

SECTION 00 01 10
TABLE OF CONTENTS
REV 1.13 – 30 JUN 2012

REQUEST FOR PROPOSAL

[Not Supplied - Project Information : PROJECT_TITLE]
 Fort Bragg

DIVISION 00 - PROPOSAL REQUIREMENTS, CONTRACT FORMS AND CONDITIONS

Sections

00 11 00	SF1442/CLIN SCHEDULE
00 21 00	Instructions to Offerors
00 22 11	Proposal Submission Requirements Evaluation Criteria, and Basis of Award One Step – Best Value, Design-Build (Single Award)
00 45 00	Representations and Certifications
00 72 00	Contract Clauses – Table of Contents
00 73 00	Special Contract Requirements

DIVISION 01 - GENERAL REQUIREMENTS

Sections

01 10 00	Statement of Work
01 32 01.00 10	Project Schedule
01 33 00	Submittal Procedures
01 33 16	Design After Award
01 45 01.10	Quality Control System (QCS)
01 45 04.00 10	Contractor Quality Control
01 50 02	Temporary Construction Facilities
01 57 20.00 10	Environmental Protection
01 62 35	Recycled/Recovered Materials
01 78 02.00 10	Closeout Submittals

Appendices

Appendix A	Geotechnical Information
Appendix B	List of Drawings
Appendix C	Utility Connections
Appendix D	Results of Fire Flow Tests
Appendix E	Environmental Information
Appendix F	Conceptual Aesthetic Considerations
Appendix G	GIS Data
Appendix H	Exterior Signage

Appendix I	Acceptable Plants List
Appendix J	Drawings
Appendix K	Utility Cost Information
Appendix L	LEED Project Credit Guidance
Appendix M	LEED Owner's Project Requirements
Appendix N	LEED Requirements for Multiple Contractor Combined Projects
Appendix O	LEED Multiple Contractor Responsibilities Table
Appendix P	USGBC Registration of Army Projects
Appendix Q	Area Computation
Appendix R	RMS Submittal Register Input Form
Appendix S	Manufacturing Performance Requirements for Plumbing Fixtures From the Energy Policy Act of 1992, (Public Law 106-486)DELETED
Appendix T	Functional Area Lighting Control Strategy (FALCS)DELETED

End of Table of Contents

SECTION 00 21 00
REV 2.5 - 31 JUL 2009

INSTRUCTIONS, CONDITIONS AND NOTICES TO OFFERORS

1.0 GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF WORK

1.2 CONTRACT COST CEILING LIMITATION FOR DESIGN AND CONSTRUCTION COSTS

1.3 GOVERNMENT SECURITY REQUIREMENTS

1.4 COPIES OF SOLICITATION DOCUMENTS AND AMENDMENTS

1.5 OFFEROR'S QUESTIONS AND COMMENTS

1.6 SMALL BUSINESS SIZE STANDARD/NAICS CODE

1.7 PROPOSAL EXPENSES AND PRE-CONTRACT COSTS

1.8 PRE-PROPOSAL CONFERENCE

1.9 ACCURACY IN PROPOSALS

1.10 PROPOSAL SUBMITTALS

1.11 PROPOSAL FORMAT

1.12 JOINT VENTURE PROPOSAL REQUIREMENTS

1.13 SUBCONTRACTING PLAN/ SUBCONTRACTING GOALS REGARDING THE UTILIZATION OF
SMALL BUSINESS CONCERNS

1.14 SOLICITATION PROVISIONS

1.0 GENERAL INFORMATION

1.1. GENERAL DESCRIPTION OF WORK

The scope of project includes all work required to design and construct a [Not Supplied - Project Information : PROJECT_TITLE] located at Fort Bragg. The work shall be in accordance with Request for Proposal documents.

General Description of Work: Tactical Equipment Maintenance Facility (TEMF), 3d Brigade Combat Team (Lite) Complex.

1.2. CONTRACT COST CEILING LIMITATION FOR DESIGN AND CONSTRUCTION COSTS

The design and construction costs will be subject to the funds available for this project. The total contract award shall not exceed \$0.00 for this contract. Offerors are notified that they are under no obligation to approach this ceiling. However the Government will not be able make an award, if the dollar amount set for this project is exceeded.

1.3. GOVERNMENT SECURITY REQUIREMENTS

The Offeror(s) must ensure that **ALL** mail sent to the CESAS District, U.S. Army Corps of Engineers, either pre-contract or post-contract award, has a return mailing address on the outside of the envelope, package, box, etc. **ANY MAIL** addressed to the U.S. Army Corps of Engineers, including but not limited to bids, modifications to bids, proposals, revised proposals, bonds, correspondence, etc., **will be REJECTED** by the US Army Corps of Engineers mail room facility located at 100 W. Oglethorpe Ave, Savannah, GA 31401 if it does not contain a return mailing address. **There will be no exceptions.**

1.4. COPIES OF SOLICITATION DOCUMENTS AND AMENDMENTS

Copies of the solicitation and amendments are available by INTERNET ACCESS ONLY. All solicitation documents will be posted to the Federal Business Opportunities website at: [Not Supplied - ContractInfoGeneral : FEDBIZOPS_WEB]

[Not Supplied - DistrictInfoGeneral : ISSUING_DIST_WEB]

It shall be the contractor's responsibility to check the websites for any amendments. The offeror shall submit in the proposal all requested information specified in this solicitation. There will be no public opening of the proposals received as a result of this solicitation.

A list of interested vendors (potential offerors and subcontractors) is available on the federal business opportunities web site (registration required) is available at: <http://www.fbo.gov/> via Quick Search (Solicitation No. W912HN-07-X-101C).

Additional information regarding this solicitation and potential offerors and/or subcontractors is available at [Not Supplied - DistrictInfoGeneral : ISSUING_DIST_CONTRACT_WEB].

1.5. OFFEROR'S QUESTIONS AND COMMENTS

Questions and/or comments relative to these documents should be submitted via e-mail or mailed to:

Contract Officer – Primary POC

U.S. Army Corps of Engineers, CESAS District

ATTN: [Not Supplied - DistrictInfoPOC : CONTRACTING_OFFICER]

[Not Supplied - DistrictInfoPOC : CONTRACTING_OFFICER_MAIL]

Phone: [Not Supplied - DistrictInfoPOC : CONTRACTING_OFFICER_PHONE]/Fax: [Not Supplied - DistrictInfoPOC : CONTRACTING_OFFICER_FAX]

Email: [Not Supplied - DistrictInfoPOC : CONTRACTING_OFFICER_EMAIL]

Contract Specialist – Support POC

U.S. Army Corps of Engineers, CESAS District

ATTN: [Not Supplied - DistrictInfoPOC : SUPPORT_CONTRACT_SPEC]

[Not Supplied - DistrictInfoPOC : SUPPORT_CONTRACT_SPEC_MAIL]

Phone: [Not Supplied - DistrictInfoPOC : SUPPORT_CONTRACT_SPEC_PHONE]/Fax: [Not Supplied - DistrictInfoPOC : SUPPORT_CONTRACT_SPEC_FAX]

Email: [Not Supplied - DistrictInfoPOC : SUPPORT_CONTRACT_SPEC_EMAIL]

Note: All questions and/or comments should reach the above referenced Contracting Office no later than zero(0) calendar days after the pre-proposal conference, in order that they may be given consideration or actions taken prior to receipt of offers.

1.5.1. Bidder Inquiry

1.5.1.1. Technical inquiries and questions relating to proposal procedures or bonds are to be submitted via Bidder Inquiry in ProjNet at <http://www.projnet.org/projnet>.

1.5.1.1.1. To submit and review bid inquiry items, bidders will need to be a current registered user or self-register into system. To self-register go to web page, click BID tab select Bidder Inquiry, select agency USACE, enter Key for this solicitation listed below, and your e-mail address, click login. Fill in all required information and click create user. Verify that information on next screen is correct and click continue.

1.5.1.1.2. From this page you may view all bidder inquiries or add inquiry.

1.5.1.1.3. Bidders will receive an acknowledgement of their question via email, followed by an answer to their question after it has been processed by our technical team.

1.5.1.1.4. The Solicitation Number is : W912HN-07-X-101C

1.5.1.1.5. The Bidder Inquiry Key is: [Not Supplied - ProposalSubReqConference : BID_KEY]

1.5.1.2. The Bidder Inquiry System will be unavailable for new inquires 5 days prior to proposal submission in order to ensure adequate time is allotted to form an appropriate response and amend the solicitation, if necessary.

1.5.1.3. Offerors are requested to review the specification in its entirety, review the Bidder Inquiry System for answers to questions prior to submission of a new inquiry.

1.5.1.4. The call center operates weekdays from 8AM to 5PM U.S. Central Time Zone (Chicago). The telephone number for the Call Center is 800-428-HELP.

1.5.1.5. Offers will NOT be publicly opened. Information concerning the status of the evaluation and/or award will NOT be available after receipt of proposals.

1.6. SMALL BUSINESS SIZE STANDARD/NAICS CODE

See Section 00 45 00, FAR 52.219-1 for the small business size standard/NAICS Code.

1.7. PROPOSAL EXPENSES AND PRE-CONTRACT COSTS

This Request for Proposal (RFP) does not commit the Government to pay, as a direct charge, any costs incurred in the preparation and submission of a proposal.

1.8. PRE-PROPOSAL CONFERENCE

The Government intends to hold the pre-proposal conference at [Not Supplied - ProposalSubReqConference : PRECON_BUILD]- located at [Not Supplied - ProposalSubReqConference : PRECON_BUILD_ADDRESS] Phone: [Not Supplied - ProposalSubReqConference : PRECON_BUILD_PHONE], on 05 November 2012 1424 (02:24 PM) (GMT- 07:24) Eastern Time. Specific details will be posted on the CESAS District's contracting web site at [Not Supplied - DistrictInfoGeneral : ISSUING_DIST_CONTRACT_WEB] and to the Army Single Face to Industry/FedBizOpps websites. The offeror must submit in writing, via fax or e-mail, the firm's name, address, point of contact, telephone number, and number of personnel planning to attend to the following no later than five (5) working days prior to the conference:

U.S. Army Corps of Engineers, CESAS District

ATTN: [Not Supplied - ProposalSubReqConference : PRECON_POC]

[Not Supplied - ProposalSubReqConference : PRECON_POC_MAIL]

Phone: [Not Supplied - ProposalSubReqConference : PRECON_POC_PHONE]/Fax: [Not Supplied - ProposalSubReqConference : PRECON_POC_FAX]

Email: [Not Supplied - ProposalSubReqConference : PRECON_POC_EMAIL]

All interested offerors are urged to attend. During this conference, the requirements set forth in the solicitation will be reviewed and discussed, with part of the conference to include a question and answer period.

1.9. ACCURACY IN PROPOSALS

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

1.10. PROPOSAL SUBMITTALS

Due to heightened security at Government installations, those offerors who have their proposals hand-delivered shall contact [Not Supplied - DistrictInfoPOC : CONTRACTING_OFFICER], Contracting Officer, at [Not Supplied - DistrictInfoPOC : CONTRACTING_OFFICER_PHONE] or [Not Supplied - DistrictInfoPOC : SUPPORT_CONTRACT_SPEC], Contract Specialist, at [Not Supplied - DistrictInfoPOC : SUPPORT_CONTRACT_SPEC_PHONE] or the Contracting Office Main Desk, at [Not Supplied - DistrictInfoGeneral : ISSUING_DISTRICT_PHONE], prior to delivering to the address shown below. On the date specified, and thirty minutes prior to the time specified on Standard Form SF 1442, Page 1, Item 9, a Contracting representative will be in the lobby to accept proposals. At the time specified on Standard Form SF 1442, Page 1, Item 9, it will be announced that receipt of proposals is closed. Official time will be established by the clock located in the area where the proposals are received. Recent terrorist threats have resulted in more time-consuming sign-in and escort procedures and may impact the timely delivery of offers. See FAR 52.215-1 for rules concerning late proposals.

As stated on Standard Form SF 1442: Proposals will be received until 1345 (01:45 PM) (GMT-06:45) Eastern Time on 22 December 2010 at:

U.S. Army Corps of Engineers, CESAS District

ATTN: [Not Supplied - DistrictInfoPOC : CONTRACTING_OFFICER]

[Not Supplied - DistrictInfoPOC : CONTRACTING_OFFICER_MAIL]

The Packaging that contains the Proposals shall be marked:

"Proposals for Solicitation Number: W912HN-07-X-101C, DO NOT OPEN"

1.11. PROPOSAL FORMAT

(a) Written materials: 8 ½" x 11" format, using 10 point or larger font size, in bound volumes, using 3-ring binders (except that Pro Forma material and price proposal shall be submitted in a closed manila envelope. Each bound volume will contain a Title Sheet on the cover for ready identification of the proposal and a full table of contents, separated by Tabs, as prescribed herein

(i) The prime, consortium, or joint venture's name, address, a signature of the official that can bind the firm and a telephone number shall appear in the lower left corner of the title page of any document/volume to be evaluated.

(ii) Volume number, section and date submitted shall appear in the bottom right corner of each page (along with the revision number for the amended page, if necessary).

(b) **Drawing sheets:** Use 22" x 34" for full size drawings. Half-size sheets are also acceptable.

(c) **Electronic Format:** Provide two CDs in read-only format, preferably using .pdf files. All price breakdown information to aide in the price evaluation shall be submitted in Excel format.

(d) **Number of copies:** Submit one original and zero(0) copies of drawings and printed matter (Bound Volumes), as well as zero(0) CDs. For Pro Forma information submit the original and one copy and one separate CD.

1.12. JOINT VENTURE PROPOSAL REQUIREMENTS

When proposing as a joint venture, all members of the joint venture shall sign the SF 1442 and the bid bond unless a written agreement by the joint venture is furnished with the proposal designating one firm with the authority to bind the other member(s) of the joint venture. In addition, a copy of the joint venture agreement shall be submitted with the proposal. Failure to comply with the foregoing requirements may eliminate the proposal from further consideration. If this is an 8(a) or HubZone joint venture, the offeror shall ensure that it complies with the applicable requirements of 13 CFR Part 124 and 13 CFR Part 126, respectively

1.13. SUBCONTRACTING PLAN/ SUBCONTRACTING GOALS REGARDING THE UTILIZATION OF SMALL BUSINESS CONCERNS

(a) **Application.** This clause applies to all offerors submitting proposals.

(b) **Federal Acquisition Regulations (FAR).** Attention is directed to the following FAR and DFARS provisions contained in this solicitation:

52.219-8, Utilization of Small Business Concerns (Alternate I)

52.219-9, Small Business Sub Contracting Plan (Alternate I) (applies only to Large Business)

52.219-16, Liquidated Damages – Small Business Subcontracting Plan (applies only to Large Business)

252.226-7001, Utilization of Indian Organizations, Indian-Owned Economic Enterprises, and Native Hawaiian Small Business Concerns

(c) **Goals.** The U.S. Army Corps of Engineers considers the following goals reasonable and achievable for the performance of the resultant contract:

(i) 0.00% of subcontracted amount contract amount with small business concerns.

(ii) 0.00% of subcontracted amount contract amount with those small business concerns owned and controlled by socially and economically disadvantaged individuals.

(iii) 0.00% of subcontracted amount contract amount with those small business concerns owned and controlled by women.

(iv) 0.00% of subcontracted amount contract amount with those small business concerns owned and controlled by Service-Disabled Veterans.

(v) 0.00% of subcontracted amount contract amount with those small business concerns owned and controlled by HUBZones.

(vi) 0.00% of subcontracted amount contract amount with those minority institutions and historically black colleges and universities

1.14. SOLICITATION PROVISIONS

The clauses below are included for reference only. They are to be entered into the RFP through the SPS system. No other clauses other than those listed in the tables below should be included in the RFP unless approved by the PEO

The following contract provisions are required to be used:

PROVISION	TITLE	Inc by Reference	NOTES
NA	Model RFP Provisions	No	Put all Model RFP Provisions in Section 00100. Edit and fill-in as necessary.
52.233-2	Service Of Protest	No	33.106(a) IF >SAT
52.236-28	Preparation Of Proposals-- Construction	No	36.520 when contracting by negotiation

The following contract provisions are to be used if applicable for your project:

PROVISION	TITLE	Inc by Reference	NOTES
52.204-6	Data Universal Numbering System (Duns) Number	Yes	4.603 (a) USE IN ALL > \$25K
52.209-5	Certification Regarding Debarment, Suspension, Proposed Debarment, And Other Responsibility Matters	NO	9.409(a) > SAT
52.211-2	Availability Of Specifications Listed In The DOD Index Of Specifications And Standards (DODISS) And Descriptions Listed In The Acquisition Management Systems And Data Requirements Control	NO	11.204 (b) IF CITING SPECS LISTED IN DoDISS OR DoD5010.12-L THAT ARE NOT LISTED IN SOLICITATION

	List, Did 5010.12-L		
52.211-6	Brand Name Or Equal	Yes	11.107 When brand name or equal purchase descriptions in solicitation
52.211-14	Notice Of Priority Rating For National Defense Use	NO	11.604(a) PRIORITY RATED REQUIREMENTS
52.214-34	Submission Of Offers In The English Language	Yes	14.201-6(w) solicitations that include any of the clauses prescribed in 25.1101 or 25.1102.
52.214-35	Submission Of Offers In U.S. Currency	Yes	14.201-6(x) in solicitations that include any of the clauses prescribed in <u>25.1101</u> or <u>25.1102</u>
52.215-1	Instructions To Offerors--Competitive Acquisition	Yes	15.209(a) - USE IN ALL COMPETITIVE WHERE AWARDED WITHOUT DISCUSSIONS
52.215-3	Request For Information Or Solicitation For Planning Purposes	NO	15.209(c) ONLY WHEN ISSUING A SOLICITATION FOR INFO OR PLANNING PURPOSES
52.215-5	Facsimile Proposals	NO	15.209(e) TO AUTHORIZE FAXED PROPOSALS
52.216-1	Type Of Contract	NO	16.105 > sat
52.216-27	Single Or Multiple Award	Yes	16.506(f) MULTIPLE AWARD CONTRACT
52.217-4	Evaluation Of Options Exercised At Time Of Contract Award	Yes	17.208(b) IF INCLUDES OPTION CLAUSE
52.217-5	Evaluation Of Options	Yes	17.208(c) IF CONTAINS OPTIONS THAT WILL NOT BE EXERCISED AT TIME OF AWARD
52.222-5	Davis-Bacon Act -- Secondary Site Of The Work	NO	22.407(h) > \$2000
52.225-10	Notice Of Buy American Act/Balance Of Payment Program Requirement - Construction Materials	Yes	25.1102 (b)1 - use with 52.225-9

52.225-10 ALT I	Alternate I	Yes	25.1102 (b)2 use if insufficient time to process a determination of inapplicability
52.225-12	Notice Of Buy American Act/Balance Of Payment Program Requirement - Construction Materials	Yes	25.1102(d)(1) if contains 52.225-11
52.225-12 ALT I	Alternate I	Yes	25.1102(d)(2) if insufficient time to process a determination of applicability
52.225-12 ALT II	Alternate II	Yes	25.1102(d)(3) if between \$6,725,000-\$7,611,532
52.232-13	Notice Of Progress Payments	Yes	32.502-3(a) if using progress payments
52.232-28	Invitation To Propose Performance Based Payments	Yes	32.1005(b)(1) If inviting offerors to propose performance based payments
52.236-27	Site Visit (Construction)	No	36.523 if need a site visit
52.236-27 ALT I	Site Visit (Construction) Alt I	No	36.523 if conducting an organized site visit
52.252-1	Solicitation Provisions Incorporated By Reference	No	52.107(a) ALL
252.205-7000	Provision Of Information To Cooperative Agreement Holders	Yes	205.470 in solicitations and contracts exceeding \$1,000,000
252.232-7010	Levies On Contract Payments	Yes	DFARS 232.7102 in all solicitations & contracts other than micro-purchases
252.225-7031	Secondary Arab Boycott Of Israel	No	Dfars 225.770-5 all
252.236-7007	Additive Or Deductive Items	No	236.570 (5) 252.236-7007, Additive or Deductive Items, if the procedures in 236.213-70 are being used.
252.236-7008	Contract Prices - Bidding Schedules	Yes	236.507(b)(6) If contract will contain only unit prices for some items

The following contract provisions are optional:

CLAUSE	TITLE	Inc by Reference	NOTES
52.215-20	Requirements For Cost Or Pricing Data Or Information Other Than Cost Or Pricing Data	NO	15.408(I) USE WHERE COST OR PRICING DATA OR INFO OTHER THAN COPD WILL BE REQ'D
52.215-20 ALT I	Requirements For Cost Or Pricing Data Or Information Other Than Cost Or Pricing Data (Oct 1997) Alternate I	NO	15.408(I) USE WITH 15.215-20 WHERE FORMAT OTHER THAN TABLE 15-2 IS REQUIRED
52.215-20 ALT II	Requirements For Cost Or Pricing Data Or Information Other Than Cost Or Pricing Data (Oct 1997) Alternate li	NO	15.408(I) USE WITH 15.215-20 WHERE PROPOSALS COPIES ARE TO BE SENT TO THE ACO AND CONTRACT AUDITOR
52.215-20 ALT III	Requirements For Cost Or Pricing Data Or Information Other Than Cost Or Pricing Data (Oct 1997) Alternate Iii	NO	15.408(I) USE WITH 15.215-20 WHERE ELECTRONIC SUBMISSION IS REQUIRED
52.215-20 ALT IV	Requirements For Cost Or Pricing Data Or Information Other Than Cost Or Pricing Data (Oct 1997) Alternate IV	NO	15.408(I) USE WHERE INFO OTHER THAN COST OR PRICING DATA IS REQ'D

End of Section 00 22 00

SECTION 00 22 11
REV 5.21 – 31 OCT 2012

**PROPOSAL SUBMISSION REQUIREMENTS EVALUATION CRITERIA AND BASIS OF AWARD ONE
STEP - -BEST VALUE, DESIGN BUILD
(SINGLE AWARD)**

1.0 OVERVIEW

2.0 BASIS OF AWARD

3.0 GENERAL INSTRUCTIONS

4.0 PROPOSAL INFORMATION AND RELATED EVALUATION FACTORS, SUBFACTORS AND ELEMENTS

4.1. VOLUME 1 – DESIGN-TECHNICAL

4.2. VOLUME 2 – PERFORMANCE CAPABILITY/UTILIZATION OF SMALL BUSINESS

4.3. VOLUME 3 – PRICE AND PRO-FORMA INFORMATION

5.0 VOLUME 1 – FACTOR 1 - DESIGN TECHNICAL

5.1. GENERAL

5.2. TAB A –SUBFACTOR 1 – BUILDING FUNCTIONAL, AESTHETICS AND SPACE

5.3. TAB B –SUBFACTOR 2 – QUALITY OF BUILDING SYSTEMS AND MATERIALS

5.4. TAB C – NOT USED

5.5. TAB C – SUBFACTOR 3 SUSTAINABILITY REQUIREMENTS

6.0 VOLUME 2 –FACTOR 2 - PERFORMANCE CAPABILITY

6.1. TAB A –SUBFACTOR 1 – SPECIALIZED EXPERIENCE

6.2. TAB B –SUBFACTOR 2 – PAST PERFORMANCE

6.3. TAB C –SUBFACTOR 3 – PROPOSED CONTRACT DURATION AND SUMMARY SCHEDULE

6.4. TAB D –SUBFACTOR 4 – ORGANIZATION/TECHNICAL APPROACH

6.5. TAB E –SUBFACTOR 5 – KEY PERSONNEL CAPABILITIES AND EXPERIENCE

6.6. TAB F –SUBFACTOR 6 – UTILIZATION OF SMALL BUSINESS CONCERNS

7.0 VOLUME 3 – PRICE AND PRO FORMA INFORMATION

7.1. GENERAL

7.2. TAB A – FACTOR 3 – PRICE (STANDARD FORM 1442, PROPOSAL DATA SHEET AND CONTRACT LINE ITEM SCHEDULE)

- 7.3. TAB B – BID GUARANTEE
- 7.4. TAB C– REQUIRED PRE-AWARD INFORMATION
- 7.5. TAB D – SUBCONTRACTING PLAN

8.0 EVALUATION PROCEDURES

- 8.1. SOURCE SELECTION EVALUATION BOARD (SSEB)
- 8.2. EVALUATION
- 8.3. DEFINITIONS
- 8.4. EVALUATION RATING SYSTEM
- 8.5. PAST PERFORMANCE CONFIDENCE ASSESSMENT RATING SYSTEM

ATTACHMENTS

- 1 - FORMAT FOR TABLE OF FACILITIES**
- 2 - FORMAT FOR TABLE OF SPACES**
- 3 - COMPANY SPECIALIZED EXPERIENCE CONSTRUCTION OR PRIME CONTRACTOR**
- 4 - COMPANY SPECIALIZED EXPERIENCE DESIGN FIRM OR IN-HOUSE DESIGN CAPABILITY**
- 5 - COMPANY SPECIALIZED EXPERIENCE KEY SUBCONTRACTOR (OR PRIME IF WORK NOT TO BE SUBCONTRACTED)**
- 6 - PAST PERFORMANCE EVALUATION TELEPHONE INTERVIEW QUESTIONNAIRE**
- 7 - KEY PERSONNEL RESUME**
- 8 - LETTER OF COMMITMENT FOR KEY PERSONNEL**
- 9 - LETTER OF COMMITMENT FOR (DESIGN FIRM OR KEY SUBCONTRACTOR)**
- 10 - PROPOSAL DATA SHEETS**

1.0 OVERVIEW

1.1. **The Government is looking for ways to streamline construction, manage labor and other resource constraints in an effort to reduce costs and achieve an aggressive schedule in executing task orders to meet the Army's Transformation program goals of faster project execution at lower cost, while taking advantage of industry standards, means and methods.**

1.2. This is a "Best Value" solicitation for the Design and Construction of a [Not Supplied - Project Information : PROJECT_TITLE] located at Fort Bragg. The Government will evaluate the proposals in accordance with the criteria described herein, and award a firm fixed price contract to the responsible offeror, whose proposal conforms with all the terms and conditions of the solicitation and whose proposal is determined to represent the overall best value to the Government.

2.0 BASIS OF AWARD

2.1. The Contracting Officer will award a firm fixed-price contract to that responsible Offeror whose proposal the Source Selection Authority has determined conforms to the solicitation, is fair and reasonable, and offers the best overall value to the Government, considering all non-price factors described herein, and price. **All evaluation factors, other than price, when combined, are considered significantly more important than the price, however the Contract award shall not exceed the cost limitation described in Section 00 21 00 for this project.** The intent of this solicitation is to obtain the best proposal within the cost limitation. There is no obligation to approach or match the cost limitation in the offer. After the Government individually evaluates and rates each proposal, the Contracting Officer/Source Selection Authority will compare proposals to determine which proposal represents the best value. The Government reserves the right to accept other than the lowest priced offer or to reject all offers. The Government will not award a contract to an Offeror whose proposal contains a deficiency, as defined in FAR 15.001. If there is a lower priced, conforming offer(s), the Contracting Officer/Source Selection Official must determine that the added value of a more expensive proposal (within the cost limitation) would justify award to that offeror.

2.2. As part of the evaluation, the Government will evaluate betterments in proposals relative to the minimum standards in the RFP to determine if they offer additional value to the Government. In addition, innovations in proposals will be evaluated to determine if creative ideas of the Offeror are a better value to the Government compared to the minimum criteria.

3.0 GENERAL INSTRUCTIONS

3.1. Proposals should be submitted initially on the most favorable terms from a price and technical standpoint. Do not assume that offerors will be contacted or afforded an opportunity to clarify, discuss or revise their proposals.

3.2. Firms formally organized as design-build entities, design firms and construction contractors that have associated specifically for this project, consortia of firms or any other interested parties may submit proposals. Associations may be as joint ventures or as key team subcontractors. Any legally organized Offeror may submit a proposal, provided that the Offeror or Offeror's subcontractor has or will have professional architects and engineers, registered in the appropriate technical disciplines and provided that the requirements specified in Contract clause, "Requirements for Registration of Designers", are met. All designs must be under the direct supervision of appropriately licensed professionals for each discipline involved.

3.3. Submit proposals in tabbed, three-ring binders. Note that the Government will not evaluate any material that exceeds the page limits, where indicated below.

4.0 PROPOSAL INFORMATION AND RELATED EVALUATION FACTORS, SUBFACTORS AND ELEMENTS

4.1. VOLUME 1 – DESIGN TECHNICAL FOR SOLICITATION NO. W912HN-07-X-101C

<u>Factor/Sub Factor</u>	<u>Location</u>	<u>Description</u>	<u>Relative Importance</u>
FACTOR 1		DESIGN TECHNICAL	Most Important Factor
Subfactor 1	Vol. 1 TAB A	Building Functional, Aesthetics and Space	Most Important Subfactor
Subfactor 2	Vol. 1 TAB B	Quality of Building Systems and Materials	Equally Important with Subfactor 1
Subfactor 3	Vol. 2 TAB C	Sustainability	3rd Most Important Subfactor (slightly less important than Subfactors 1 and 2, which are equal in importance)

4.2. VOLUME 2 – PERFORMANCE CAPABILITY AND SMALL BUSINESS UTILIZATION

<u>Factor/Sub Factor</u>	<u>Location</u>	<u>Description</u>	<u>Relative Importance</u>
FACTOR 2		PERFORMANCE CAPABILITY	2nd Most Important Factor (slightly less important than Factor 1)
Subfactor 1	Vol. 2 TAB A	Specialized Experience	Most Important Subfactor
Subfactor 2	Vol. 2 TAB B	Past Performance	2nd Most Important subfactor (slightly less important than Subfactor 1)
Subfactor 3	Vol. 2 TAB C	Proposed Contract Duration and Summary Schedule	3rd Most Important Subfactor (slightly less important than Subfactor 2. Equal to Subfactors 4 and 5).
Subfactor 4	Vol. 2 TAB D	Organization/Technical Approach	3rd Most Important Subfactor (slightly less important than Subfactor 2. Equal to Subfactors 3 and 5).
Subfactor 5	Vol. 2 TAB E	Key Personnel Capabilities and Experience	3rd Most Important Subfactor (slightly less important than Subfactor 2. Equal to Subfactors 3 and 4).
Subfactor 6	Vol. 2 TAB F	Small Business Utilization	6th Most Important Subfactor (slightly less important than Subfactors 3,4 and 5)

4.3. VOLUME 3 – PRICE AND PRO FORMA INFORMATION)

<u>Factor/Sub Factor</u>	<u>Location</u>	<u>Description</u>	<u>Relative Importance</u>
FACTOR 3	Vol. 3 TAB A	Price (Standard Form 1442, Proposal Data Sheet And Contract Line Item Schedule)	3rd Most Important Factor (slightly less important than Factor 2)

<u>Factor/Sub Factor</u>	<u>Location</u>	<u>Description</u>	<u>Relative Importance</u>
N/A	Vol. 3 TAB B	Bid Guarantee	Not Rated
N/A	Vol. 3 TAB C	Required Pre-Award Information	Not Rated

NOTE: 8(a) Joint Venture Offeror or Offeror submitting Proposal as HubZone Joint Venture shall submit evidence from Offerors SBA Servicing Agency that the Offeror has notified and discussed the proposed joint venture for this specific project with the appropriate SBA Representative or Business Opportunity Specialist

5.0 VOLUME 1– FACTOR 1 – DESIGN TECHNICAL

5.1. GENERAL: The design-technical Factor consists of conceptual level presentation drawings, technical approach narratives and information regarding material and system quality. It must clearly define the proposed scope and quality levels that the design-build team is offering to the Government in enough detail for the Government and the Offeror to mutually understand the whether or not the proposal meets or exceeds the minimum Solicitation requirements. **The use of BIM to prepare or submit proposals is NOT required. Fully developed drawings, details, or specifications are not required or desired. Unless, specifically stated, herein, the Government will not be performing a detailed engineering analysis or design review at the proposal stage.** The intent during the proposal submission and review process is not to require detailed design effort or to perform a detailed design engineering review but to focus on the proposed quality levels of materials and systems. If the Government evaluators have actual knowledge or strong suspicion that a proposed product or solution is inappropriately sized, being used in the wrong application or otherwise does not meet the contract requirements, the Government will inform the proposer in the event that discussions are conducted with the firm. But the Government is not asking for design analyses in the proposal and is not obligated to perform an engineering design review at this stage. After, award, In the event of conflict between the contractor's accepted proposal and the requirements in the final, amended RFP, the order of precedence is indicated in Special Contract Requirement 1.2, DESIGN/BUILD CONTRACT – ORDER OF PRECEDENCE. The Offeror shall identify what it considers to be Betterments in its proposal for Subfactors 1-3 (See Section 00 73 00, SCR "Proposed Betterments"). Note that the Government will not evaluate any material that exceeds the page limits, where indicated below. The final design must comply with the RFP requirements except that accepted betterments become the new contract minimum requirements.

5.2. VOLUME 1 - TAB A –SUBFACTOR 1 - BUILDING FUNCTIONAL, AESTHETICS AND SPACE

5.2.1. Submission Requirements:

5.2.1.1. Presentation Drawings:

- (a) Exterior Elevation(s) of the primary elevation(s) of each facility clearly noting proposed materials and colors
- (b) At least one (1) Exterior Perspective Rendering (may be CADD rendering) for each facility type included in the contract with enough detail to aid in the evaluation of the exterior building aesthetics, as described in paragraph 5.2.2.2 (a), below. Rendering should be at least 11" x 17" in order to show a detailed perspective view of the building
- (c) At least one building section demonstrating typical exterior wall sections, typical exterior construction materials, finished floor elevations, and ceiling heights.

NOTE: The Government will use this information to evaluate functional and aesthetic considerations ,such as floor to ceiling heights and may use it to help evaluate exterior aesthetics and appearance. The Government may also use this information in conjunction with the submission information under the

subfactor: QUALITY OF BUILDING SYSTEMS AND MATERIALS, below, to evaluate quality of wall finishes as well as looking at how the proposer has considered air barrier . **The Government is NOT evaluating the structural framing system or solution.**

(d) Schematic floor plans for each floor of each facility. Not necessary if the Government provides the floor plans in the solicitation and the proposer proposes to use them, without change. In that event, the proposer must clearly acknowledge that it will provide the floor plan without change. If the proposer intends to change any Government provided floor plan, it must clearly identify any and all proposed changes to the floor plans, either on a floor plan or in a narrative.

(e) A color board including primary interior and exterior finish materials.

5.2.1.2. Technical Approach Narratives

Provide technical approach narratives, both qualitative and quantitative, defining the elements of the proposal. Preface the narratives with a design concepts narrative, providing the design rationale and basis of the proposal.

(a) Minimum Space and Facility Size. Describe the spaces provided for each facility, in accordance with Section 01 10 00, **Statement of Work**. As a minimum, include a tabulation of the net square footage for rooms, zones, or other areas, the total gross square footage for each floor of each facility, and the total gross square footage for each facility to clearly demonstrate compliance with the project requirements. See the sample spreadsheets at the end of this section (Attachments 1 and 2).

(b) Architectural Theme and Materials. This narrative shall be no longer than 3 typewritten pages. Describe the architectural themes of the various facilities and spaces which demonstrate how the proposal achieves the results desired by the **Statement of Work**. Narrative should address how the selection of materials and colors enhances the exterior and interior aesthetics of the facilities and improves the living and/or working conditions for the soldier populations who will utilize the facilities. This narrative is not intended to be a material listing, but to explain/reflect how the selections were made and how they address the requirements.

5.2.2. Evaluation Criteria:

The following three elements are equal in importance (not rated separately).

5.2.2.1. **Building Functional Arrangement:** This element considers the overall functional layout (Floor Plan) and interaction of the spaces in the facilities as well. This element considers the planning and design of the spaces with respect to soldier working conditions and the operations of the facility.

The following criteria will be considered in the evaluation of the functional arrangement of the various facilities:

(a) How well the floor plan responds to the Functional Relationship requirements described in the **Statement of Work**

(b) How well the floor plan and space arrangement facilitate work flow and access necessary to successfully operate this facility in accordance with its mission.

(c) Do the facilities provide acceptable life safety and fire safety measures?

(d) Do the proposed plans demonstrate compliance with the mandatory requirements for circulation, furnishings equipment, and other specifically identified items in the **Statement of Work**?

5.2.2.2. **Building Aesthetics:** This element considers the overall "appeal" of the facility and the desire that both the interior and exterior of the facilities present a professional, attractive appearance. The following two areas will be considered under this element and are equal in importance (not rated separately):

(a) Exterior Considerations:

To the extent possible within the government identified contract cost limitation (CCL), the proposal must comply with the look and feel of the Installation architectural theme identified in the Request for Proposals. The first priority in order of importance is how well the proposal provides comparable building mass, size, height, and configuration in comparison with the architectural theme expressed in the Solicitation. The second priority in order of importance is how well the proposal provides compatible exterior skin appearance based upon façade, architectural character (period or style), exterior detailing, matching the architectural theme expressed in the Solicitation.

- Proposals shall be evaluated on mass, size, height, and configuration in comparison with the architectural theme expressed in the Solicitation, design of facades, roof lines, delineation of entrances, proportions of fenestration in relation to elevations, shade and shadow effects, materials, textures, architectural character (period or style), exterior color schemes.
- How compatible is the proposed design with the installation architectural theme expressed in the RFP? If not an exact "copy" of the theme, how well does it harmonize or blend with the expressed theme?
- How well does the proposal provide comparable building mass, size, height, and configuration in comparison with the architectural theme expressed in the Solicitation?
- How well does the proposal provide compatible exterior skin appearance based upon façade, architectural character (period or style), exterior detailing, matching the architectural theme expressed in the Solicitation?
- Is the building an attractive addition to the Installation?
- How well does the building harmonize with its environment, including surrounding facilities?
- Has the proposer addressed/coordinated the arrangement of stacks, louvers, vents, and roof mounted equipment, etc. to provide a visually attractive structure?

(b) Interior Considerations:

- Are the proposed colors and material finishes conducive to the working environment of the facility?
- For administrative areas, does the interior design provided establish a positive working environment?
- Has the proposal addressed/provided for natural and artificial light in the living and working spaces and is the arrangement of fenestration and lighting fixtures in the spaces conducive to furniture placement and space usage?
- Do the proposed ceiling material, elevation, and design enhance the environment?
- Has "support item" placement been considered and addressed in the proposal to enhance the environment? For example: placement of supply/exhaust devices, placement of electrical panels, and placement of exhaust fans, etc.
- Does the proposal provide for acoustic control of noise from service/support spaces to administrative areas?

5.2.2.3. Minimum Space and Facility Size

The proposal must include all the mandatory spaces in response to the requirements set forth in Section 01 10 00, **Statement of Work**. Proposals will be evaluated on compliance with these requirements. Proposals shall identify any individual areas which are less than the required areas and describe how such deviation would enhance the building function. Individual areas may slightly exceed the requirements, so long as building function is not compromised elsewhere and as long as the overall square footage is not greater than that as described in Section 01 10 00, as authorized by Congress.

5.3. VOLUME 1- TAB B – SUBFACTOR 2 - QUALITY OF BUILDING SYSTEMS AND MATERIALS

5.3.1. **General.** As part of this Subfactor, the Government has identified certain items as desirable features or preferable items. Desirable features are identified below in the evaluation criteria. Preferable items are listed in order of priority, These items, along with any Offeror-identified betterment, will be given additional consideration during the evaluation process, provided that they are included within the contract cost limitation (CCL) identified in the Solicitation.

1. 1. Maximize SPLIT FACE CMU exterior – entire facility would be goal. Anything above 5 foot line to roof soffit would be a plus.
2. Highly efficient water heating systems. For large capacity systems the preference is an effective Solar Hot Water Heater with a high efficiency gas backup.
3. Provide more than 10 percent additional energy savings beyond the minimum RFP requirements. The expectation is that energy savings should exceed 40 percent. Meet LEED Daylighting requirements.
4. Doors and frames – exterior and interior durability. Metal doors and frames with grade one hardware outside and inside with highest quality door hardware. Exterior frames to be 16 gauge welded, interior door frames to be 18 gauge knock down.
5. Maximize Sound Transmission Coefficients Ratings (STC) where applicable between the maintenance areas, admin areas and bench areas.

5.3.2. Submission Requirements:

5.3.2.1. Presentation Drawings

(1) There are no specific drawings requirements for this Subfactor. However, the offeror has the option of providing concept level drawing information for specific materials and/or systems which the offeror feels are necessary to describe the proposed systems or materials.

5.3.2.2. Technical Approach Narratives:

Provide technical approach narratives, both qualitative and quantitative, defining the elements of the proposal. It is acceptable to include all the sub-items shown below into a single combined narrative for the entire facility. It is the responsibility of the proposer to ensure that all aspects identified in the evaluation criteria below are addressed. Whether individual narratives or a single combined narrative is provided, the maximum total length for narratives shall be ten (10) typewritten pages.

(a) Architectural Finishes: Describe how the materials selected provide for a suitable environment for the expected population of the facility. Discuss how these selections provide value to the Government and how they address the minimum requirements of the solicitation. Narrative should focus on aesthetics, durability and maintenance of the finishes proposed.

(b) Furniture Systems: Not Used

(c) Mechanical Systems: Describe how the mechanical systems selected provide for a highly efficient environmental control system including information about provisions for indoor air quality maintenance. Discuss how these selections provide value to the Government and how they address the minimum requirements of the solicitation. Narrative should focus on maintenance considerations, limiting energy consumption, and suitability of the proposed systems for the expected usage.

(d) Plumbing Systems: Describe how the plumbing systems selected provide for a highly efficient domestic hot water system and an efficient piping system. Discuss how these selections provide value to the Government and how they address the minimum requirements of the solicitation. Narrative should focus on maintenance considerations, energy consumption, and suitability of the proposed systems for the expected usage.

(e) Electrical Systems: Describe how the electrical power and lighting systems, telephone, data, and cable television systems selected provide for a highly efficient electrical system. Discuss how these selections provide value to the Government and how they address the minimum requirements of the solicitation. Narrative should focus on maintenance considerations, energy consumption, and suitability of the proposed systems for the expected usage.

(f) ATFP Considerations: Describe how the proposed materials, systems, and designs address the mandatory building ATRFP requirements included in the Statement of Work.

(g) Site Utilities and Site Systems: Not Used

(h) Interoperability: Describe how systems integrated into the new facilities which require connection and interface with existing Installation wide systems will be accommodated in the proposed project. Narrative should address the following systems as minimum: Fire Alarm, Telephone, Cable Television, UMCS, and privatized utility companies where applicable.

(i) Solar Hot Water Heating: Include provisions to provide at least 30% of the domestic hot water requirements through solar heating methodologies, unless the results of a Life Cycle Cost Analysis (LCCA), developed utilizing the Building Life Cycle Cost Program (BLCC) demonstrates to the Government's satisfaction that the solar hot water system is not life cycle cost effective in comparison with other hot water heating systems. Discuss and outline Offeror's strategy for this solar system including components, placement of collectors, and controls Include all applicable input data, assumptions, first cost, replacement cost, and maintenance and repair cost that were utilized in the calculations. If using the LCCA to justify non-selection of solar hot water heating, make all life cycle cost comparisons to a baseline system to provide domestic hot water without solar components. Analyze at least two different solar hot water methodologies to compare against the baseline system. Use a study period of 25 years and use the Utility cost information in Appendix K.

5.3.2.3. Proposed Material Identifications: In order to evaluate and rate the quality of the materials being proposed, including any material or equipment warranties exceeding the one year warranty in the contract clause "Warranty of Construction", the offeror shall include in the proposal material identification for major materials in each of the areas shown below. Provide this information in tabular form supported, if necessary to clearly identify level of proposed quality, by catalog information (may provide on CD-ROM). Table should include manufacturer's name, model number, if known or at least model series, length of warranty, size/capacity (where available), efficiency (where applicable), and any other notes or information selected by the offeror. The Government will evaluate and consider materials and equipment proposed by brand name and model series or number as a quality standard. Unless substitution of a manufacturer, brand name or model is otherwise specifically prohibited in the contract, if the successful offeror desires to substitute manufacturers, brand names or models after award, the substituted product must meet the contract requirements and be approved by the designer of record and the Government as equal in function, performance, quality and salient features to that initially proposed. Acceptance of the proposal is not a guaranty that the proposed products meet the contractual requirements. See below under Evaluation Criteria for more explanation.

(a) Architectural Finishes

- Interior Walls
- Floors
- Ceilings
- Exterior Walls
- Any Special Features
- Hardware systems (not individual hardware sets)
- Door systems/types (not individual doors)
- Window systems/types (not individual windows)
- Roofing Systems

(c) Furniture Systems: Not Used

(d) Mechanical Systems

- Central Heating/Cooling Equipment
- Pumps
- Air Handling Equipment
- HVAC System Control Equipment
- Energy Conservation Features

(e) Plumbing Systems

- Fixtures
- Domestic Hot Water Generator

(f) Electrical Systems

- Lighting Fixtures
- Main Switchgear and Panels
- Data, Telephone, Cable TV, Intercom, CCTV, or Other Special Systems as Identified in the SOW

5.3.2.4. Provide a list of quality improvements that are above the minimum stated with the performance specifications. Develop the following table, or similar, to identify quality betterments.

	Improved Quality	Concise description of improved quality	Feature is included within the Construction Cost Limitation – YES/NO
Arch. Finishes	N/A	N/A	
Etc.			

5.3.3. **Evaluation Criteria:**

5.3.3.1. **General:** It is the Army's objective that these buildings will have a 50 year useful life. The design and construction should provide an appropriate level of quality to ensure the continued use of the facility over that time period with the application of reasonable preventive maintenance and repairs that would be industry-acceptable to a major civilian sector project OWNER. The facility design should consider that the Army may repurpose the use of the facility over the 50 year life. The Army's intent is to install products and materials of good quality that meet industry standard average life that corresponds with the period of performance expected before a major renovation or repurpose. The design should be flexible and adaptable to possible future uses different than the current to the extent practical while still meeting the operational and functional requirements defined within. Flexibility is achieved through design of more flexible structural load-bearing wall and column system arrangements. The site infrastructure will have at least a 50-year life expectancy with industry-accepted maintenance and repair cycles. Develop the project site for efficiency and to convey a sense of unity or connectivity with the adjacent buildings and with the Installation as a whole. Building useful life is defined by the length of service of the structural systems; concrete, masonry, steel, and wood in any combination. These structural systems last a lifetime when properly constructed and maintained. The building systems; electrical, mechanical, interior finishes etc. vary in useful life based on quality of the products and materials. Generally speaking these systems will last an average of 20-30 years. Historically the Army has often performed a major renovation or changed the use of the facility once in the first 25 years. Within that overriding theme the Government will evaluate the offeror selected systems and components proposed in terms of extended warranties provided, maintenance considerations (frequency, estimated cost, access, equipment locations), operability (ease of use, placement of control features, simplicity), durability (withstand troop usage, ease of cleaning), sustainability, and energy consumption (HVAC, lighting, power). The minimum acceptable level of quality for finishes and materials for these buildings are those materials suitable for the expected population and usage. Residential or similar grade finishes and materials are not acceptable for inclusion in these buildings, unless otherwise specifically allowed in Section 01 10 00. Acceptance of the proposal is not a guaranty that the proposed products meet the contractual requirements or that they are the appropriate size or application for the design which will be developed after award. The intent during the proposal submission and review process is not to require detailed design effort or to perform a detailed design engineering review but to focus on the proposed quality levels of materials and systems. If the Government evaluators have actual knowledge or strong suspicion that a proposed product or solution is inappropriately sized, being used in the wrong application or otherwise wont meet the contract requirements, the Government will inform the proposer in the event that discussions are conducted with

the firm. But the Government is not asking for design analyses in the proposal and is not obligated to perform an engineering design review at this stage. After, award, In the event of conflict between the contractor's accepted proposal and the requirements in the final, amended RFP, the order of precedence is indicated in Special Contract Requirement 1.2, DESIGN/BUILD CONTRACT – ORDER OF PRECEDENCE.

5.3.3.2. The Government encourages the Offeror to place emphasis on those design features which optimize and emphasize functional/operational requirements; interior/exterior finishes and systems; and life cycle/ energy efficiency. The Offeror may choose the most economical "Type of Construction" allowed by the Building Code for this occupancy/project and put the money into durable finishes and efficient systems. **The features that the Government has identified below as desirable features will be given additional consideration in the evaluation. The items that the Government has identified in paragraph 5.3.1 as preferable will also be given additional consideration during the evaluation process, provided that they are included within the contract cost limitation identified in the Solicitation. Offeror-identified betterments may also be given additional consideration during the evaluation process, provided that they are included within the contract cost limitation identified in the solicitation. Desirable features, Government identified preferences, and Offeror identified betterments that are evaluated as true betterments and that are acceptable to the Government are all considered "betterments", if they are included within the contract cost limitation. The Government will identify those Offeror identified betterments that are not desired or are otherwise objectionable or unacceptable, if discussions are conducted with that Offeror.** The order of importance for proposed betterments for rating purposes is as follows: desirable features, preferable items (identified in paragraph 5.3.1) and other Offeror identified betterments. Unsubstantiated claims or narrative information will not be given evaluation credit during the evaluations. The following elements (not rated separately) will be considered in the evaluation of the building systems and materials of the various facilities:

(a) Architectural Finishes, Components and Systems:

Satisfactory proposals include finishes which provide usable spaces for the intended purposes. Proposals will receive additional consideration for materials offered that include extended warranties, longer life expectancies, sustainability, durability (stand up to troop usage), have low maintenance requirements, and enhance the overall life cycle cost efficiency of the facility.

Specific examples of desirable features: solid wood cabinetry; solid surface counter tops; ceramic tile; 25 year non-pro-rated, no-leak roof warranty; high efficiency windows and doors.

(b) Furniture Systems: Not Used

(c) Mechanical Components and Systems:

Acceptable proposals include components and systems that provide the basic environmental control function necessary. Proposals will receive additional consideration for components and systems offered that include extended warranties, longer life expectancies, reduce energy consumption, sustainability, maintainability (cyclical maintenance, access, equipment placement), and enhance the overall life cycle cost efficiency of the facility.

(d) Plumbing Components and Systems:

Acceptable proposals include components and systems that provide the basic function necessary. Proposals will receive additional consideration for components and systems offered that include extended warranties, longer life expectancies, sustainability, durability (stand up to troop usage), have low maintenance requirements, and enhance the overall life cycle cost efficiency of the facility.

Specific examples of desirable features: lifetime domestic hot water storage tank warranty; high efficiency equipment; easy/local availability of replacement/repair parts; zoned/valved sub-systems to allow repair without building shutdown; shower heads on hoses.

(e) Electrical Components and Systems:

Acceptable proposals include components and systems that provide the basic function necessary. Proposals will receive additional consideration for components and systems offered that include extended warranties, longer life expectancies, sustainability, durability (stand up to troop usage), have low maintenance requirements, and enhance the overall life cycle cost efficiency of the facility.

Specific examples of desirable features: all copper conductors; additional telephone/data/cable TV outlets.

(f) ATFP Considerations: This consideration verifies the inclusion/compliance with the building related (laminated windows, design for progressive collapse, etc.) ATFP minimum standard constraints included in the Statement of Work. All proposals must be compliant with the ATFP requirements of the Statement of Work to be considered for award. Acceptable proposals are compliant with all ATFP requirements. Acceptance of the successful proposal does not constitute acceptance of a design that does not conform to ATFP requirements. Final designs must comply with the ATFP requirements.

(g) Site Utilities Components and Site Systems: Not Used

(h) Interoperability: Fire Alarm, Telephone, Cable Television, UMCS, and privatized utility systems (where applicable) must be integrated into the new facilities which require connection and interface with existing installation-wide systems must be accommodated in the proposed project.

(i) Solar Hot Water Heating: The Government will evaluate the systems and materials proposed for use in the solar domestic hot water system. Proposals that demonstrate solar hot water provisions above 30% will receive additional consideration during the evaluation, provided that it does not increase first cost beyond the contract cost limitation (CCL). No additional consideration will be given for proposals providing for more than 30% solar hot water if the proposed price exceeds the CCL. If the Offeror has provided life cycle cost analyses documenting the non-feasibility of the solar system provision, the Government will verify as reasonable and complete. Errors or inconsistencies in the calculations will be considered deficiencies during evaluations.

5.4. NOT USED

5.5. VOLUME 1 - TAB C – SUBFACTOR 3 – SUSTAINABILITY REQUIREMENT

5.5.1. **Submission Requirements:**

The Offeror shall acknowledge that it understands the contract requirements for sustainable design and construction and that the final project will achieve a Silver level. The Offeror shall submit LEED-NC Version 2.2 Registered Project Checklist demonstrating how it will achieve the Silver level. Project Checklist for each non-exempt facility demonstrating how it will achieve the Silver level. One checklist may be provided for multiple identical facilities. If the offeror proposes a higher LEED rating than silver, the proposal shall describe whether or not it involves additional costs and clearly indicate if such costs would detract from higher rated factors herein, such as functionality, quality of materials and systems, site work, etc.

5.5.2. **Evaluation Criteria:**

All requirements identified as mandatory in Section 01 10 00 or elsewhere in the Solicitation must be included and the proposal must meet the requirements of the LEED-NC Version 2.2 requirements for a Silver level. The Government will provide additional evaluation consideration for proposals which include LEED points identified as preferred. The Government does not desire to pay more to obtain a higher LEED rating, such as Gold, if the additional cost would detract from the higher rated factors, herein.

6.0 VOLUME 2 –FACTOR 2 – PERFORMANCE CAPABILITY

6.1. TAB A – SUBFACTOR 1 - SPECIALIZED EXPERIENCE

6.1.1. Submission Requirements:

6.1.1.1. The offeror shall select the design firm(s) and key subcontractors for electrical and mechanical installation, (or prime contractor if design and/or electrical and mechanical work is to be self-performed). Also identify general subcontractors, if any of the facility types are to be subcontracted out and describe the extent of their involvement in the project. The prime contractor and the design firm(s) (or prime contractor if design is to be self-performed) shall each demonstrate recent, relevant experience on similar projects using, Construction – Specialized Experience Form (Attachment 3), Designer – Specialized Experience Form (Attachment 4), and Key Subcontractor – Specialized Experience Form (Attachment 5) at the end of the section. Offerors may identify state and local government and private contracts that are similar to the Government's requirements. If the offeror is a joint venture, each firm shall provide information, demonstrating experience relevant to their role on this project. Submit projects that are currently well underway (designed and at least 50% construction progress completed) or completed and turned over no longer than five (5) years preceding the date of this Solicitation. If any firm has multiple functions or divisions, limit the project examples to those performed by the division or unit submitting the offer or by the team member. Design firms may list prime contractors they have worked for or government, private or commercial customers. The offeror shall select the design firm(s). If projects were design-build, so identify them. The prime contractor and the design firm(s) shall each submit no more than five (5) projects for each of the facility types or their equivalent or similar commercial or institutional type:

- Heavy Equipment/Vehicle Maintenance and Repair Garage, Heavy Farm Equipment Sales and Service Dealership, Over-the-Road Freight Hauler Heavy Repair Facilities, Tactical Equipment Maintenance Facility, etc.

6.1.1.2. The offeror may provide a supplemental **narrative (not project lists)**, not to exceed two pages, explaining how any corporate experience that is not directly related to the specific projects above is applicable to this project and how the Government will benefit. The following information may be considered.

6.1.1.3. The offeror should describe any previous teaming experience between current team members, if not described in the project list. Describe Team members' experience on LEED projects, if not included on the project list. Offeror may describe design-build experience on other type projects. The above information is limited to projects that are well underway or that have been completed and turned over no longer than the past five years preceding the date of this solicitation.

6.1.2. Evaluation Criteria:

6.1.2.1. The Government will evaluate the extent of recent, related experience of the prime contractor, design firm(s) and key subcontractors in design, construction or design-build, as relevant to their role on this project. If the design will be accomplished in-house, rather than by subcontract, then the design element of specialized experience will still be evaluated, realizing that the work is being done in-house. Experience on the similar projects identified in the project lists will receive more consideration than experience provided in the supplemental narrative. The Government may place greater importance on projects performed as a prime contractor than as a subcontractor, depending upon overall role and relevancy considerations. **Federal Government project experience will not be rated inherently more important than non-Federal Government project experience.** (Note: After award, the Section 00 73 00 Special Contract Requirement *Key Personnel, Subcontractors and Outside Consultants* will apply to the selection, which establishes the minimum quality standard. No substitution will be allowed without adequate reason and possible consideration to the Government.)

6.1.2.2. The Offeror must submit the requested information to demonstrate a record of recent, related experience in both design and construction, for the facility types (which may include similar state or local government or private counterparts) included in this contract. Recent experience includes projects well

underway (see above criteria) or those completed and turned over within **five (5)** years of the proposal issue date for this RFP for design or construction experience. Joint Venture partners should each demonstrate experience commensurate with their role on this project or explain in the supplemental narrative how their experience qualifies them for their role on this project.

6.1.2.3. The Government reserves the right to verify the experience record of cited projects or other recent projects by reviewing the Corps of Engineers Construction Contractor (or Architect-Engineer) Appraisal Support System (CCASS/ACASS), other DOD or Government appraisal systems or to interview owners or references. The Government may check any or all cited references to verify supplied information.

6.1.2.4. To receive credit for extent (amount) of experience, the Offeror and its proposed design firm(s) shall demonstrate a history of recent, relevant experience. A firm will not receive credit under this factor for the relevant experience of key personnel proposed for this project.

6.1.2.5. The Government will consider extent of recent experience, degree of relationship of such experience to this project, demonstrated familiarity with applicable codes and local conditions. Some examples of relevancy to this project may include, but not be limited to:

- (1) Number, size, type work, complexity, location
- (2) Dates (well under way or completed no more than 5 years preceding date of Solicitation)
- (3) Firm's role and extent of work self-performed (brokering out all work and simply "pouring the sidewalks" on a cited project are examples of less relevant experience)

6.1.2.6. Previous design-build experience is not necessary for an acceptable rating. The Government may consider previous D-B experience a strength, even if the experience is on different type projects than this project. Similarly, the Government may consider previous recent teaming experience among the team members as value added, even if on different type design and/or construction projects than this project. The more relevant the experience, the more credit will be given.

6.1.2.7. The firm(s) preparing the design must demonstrate qualifications and experience in sustainable design and development and design, based on project experience on projects that have achieved US Green Building Council's LEED certification or project experience on completed Corps of engineers design-build projects that were validated as having achieving LEED silver rating or were certifiable at LEED silver or better for an acceptable rating. Additional consideration will be given if both the constructor and the design firm(s) demonstrate qualifications and experience on LEED.

6.2. TAB B –SUBFACTOR 2 - PAST PERFORMANCE

6.2.1. **Submission Requirements:**

6.2.1.1. Past performance refers to the quality of recent project experience from the owner's perspective. The Offeror and its design firm(s) (or prime contractor if design is to be self-performed) shall provide customer reference name(s), company affiliation and current phone numbers on the specific project experience sheets in TAB B. The Government will use the specific project experience sheets submitted for specialized experience in Tab B that were completed or well underway (as defined above) within five (5) years preceding the date of the solicitation. (No separate submittal for past performance for those projects, here). Include the performance rating by the owner on the form, if the Offeror was rated. Additional past performance examples may be submitted for consideration on any member of a Teaming Arrangement that will perform a major or critical aspect of the project. Projects cited shall be currently well underway (fully designed and at least 50% construction progress completed) or construction substantially completed within 5 years preceding the date of this solicitation. If any firm has multiple functions or divisions, limit the project examples to those performed by the division, unit or team member submitting the offer. The Government may contact and interview the points of contact and reserves the right to interview other individuals acting for the listed reference, if the listed reference is not available.

See the Interview form at the end of this Section (attachment 4). The team members may also briefly provide information on problems encountered on identified contracts and the team member's corrective action.

6.2.2. Evaluation Criteria:

6.2.2.1. The Government will perform a performance confidence assessment of the offeror's probability of successfully meeting the contract requirements, considering the degree of success of the D-B team's recent (well under way or turned over no longer than 5 years preceding the date of this solicitation), relevant experience. See explanation of "well underway" and relevancy under the Factor "Specialized Experience". The Government will assess the past performance on projects submitted under the Specialized Experience Factor and reserves the right to conduct telephone interviews with points of contact identified in the proposal, and/or to review other recent projects rated in CCASS/ACASS or other agency performance databases, review and/or contact offeror furnished references, or to review personal knowledge.

6.2.2.2. The Government will first assess and rate the relevancy of recent projects accomplished by the offeror to the scope of this contract for overall application to the performance confidence assessment ratings described hereinafter. The projects will include those submitted under the Specialized Experience Factor as well as from other sources described above. This rating is not a separate proposal rating but is only used in developing overall past performance confidence assessment rating assigned to the Past Performance Factor. The past performance relevancy ratings are described below:

- (a) **Very Relevant:** Present/past performance effort involved essentially the same scope and magnitude of effort and complexities this solicitation requires
- (b) **Relevant:** Present/past performance effort involved similar scope and magnitude of effort and complexities this solicitation requires.
- (c) **Somewhat Relevant:** Present/past performance effort involved some of the scope and magnitude of effort and complexities this solicitation requires.
- (d) **Not Relevant:** Present/past performance effort involved little or none of the scope and magnitude of effort and complexities this solicitation requires.

6.2.2.3. The Government will next consider how well the offeror performed on the contracts. The Government will consider the currency and relevance of the information, source of the information, context of the data, and general trends in contractor performance. With respect to relevancy, past performance on projects with more relevance will typically be a stronger predictor of future success and have more influence on the past performance confidence assessment rating than past performance on projects of lesser relevance. If any firm has multiple functions or divisions, The Government will only evaluate past performance of the division or unit submitting the offer or by the team member. Owners/references may be asked to comment on items such as quality of design or construction, timeliness, management of the work subcontractor management, including timely payment to subs or suppliers, safety, relations between owner and designer or contractor, level of support for such things as as-built documentation, O&M manuals, training, correcting design or construction errors, warranty work, etc. (see the interview form at attachment 4). The Government will target areas covered in the requirements of this proposal including records of conforming to quality, schedule, cost control, customer satisfaction, level of support for such things as as-built documentation, O&M manuals, training, problem resolution for design or construction errors, warranty work, and safety. The Government will not release the Interview Forms to the Offeror at any time, in order for the Government to solicit candid, unbiased interview comments. The Government also places a higher value on projects, which document successful outcomes and are supported by outside source confirmation, for example, but not limited to telephone interviews with points of contact identified in the proposal, CCASS/ACASS or other agency performance databases, offeror furnished references, or personal knowledge. The Government also places a higher value on projects, which provided particularly difficult or unique challenges and the innovative methods the contractor used to resolve problems successfully. The rating for this factor will be expressed as a

degree of confidence in the offeror's ability to successfully accomplish the contract requirements. The rating system used for the performance confidence assessment is described below.

6.2.2.4. Each entity (firm) will be rated on its own performance or that of its predecessor, if relevant. An entity may not establish past performance based on the past performance of its proposed key personnel, apart from that of the entity. If the Government does not obtain past performance information for the projects identified by the offeror and cannot establish a past performance record for the offeror through other sources, past performance will be rated neither favorably nor unfavorably. The performance confidence assessment will be considered "Unknown Confidence".

6.3. TAB C –SUBFACTOR 3 - PROPOSED CONTRACT DURATION AND SUMMARY SCHEDULE

6.3.1. Submission Requirements:

6.3.1.1. **Proposed Contract Duration:** The offeror shall propose the contract duration in the appropriate Contract Line Item Number in the CLIN Schedule, not to exceed the maximum contract duration specified in the CLIN.

6.3.1.2. **Summary Schedule:** Submit a summary level schedule for integrated design and construction. Schedules or diagrams may be provided separately in a size that is easily read, but shall be bound and clearly labeled as Tab B. This summary schedule will, after contract award, be replaced with a project schedule as required by Section 01 32 01.00 10: **Project Schedule**. The schedules shall be task oriented, indicating the number of calendar days, after notice to proceed, by which milestones are to be achieved. Offeror may use a critical path or other method of his choice; however, schedules shall be graphically represented. The proposed project schedule shall reflect the proposed contract duration. Give attention to the following features:

- (a) Provide a narrative, describing the design packaging plan for separate design packages, based on the offeror's plan for fast tracking. Describe all design and construction to be "fast-tracked" (See section 01 33 16: **Design After Award**). If long lead item equipment must be ordered prior to completion of a design phase, describe the requirement in the narrative and show the required ordering date in the schedule.
- (b) Show the design phase, including events associated with coordinating the interim and final design submittals for each package and the proper handling of the review comments for each design package (See section 01 33 16).
- (c) Show the overall construction phase for each facility, for the site work, and for utilities. Show fast track starts for design packages but it isn't necessary to show the detailed breakdown construction (e.g., by trades) of each facility, site work and utilities.
- (d) Show turnover of each facility. Identify any proposed phased turnovers. The time to complete the facility and turnover to the Government must consider the requirement for the Contractor's CQC completion inspection and the subsequent joint Contractor-Government turnover inspection.
- (e) Show as-built submissions (See section 01 78 02.00 10: **Project Closeout**).
- (f) Constraints: Offeror must demonstrate the capability and flexibility to plan and schedule the complete project to meet the proposed contract completion period. Clearly identify any constraints on the schedules presented (e.g., labor or material availability, permits, weather, etc.). Indicate the anticipated overall critical path on the schedule.

6.3.2. Evaluation Criteria:

6.3.2.1. **Proposed Contract Duration:** This duration will become the contractually binding completion period. The Government will evaluate the contract duration, as proposed by the Offeror in the Contract Line Item Schedule, not to exceed the maximum allowed duration of 540 days. In assessing the reasonableness of the proposed contract duration, the Government may take into account how well the

proposed summary schedule supports the proposed duration, as well as use other information, such as but not limited to independent judgment concerning logic, constraints and typical construction durations. A proposed contract duration matching the maximum allowed contract duration is "acceptable". A proposed contract duration shorter than the maximum allowed duration will receive additional rating consideration, provided it is realistic and deemed to be achievable. The Government will consider an unreasonably condensed contract duration, which places additional cost or schedule risk on the Government or which may create a risk of contract or performance failure, as a significant weakness or a deficiency, depending upon the evaluators' judgment. During the subsequent comparison between proposals, differences between proposed contract durations of at least three weeks (differences of 21 calendar days between proposals) will be considered an advantage to the Government, with greater differences also considered, accordingly. No advantage will be considered between proposals for differences less than 21 calendar days.

6.3.2.2. Summary Schedule: In addition to the proposed contract duration, the Government will evaluate the summary schedule for integrated design and construction. The length of the schedule must match the proposed contract duration. If it is shorter than the Offeror's proposed contract duration, it offers no advantage to the Government because it is non-binding, only representing a preliminary planned schedule. A Schedule shorter than the proposed contract duration may indicate the Offeror is placing additional risk on the Government for any delays between the scheduled completion date and the required contract completion period. Both parties shall assume field overhead costs are included in the contract price for the full proposed contract duration. Therefore, the Government believes that there is no valid need to shorten the schedule less than the full proposed contract duration. The Government will evaluate the schedule to assess the strength of understanding of the project scope, restrictions which must be considered in the schedule e.g., permitting (see Section 01 10 00), long lead items, etc. The Government will evaluate the strength of understanding of events associated with coordinating design submittals, reviews and incorporating review comments, the offeror's capability to schedule the complete project within the proposed contract duration and the realism of the schedule. The Government will evaluate the design packaging plan for logic, reasonableness, how it facilitates meeting the proposed contract duration and how it facilitates the Government's ability to timely perform its design reviews. The packaging plan should minimize risk to the Contractor and to the Government for tear-out and coordination for reviews. For example, is the footing and foundation plan based on adequate design for building loads; etc.? A schedule that offers advantage(s) to the Government over one that merely indicates an adequate understanding of the scope, restrictions, major milestones and general understanding of the various events that can affect start and completion of construction will receive additional consideration.

6.4. TAB D – SUBFACTOR 4- ORGANIZATION/TECHNICAL APPROACH

6.4.1. **Submission Requirements:**

6.4.1.1. Provide information that describes the offeror's organization and intended technical approach to executing the design-build contract per the detailed requirements herein. Demonstrate an understanding of the risk management process associated with design-build process. Limit the information to fifteen pages or less clearly but concisely describe the organizational and technical approach to project management and execution.

6.4.1.2. **Organization.** Describe what firms, their resources and how their resources will be utilized, their roles and responsibilities and any contractual arrangements that have been established. Clearly describe any teaming or joint venture arrangements, including a clear description of each firm's roles and responsibilities on the project. A copy of the teaming or joint venture agreement(s) may be appended to the plan (not included in the page limitation). Include a simple organizational chart, illustrating the organization, including the proposed quality control group(s). Present a matrix of responsibilities for each firm in executing the key work breakdown structure activities of the project, including design and construction activities for each major feature (i.e., site work, utilities and each building). Identify the design firm(s) chosen for the project, if not to be self-performed. Identify the specific firms chosen as key subcontractors for mechanical and electrical installation. The Offeror shall document unequivocal

teaming arrangements with its design firms(s) and key subcontractors (see attachment 9). Describe the proposed management structure for the team, describing the how the design and construction process will be managed and the authorities and the delegations of authority within the team Include a key personnel organization chart that clearly depicts the key positions and the names of the personnel, their firm affiliations and their job locations, their job/position title within the organization. The key personnel organization chart shall be consistent with the corporate organization chart, with the matrix of responsibilities assigned to the D-B team firms, and with the list of key personnel to be provided under the Tab, "KEY PERSONNEL CAPABILITIES AND EXPERIENCE".

6.4.1.3. Technical Approach for Design and Construction. Describe the technical approach to design and construction of these facilities. Include any considerations of fast-tracking design and construction, panelized construction, pre-engineered components or buildings, factory built modules or assemblies, tilt-up, pre-cast parts, standard designs stick-built framing, etc. The Government is looking for ways to streamline construction, manage labor and other resource constraints in an effort to reduce costs and achieve an aggressive schedule.

6.4.1.4. Collaborative Approach for Design-build. Describe interactions within the team and with the Corps of Engineers during the design. Discuss how the configuration management system will track and control design evolution and changes during design for quality control and to facilitate quicker Government reviews. Describe the role of the construction team members during design. Describe the type of Building Information Modeling (BIM) system to be used on the project (See section 01 33 16 and Attachment F of that Document for CADD/BIM requirements and for Contractor Electives for additional consideration, as described below in the evaluation criteria) and how the team intends to develop and use the model. Describe the role and interaction of the design team with the construction team during construction, addressing, as a minimum, maintaining configuration management of the design during construction, including control and approval of revisions to the accepted design; requests for information; shop drawing and submittal reviews and approvals; progress meetings; site visits, if any; contract completion, closeout, as-built and completion documentation.

6.4.1.5. Planning and Scheduling. Describe the time control capabilities and systems to be used to plan design and construction and how the schedule will be used to manage design and construction. Discuss internal procedures for handling delays to minimize time growth and "schedule creep".

6.4.1.6. Self-Performed Work: Generally describe the items the offeror will self-perform to comply with the requirements in Section 00 73 00 for self-performed work.

6.4.1.7. Quality Control. Describe the team's quality control approach, corporate systems and capabilities to maintain quality control of the design and construction. Describe the proposed quality control organization, including the proposed staffing plan. There is no need to submit a quality control plan as the successful offeror will provide that after award. The Government is interested in demonstrable capabilities to assure and control quality and how the offeror can achieve or exceed the contract's minimum quality control system requirements. In addition to the required designer-of-record roles specified within the RFP for maintaining integrity of the design, describe any other DOR involvement in the quality control process, if any.

6.4.2. Evaluation Criteria

6.4.2.1. The Government will evaluate the strengths, weaknesses and any deficiencies in the plan. The Government will evaluate the firm's understanding of D-B (and the requirements in described in the Division 01 requirements of the Solicitation) and the capability to execute the project. Some additional specific evaluation considerations are listed below. This list is not all-inclusive.

6.4.2.2. Organization. The Government will evaluate the clarity and strength of the overall organization and how well it is organized, structured and staffed to execute the entire scope of work. This subfactor will be rated as unsatisfactory, if the Offeror has not selected and committed to use its design firm(s).

Joint venture participants' contribution to the organization should be commensurate with their skills and background.

6.4.2.3. Technical Approach for Design and Construction. The Government places a higher value on an offer that provides proposed methods to streamline construction, manage labor and other resource constraints in an effort to reduce costs and support an aggressive schedule, including such things as fast-tracking, using factory built modules or assemblies, panelization, pre-cast, tilt-up, standard designs, etc. The Government will also consider whether the approach reduces on-site craft labor and susceptibility to inclement weather delays.

6.4.2.4. Collaborative Approach for Design-Build. The use of 3-dimensional (3D) Building Information Model (BIM) technology in the design process is a requirement. The BIM requirements are described in Section 01 33 16, "Design After Award. The Government will evaluate the integration of the design and construction firms and the staff during design and construction. The constructor must be actively involved in the design process, not just leaving it up to the designer (see Special Contract Requirement (SCR: **"Constructor's role during Design"**)). The offeror must have an effective configuration management system to control and track revisions to the design. The Government will evaluate the offeror's understanding of the design process and the roles of the designers of record and the Government reviewers. The Government will evaluate the role of the designer in maintaining design integrity throughout the process, including its key roles during construction. The Government places greater value in collaborative development of the Building Information Model as early as possible during the design and construction process. Additional consideration will be given to a team that includes as many subcontractors as possible (e.g., the key subs for electrical and mechanical, the fire protection subcontractor, fabricators, etc.) during design development, prior to release of the applicable design packages for construction, so that systems and trade coordination can reduce interferences, increase constructability and speed up construction operations. Additional consideration will also be given to a team that includes one or more BIM "Contractor Electives", as described in Appendix F of Section 01 33 16.

6.4.2.5. Planning and Scheduling. The Government will evaluate the offeror's scheduling capabilities to manage an integrated fast track design-build schedule. Additional consideration will be given for teams that provide 4-D Schedule modeling with demonstrated experience in BIM.

6.4.2.6. Quality Control. The Government will evaluate the offeror's capabilities and understanding of the contractually required quality control processes for both design and construction. The Government places value upon continued participation by the designers of record during the construction quality control process. The Government will evaluate the adequacy of the staffing plan to cover all required tasks and responsibilities.

6.5. TAB E – SUBFACTOR 5 - KEY PROJECT PERSONNEL CAPABILITIES AND EXPERIENCE

6.5.1. Submission Requirements:

Provide a consolidated list of key personnel with name, position title and description of project responsibility for each. Indicate whether each individual has had a significant role in any of the cited project examples. If re-assignment of personnel is considered possible, provide alternate professionals in each assignment. Include key designers, whether employed by the prime or by a design subcontractor. For each person provide a brief resume, using the Key Personnel Resume form at the end of this Section (Attachment 7). Include the prime contractor's project manager responsible for design and construction, the design manager, the designers of record for architecture, interior design, structural, civil, geotechnical, fire protection, electrical, mechanical/plumbing, and permit preparers. Permit preparers must be professionally registered in the state the project is located. Where projects are located in states that require a separate registration for design of structures, the structural designer of record must be registered in that state. All other designers of record must be registered in accordance with contract clause: 52.236-25, Requirements for Registration of Designers. For dining facilities, include the food service consultant. For construction, include the on-site manager and the general superintendent (in

charge of self-performed work). Offeror shall provide unequivocal letters of commitment from all proposed key personnel not currently employed by the team members. Use the form letter (Attachment 8) at the end of this section.

6.5.2. Evaluation Criteria:

The Government will evaluate the required information to determine how well the offeror identifies and demonstrates that its key personnel meet or exceed minimum qualifications necessary, which includes previous satisfactory experience in similar type work, to manage, control and perform the design, and to perform construction. Performance of key personnel proposed for this project may be taken into account when it comes to the attention of the Government. Evaluate how well the Offeror demonstrates that it has the necessary structure and experienced, qualified personnel within its organization to effectively manage, control, administer and execute the integrated design and construction operations, quality control program and subcontracts. This shall be achievable with other projected on-going work. Give additional consideration to previous design-build experience. Evaluate whether designers of record are registered (a requirement), experienced and qualified, that permit preparers are qualified in the jurisdiction (a requirement) and that, if the project is located in a state with separate structural engineering registration, that the structural designer of record is properly registered in that state (a requirement). The fire protection engineer of record shall be a registered professional engineer (P.E.) who has passed the fire protection engineering written examination administered by the National Council of Examiners for Engineering and Surveys (NCEES), or a registered P.E. in a related engineering discipline with a minimum of 5 years experience, dedicated to fire protection engineering that can be verified with documentation. The minimum experience requirements for the Project Manager are at least 5 years construction and construction management experience. The minimum experience requirements for the Design manager are at least 5 years of design experience or at least 5 years of construction and construction management experience. The minimum experience requirements for the on-site manager are at least 3 years managing projects with multiple subcontractors and familiarity with scheduling. The minimum experience requirements for the superintendent are at least 5 years experience as superintendent, managing multiple trades and subcontractors. If alternates are proposed for key positions, the evaluation rating will consider the lesser qualified or experienced person, if there is a difference.

6.6. TAB F –SUBFACTOR 6 – UTILIZATION OF SMALL BUSINESS CONCERNS

6.6.1. Submission Requirements:

6.6.1.1. All Offerors shall identify the extent to which Small Businesses (SBs), Veteran-Owned Small Businesses (VOSBs), Service-Disabled Veteran-Owned Small Businesses (SDVOSBs), HUBZone Small Businesses, Small Disadvantaged Businesses (SDBs) Woman-Owned Small Businesses (WOSBs), Historically Black Colleges/Universities or Minority Institutions (HBCU/MIs) would be utilized in the performance of this proposed contract. For small businesses, as defined by the North American Industry Classification System (NAICS) Code applicable to this solicitation, the offeror's shall identify their own participation as a SB, VOSB, SDVOSB, HUBZONE SB, SDB, WOSB, or HBCU/MI, and it will be considered in evaluating the Utilization of Small Business factor. See Section 00 21 00 **Instructions to Offerors** for the applicable goals for participation in this contract.

6.6.1.2. Address the following information in detail.

(1) Provide the names of SB, VOSB, SDVOSB, HUBZONE SB, SDB, WOSB, or HBCU/MIs who would participate in the proposed contract, identifying specific components to be produced or services to be performed by them, and the estimated total dollars of such work..

6.6.2. Evaluation Criteria:

6.6.2.1. All offerors (both large and small businesses) will be evaluated on the level of small business commitment that they demonstrate for the proposed acquisition.

6.6.2.2. A small business offeror also receives credit for their small business participation as a Prime Contractor and can apply their dollar value and calculate percentages in all the applicable small business categories.

6.6.2.3. The following shall evidence small business participation:

- (a) The extent to which such firms, as defined in FAR Part 19, are specifically identified in proposals;
- (b) The extent of commitment to use such firms (enforceable commitments will be weighted more heavily than non-enforceable ones);
- (c) The complexity and variety of the work small business firms are to perform;
- (d) The realism of the proposal;
- (e) The extent of participation of such firms in terms of the value of the total acquisition;
- (f) The extent to which the offeror provides detailed explanations/documentation supporting the proposed participation percentages, or lack thereof.

7.0 VOLUME 3 -- PRICE AND PRO FORMA INFORMATION

7.1. GENERAL

Submit the Pro Forma information in a separate envelope labeled: "Volume 3 - Pro Forma Requirements."

7.2. TAB A - FACTOR 3 – PRICE (STANDARD FORM 1442, PROPOSAL DATA SHEET AND CONTRACT LINE ITEM SCHEDULE)

7.2.1. Submission Requirements:

7.2.1.1. Submit the properly filled out and executed SF 1442, along with the CLIN Schedule, containing proposed line item and total pricing, as well as the proposed contract duration. See instructions in Section 00 21 00, "Instructions to Offerors". Submit the Proposal Data Sheet, Attachment 10.

7.2.1.2. Supplemental Price Breakdown. If deemed necessary to evaluate the price proposals, the Government's will request a price breakdown of the Contract Line items in a sealed envelope marked "Price Breakdown Information", in Excel format. The Government will provide details on where and how to send the breakdown. This information will not be needed sooner than three working days after the proposal submission due date. This information may be required for the initial proposal and, if requested, for any revised proposals. This information is not an opportunity for an offeror to revise its non-price or price proposal.

7.2.2. Evaluation Criteria:

7.2.2.1. Price will not be rated or scored, but will be evaluated for fairness and reasonableness through the use of a price analysis. The price evaluators will also check for appearance of unbalanced line item prices. Offerors are cautioned to distribute direct costs, such as material, labor, equipment, subcontracts, etc. and to evenly distribute indirect costs, such as job overhead, home office overhead, bond, etc., to the appropriate contract line items.

7.2.2.2. If deemed necessary, the supplemental price breakdown information will be used to assist the Government in performing the price evaluations described above.

7.2.2.3. Award cannot be made for project cost for design and construction exceeding the contract cost limitation described herein.

7.3. TAB B – BID GUARANTEE

7.3.1. **Submission Requirements:**

Submit the Bid Bond in accordance with the Instructions in Section 00 21 00, Provision 52.228-1 Bid Guarantee.

7.3.2. **Evaluation requirements:**

This item is not rated. The Government will review the Bid Bond for legal sufficiency. The Bond must be legally sufficient.

7.4. TAB C – REQUIRED PRE-AWARD INFORMATION

7.4.1. **Submission Requirements:**

7.4.1.1. Submit this information for the Contracting Officer's determination of offeror responsibility, which includes, but is not limited to the following:

- (1) A list of present commitments, including the dollar value thereof, and name of the organization under which the work is being performed. Include names and telephone numbers of personnel within each organization who are familiar with the prospective contractor's performance.
- (2) A certified statement listing; (1) each contract awarded within the preceding three month period exceeding \$1,000,000.00 in value with a brief description of the contract; and (2) each contract awarded within the preceding three year period not already physically completed and exceeding \$5,000,000.00 in value with a brief description of the contract.
- (3) If the prospective contractor is a joint venture, each joint venture member will be required to submit the above defined certification.

7.4.1.2. One copy of the following information shall be provided:

- (1) Proof of Financial Ability (Most recent financial statement covering assets and liabilities)
- (2) Number of years the firm has been in business
- (3) Name, address and telephone number of firm's bonding company
- (4) Information showing offeror's bondability for this project. Include the bond rate.
- (5) Name, address and telephone numbers of two credit/trade references.

7.4.2. **Evaluation Criteria:**

In addition to the other proposal information, the Contracting Officer shall use this information in making an affirmative responsibility determination for award to the Successful Offeror, in accordance with FAR Part 9.

7.5. TAB D – SUBCONTRACTING PLAN

7.5.1. **Submission Requirements: (NOTE: This Requirement only applies to (the otherwise successful offeror if it is a Large Business.)**

7.5.1.1. If the Offeror proposing on this solicitation is a large business concern, in accordance with the definition as identified in FAR Clause 52.219-1, "SMALL BUSINESS PROGRAM REPRESENTATION", (upon notification that it is the apparent successful Offeror,) the firm must submit a small business subcontracting plan in accordance with FAR Clause 52.219-9 SMALL BUSINESS SUBCONTRACTING PLAN (Jan 2002). The goals established for small business, small disadvantaged business, woman-owned business, HUBZone business, Service disabled veteran-owned small business participation are described in Section 00 21 00, **Instructions to Offerors**.

7.5.1.2. The Small Business Subcontracting Plan shall be thorough, complete, and in accordance with AFARS Appendix DD and FAR Clause 52.219-9, as it will be incorporated into the contract upon award of the contract to the Offeror, if acceptable and upon final approval of the Contracting Officer.

7.5.1.3. The Plan shall include a description of the types of services the firm proposes to subcontract with small business (SB), small disadvantaged business (SDB), woman-owned small business (WOSB), HUBZone business, and service-disabled veteran-owned small business (SDVOSB), along with the proposed percentages of their participation, to demonstrate a plan to meet the subcontracting goals that will apply to these contracts. If practical, the Offeror shall provide specific information on proposed subcontracted effort for this project.

7.5.1.4. Submit the firm's subcontracting compliance on previous projects completed or underway within the past three years of the date of this solicitation. This requirement may be supported by using copies of the U.S. Government Standard Form 295.

7.5.2. Evaluation Criteria:

7.5.2.1. The Government will evaluate the Plan in accordance with the rating scheme in Army FAR Supplement Appendix DD and with the requirements of FAR Clause 52.219-9. This factor is rated as GO/NO-GO. To be acceptable ("GO" rating), subcontracting plans must:

Adequately address the required statutory elements.

(1) Provide sufficient information to enable the Contracting Officer to answer affirmatively questions A through H of Appendix DD, Part 2, number 8, (Army FAR Supplement 19.705).

(2) A subcontracting plan that is rated 70 percent or less under the AFARS evaluation system will not be considered acceptable. The Government will review those areas where the plan is deficient with the Offeror with the goal of correcting deficiencies.

(3) As part of the evaluation, the Government will compare the small business subcontracting opportunities in the plan with the goals established in the solicitation with additional consideration given for a proposed subcontracting plan that exceeds the goals established in Section 00 21 00 of this solicitation. The Government will give additional credit for a plan which is more specific in nature as to the proposed subcontracting opportunities for Small Business Community (small business (SB), small disadvantaged business (SDB), woman-owned small business (WOSB), HubZone business (HUBZone), and service-disabled veteran-owned small business (SDVOSB).

(4) As part of the subcontracting plan evaluation, the Government will also evaluate the Offeror's past performance in establishing realistic yet challenging goals, and in achieving them

7.5.2.2. Due to requirements for review of the successful Offeror's subcontracting plan by other agencies, the Government reserves the right to negotiate the details of the final plan with the successful Offeror before award can be made. Minor weaknesses or minor deficiencies will not make the otherwise successful offeror ineligible, however award cannot occur until the Plan is deemed at least acceptable. This process is not considered to be discussions per FAR 15.306.

8.0 EVALUATION PROCEDURES

8.1. SOURCE SELECTION EVALUATION BOARD (SSEB)

8.1.1. The SSEB will be established to conduct the evaluation of proposals received in response to this solicitation. The evaluation will be based on the content of the proposal and any subsequent discussions required, as well as information obtained from other sources, e.g. past performance information. The SSEB will not consider any information incorporated by reference, except as expressly allowed by this solicitation.

8.2. EVALUATION

8.2.1. The SSEB will evaluate the proposals and assign a consensus rating for each evaluation factor and subfactor, except that performance risk ratings are assigned to past performance (see below).

8.2.2. The Government intends to award without discussions. Offerors are cautioned to put forth their best efforts, and to furnish all information clearly to allow the Government to evaluate proposals. Offerors should not assume that they will have an opportunity to clarify or correct anything in their proposal after submitting it.

8.2.3. A "Competitive Range" is a subjective determination of the most highly rated proposals in the event that the Government decides that discussions with offerors are required or are considered to be in the Government's best interests. In such an event, the Contracting Officer will establish a competitive range of all the most highly rated proposals.

8.2.4. If discussions are held, the Government may engage in a broad give and take with those offerors in the competitive range, in accordance with FAR 15.306 (d). The Government will provide the Offeror an advance agenda for the discussions. During discussions, the Government may ask the Offeror to further explain its proposal and to answer questions about it.

8.2.5. Upon conclusion of discussions, those offerors still considered the most highly rated, will be afforded an opportunity to submit their proposal revisions for final evaluation and selection.

8.3. DEFINITIONS

8.3.1. **Deficiency**

A material failure of a proposal to meet a Government requirement or a combination of significant weaknesses in a proposal that increases the risk of unsuccessful contract performance to an unacceptable level.

8.3.2. **Weakness**

A flaw in the proposal that increases the risk of unsuccessful contract performance.

8.3.3. **Significant Weakness**

A flaw in the proposal that appreciably increases the risk of unsuccessful contract performance.

8.3.4. **Strength**

Any aspect of a proposal that, when judged against a stated evaluation criterion, enhances the merit of the proposal or increases the probability of successful performance of the contract.

8.3.5. **Significant Strength**

A significant strength appreciably enhances the merit of a proposal or appreciably enhances the probability of successful contract performance.

8.3.6. **Deviation**

Proposal implies or specifically offers a deviation below the specified criteria. The offeror may or may not have called the deviation to the Government's attention. **A deviation is a deficiency.** The proposal must conform to the solicitation requirements for award.

8.4. EVALUATION RATING SYSTEM

8.4.1. **General:** The Government will review the proposals and rate the quality of each evaluation factor and subfactor (if any). The SSEB will rate each proposal against the specified evaluation criteria in the Solicitation requirements. They will not compare proposals at this time. After all proposals are rated, the Government will compare the ratings and relative advantages and disadvantages of proposals against each other.

8.4.2. **Review Write-up:** The Government will support each rating with a narrative, separately listing all strengths or advantages, weaknesses or disadvantages, deficiencies, and required clarifications.

8.4.3. **Rating System:** After listing proposal strengths, weaknesses and deficiencies, the SSEB will assign an adjective rating of "Outstanding", "Good", "Acceptable", "Marginal", or "Unacceptable" to each factor and subfactor (except those factors rated as GO/NO-GO and the Past Performance Factor), which reflect the Government's confidence in each offeror's ability, as demonstrated in its proposal, to perform the requirements stated in the RFP. The adjectival ratings shall be assigned, using the following criteria, which incorporate a proposal risk assessment:

8.4.3.1. **Outstanding:** Proposal meets requirements and indicates an exceptional approach and understanding of the requirements. Strengths far outweigh any weaknesses. Risk of unsuccessful performance is very low.

8.4.3.2. **Good:** Proposal meets requirements and indicates a thorough approach and understanding of the requirements. Proposal contains strengths which outweigh any weaknesses. Risk of unsuccessful performance is low.

8.4.3.3. **Acceptable:** Proposal meets requirements and indicates an adequate approach and understanding of the requirements. Strengths and weaknesses are offsetting or will have little or no impact on contract performance. Risk of unsuccessful performance is no worse than moderate.

8.4.3.4. **Marginal:** Proposal does not clearly meet requirements and has not demonstrated an adequate approach and understanding of the requirements. The proposal has one or more weaknesses which are not offset by strengths. Risk of unsuccessful performance is high.

8.4.3.5. **Unacceptable.** Proposal does not meet requirements and contains one or more deficiencies. Proposal is unawardable.

8.5. PAST PERFORMANCE CONFIDENCE ASSESSMENT RATING SYSTEM

8.5.1. Past Performance Risk Ratings assess the risks associated with an offeror's likelihood of success in performing the requirements stated in the RFP based on the offeror's demonstrated performance on recent, relevant contracts.

8.5.2. Performance Confidence Assessment (Overall) Rating System:

8.5.2.1. **Unknown Confidence:** No recent/relevant performance record is available or the offeror's performance record is so sparse that no meaningful confidence assessment rating can be reasonably assigned.

8.5.2.2. **Satisfactory Confidence:** Based on the offeror's recent/relevant performance record, the Government has a reasonable expectation that the offeror will successfully perform the required effort.

8.5.2.3. **Limited Confidence:** Based on the offeror's recent/relevant performance record, the Government has a low expectation that the offeror will successfully perform the required effort.

No Confidence: Based on the offeror's recent/relevant performance record, the Government has no expectation that the offeror will be able to successfully perform the required effort.

**SECTION 00 22 11 - ATTACHMENT 1
FORMAT FOR TABLE OF FACILITIES**

FACILITY (1)	SOLICITATION REQUIREMENTS (2)		PROPOSAL PROVIDED (3)		DIFFERENCE (+/-) (4)		NOTES/REMARKS (5)
	Net SF	Gross SF	Net SF	Gross SF	Net SF	Gross SF	

Notes:

- (1) Facility column shall identify building, e.g. Dining Facility, TEMF, UEPH, etc. Where different designs are offered for the same overall building type, each different design shall be identified and tabulated separately.
- (2) Complete these columns directly from information in the solicitation. If the solicitation is silent on net square feet for a particular facility, leave this blank.
- (3) Complete these columns directly from the information in your proposal.
- (4) This column represents the mathematical difference between the proposal and the solicitation requirements. + differences represent areas above the solicitation requirements and – differences represent areas below the solicitation requirements. Proposers are cautioned that exceeding the statutory limitations on building size will cause a proposal to be considered non-compliant.
- (5) This column is provided to allow the proposers to place additional relevant information with respect to building area.

**COMPANY SPECIALIZED EXPERIENCE - CONSTRUCTION OR PRIME CONTRACTOR
SECTION 00 22 11 - ATTACHMENT 3**

Provide the following information to show examples of projects your company constructed within the last **five** years indicating experience with projects of similar type and scope. Use one form per project.

(a) Type of BCT Facility Represented _____

(b) Your Firm's Name _____

(c) Name of Project _____

(d) Location of Project _____

(e) Owner _____
—

(f) General Scope of Construction Project _____

(g) Your Role (Prime, Joint Venture, or Subcontractor, etc.) and Work Your Company Self-Performed :

(h) Construction Cost _____

(i) Extent and Type of Work You Subcontracted Out _____

(j) Dates Construction: Began _____ Completed _____

(k) Your Performance Evaluation by Owner, if known

(l) Were You Terminated or Assessed Liquidated Damages?

(If either is "Yes", attach an Explanation)

(m) Owner's Point of Contact for Reference (Name and Company)

(n) Current Telephone Number of Reference

POC _____

**COMPANY SPECIALIZED EXPERIENCE - DESIGN FIRM OR IN-HOUSE DESIGN CAPABILITY
SECTION 00 22 11 - ATTACHMENT 4**

Provide the following information to show examples of projects your company constructed within the last **five** years indicating experience with projects of similar type and scope. Use one form per project.

(a) Type of BCT Facility Represented

(b) Your Firm's Name

(c) Name of Project

(d) Location of Project

(e) Owner

-

(f) General Scope of Construction Project

(g) Summary of Your Role in Design of this Project, including implementing LEED

(h) Identify Estimated ("E") or Actual ("A") Construction Cost

(i) Extent and Type of Work You Subcontracted

(j) Dates Design: Began _____ Completed _____

(k) Dates Construction: Began _____ Completed _____

(l) Your Performance Evaluation, if known

(m) Were You Terminated or Assessed Liquidated Damages?

(If either is "Yes", attach an Explanation)

(n) Owner's Point of Contact for Reference (Name and Company)

(o) Current Telephone Number of Reference
POC _____

**COMPANY SPECIALIZED EXPERIENCE
KEY SUBCONTRACTOR (OR PRIME IF WORK NOT TO BE SUBCONTRACTED)
SECTION 00 22 11 - ATTACHMENT 5**

Provide the following information to show examples of projects your company constructed within the last **five** years indicating experience with projects of similar type and scope. Use one form per project.

(a) Type of BCT Facility Represented

(b) Your Firm's Name

(c) Name of project

(d) Owner

-

(e) General Scope of Construction Project

(f) Your Role (Prime, Joint Venture, or Subcontractor, etc.) and Work Your Company Self-Performed :

(g) Your Contract or Subcontract Amount

(h) Detailed Description of Your Self-Performed Work

(i) Describe any Work You Subcontract to Others

(j) Dates Your (sub) contract: Started _____ Completed _____

(k) Your Performance Evaluation by Owner, if any

By

Prime:

(l) Were You Terminated or Assessed Liquidated Damages?

(If either is "Yes", attach an Explanation)

(m) Name and Company of Point of Contact (POC) for reference (If you were a subcontractor, also list the firm you were hired by):

(n) Current Telephone Number of Reference POC

**PAST PERFORMANCE EVALUATION TELEPHONE INTERVIEW QUESTIONNAIRE
SECTION 00 22 11 - ATTACHMENT 6**

- (1) Contractor/Name & Address (City and State):
- (2) Type of Contract: Fixed Price _____ Cost Reimbursement _____
Other (Specify) _____
- (3) Title of Project/Contract Number:

- (4) Description of Work:

- (5) Complexity of Work: High _____ Mid _____ Routine _____
- (6) Location of Work: _____
- (7) Date of Award: _____
- (8) Status: Active _____ (Please provide percent complete)
Complete _____ (Please provide completion date)
- (9) Name and telephone number of Owner's Technical Representative:

QUALITY OF PRODUCT/SERVICE:

(10) Please evaluate the contractor's performance in complying with contract requirements, quality achieved and overall technical expertise demonstrated.

Excellent	
Good	
Satisfactory	
Marginal	
Unsatisfactory	

Remarks:

(11) To what extent were the contractor's reports and documentation accurate, complete and submitted in a timely manner?

Excellent	
Good	
Satisfactory	
Marginal	
Unsatisfactory	

Remarks:

(12) To what extent was the contractor able to solve contract performance problems without extensive guidance from Owner counterparts?

Excellent	
Good	
Satisfactory	
Marginal	
Unsatisfactory	

Remarks:

(13) How well did the contractor manage and coordinate subcontractors, suppliers, and the labor force?

Excellent	
Good	
Satisfactory	
Marginal	
Unsatisfactory	

Remarks:

CUSTOMER SATISFACTION:

(14) To what extent were the end users satisfied with:

	Quality?	Cost?	Schedule?
Exceptionally Satisfied			
Highly Satisfied			
Satisfied			
Somewhat Dissatisfied			
Highly Dissatisfied			

Remarks:

TIMELINESS OF PERFORMANCE:

(15) To what extent did the contractor meet the required schedules?

Completed Substantially Ahead of Schedule	
Completed on Schedule with no Time Delays	
Completed on Schedule with Minor Delays Under Extenuating Circumstances	

Experienced Significant Delays without Justification	
--	--

Remarks:

(16) If given the opportunity, would you work with this contractor again?

Yes _____ No _____ Not Sure _____

OTHER REMARKS:

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

END OF TELEPHONE QUESTIONNAIRE

**KEY PERSONNEL RESUME
SECTION 00 22 10 - ATTACHMENT 5**

Provide information, listed below, on separate sheets showing qualifications of: prime contractor's project manager responsible for design and construction, the design manager, the designers of record for architecture, interior design, structural, civil, geotechnical, fire protection, electrical, mechanical/plumbing, and permit preparers-registered in **:- Select a State :-**. For dining facilities, include the food service consultant. For construction, include the on-site manager and general superintendent (in charge of self-performed work). Use a continuation sheet, if needed. NOTE: Match the positions on this page to the list of key personnel in the narrative submission requirements and evaluation criteria.

(a) Your Name and Title _____

(a) Your Assignment on this Project _____

(b) Name of Your Firm _____

(c) No. of Years: With this Firm _____ With other Firms _____

(d) Education: Degree(s)/Year/Specialization _____

(e) _____

(f) Active Registration, if any: No. _____, State(s) _____,

First Year/ Current Year _____ / _____

(g) Describe Your Specific Experience and Qualifications Relevant to this Project:

**LETTER OF COMMITMENT FOR KEY PERSONNEL
SECTION 00 22 11 - ATTACHMENT 8**

TO: Contracting Officer

SUBJECT: Letter of Commitment for Proposed Contract for _____

Dear Sir or Madam:

I hereby make the unequivocal commitment that, in the event of an award of a contract to (Fill in name of Proposer), that I will fulfill the duty of (Job Title).

Sincerely, (prospective employee signs)

Date: _____

**LETTER OF COMMITMENT OF (DESIGN FIRM OR KEY SUBCONTRACTOR)
(USE SUBCONTRACTOR'S COMPANY LETTERHEAD)
SECTION 00 22 11 - ATTACHMENT9**

TO: Contracting Officer

SUBJECT: Letter of Commitment for Proposed Contract for _____

Dear Sir or Madam:

I hereby make the unequivocal commitment that, in the event of an award of a contract to (Fill in name of Proposer), that (insert name of design firm) will fulfill the duties of (state role on a project)

Sincerely, (Authorized Official)

Date: _____

**PROPOSAL DATA SHEET
SECTION 00 22 11 ATTACHMENT 10**

(1) Name of Solicitation:

Name of Firm:

Address:

Phone:

Fax:

E-mail:

DUNS # (used for accessing the Construction Contractor Appraisal Support System (CCASS) or A-E Contractor Administration Support System (ACASS) Database)

Also provide any other assigned number that identifies the member firm(s) in the ACASS or CCASS databases. If a separate DUNS has been created for a joint venture (J-V) it must also be submitted. Provide a DUNS number for each company identified in any proposed Contractor-subcontractor association of firms. If the firm is a joint venture or contractor-subcontractor association of firms, list the individual firms and briefly describe the nature of the association. Provide DUNS for each.

Firm 1:

Firm 2:

Firm 3:

Nature of Association:

(2) AUTHORIZED NEGOTIATORS. FAR 52.215-11

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

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

Name of Person Authorized to Negotiate:

Negotiator's Address:

Negotiator's Telephone:

Negotiator's E-mail:

End of Section 00 22 11

SECTION 00 45 00
REV 2.1 - 01 SEP 2007

**REPRESENTATIONS, CERTIFICATIONS
AND OTHER STATEMENTS OF BIDDERS/OFFERORS**

The clauses below are included for reference only. They are to be entered into the RFP through the SPS system. No other clauses other than those listed in the tables below should be included in the RFP unless approved by the PEO

The following contract provisions are required to be used

PROVISION	TITLE	Inc by Reference	NOTES
52.236-28	Preparation of Proposals -- Construction	Yes	36.520 when contracting by negotiation.

The following contract provisions are to be used if applicable for your project

PROVISION	TITLE	Inc by Reference	NOTES
52.204-3	TAXPAYER IDENTIFICATION	NO	4.905 USE WHERE CLAUSE 52.204-7 IS NOT INCLUDED & FAR PART 12 NOT APPLICABLE
52.204-8	ANNUAL REPRESENTATIONS AND CERTIFICATIONS	NO	4.1202 FOR ALL EXCEPT COMMERCIAL ITEMS
52.222-23	NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION	No	22.810(b) USE WITH 52.222-26 WHERE K > \$10K
52.230-7	PROPOSAL DISCLOSURE-COST ACCOUNTING PRACTICE CHANGES	No	30.201-3(c) IF CAS APPLIES
252.209-7001	DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A TERRORIST COUNTRY	No	DFARS 209.104-70(a) > \$100K
252.225-7031	SECONDARY ARAB BOYCOTT OF ISRAEL	Yes	DFARS 225.7605 use in all solicitations
252.227-	TECHNICAL DATA OR COMPUTER SOFTWARE	Yes	DFARS 227.7103-6(d), 227.7104(f)(2), or 227.7203-

PROVISION	TITLE	Inc by Reference	NOTES
7028	PREVIOUSLY DELIVERED TO THE GOVERNMENT		6(e),
252.247-7022	REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA	No	DFARS 247.573(a) > SAT

End of Section 00 45 00

SECTION 00 72 00
REV 2.3 – 31 AUG 2010

TABLE OF CONTENTS FOR CONTRACT CLAUSES

The clauses below are included for reference only. They are to be entered into the RFP through the SPS system. No other clauses other than those listed in the tables below should be included in the RFP unless approved by the PEO

The following contract provisions clauses are required to be used:

PROVISION	TITLE	Inc by Reference	NOTES
52.202-1	DEFINITIONS	Yes	2.201 > SAT FOR CONSTRUCTION/ A-E/ DEMOLITION-ALL
52.203-5	COVENANT AGAINST CONTINGENT FEES	Yes	3.404 > SAT EXCEPT THOSE FOR COMMERCIAL ITEMS
52.203-7	ANTI-KICKBACK PROCEDURES	Yes	3.502-2 > SAT EXCEPT THOSE FOR COMMERCIAL ITEMS
52.211-10	COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK	NO	11.404(b)
52.216-24	LIMITATION OF GOVERNMENT LIABILITY	NO	16.603-4(b)(2) USE WITH LETTER CONTRACTS
52.216-25	CONTRACT DEFINITIZATION	NO	16.603-4(b)(3) USE WITH LETTER CONTRACTS
52.223-14	TOXIC CHEMICAL RELEASE REPORTING	Yes	23.907(b) > SAT USE IN ALL K THAT INCLUDES 52.222-13 IN SECTION 00600. USE FOR CONSTRUCTION
52.225-13	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES	Yes	25.1103(a) > \$2500

PROVISION	TITLE	Inc by Reference	NOTES
52.232-27	PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS	Yes	32.908 (b) ALL
52.232-5	PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS	No	32.111(a)(5) FP CONSTRUCTION
52.233-3	PROTEST AFTER AWARD	Yes	33.106(b) ALL
52.233-4	APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM	Yes	33.215(b) ALL
52.236-5	MATERIAL AND WORKMANSHIP	Yes	36.505 ALL
52.236-7	PERMITS AND RESPONSIBILITIES	Yes	36.507 FP CONSTRUCTION > SAT
52.244-6	SUBCONTRACTS FOR COMMERCIAL ITEMS	Yes	44.403 ALL Ks OTHER THAN COM. ITEMS

The following contract provisions-clauses are to be used if applicable for your project:

PROVISION	TITLE	Inc by Reference	NOTES
52.203-3	GRATUITIES	Yes	3.202 > SAT EXCEPT THOSE FOR PERSONAL SVCS
52.203-6	RESTRICTION ON SUBCONTRACTOR SALES TO THE GOVERNMENT	Yes	3.503-2 > SAT EXCEPT THOSE FOR COMMERCIAL ITEMS
52.203-8	CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY	Yes	3.104-9(a) > SAT

PROVISION	TITLE	Inc by Reference	NOTES
52.203-10	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY	Yes	3.104-9(b) > SAT
52.203-12	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS	Yes	3.808(b) > \$100K
52.204-2	SECURITY REQUIREMENTS	Yes	4.404(a) USE WHEN CONTRACT MAY REQUIRE ACCESS TO CLASSIFIED INFORMAITON
52.204-2 ALT II	SECURITY REQUIREMENTS (AUG 1996) ALT II	Yes	4.404(c) USE WHERE KTR ID IS REQ'D
52.204-4	PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER	Yes	4.303 > SAT
52.204-7	CENTRAL CONTRACTOR REGISTRATION	Yes	4.1104 USE IN ALL EXCEPT WHERE (1) GOVT PURCH CARD IS USED FOR PURCHASING AND PAYMENT, (2) CLASSIFIED, (3)CONTINGENCY
52.204-9	PERSONAL IDENTITY VERIFICATION OF CONTRACTOR PERSONNEL	Yes	4.1301 use when when contract performance requires contractors to have routine physical access to a Federally-controlled facility and/or routine access to a Federally-controlled information system.
52.208-8	REQUIRED SOURCES FOR HELIUM AND HELIUM USAGE DATA	NO	8.505 IF PEFORMANCE REQUIRES A MAJOR HELIUM REQUIREMENT
52.209-6	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT	Yes	9.409(b) >\$25K
52.211-10 ALT I	COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK	Yes	11.404(b) IF COMPLETION DATE IS EXPRESS AS SPECIFIC CALENDAR DATE

PROVISION	TITLE	Inc by Reference	NOTES
	(Apr 1984) ALTERNATE I		
52.211-13	TIME EXTENSIONS	Yes	11.503(C) IF USING 52.211-12 AND IF MULTIPLE COMPLETION DATES WITH SEPARATE LIQUIDATED DAMAGES
52.211-15	DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS	Yes	11.604(b) PRIORITY RATED CONTRACTS
52.211-18	VARIATION IN ESTIMATED QUANTITY	Yes	11.703 c) IF VARIATION IN ESTIMATED QUANTITY OF UNIT PRICED ITEMS IS AUTHORIZED
52.215-2	AUDIT AND RECORDS -- NEGOTIATION	Yes	15.209(b)(1) > SAT
52.215-2 ALT III	AUDIT AND RECORDS -- NEGOTIATION (JUNE 1999) ALTERNATE III	Yes	15.209(b)(4) USE WHEN HEAD OF AGENCY HAS WAIVED EXAMINATION OF RECORDS BY THE COMPTROLLER GENERAL IAW 25.1001
52.215-8	Order of Precedence -- Uniform Contract Format	Yes	15.209(h) in solicitations and contracts using the format at 15.204.
52.215-10	PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA	Yes	15.408(b) SOLE SOURCE > \$550K
52.215-11	PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA -- MODIFICATIONS	Yes	15.408(c) USE IN ALL THAT MODS MAY BE > \$550K
52.215-12	SUBCONTRACTOR COST OR PRICING DATA	Yes	15.408(d) SOLE SOURCE > \$550K
52.215-13	SUBCONTRACTOR COST OR PRICING DATA -- MODIFICATIONS	Yes	15.408(e) USE WHEN 52.215-11 IS USED
52.215-15	PENSION ADJUSTMENTS AND ASSET REVERSIONS	Yes	15.408(g) USE WHERE COST OR PRICING DATA REQ'D OR COST DETERMINATIONS SUBJECT TO PART 31.
52.215-17	WAIVER OF FACILITIES CAPITAL COST OF MONEY	Yes	15.408(i) USE WHERE KTR DOES NOT PROPOSE FACILITIES CAPITAL COST OF MONEY IN ITS OFFER
52.215-18	REVERSION OR ADJUSTMENT OF PLANS	Yes	15.408(j) USE WHERE COST OR PRICING DATA REQ'D OR COST DETERMINATIONS

PROVISION	TITLE	Inc by Reference	NOTES
	FOR POSTRETIREMENT BENEFITS (PRB) OTHER THAN PENSIONS		SUBJECT TO PART 31.
52.215-19	NOTIFICATION OF OWNERSHIP CHANGES	NO	15.408(k) USE WHERE COST OR PRICING DATA REQ'D OR COST DETERMINATIONS SUBJECT TO PART 31.
52.216-5	PRICE REDETERMINATION -- PROSPECTIVE	Yes	16.205-4 USE IN ACQUISITIONS OF QUANTITY PRODUCTION WHERE FFP CAN BE NEGOTIATED FOR AN INITIAL PERIOD BUT NOT SUBSEQUENT PERIODS.
52.216-16	INCENTIVE PRICE REVISION -- FIRM TARGETS	Yes	16.406(a)3 USE WITH FP INCENTIVE (FIXED TARGETS) CONTRACTS
52.216-17	INCENTIVE PRICE REVISION -- SUCCESSIVE TARGETS	Yes	16.406(b)3 USE WITH FP INCENTIVE (SUCCESSIVE TARGETS) CONTRACTS
52.216-18	ORDERING	Yes	16.506(a) IDC, DEFINATE QUANTITY, OR REQUIREMENTS
52.216-19	ORDER LIMITATIONS	Yes	16.506(b) IDC, DEFINATE QUANTITY, OR REQUIREMENTS
52.216-20	DEFINITE QUANTITY	Yes	16.506(c) IF DEFINATE QUANTITY
52.216-21	REQUIREMENTS	Yes	16.506(d)(1) IF A REQUIRMENTS CONTRACT
52.216-22	INDEFINITE QUANTITY	Yes	16.506(e) IDC ONLY
52.216-23	EXECUTION AND COMMENCEMENT OF WORK	NO	16.603-4(b)(1) USE WITH LETTER CONTRACTS EXCEPT WHERE AWARDED ON SF26
52.216-25 ALT I	CONTRACT DEFINITIZATION (OCT 1997) ALTERNATE I	NO	16.603-4(b)(3) USE WITH LETTER CONTRACTS WHERE AWARDING ON THE BASIS OF PRICE COMPETITION
52.217-2	CANCELLATION UNDER MULTIYEAR CONTRACTS	Yes	17.109(a) IF A MULTIYEAR CONTRACT
52.217-9	OPTION TO EXTEND THE TERM OF THE CONTRACT	Yes	17.208(g) USE IN IDC'S. REQ'D TO GIVE 30 DAY NOTICE FOR OPTION PERIODS.
52.219-3	NOTICE OF TOTAL HUBZONE SET-ASIDE	Yes	19.1308(a) USE IN TOTAL HUBZONE SET-ASIDES

PROVISION	TITLE	Inc by Reference	NOTES
52.219-4	NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS	Yes	19.1308(b) FULL & OPEN NOT < SAT
52.219-8	UTILIZATION OF SMALL BUSINESS CONCERNS	Yes	19.708(a) > SAT UNLESS FOR PERSONAL SVCS OR OUTSIDE USA
52.219-9	SMALL BUSINESS SUBCONTRACTING PLAN	Yes	19.708(b) > \$1 MILLION & WHERE 52.219-8 EXCEPT WITH SET-ASIDES
52.219-9 ALT II	SMALL BUSINESS SUBCONTRACTING PLAN (JUL 2005) ALT II	Yes	19.708(b)(2) USE IF 52.219-9 USED
52.219-14	LIMITATIONS ON SUBCONTRACTING	Yes	19.508(e) > SAT AND SET-ASIDE OR 19.811-3(e). INCLUDE IN UNRESTRICTED SOLICITATIONS ALSO. APPLICABLE ON AN RESTRICTED AWARD WHEN A PRICE PREFERENCE IS CLAIMED (CURRENTLY SUSPENDED FOR RFP'S ISSUED THROUGH 9 MAR 2007)
52.219-16	LIQUIDATED DAMAGES -- SUBCONTRACTING PLAN	Yes	19.708(b)(2) USE IF 52.219-9 USED
52.219-17	SECTION 8(a) AWARD	No	19.811-3(c) - 8(a) COMPETITIVE OR SOLE SOURCE
52.219-18	NOTIFICATION OF COMPETITION LIMITED TO ELIGIBLE 8(a) CONCERNS - (USE BOTH FAR & DFARS CLAUSES IN AN 8(A) SET ASIDE.)	No	19.811-3(d) - 8(a) COMPETITIVE
52.219-23	NOTICE OF PRICE EVALUATION ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS	Yes	19.1104 - CHECK NAICS CODE, DO NOT USE WITH SET-ASIDES
52.219-23 ALT II	NOTICE OF PRICE EVALUATION ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS (SEP 2005) ALTERNATE II	Yes	19.1104 - USE WHEN A REGIONAL PRICE EVALUATION ADJUSTMENT IS AUTHORIZED
52.219-25	SMALL DISADVANTAGED	Yes	19.1204(b) IF CONSIDERING

PROVISION	TITLE	Inc by Reference	NOTES
	BUSINESS PARTICIPATION PROGRAM- DISADVANTAGED STATUS AND REPORTING		PARTICIPATION OF SDB
52.219-27	NOTICE OF TOTAL SERVICE DISABLED VETERAN OWNED SMALL BUSINESS SET ASIDE	Yes	19.1407-USE IF DOING A SET-ASIDE OR SOLE-SOURCE TO A SDVO SB
52.222-10	COMPLIANCE WITH COPELAND ACT REQUIREMENT	Yes	22.407 (a) > \$2000
52.222-11	SUBCONTRACTS (LABOR STANDARDS)	Yes	22.407 (a) > \$2000
52.222-12	CONTRACT TERMINATION -- DEBARMENT	Yes	22.407 (a) > \$2000 (CONSTRUCTION)
52.222-13	COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS	Yes	22.407 (a) > \$2000 (CONSTRUCTION)
52.222-14	DISPUTES CONCERNING LABOR STANDARDS	Yes	22.407 (a) > \$2000 (CONSTRUCTION)
52.222-15	CERTIFICATION OF ELIGIBILITY	Yes	22.407 (a) > \$2000 (CONSTRUCTION)
52.222-21	PROHIBITION OF SEGREGATED FACILITIES	Yes	22.810(a)(1) USE WITH 52.222-26
52.222-26	EQUAL OPPORTUNITY	Yes	22.810(e) USE IN ALL UNLESS K IS EXEMPT FROM EO11240
52.222-27	AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION	Yes	22.810(f) USE W/ 52.222-26
52.222-3	CONVICT LABOR	Yes	22.202 > SAT
52.222-30	DAVIS BACON ACT-- PRICE ADJUSTMENT (NONE OR SEPARATELY	Yes	22.407(e) USE WITH OPTIONS TO EXTEND TERM OF K, & PRICE ADJUSTMENT METHOD BEING USED IS AT 22.404-12(c)

PROVISION	TITLE	Inc by Reference	NOTES
	SPECIFIED METHOD)		(1) or (2)
52.222-31	DAVIS BACON ACT-- PRICE ADJUSTMENT (PERCENTAGE METHOD)	Yes	22.407(f) USE WITH OPTIONS TO EXTEND TERM OF K, & PRICE ADJUSTMENT METHOD BEING USED IS AT 22.404-12(c)(3)
52.222-32	DAVIS BACON ACT-- PRICE ADJUSTMENT (NONE OR SEPARATELY SPECIFIED METHOD)	Yes	22.407(g) USE WITH OPTIONS TO EXTEND TERM OF K, & PRICE ADJUSTMENT METHOD BEING USED IS AT 22.404-12(c) (4)
52.222-35	EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETRANS OF THE VIETNAM ERA, AND OTHER ELGIBLE VETRANS	Yes	22.1310(a)(1) > \$25K EXCEPT OUTSIDE USA
52.222-36	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES	Yes	22.1408(a) > \$10 K EXCEPT WHEN OUTSIDE USA
52.222-37	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETRANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETRANS	Yes	22.1308(b) USE W/52.222-35 > \$10K EXCEPT OUTSIDE USA
52.222-39	NOTIFICATION OF EMPLOYEE RIGHTS CONCERNING PAYMENT OF UNIION DUES OR FEES	No	22.1605 ALL > SAT EXCEPT THOSE COVERED BY AN EXEMPTION GRANTED BY THE SECRETARY OF LABOR
52.222-54	EMPLOYMENT ELIGIBILITY VERIFICATION	No	22.1803 ALL > SAT, EXCEPT THOSE CONTRACTS PERFORMED OUTSIDE THE US, OR ARE FOR PERIOD LESS THAN 120 DAYS
52.222-4	CONTRACT WORK HOURS AND SAFETY STANDARDS ACT -- OVERTIME COMPENSATION	Yes	22.305 IF LABORERS OR MECHANICS
52.222-6	DAVIS-BACON ACT	Yes	22.407 (a) > \$2000
52.222-7	WITHHOLDING OF FUNDS	Yes	22.407 (a) > \$2000

PROVISION	TITLE	Inc by Reference	NOTES
52.222-8	PAYROLLS AND BASIC RECORDS	Yes	22.407 (a) > \$2000
52.222-9	APPRENTICES AND TRAINEES	Yes	22.407 (a) > \$2000
52.223-3	HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA	No	23.303 IF REQUIRES DELIVERY OF HAZARDOUS MATERIAL
52.223-5	POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION	Yes	23.1005 USE IF PERFORMED ON A FEDERAL FACILITY
52.223-6	DRUG FREE WORKPLACE	Yes	23.505 > SAT UNLESS AWARDED TO INDIVIDUAL
52.225-11	BUY AMERICAN ACT -- CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS	No	25.1102 (C)(1) CONSTRUCTION > \$6.8 M
52.225-11 ALT I	BUY AMERICAN ACT -- CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (JAN 2005), ALT I	No	25.1102 (C)(3) K BETWEEN \$6.806,000 & \$7,068,419
52.225-9	BUY AMERICAN ACT-- CONSTRUCTION MATERIALS	No	25.1102(a) CONSTRUCTION LESS THAN \$6.8 MILLION
52.226-1	UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES	Yes	26.104 WHERE SUBCT POSSIBILITIES EXIST AND FUNDS ARE AVAILABLE
52.227-1	AUTHORIZATION AND CONSENT	Yes	27.201(a) ALL
52.227-2	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT	Yes	27.202-2 >SAT
52.227-4	PATENT INDEMNITY-- CONSTRUCTION CONTRACTS	Yes	27.203-5 USE, EXCEPT IF USING 52.227-1 ALT I

PROVISION	TITLE	Inc by Reference	NOTES
52.228-2	ADDITIONAL BOND SECURITY	Yes	28.106-4 USE IF PERFORMANCE /PAYMENT BONDS REQUIRED ALL
52.228-5	INSURANCE--WORK ON A GOVERNMENT INSTALLATION	Yes	28.310 USE IF WORK ON GOVERNMENT INSTALLATION
52.228-11	PLEDGES OF ASSETS	No	28.203-6 USE IF PERFORMANCE OR PAYMENT BONDS REQ'D
52.228-12	PROSPECTIVE SUBCONTRACTOR REQUESTS FOR BONDS	Yes	28.106-4(b) USE IF PERFORMANCE AND PAYMENT BONDS REQ'D
52.228-13	ALTERNATIVE PAYMENT PROTECTIONS	No	28.102-3(b) IF BETWEEN \$25K-\$100K
52.228-14	IRREVOCABLE LETTER OF CREDIT	No	28.404-4 USE IF PERFORMANCE OR PAYMENT BONDS REQ'D
52.228-15	PERFORMANCE AND PAYMENT BONDS - CONSTRUCTION	Yes	28.102-3(a)(6) USE IF >\$100K AND PERFORMANCE AND PAYMENT BONDS REQ'D
52.229-2	NORTH CAROLINA STATE AND LOCAL SALES AND USE TAX	No	29.104-2 IF PERFORMED IN NC
52.229-3	FEDERAL, STATE, AND LOCAL TAXES	Yes	29.401-3 IF FP AND >SIMPLIFIED ACQ THRESHOLD
52.229-4	FEDERAL, STATE, AND LOCAL TAXES (ADJUSTMENTS)	Yes	29.401-3(b) IF SOLE-SOURCE & INCLUDES INAPPROPRIATE CONTINGENCY
52.230-2	COST ACCOUNTING STANDARDS	Yes	30.201-4(a) USE UNLESS EXEMPT FROM CAS OR USING MODIFIED CAS
52.230-3	DISCLOSURE AND CONSISTENCY OF COST ACCOUNTING PRACTICES	Yes	30.201-4(b)(1) IF BETWEEN \$500K-\$50M & OFFEROR ELIGIBLE FOR MODIFIED CAS
52.230-6	ADMINISTRATION OF COST ACCOUNTING STANDARDS	Yes	30.201-4(d)(1) IF ANY CLAUSE AT 30.201-4 (a)(b) or (e) APPLIES
52.232-12	ADVANCE PAYMENTS	No	32.412(a) IF ALLOWING ADVANCE PAYMENTS

PROVISION	TITLE	Inc by Reference	NOTES
52.232-16	PROGRESS PAYMENTS	No	32.502-4(a) IF PROVIDING PROGRESS PAYMENTS BASED ON COST
52.232-16 ALT I	PROGRESS PAYMENTS ALT 1	No	32.502-4(b) IF KTR IS SMALL BUSINESS AND USING PROGRESS PAYMENTS
52.232-16 ALT III	PROGRESS PAYMENTS ALT III	No	32.502-4(d) IF USING PROGRESS PAYMENTS, IDIQ, BOA, & KTR IS NOT SMALL BUSINESS
52.232-17	INTEREST	Yes	32.617(a) & (b) ALL > \$100K
52.232-18	AVAILABILITY OF FUNDS	Yes	32.705-1(a); USE IF THE K WILL BE CHARGEABLE TO NEW FY FUNDS & CT ACTION IS TO BE INITIATED BEFORE FUNDS ARE AVAILABLE (USE IF SAF)
52.232-23	ASSIGNMENT OF CLAIMS	Yes	32.806(a)(1) > MICRO-PURCHASE THRESHOLD UNLESS THE K PROHIBITS THE ASSIGNMENT OF CLAIMS
52.232-23 ALT I	ASSIGNMENT OF CLAIMS (JAN 1986), ALT I	Yes	32.806(a)(1) & 232.806(a)(2) - USE UNLESS ASSIGNMENT OF CLAIMS IS PROHIBITED
52.232-32	PERFORMANCE BASED PAYMENTS	Yes	32.1005 IF USING PERFORMANCE BASED PAYMENTS
52.232-33	PAYMENT BY ELECTRONIC FUNDS TRANSFER -- CENTRAL CONTRACTOR REGISTRATION	Yes	32.1110(a)(1) IF CCR USED AS DATABASE
52.233-1	DISPUTES	Yes	32.215 USE IN ALL UNLESS 33.203(b) APPLIES (FOREIGN ACQS)
52.233-1 ALT I	DISPUTES ALT I	Yes	33.215 IF CONTINUED PERFORMANCE IS NECESSARY
52.236-1	PERFORMANCE OF WORK BY CONTRACTOR	No	36.501(b) IF FP CONSTRUCTION, > \$1M. STATE THAT THE CONTRACTOR SHALL SELF-PERFORM AT LEAST 12% OF THE WORK.
52.236-2	DIFFERING SITE CONDITIONS	Yes	36.502 FP CONSTRUCTION > SAT
52.236-3	SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK	Yes	36.503 FP CONSTRUCTION > SAT

PROVISION	TITLE	Inc by Reference	NOTES
52.236-4	PHYSICAL DATA	No	36.504 IF FP CONSTRUCTION & PHYSICAL DATA WILL BE PROVIDED
52.236-6	SUPERINTENDENCE BY THE CONTRACTOR	Yes	36.506 FP CONSTRUCTION > SAT
52.236-8	OTHER CONTRACTS	Yes	36.508 FP CONSTRUCTION OR DEMOLITION > SAT
52.236-9	PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS	Yes	36.509 FP CONSTRUCTION > SAT
52.236-10	OPERATIONS AND STORAGE AREAS	Yes	36.510 FP CONSTRUCTION > SAT
52.236-11	USE AND POSSESSION PRIOR TO COMPLETION	Yes	36.511 FP CONSTRUCTION > SAT
52.236-12	CLEANING UP	Yes	36.512 FP CONSTRUCTION > SAT
52.236-13	ACCIDENT PREVENTION	Yes	36.513 FP CONSTRUCTION > SAT
52.236-13 ALT I	ACCIDENT PREVENTION (NOV 1991), ALT I	Yes	36.513 FP CONSTRUCTION, IF LONG DURATION OR HAZARDOUS > SAT
52.236-14	AVAILABILITY AND USE OF UTILITY SERVICES	Yes	36.514 FP CONSTRUCTION & FURNISHING UTILITIES IS IN GOVT'S BEST INTEREST
52.236-17	LAYOUT OF WORK	Yes	36.517 FP CONSTRUCTION > SAT, NEED ACCURATE WORK LAYOUT
52.236-21	SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION	Yes	36.521 FP CONSTRUCTION > SAT
52.236-21ALT I	SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION ALT I	Yes	36.521 FP CONSTRUCTION > SAT, IF REPRODUCIBLE SHOP DRAWINGS ARE NEEDED
52.236-21ALT II	SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION ALT II	Yes	36.521 FP CONSTRUCTION > SAT, IF REPRODUCIBLE SHOP DRAWINGS ARE NOT NEEDED
52.236-25	REQUIREMENTS FOR REGISTRATION OF DESIGNERS	Yes	36.609-4 USE IFOR ALL DESIGN-BUILD CONTRACTS

PROVISION	TITLE	Inc by Reference	NOTES
52.236-26	PRECONSTRUCTION CONFERENCE	Yes	36.522 USE IF NEED A PRECONSTRUCTION CONFERENCE
52.242-13	BANKRUPTCY	Yes	42.903 > SAT
52.242-14	SUSPENSION OF WORK	Yes	42.1305(a) FP CONSTRUCTION
52.243-4	CHANGES	Yes	43.205(d) > SAT
52.244-5	COMPETITION IN SUBCONTRACTING	Yes	44.204(c) USE IF CAN NOT AWARD ON BASIS OF ADEQUATE PRICE COMPETITION
52.245-1	PROPERTY RECORDS	Yes	45.106(a) IF HAVE GFP
52.245-2	GOVERNMENT PROPERTY (FIXED PRICE CONTRACTS)	Yes	45.106(b)(1) IF GFP IS >\$100K AND INSTALLED BY KTR
52.246-12	INSPECTION OF CONSTRUCTION	Yes	46.312 IF >SAT
52.246-21	WARRANTY OF CONSTRUCTION	Yes	46.710 (e)(1) ALL FP CONSTRUCTION
52.248-3	VALUE ENGINEERING-CONSTRUCTION	Yes	48.202 IF > SAT
52.249-2 ALT I	TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED PRICE) (MAY 2004) ALT I	Yes	49.502(b)(1)(ii) IF > \$100K
52.252-2	CLAUSES INCORPORATED BY REFERENCE	No	52.107(b) - ALL
52.253-1	COMPUTER GENERATED FORMS	Yes	53.111 IF DATA IS TO BE SUBMITTED ON FEDERAL FORMS
252-201-7000	CONTRACTING OFFICER'S REPRESENTATIVE	No	201.602-70 WHEN COR IS NEEDED
252-203-7001	PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE-CONTRACT-RELATED FELONIES	No	203.570-3 > SAT

PROVISION	TITLE	Inc by Reference	NOTES
252-203-7002	DISPLAY OF DOD HOTLINE POSTER	No	203.7002 > \$5 MILLION ONLY
252-204-7000	DISCLOSURE OF INFORMATION	No	DFARS 204.404-70 WHEN THE CONTRACTOR WILL HAVE ACCESS TO OR GENERATE UNCLASSIFIED INFO THAT MAY BE SENSITIVE & INAPPROPRIATE FOR RELEASE TO THE PUBLIC
252-204-7003	CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT	No	DFARS 204.404-70(b) ALL
252-204-7004 ALT A	ALTERNATE A (REQUIRED CENTRAL CONTRACTOR REGISTRATION REVISED BY DFARS CHANGE NOTICE 20031114)	No	DFARS 204.404-70(b) ALL
252.205-7000	PROVISION OF INFORMATION TO COOPERATIVE AGREEMENT HOLDERS	No	DFARS 205.470-2 > \$1,000,000
252.209-7004	SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY	No	DFARS 209.409 > SAT
252.215-7000	PRICING ADJUSTMENTS	No	DFARS 215.408-8(1) USE WITH 52.215-11, 12, 13
252.219-7003	SMALL, SMALL DISADVANTAGED AND WOMEN OWNED SMALL BUSINESS SUBCONTRACTING PLAN	No	DFARS 219-708 IF UNDER TEST PROGRAM USED IF 52.219-9 IS USED NA/SB
252.219-7009	SECTION 8(a) DIRECT AWARD	No	DFARS 219.811-3(1) IF 8(a) AWARD USE IAW MOU IN DFARS 219.800
252.219-7010 ALT A	NOTIFICATION OF COMPETITION LIMITED TO ELIGIBLE 8(a) CONCERNS (USE BOTH FAR AND DFARS CLAUSES MUST BE USED IN AN 8(A) SET-	No	AS PRESCRIBED USE IN 8(a) SET-ASIDES WITH CLAUSE 52.219-18 AT DFARS 52.219-7010 ALT A

PROVISION	TITLE	Inc by Reference	NOTES
	ASIDE.)		
252.223-7001	HAZARD WARNING LABELS	No	DFARS 223.303 WHICH REQUIRE SUBMISSION OF HAZARDOUS MATERIAL DATA SHEETS
252.223-7004	DRUG-FREE WORK FORCE	No	DFARS 223-570-4 IF CLASSIFIED INFORMATION USED
252.223-7006	PROHIBITION ON STORAGE AND DISPOSAL OF TOXIC AND HAZARDOUS MATERIALS	No	DFARS 223-7103 PERFORMANCE ON DOD INSTALLATION
252.225-7012	PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES	No	DFARS 225.7012 ALL
252.226-7001	UTILIZATION OF INDIAN ORGANIZATIONS, INDIAN-OWNED ECONOMIC ENTERPRISES, AND NATIVE HAWAIIAN SMALL BUSINESS CONCERNS	No	DFARS 226.103 IF THERE ARE SUBCONTRACTING OPPORTUNITIES FOR INDIAN OWNED ENTERPRISES PIL 2002-11 DTD 5/15/02
252.227-7022	GOVERNMENT RIGHTS (UNLIMITED)	No	DFARS 227.7107-1(a) CONSTRUCTION WITH A/E USE FOR DESIGN-BUILD
252.227-7023	DRAWINGS AND OTHER DATA TO BECOME PROPERTY OF THE GOVERNMENT	No	DFARS 227.7107-1(b) CONSTRUCTION WITH A/E - USE FOR DESIGN-BUILD WHEN GOVERNMENT TO OWN EXCLUSIVE RIGHTS TO A UNIQUE DESIGN, IN LIEU OF 252.227-7022
252.227-7033	RIGHTS IN SHOP DRAWINGS	No	DFARS 227.7107-1(d) IF SHOP DRAWINGS PART OF DELIVERABLE
252.231-7000	SUPPLEMENTAL COST PRINCIPLES	No	DFARS 231.100-70 USE IN ALL SOLICITATION & CONTRACTS SUBJECT TO FAR SUBPARTS 31.1, 31.2, 31.6, & 31.7
252.232-7010	LEVIES ON CONTRACT PAYMENT	No	DFARS 232.7102 All Solicitations & Contracts
252.236-7000	MODIFICATION PROPOSALS--PRICE BREAKDOWN	No	DFARS 236.570(a) FFP CONSTRUCTION

PROVISION	TITLE	Inc by Reference	NOTES
252.236-7005	AIRFIELD SAFETY PRECAUTIONS	No	DFARS 236.570(b)(3) WHEN CONST WILL BE PERFORMED ON OR NEAR AIRFIELDS
252.236-7007	ADDITIVE OR DEDUCTIVE ITEMS	No	DFARS 252.236-7007(b)(5) if the procedures in 236.213-70
252.236-7008	CONTRACT PRICES-- BIDDING SCHEDULES	No	DFARS 252.570(b)(6) if the procedures in 236.213-70 are being used.
252.243-7001	PRICING OF CONTRACT MODIFICATIONS	No	DFARS 243.205-71 FP
252.243-7002	REQUESTS FOR EQUITABLE ADJUSTMENT	No	DFARS 243.205-72 > SAT
252.244-7000	SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (DOD CONTRACTS)	No	DFARS 244.403 SUPPLIES OR SVCS OTHER THAN COMMERCIAL AND 252.225-7014 PREFERENCE FOR DOMESTIC SPECIALTY METALS, ALT I
252.245-7001	REPORTS OF GOVERNMENT PROPERTY	No	DFARS 245.505-14 USE IF GFP IS BEING FURNISHED
252.247-7023	TRANSPORTATION OF SUPPLIES BY SEA	No	DFARS 247.573 (b)(1) > SAT
252.247-7024	NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA	No	DFARS 247.573 (c) ALL

The following contract provisions-clauses are optional:

PROVISION	TITLE	Inc by Reference	NOTES
52.211-12	LIQUIDATED DAMAGES -- CONSTRUCTION	NO	11.503 (b) WHEN LIQUIDATED DAMAGES ARE APPROPRIATE
52.215-21	REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA -- MODIFICATIONS	Yes	15.408(m) USE IN MODS WHERE COST OR PRICING DATA OR INFO OTHER THAN COPD WILL BE REQ'D
52.215-21 ALT I	REQUIREMENTS FOR COST OR PRICING DATA	Yes	15.408(m) USE WITH 15.215-21 WHERE FORMAT OTHER THAN TABLE 15-2 IS REQUIRED

PROVISION	TITLE	Inc by Reference	NOTES
	OR INFORMATION OTHER THAN COST OR PRICING DATA -- MODIFICATIONS (OCT 1997) ALTERNATE I		
52.215-21 ALT II	REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA -- MODIFICATIONS (OCT 1997) ALTERNATE II	Yes	15.408(m) USE WITH 15.215-21 WHERE PROPOSALS COPIES ARE TO BE SENT TO THE ACO AND CONTRACT AUDITOR
52.215-21 ALT III	REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA -- MODIFICATIONS (OCT 1997) ALTERNATE III	Yes	15.408(m) USE WITH 15.215-21 WHERE ELECTRONIC SUBMISSION IS REQUIRED
52.215-21 ALT IV	REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA -- MODIFICATIONS (OCT 1997) ALTERNATE IV	Yes	15.408(m) USE WHERE INFO OTHER THAN COST OR PRICING DATA IS REQ'D
52.219-10	INCENTIVE SUBCONTRACTING PROGRAM	Yes	19.708(c(1) USE WHERE SUBCONTRACTING PLAN IS REQUIRED & MONITARY INCENTIVE
52.219-24	SMALL DISADVANTAGED BUSINESS PARTICIPATION PROGRAM - TARGETS	Yes	19.1204(a) IF CONSIDERING PARTICIPATION OF SDB
52.236-15	SCHEDULES FOR CONSTRUCTION CONTRACTS	Yes	36.515 FP CONSTRUCTION > SAT > 60 DAYS

End of Section 00 72 00

SECTION 00 73 00
REV 2.9 - 30 APR 2012

SPECIAL CONTRACT REQUIREMENTS

1.0 GENERAL

- 1.1. REFERENCES – NOT USED
- 1.2. DESIGN/BUILD CONTRACT – ORDER OF PRECEDENCE (AUG 97)
- 1.3. PROPOSED BETTERMENTS (~~AUG 97~~APR 12)
- 1.4. SELF-PERFORMANCE OF WORK BY THE PRIME CONTRACTOR (MAR 06/UPDATED MAR 10)
- 1.5. PARTNERING (AUG 97)
- 1.6. KEY PERSONNEL, SUBCONTRACTORS AND OUTSIDE ASSOCIATES OR CONSULTANTS (MAY 06)
- 1.7. RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN (MAY 02)
- 1.8. WARRANTY OF DESIGN (FIRM-FIXED PRICE DESIGN-BUILD CONTRACT) (MAY 02)
- 1.9. CONSTRUCTOR'S ROLE DURING DESIGN (JUN 98)
- 1.10. VALUE ENGINEERING AFTER AWARD (JUN 99)
- 1.11. DEVIATING FROM THE ACCEPTED DESIGN (JUN 02)
- 1.12. GOVERNMENT-FURNISHED RFP DRAWINGS, SURVEYS AND SPECIFICATIONS (JUL 02)
- 1.13. GOVERNMENT-FURNISHED SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (JAN 11)
- 1.14. GOVERNMENT RE-USE OF DESIGN (SEP 05)
- 1.15. ADDITIONAL MONTHLY INCENTIVE PROGRESS PAYMENT (JULY 05)
- 1.16. US ARMY CORPS OF ENGINEERS SAFETY AND HEALTH REQUIREMENTS MANUAL (JUL 11)
- 1.17. SUPPLEMENTAL PRICE BREAKDOWN INFORMATION
- 1.18. SITE SAFETY AND HEALTH OFFICER REQUIREMENTS AND QUALIFICATIONS (JUL 11)
- 1.19. CONTRACTOR PERFORMANCE EVALUATION
- 1.20. CONTRACTOR SUPPLY AND USE OF ELECTRONIC SOFTWARE FOR PROCESSING DAVIS-BACON ACT CERTIFIED LABOR PAYROLLS (JULY 2011)

2.0 PRODUCTS NOT USED

3.0 EXECUTION NOT USED

1.0 GENERAL

1.1. REFERENCES - NOT USED

1.2. DESIGN/BUILD CONTRACT - ORDER OF PRECEDENCE (AUG 97)

(a) The contract includes the standard contract clauses and schedules current at the time of contract award. It entails (1) the solicitation in its entirety, including all drawings, cuts, and illustrations, and any amendments, and (2) the successful offeror's accepted proposal. The contract constitutes and defines the entire agreement between the Contractor and the Government. No documentation shall be omitted which in any way bears upon the terms of that agreement.

(b) In the event of conflict or inconsistency between any of the provisions of this contract, precedence shall be given in the following order:

(1) Betterments: Any portions of the accepted proposal which both conform to and exceed the provisions of the solicitation.

(2) The provisions of the solicitations. (See also contract Clause: 52.236- 21, **SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION.**)

(3) All other provisions of the accepted proposal.

(4) Any design products including, but not limited to, plans, specifications, engineering studies and analyses, shop drawings, equipment installation drawings, etc. These are "deliverables" under the contract and are not part of the contract itself. Design products must conform to all provisions of the contract, in the order of precedence herein.

1.3. PROPOSED BETTERMENTS (AUG-97/APR 12)

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

(b) "Betterment" is defined as any component or system **in the accepted proposal** which exceeds the minimum requirements stated in the Request for Proposal.

(c) This includes all betterments identified in the **accepted proposal**. **It also and/or all includes all Government identified betterments in the accepted proposal, whether or not the Government specifically identifies such betterments in a "List of Accepted Project Betterments", made part of the contract award by alteration. It also includes any other betterments in the accepted Proposal that might be identified after award.**

1.4. SELF-PERFORMANCE OF WORK BY THE PRIME CONTRACTOR (MAR 06/UPDATED MAR 10)

(a) The following describes the applicable clause or requirement for self-performance of work by the Contractor, depending upon the type of solicitation (e.g., unrestricted or full or partial set-aside) and/or whether or not a price evaluation preference was provided for in the source selection evaluation.

(b) Contract clause 52.236-1, **PERFORMANCE OF WORK BY THE CONTRACTOR**, is applicable to unrestricted procurement contract awards to any business except as explained in paragraphs c. and e., below.

(c) In lieu of the above clause, contract clause 52.219-4, **NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS** is applicable for award to a HUBZone small business concern on an unrestricted solicitation when the awardee is a HUBZone small business concern or joint venture and claimed a price evaluation preference in accordance with the clause. For purposes of this clause, "cost of the contract" includes all direct and indirect costs, excluding profit or fees. "Cost of contract performance incurred for personnel" means direct labor costs and any overhead which has only direct labor as its base, plus the concern's general and administrative overhead rate multiplied by the labor cost.

(d) Contract clause 52.219-3 **NOTICE OF TOTAL HUBZONE SET-ASIDE** is applicable to awards made under a partial or total HubZone set-aside. For purposes of this clause, "cost of the contract" includes all direct and indirect costs, excluding profit or fees. "Cost of contract performance incurred for personnel" means direct labor costs and any overhead which has only direct labor as its base, plus the concern's general and administrative overhead rate multiplied by the labor cost.

(e) Contract Clause 52.219-14, **LIMITATIONS ON SUBCONTRACTING**, is the applicable requirement for awards to small business concerns for solicitations that were fully or partially set-aside for Small Business, 8(a), or award to a small disadvantaged business (SDB) concern on an unrestricted procurement where an SDB concern has claimed a price evaluation preference (but see next paragraph for suspension of the SDB price preference).

(f) By Memorandum dated March 12, 2010, the Director of Defense Procurement and Acquisition Policy directed cessation of the use of the price evaluation adjustment for SDBs in DoD procurements (FAR Clause 52.219-23). Said FAR Clause is not included in or made a part of this RFP. FAR Clause 52.219-4, relating to a 10% price evaluation preference for HUB ZONE small business concerns, is included in and made a part of this RFP. PLEASE NOTE HOWEVER, that paragraph (b) (3) of the FAR Clause 52.219-4, is inapplicable also due to the referenced cessation of FAR Clause 52.219-23.

1.5. PARTNERING (AUG 97)

In order to most effectively accomplish this contract, the Government proposes to form a partnership with the Contractor to develop a cohesive building team. It is anticipated that this partnership would involve the Corps of Engineers, The Installation DPW and the privatized utility representatives, the Contractor, primary subcontractors and the designers. This partnership would strive to develop a cooperative management team drawing on the strengths of each team member in an effort to achieve a quality project within budget and on schedule. This partnership would be bilateral in membership and participation will be totally voluntary. All costs, excluding labor and travel expenses, shall be shared equally between the Government and the Contractor. The Contractor and Government shall be responsible for their own labor and travel costs.

1.6. KEY PERSONNEL, SUBCONTRACTORS AND OUTSIDE ASSOCIATES OR CONSULTANTS (MAY 2006)

In connection with this contract, any in-house personnel, subcontractors, and outside associates or consultants will be limited to individuals or firms that were specifically identified in the Contractor's accepted proposal. The Contractor shall obtain the Contracting Officer's written consent before making any substitution for these designated in-house personnel, subcontractors, associates, or consultants. If the Contractor proposes a substitution, it shall submit the same type of information that was submitted in the accepted proposal to the Contracting Officer for evaluation and approval. The level of qualifications and experience submitted in the accepted proposal or that required by the Solicitation, whichever is greater, is the minimum standard for any substitution.

1.7. RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN (MAY 02)

(a) The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and other non-construction services furnished by the Contractor under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiency in its designs, drawings, specifications, and other non-construction services and perform any necessary rework or modifications, including any damage to real or personal property, resulting from the design error or omission.

(b) The standard of care for all design services performed under this agreement shall be the care and skill ordinarily used by members of the architectural or engineering professions practicing under similar conditions at the same time and locality. Notwithstanding the above, in the event that the contract specifies that portions of the Work be performed in accordance with a performance standard, the design services shall be performed so as to achieve such standards.

(c) Neither the Government's review, approval or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract. The Contractor shall be and remain liable to the Government in accordance with applicable law for all damages to the Government caused by the Contractor's negligent performance of any of these services furnished under this contract.

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

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

1.8. WARRANTY OF DESIGN (FIRM-FIXED PRICE DESIGN-BUILD CONTRACT) (MAY 02)

(a) The Contractor warrants that the design shall be performed in accordance with the Contract requirements. Design and design related construction not conforming to the Contract requirements shall be corrected at no additional cost to the Government. The standard of care for design is defined in paragraph (b) of Special Contract Requirement **RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN**.

(b) The period of this warranty shall commence upon final completion and the Government's acceptance of the work, or in the case of the Government's beneficial occupancy of all or part of the work for its convenience, prior to final completion and acceptance, at the time of such occupancy.

(c) This design warranty shall be effective from the above event through the Statute of Limitations and Statute of Repose, as applicable to the state that the project is located in.

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

1.9. CONSTRUCTOR'S ROLE DURING DESIGN (JUN 98)

The Contractor's construction management key personnel shall be actively involved during the design process to effectively integrate the design and construction requirements of this contract. In addition to the typical required construction activities, the constructor's involvement includes, but is not limited to actions such as: integrating the design schedule into the Master Schedule to maximize the effectiveness of fast-tracking design and construction (within the limits allowed in the contract), ensuring constructability and economy of the design, integrating the shop drawing and installation drawing process into the design, executing the material and equipment acquisition programs to meet critical schedules, effectively interfacing the construction QC program with the design QC program, and maintaining and providing the design team with accurate, up-to-date redline and as-built documentation. The Contractor shall require and manage the active involvement of key trade subcontractors in the above activities.

1.10. VALUE ENGINEERING AFTER AWARD (JUNE 99)

(a) In reference to Contract Clause 52.248-3, **VALUE ENGINEERING - CONSTRUCTION**, the Government may refuse to entertain a "Value Engineering Change Proposal" (VECP) for those "performance oriented" aspects of the Solicitation documents which were addressed in the Contractor's accepted contract proposal and which were evaluated in competition with other offerors for award of this contract.

(b) The Government may consider a VECP for those "prescriptive" aspects of the Solicitation documents, not addressed in the Contractor's accepted contract proposal or addressed but evaluated only for minimum conformance with the Solicitation requirements.

(c) For purposes of this clause, the term "performance oriented" refers to those aspects of the design criteria or other contract requirements which allow the Offeror or Contractor certain latitude, choice of and flexibility to propose in its accepted contract offer a choice of design, technical approach, design solution, construction approach or other approach to fulfill the contract requirements. Such requirements generally tend to be expressed in terms of functions to be performed, performance required or essential physical

characteristics, without dictating a specific process or specific design solution for achieving the desired result.

(d) In contrast, for purposes of this clause, the term “prescriptive” refers to those aspects of the design criteria or other Solicitation requirements wherein the Government expressed the design solution or other requirements in terms of specific materials, approaches, systems and/or processes to be used. Prescriptive aspects typically allow the Offerors little or no freedom in the choice of design approach, materials, fabrication techniques, methods of installation or other approach to fulfill the contract requirements.

1.11. DEVIATING FROM THE ACCEPTED DESIGN (JUN 02)

(a) The Contractor shall obtain the approval of the Designer of Record and the Government's concurrence for any Contractor proposed revision to the professionally stamped and sealed and Government reviewed and concurred design, before proceeding with the revision.

(b) The Government reserves the right to non-concur with any revision to the design, which may impact furniture, furnishings, equipment selections or operations decisions that were made, based on the reviewed and concurred design.

(c) Any revision to the design, which deviates from the contract requirements (i.e., the Request for Proposals and the accepted proposal), will require a modification, pursuant to the Changes clause, in addition to Government concurrence. The Government reserves the right to disapprove such a revision.

(d) Unless the Government initiates a change to the contract requirements, or the Government determines that the Government furnished design criteria are incorrect and must be revised, any Contractor initiated proposed change to the contract requirements, which results in additional cost, shall strictly be at the Contractor's expense.

(e) The Contractor shall track all approved revisions to the reviewed and accepted design and shall incorporate them into the as-built design documentation, in accordance with agreed procedures. The Designer of Record shall document its professional concurrence on the as-builts for any revisions in the stamped and sealed drawings and specifications.

1.12. GOVERNMENT-FURNISHED RFP DRAWINGS, SURVEYS AND SPECIFICATIONS (JUL 02)

This is to clarify that contract clause 252.236-7001, **CONTRACT DRAWINGS AND SPECIFICATIONS**, refers to any Government-furnished design or design criteria included in the Request for Proposal (RFP).

1.13. GOVERNMENT-FURNISHED SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (JAN 2011)

This is to clarify that contract clause 52.236-21, **SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION**, refers to any specifications and drawings furnished in the Request for Proposal (RFP). The term “specifications” refers to the design criteria or scope of work, in addition to any attached specifications.

1.14. GOVERNMENT RE-USE OF DESIGN (MAY 06)

In conjunction with the Clause 252.227-7022, **GOVERNMENT RIGHTS UNLIMITED**, the Government will not ask for additional originals or copies of the design works after the Contractor provides all required design documentation and as-built documentation under the instant contract. Further, if the Government uses the design for other projects without additional compensation to the Contractor for re-use, the Government releases the Contractor from liability in the design on the other projects, due to defects in the design that are not the result of fraud, gross mistake as amounts to fraud, gross negligence or intentional misrepresentation.

1.15. ADDITIONAL MONTHLY INCENTIVE PROGRESS PAYMENT (MAY 06)

(a) As an incentive for maintaining satisfactory progress, The Government offers to make an interim monthly progress payment for satisfactory design and construction work in compliance with the contract, while construction operations are underway, up to turnover of the facilities to the Government. This is a second monthly progress payment, in between the regular monthly progress payment that is described in Contract Clause 52.232-5, **PAYMENTS UNDER FIXED PRICE CONSTRUCTION CONTRACTS**.

(b) As a condition for the additional progress payment, the Contractor must maintain progress within 2% of scheduled progress and within 7 calendar days of the scheduled progress along the critical path(s) at the time of submission.

(c) All requirements of the contract clauses **PAYMENTS UNDER FIXED PRICE CONSTRUCTION CONTRACTS** and 52.232-25, **PROMPT PAYMENT**, will apply to the interim progress payment. In lieu of submitting an updated progress schedule to substantiate the amounts included in the interim progress payment, the Contracting Officer will determine what documentation is required to support an interim payment, including the required Prompt Payment Certification. For the next regular monthly progress payment following an interim payment, the Contractor shall reconcile the interim progress payment against actual progress.

1.16. US ARMY CORPS OF ENGINEERS SAFETY AND HEALTH REQUIREMENTS MANUAL (JUL 11)

In accordance with Contract Clause 52.236-13, **ACCIDENT PREVENTION**, the Contractor shall comply with the latest version of Engineer Manual 385-1-1, including any interim revisions, in effect at the time of the solicitation. EM 385-1-1 and its changes are available through www.usace.army.mil/CESO/Pages/EM385-1-1.aspx

1.17. SUPPLEMENTAL PRICE BREAKDOWN INFORMATION:

After contract award, the Government will require the Contractor to provide a cost breakdown of each facility by square foot, including major building systems to the five-foot line, for programming validation purposes. There will be no separate payment for this information and the Contractor shall include it in the contract price. The Government will provide a format with the directive.

1.18. SITE SAFETY AND HEALTH OFFICER REQUIREMENTS AND QUALIFICATIONS (JUL 11)

(a) The Contractor shall employ a competent person at each project to function as the Site Safety and Health Officer (SSHO) in accordance with EM 385-1-1, Section 01.A.17. The SSHO shall report to the senior project official or to a senior corporate official. Submit the qualifications of the proposed SSHO for Government Approval.

(b) The SSHO may be a collateral duty responsibility.

1.19. CONTRACTOR PERFORMANCE EVALUATION

In accordance with the provisions of Subpart 36.201 (Evaluation of Contractor Performance) of the Federal Acquisition Regulation (FAR), construction contractor's performance shall be evaluated throughout the performance of the contract. The United States Army Corps of Engineers (USACE) follows the procedures outlined in Engineering Regulation 415-1-17 to fulfill this FAR requirement. For construction contracts awarded at or above \$100,000.00, the USACE will evaluate contractor's performance and prepare a performance report using the Construction Contractor Appraisal Support System (CCASS), which is now a web-based system. After an evaluation (interim or final) is written up by the USACE, the contractor will have the ability to access, review and comment on the evaluation for a period of 30 days. Accessing and using CCASS requires specific software, called PKI certification, which is installed on the user's computer. The certification is a Department of Defense requirement and was implemented to provide security in electronic transactions. The certification software could cost approximately \$110 - \$125 per certificate per year and is purchased from an External Certificate Authorities (ECA) vendor. Current information about the PKI certification process and for contacting

vendors can be found on the web site: <http://www.cpars.csd.disa.mil/>. If the Contractor wishes to participate in the performance evaluation process, access to CCASS and PKI certification is the sole responsibility of the Contractor.

1.20 CONTRACTOR SUPPLY AND USE OF ELECTRONIC SOFTWARE FOR PROCESSING DAVIS-BACON ACT CERTIFIED LABOR PAYROLLS (JULY 2011)

(a) The Contractor is encouraged to use a commercially-available electronic system to process and submit certified payrolls electronically to the Government. The Davis-Bacon Act (DBA) establishes requirements for preparing, processing and providing certified payrolls, as stated in FAR 52.222-8, PAYROLLS AND BASIC RECORDS and FAR 52.222-13, COMPLIANCE WITH DAVIS-BACON AND RELATED REGULATIONS.

(b) If the Contractor elects to use an electronic DBA payroll processing system, obtain and provide all access, licenses, and other services required to provide for receipt, processing, certifying, electronically transmitting to the Government, and storing all payrolls and other data required to comply with DBA and related Act regulations. An electronic DBA payroll system shall use the electronic payroll service to prepare, process, and maintain the relevant payrolls and basic records during all work under the contract. The electronic payroll service shall be capable of preserving these payrolls and related records for the required three years after contract completion. Obtain and provide electronic system access to the Government, as required to comply with the DBA and related Act regulations over the duration of the contract. Access shall include electronic review access by the Government contract administration office to the Contractor's electronic processing system.

(c) The provision and use of an electronic payroll system shall meet the following functional criteria: commercially available; compliant with appropriate DBA payroll provisions in the FAR; able to accommodate the required number of employees and subcontractors planned to be employed under the contract; capable of producing an Excel spreadsheet-compatible electronic output of weekly payroll records (format at <http://www.mssupport.com/guides.aspx>) for export in an excel spreadsheet to be imported into the Contractor's Quality Control System (QCS) version of Resident Management System (RMS), that in turn shall export payroll data to the Government's Resident Management System (RMS); demonstrated security of data and data entry rights; ability to produce Contractor-certified electronic versions of weekly payroll data; ability to identify erroneous data entries and track the data/time of all versions of the certified DBA payrolls submitted to the Government over the life of the contract; capable of generating a durable record copy, that is, a CD or DVD and PDF file record of data from the system database at end of the contract closeout. Provide the durable record copy to the Government during contract closeout.

(d) Include all Contractor-incurred costs related to the provision and use of an electronic payroll processing service in the contract price for the overall work under the contract. There will be no separate line item for or payment of costs for DBA compliance or the use of electronic payroll processing services.

2.0 PRODUCTS NOT USED

3.0 EXECUTION NOT USED

End of Section 00 73 00

SECTION 01 10 00
REV 3.4 – 31 OCT 2012
STATEMENT OF WORK

1.0 PROJECT OBJECTIVES

1.1. SECTION ORGANIZATION

2.0 SCOPE

2.1. TACTICAL EQUIPMENT MAINTENANCE FACILITY

2.2. SITE

2.3. GOVERNMENT-FURNISHED GOVERNMENT INSTALL EQUIPMENT (GFGI)

2.4. FURNITURE REQUIREMENTS

3.0 TACTICAL EQUIPMENT MAINTENANCE FACILITY

3.1. GENERAL REQUIREMENTS

3.1.1. FACILITY DESCRIPTION

3.1.2. FACILITY RELATIONSHIPS

3.1.3. ACCESSIBILITY REQUIREMENTS

3.1.4. BUILDING AREAS

3.1.5. ADAPT BUILD MODEL

3.2. FUNCTIONAL AND AREA REQUIREMENTS

3.2.1. FUNCTIONAL SPACES

3.3. SITE FUNCTIONAL REQUIREMENTS

3.4. SITE AND LANDSCAPE REQUIREMENTS

3.5. ARCHITECTURAL REQUIREMENTS

3.5.1. FINISHES AND INTERIOR SPECIALITIES

3.6. STRUCTURAL REQUIREMENTS

3.7. SEE PARAGRAPH 6.7 THERMAL PERFORMANCE – NOT USED

3.8. PLUMBING REQUIREMENTS

3.9. COMMUNICATIONS AND SECURITY SYSTEMS

3.10. ELECTRICAL REQUIREMENTS

- 3.11. HEATING VENTILATING AND AIR CONDITIONING (HVAC) REQUIREMENTS
- 3.12. ENERGY CONSERVATION REQUIREMENTS
- 3.13. FIRE PROTECTION REQUIREMENTS
- 3.14. SEE PARAGRAPH 6.14 SUSTAINABLE DESIGN – NOT USED
- 3.15. SEE PARAGRAPH 6.15 ENVIRONMENTAL – NOT USED
- 3.16. SEE PARAGRAPH 6.16 PERMITS – NOT USED
- 3.17. SEE PARAGRAPH 6.17 DEMOLITION – NOT USED
- 3.18. SEE PARAGRAPH 6.18 – NOT USED
- 3.19. EQUIPMENT AND FURNITURE REQUIREMENTS
 - 3.19.1. FURNISHINGS
 - 3.19.2. EQUIPMENT
- 3.20. FACILITY SPECIFIC REFERENCES
- 4.0 APPLICABLE CRITERIA**
 - 4.1. INDUSTRY CRITERIA
 - 4.2. MILITARY CRITERIA
- 5.0 GENERAL TECHNICAL REQUIREMENTS**
 - 5.1. SITE PLANNING AND DESIGN
 - 5.2. SITE ENGINEERING
 - 5.3. COMMISSIONING
 - 5.4. ARCHITECTURE AND INTERIOR DESIGN
 - 5.5. STRUCTURAL DESIGN
 - 5.6. THERMAL PERFORMANCE
 - 5.7. PLUMBING AND WATER CONSUMING EQUIPMENT
 - 5.8. ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS
 - 5.9. HEATING, VENTILATING AND AIR CONDITIONING
 - 5.10. ENERGY CONSERVATION
 - 5.11. FIRE PROTECTION
 - 5.12. SUSTAINABLE DESIGN

5.13. SECURITY (ANTI-TERRORISM STANDARDS)

6.0 PROJECT SPECIFIC REQUIREMENTS

6.1. GENERAL

6.2. APPROVED DEVIATIONS

6.3. SITE PLANNING AND DESIGN

6.4. SITE ENGINEERING

6.5. ARCHITECTURE

6.6. STRUCTURAL DESIGN

6.7. THERMAL PERFORMANCE

6.8. PLUMBING

6.9. SITE ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS

6.10. FACILITY ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS

6.11. HEATING, VENTILATING AND AIR CONDITIONING

6.12. ENERGY CONSERVATION

6.13. FIRE PROTECTION

6.14. SUSTAINABLE DESIGN

6.15. ENVIRONMENTAL

6.16. PERMITS

6.17. DEMOLITION

6.18. ADDITIONAL FACILITIES

1.0 PROJECT OBJECTIVES

1.0.1 The project objective is to design and construct facilities for the military that are consistent with the design and construction practices used for civilian sector projects that perform similar functions to the military projects. For example, a Company Operations Facility has the similar function as an office/warehouse in the civilian sector; therefore the design and construction practices for a company operations facility should be consistent with the design and construction of an office/warehouse building.

Comparison of Military Facilities to Civilian Facilities

Military Facility	Civilian Facility
Tactical Equipment Maintenance Facility (TEMF)	Heavy Equipment/Vehicle Maintenance Garage

1.0.2 It is the Army's objective that these buildings will have a 50 year useful life. The design and construction should provide an appropriate level of quality to ensure the continued use of the facility over that time period with the application of reasonable preventive maintenance and repairs that would be industry-acceptable to a major civilian sector project OWNER. The facility design should consider that the Army may repurpose the use of the facility over the 50 year life. The Army's intent is to install products and materials of good quality that meet industry standard average life that corresponds with the period of performance expected before a major renovation or repurpose. The design should be flexible and adaptable to possible future uses different than the current to the extent practical while still meeting the operational and functional requirements defined within. Flexibility is achieved through design of more flexible structural load-bearing wall and column system arrangements. The site infrastructure will have at least a 50-year life expectancy with industry-accepted maintenance and repair cycles. Develop the project site for efficiency and to convey a sense of unity or connectivity with the adjacent buildings and with the Installation as a whole.

1.0.3 Requirements stated in this contract are minimums. Innovative, creative, and life cycle cost effective solutions, which meet or exceed these requirements are encouraged. Further, the OFFEROR is encouraged to seek solutions that will expedite construction (panelization, pre-engineered, etc.) and shorten the schedule. **The intent of the Government is to emphasize the placement of funds into functional/operational requirements. Materials and methods should reflect this by choosing the most economical Type of Construction allowed by code for this occupancy/project allowing the funding to be reflected in the quality of interior/exterior finishes and systems selected.**

1.1. SECTION ORGANIZATION

This Section is organized under 6 major "paragraphs".

- (1) Paragraph 1 is intended to define the project objectives and to provide a comparison between the military facility(ies) and comparable "civilian" type buildings.
- (2) Paragraph 2 describes the scope of the project.
- (3) Paragraph 3 provides the functional, operational and facility specific design criteria for the specific facility type(s) included in this contract or task order.
- (4) Paragraph 4 lists applicable industry and government design criteria, generally applicable to all facility types, unless otherwise indicated in the Section. It is not intended to be all-inclusive. Other industry and government standards may also be used, where necessary to produce professional designs, unless they conflict with those listed.
- (5) Paragraph 5 contains Army Standard Design Criteria, generally applicable to all facility types, unless otherwise indicated in the Section.

(6) Paragraph 6 contains installation and project specific criteria supplementing the other 5 paragraphs.

2.2. SITE:

Provide all site design and construction within the TEMF limits of construction necessary to support the new building facilities. Supporting facilities include, but are not limited to, utilities, electric service, exterior and security lighting, fire protection and alarm systems, security fencing and gates, water, gas, sewer, oil water separators, storm drainage and site improvements. Provide accessibility for individuals with disabilities. Include Antiterrorism/Force Protection measures in the facility design in accordance with applicable criteria.

Maintain the construction site and haul route. Repair/replace damage to existing sidewalks, pavements, curb and gutter, utilities, and/or landscaping within the construction limit, adjacent to the construction site, and along the Contractor's haul route resulting from the Contractor's construction activities at no additional cost to the Government. Prior to construction activities, Contractor and Contracting Officer Representative shall perform an existing condition survey. At completion of the Task Order, Contractor and Contracting Officer representative shall perform a final condition survey to determine repair/replacement requirements.

Approximate area available for this (these) facility(ies) is shown on the drawings.

Provide all site improvements necessary to support the new building facilities. Refer to Paragraph 6.

Approximate area available **32.00** acres

2.3. GOVERNMENT-FURNISHED GOVERNMENT-INSTALLED EQUIPMENT (GFGI)

Coordinate with Government on GFGI item requirements and provide suitable structural support, brackets for projectors/VCRs/TVs, all utility connections and space with required clearances for all GFGI items. Fire extinguishers are GF/GI personal property, while fire extinguisher brackets and cabinets are Contractor furnished and installed CF/CI. All Computers and related hardware, copiers, faxes, printers, video projectors, VCRs and TVs are GFGI.

The following are also GFGI items: **NONE**

2.4. FURNITURE REQUIREMENTS

Provide furniture design for all spaces listed in Chapter 3 and including any existing furniture and equipment to be re-used. Coordinate with the user to define requirements for furniture systems, movable furniture, storage systems, equipment, any existing items to be reused, etc. Early coordination of furniture design is required for a complete and usable facility.

The procurement and installation of furniture is NOT included in this contract. Furniture will be provided and installed under a separate furniture vendor/installer contract. The general contractor shall accommodate that effort with allowance for entry of the furniture vendor/installer onto this project site at the appropriate time to permit completion of the furniture installation for a complete and usable facility to coincide with the Beneficial Occupancy Date (BOD) of this project. The furniture vendor/installer contract will include all electrical pre-wiring and the whips for final connection to the building electrical systems however; the general contractor shall make the final connections to the building electrical systems under this contract. Furthermore, the general contractor shall provide all Information/Technology (IT) wiring (i.e. LAN, phone, etc.) up to and including the face plate of all freestanding and/or systems furniture desk tops as applicable, the services to install the cable and face plates in the furniture, the coordination with the furniture vendor/installer to accomplish the installation at the appropriate time, and all the final IT connections to the building systems under this contract.

The Government reserves the right to change the method for procurement of and installation of furniture to Contractor Furnished/Contractor Installed (CF/CI). CF/CI furniture will require competitive open market procurement by the Contractor using the Furniture, Fixtures and Equipment (FF&E) package. Reference applicable appendix for Preliminary FF&E Information including furniture dimensions sizes as shown in the Standard Design.

3.0 TACTICAL EQUIPMENT MAINTENANCE FACILITY (TEMF) (REV 4.1 – 31 JAN 2013)

3.1. GENERAL REQUIREMENTS:

3.1.1. FACILITY DESCRIPTION: Tactical Equipment Maintenance Facilities provide facilities for the purpose of maintaining and repairing vehicles and equipment, complete with parts & tool storage and administrative offices. It is intended to be similar to heavy equipment garages or motor pool facilities in the private sector.

3.1.2. FACILITY RELATIONSHIPS

A. GENERAL: Tactical Equipment Maintenance Facilities are typically located within an operations complex that may include Brigade and Battalion Headquarters and share a hardstand with the Company Operations Facilities (COF). The facilities within this complex shall be oriented to support deployment and daily operations, and should also be located within walking distance of associated community facilities such as barracks and dining facilities.

B. TRAVEL DISTANCES: Under optimum conditions, the TEMF should be located directly adjacent to its associated COF, sharing hardstand between the two facilities.

3.1.3. ACCESSIBILITY REQUIREMENTS: All TEMF buildings are to be handicapped accessible.

3.1.4. BUILDING AREAS:

A. ENCLOSED SPACES: The gross area includes the total area of all floors, including basements, mezzanines, penthouses, usable attic or sloping spaces used to accommodate mechanical equipment or for storage with an average height of 6'-11" measured from the underside of the structural system and with the perimeter walls measuring a minimum of 4'-11" in height, and other enclosed spaces as determined by the effective outside dimensions of the building.

B. HALF SPACE: One half of the area will be included in the gross area for balconies and porches; exterior covered loading platforms or facilities, either depressed, ground level, or raised; covered but not enclosed passageways or walks; covered and uncovered but open stairs; and covered ramps.

C. EXCLUDED SPACE: Crawl spaces; exterior uncovered loading platforms or facilities, either depressed, ground level, or raised; exterior insulation applied to existing buildings; open courtyards; open paved terraces; roof overhangs and soffits for weather protection; uncovered ramps; uncovered stoops; and utility tunnels and raceways will be excluded from the gross area.

D. GROSS AREA LIMITATIONS: Gross areas of facilities shall be computed according to subparagraphs above. Maximum gross area limits indicated in Paragraph 2.0, SCOPE, may not be exceeded. A smaller overall gross area is permissible if all established net area program requirements are met.

E. NET AREA: Net area requirements for functional spaces are included in the drawings. If net area requirements are not indicated, the space shall be sized to accommodate the required function, comply with code requirements, comply with overall gross area limitations and other requirements of the RFP (for example, area requirements for corridors, stairs, and mechanical rooms will typically be left to the discretion of the Offeror).

3.1.5. ADAPT BUILD MODEL: An Adapt-Build Model for a TEMF, which contains a fully developed design, including a Building Information Model (BIM), 2-D CADD files, and specifications, can be downloaded from the USACE CoS TEMF Website:

<http://mrsi.usace.army.mil/cos/savannah/SitePages/temf.aspx>. This design is provided as a guide that

exemplifies a technically suitable product and incorporates mandatory functional/operational requirements for a similar (although perhaps not an exact) facility to be constructed under this solicitation. It will be left to the offerors' discretion if, and how, they will use the sample design provided to satisfy the requirements of this Request for Proposal. This model is not intended to modify or over-ride specific requirements of this RFP and, under all circumstances, it will be incumbent upon the successful offeror to adhere to the site specific scope and functional/operational requirements specified within the RFP. Neither this statement of work, nor the adapt-build model, are intended to diminish the offeror's responsibilities under the clauses titled "Responsibility of the Contractor for Design," "Warranty of Design," and "Construction Role During Design." The successful offeror shall be the designer-of-record and shall be responsible for the final design and construction product, including but not limited to, adherence to the installation architectural theme, building code compliance and suitability of the engineering systems provided. The government assumes no liability for the model design provided and, to the extent it is used by an offeror, the offeror will be responsible for all aspects of the design as designer-of-record.

3.2. FUNCTIONAL AND OPERATIONAL REQUIREMENTS

3.2.1. FUNCTIONAL SPACES: The primary TEMF is composed of two main types of functional areas: Repair Bays (consisting of Repair areas and Maintenance areas), and the Core Area. Refer to the attached building layouts for the required functional and operational spaces and required adjacencies.

A. REPAIR AREAS AND VEHICLE CORRIDOR/MAINTENANCE AREAS: Repair areas and maintenance areas are garage areas used for service and repair of the full range of Army tactical equipment. They are single story ground floor spaces. A typical structural bay to accommodate both repair and maintenance areas is sized to measure 32' x 96'. Conceptually, this structural bay contains four 16' x 32' repair work areas, and a 32' wide vehicle corridor dividing them crosswise. The vehicle corridor also serves as a maintenance area. It accommodates pairs of 16' x 32' maintenance work areas down the length of the entire building. Two contiguous work areas may be required to accommodate work on larger equipment, thus resulting in the need for work areas to be constructed in pairs. Repair and maintenance areas are to be free of intermediate support columns, i.e. columns are only permissible along exterior perimeter walls. This allows complete shop floor coverage by a single bridge crane for all contiguous maintenance and repair areas (each wing of the facility). TEMFs requiring four structural bays or less shall be constructed contiguously in a single wing of the facility. Wall insulation shall be protected by interior metal panels to a minimum height of 8'-0" AFF.

1) Repair Areas

- a) **Function.** Repair of vehicles as described above. Structural height shall be as required to allow minimum bridge crane hook cradle height of 20 feet for a 10-ton crane or a minimum of 25 feet for facilities with a 35-ton crane. Facilities should have only one crane unless specifically approved by OACSIM. ~~Unless noted otherwise, overhead coiling doors, 24'-0" wide x 14'-0" high, shall be provided at each end of each structural bay. Overhead coiling doors, 24'-0" wide x 16'-0" high, shall be provided at each end of last structural bay.~~ ~~HQ. Overhead coiling doors, 24'-0" wide x 14'-0" high, shall be provided at each end of each structural bay.~~
- b) **Equipment.** Repair Bays shall be served by a 10-ton or a 35-ton capacity traveling bridge crane with full structural bay coverage as indicated in the Architectural TEMF Features Matrix and as specified in Para. 2.1. Additional requirements are specified in the paragraph ARCHITECTURE.
- c) **Outlets.** Provide one hose bibb and two compressed air outlets 3'-0" above the floor for each pair of repair areas.
- d) **Welding/Machine Shop Area.** Provide special purpose repair space to support machine shop equipment and power connectivity for portable welding equipment within one pair of repair areas, typically in repair bay farthest from the Core Area. This area will not be used exclusively for welding. It may be utilized as a repair area also and shall be equipped with all requirements for repair areas except items (e) and (j).
- e) **Utilities.** Provide utilities for component washing and vehicle spot washing in the outermost work area of each wing of repair/maintenance areas. Provide a 5'-4" high concrete masonry wall separating

the outermost bay from others to contain spray resulting from engine and component wash functions. Terminate partition to provide 6'-0" clear space at each end of the partition.

- f) **Power.** In each pair of repair areas, provide electric power for user provided (GFGI) portable hydraulic lift.
- g) **Trench Drains.** Provide continuous 6-inch wide trench drains with continuous grating along full width of bays at exterior doors; locate drains approximately 3'-0" inside face of exterior walls. In addition to the outside trench drains, a center trench drain running the full length of the maintenance area is provided to facilitate internal drainage of the facility. When a dedicated, partitioned welding area is provided, provide a solid cover to trench drain where it runs through the welding area.
- h) **Data.** Each work area shall have access to NIPRNet data connection points.
- i) **Exhaust Outlet.** Provide an outlet to a vehicle exhaust evacuation system for each repair area.
- j) **Tire Changing Area:** Provide capability for tire changing function where shown on the TEMF Standard Drawings. Tire changing equipment shall be GFGI.
- k) **POL Dispensing Points:** Provide POL dispensing points between each pair of structural bays on both sides so that each repair area has ready access to POL fluids. Two points will be provided in the repair area of a small facility, four in a medium, etc. Hose and reel assembly shall be heavy duty, designed for the applicable fluid or oil. Provide shutoff valve at reel. Provide distribution for grease, engine oil, gear oil, transmission fluid, and antifreeze from each dispensing point.

2) Vehicle Corridor/Maintenance Areas

- a) **Function.** Maintenance of vehicles as described above. Maintenance areas within core area shall be equipped for inspection, oil changing and lubrication. All requirements listed above, except items d), e), f), j), and k) apply to the maintenance areas.
- b) **Maintenance Area within the High Bay Portion of Facility.** Access to compressed air, water, vehicle exhaust, power and data in the maintenance areas within high bay portion of facility shall be via connections along the nearest wall.
- c) **Maintenance Area within the Core Area.** Maintenance areas within the core area shall be equipped for inspection, oil changing and lubrication. The minimum clear ceiling height shall be 14'-0" Above Finished Floor. Provide an outlet to a vehicle exhaust evacuation system for each pair of maintenance areas. Bridge crane access is not required for maintenance areas along central vehicle corridor in the core area.

(1) **Maintenance Pit.** Provide one 40-foot long x 3'-6" wide concrete maintenance pit in the central vehicle corridor portion maintenance area within the core with (concrete or metal) stair access. Due to inside clearance for some vehicles, the maximum 3'-6" width is critical for the pit and curbing. Pit shall have non-sparking, non-slip removable floor grating approximately 4'-4" below finish floor elevation, with concrete pit floor below sloping to sump. Provide sump pump, see Paragraph 3.3.6 Plumbing for additional information. Provide compressed air outlet at two places in the pit. When not in use, pit shall be provided with removable cover capable of supporting pedestrian traffic. Pit cover panels to be light enough to be handled by a maximum of two personnel (typically less than 75 lbs). Provide minimum 4-inch high steel angle curb surrounding pit opening. At each end of pit opening, provide a rounded curb (steel angle with concrete fill) to prevent possible puncture of vehicle tires. Maintenance pit walls shall be designed and constructed with recesses, as needed, to accommodate compressed air outlets, POL hose reel, Fluid Recovery System, and lighting requirements.

(2) **POL Hose Reels.** Provide two POL dispensing points mounted to the wall adjacent to maintenance area pit. Hose and reel assembly shall be heavy duty, designed for the applicable fluid or oil. Provide shutoff valve at reel. Provide distribution for grease, engine oil, gear oil, transmission fluid, and antifreeze at the two dispensing points on the wall. Provide a third dispensing point mounted in a recess in the maintenance pit. Provide only grease, gear oil and transmission fluid at the dispensing point inside the maintenance pit.

(3) Fluid Recovery System: Provide a Pneumatic Fluid Recovery System that will allow the evacuation of used POL fluids and waste antifreeze to the appropriate 500 gallon wasted fluid tank. Provide two collection points for each type of waste fluid within the maintenance pit, and provide a third collection point at a central location within the facility (out of the flow of traffic) to accommodate used fluids collected in the repair area.

3) **Circulation Bays**

a) **Structural Bay.** Provide an 8' wide x 96' long structural bay between each wing of repair bays and the core area to facilitate pedestrian egress from the building and shall conform to OSHA requirements.

b) **Equipment.** Provide 4'-0" high x 8'-0" wide framed tack board (for 'safety board') mounted on wall along the circulation bay near the tool room. Provide one permanently installed emergency eyewash, hand held drench hose and shower station at each circulation bay that is adjacent to a core area and provide additional emergency eye wash, hand held drench hose and shower stations in other bays as required per OSHA standard 1910.151(c) and ANSI Z358.1. Provide one or more emergency eyewash, hand held drench hose and shower stations in Consolidated Bench Repair and in the Fluid Distribution Room when the equipment being serviced or solvents being used generate this requirement. Locate emergency wash stations in accordance with OSHA standard 1910.151(c) and ANSI Z358.1. Per OSHA 1910.151(c) emergency eyewash/shower units should be located such that a worker can reach one in 10 seconds. ANSI Z358.1 gives a guideline of 55 feet to meet this requirement.

B. **CORE AREAS:** Core areas are arranged in one and two story configurations (refer to the attached floor plans for standard layouts). Internal walls within the core should be non-load bearing to the extent possible to allow future rearrangement of spaces.

1) **Administration and Shop Control.** Office space to accommodate foremen, production control, and clerical personnel. Provide one space per core; may be located on first or second floor but shall be accessible to the physically disabled. Provide counter and pass-through window between this room and the customer Waiting Area; size pass-through window to accommodate transfer of 30-inch by 30-inch items, and layout the area outside window so that two people can stand at the window and be out of the corridor traffic pattern. Provide viewing windows from administration and shop control space into the repair areas. Provide a weatherproof conduit through the **south facing exterior** wall to facilitate running the VSAT cable to the satellite antenna.

2) **Training Room.** The training room space is intended to facilitate the training mission for maintenance personnel. This space is to be divided into two training areas with an operable folding partition (movable wall) having a sound isolation of STC 45, minimum. Provision shall be made to accommodate up to 30 students for computer based training, including power and data connections for each student. Provide projection equipment hookups and a screen in the Training Room. In subdivided Training Rooms, two hookups and two pull-down screens are to be provided.

3) **Consolidated Bench.** Shop space for unit-level maintenance of electronics, optics, and other gear. Locate on first floor.

a) **Equipment.** Provide an overhead coiling door 10'-0" wide x 10'-0" high.

b) **Furnishings/Fixtures.** See Table 7 for furnishings. Provide capabilities shown in the features matrix for each work space.

c) **Windows.** Provide operable exterior windows. Provide at least one window with clear view and unobstructed line of sight out of the building to a minimum of 800 feet for testing weapon sights.

4) **Tool Room.** Designated space for the issue and secure storage of unit common tool kits, as well as supplemental tool kits and individual tools shared by shop personnel. Direct covered access from the tool room to the SATS containers (described below) on the exterior of the building is required. **Provide an overhead coiling door 10'-0" wide x 10'-0" high and a lockable personnel door for access to the interior of the facility, and an overhead coiling door 10'-0" wide x 10'-0" high for exterior access to the SATS containers. Provide lockable pair of personnel doors and pass-through opening with impact resistant counter and metal overhead lockable coiling shutter between Tool Room and Corridor.**

- 5) **Standard Automotive Tool Set (SATS).** The SATS is a unit-owned (i.e. GF/GI) containerized tool system with the dimensions of 8' x 20' x 8' high. An exterior hardstand storage area adjacent to the Tool Room shall be provided for three SATS containers. Connectivity to building and installation network is required. SATS are accessed from the end. Provide wall mounted awning with minimum 14-foot clear height above hardstand for weather protected entry into SATS containers. The technical manual for SATS is TM 9-4910-783-13&P.
- 6) **Tool Box Storage.** Tool Box Storage is provided for personnel working inside the maintenance facility in the Repair Areas and the Consolidated Bench area for the secure storage of individually assigned or personal (contractor) tools. In the Repair Areas, as indicated on attached building layouts, provide a shared 4' x 12' x 42" work bench at each end of every other structural bay to securely accommodate 8 toolboxes. The secure storage shall be provided underneath the bench via lockable cabinets, or structural supports sufficient to accommodate chains and padlocks. ~~Provide one Tool Box Storage Room for each wing of Repair Areas (if Repair Areas are located on both sides of a core, each side of core shall have a Tool Box Storage Room). Tool Box Storage is provided for personnel working inside the maintenance complex in the Repair Areas and the Consolidated Bench for the storage of individually assigned or personal (Contractor) tools requiring security. Provide lockable personnel door with closer between Tool Box Storage and Circulation Bay.~~
- 7) **Combat Spares.** Storage and issue of Prescribed Load List (PLL) and shop stock items kept in stock at all times because of demand or management decisions. Direct covered access from the Combat Spares room to the ASL-MS containers (described below) on the exterior of the building is required. ~~Provide an overhead coiling door 10'-0" wide x 10'-0" high and a lockable personnel door for access to the interior of the facility, and an overhead coiling door 10'-0" wide x 10'-0" high for exterior access to the ASL-MS containers and accommodation of the Provide lockable pair of personnel doors so to accommodate 48" x 48" x 74" ASL-MS repair parts bins and shelving modules, and pass-through opening with impact resistant counter and overhead lockable coiling shutter between Combat Spares and Corridor. Provide a weatherproof conduit through the wall to facilitate running the VSAT cable to the satellite antenna.~~
- 8) **Authorized Stockage List - Mobility System (ASL-MS).** Similar to the SATS, the ASL-MS is a unit-owned (i.e. GF/GI) 8' x 20' x 8' high container for repair parts. An exterior hardstand storage area adjacent to the Combat Spares room shall be provided for three ASL-MS containers. ASL-MS are accessed from the side. Provide sufficient aisles between ASL-MS for access. Provide wall mounted awning with minimum 14-foot clear height above hardstand for weather protected entry into ASL-MS containers. ~~Provide lockable pair of personnel doors at building exterior to accommodate large bulk portable tools and equipment, and ASLMS repair parts modules.~~ The technical manual for ASL-MS is TM 9-5411-236-13&P.
- 9) **Latrine, Shower and Locker Rooms**
- a) **Latrines.** Provide separate latrines for men and women on each floor. Provide water closets, urinals, lavatories and drinking fountains in accordance with established layouts and referenced codes.
- b) **Shower and Locker Rooms.** Provide a Men's Shower and Locker Room and Women's Shower and Locker Room. Locate on first floor of each core, sized to accommodate the number of lockers and showers indicated. Shower and locker area shall be adjacent to and connect to the latrine area. Provide individual shower compartments (3'-0" x 3'-0") in the number indicated on the drawings. Provide a single tier steel locker for each non-administrational occupant of the building, minimum size 1'-0" wide x 1'-6" deep x 6'-0" high.
- 10) **Break, Training, and Conference (BTC).** Locate this room on same floor as Admin and Shop Control.
- a) **Furnishings.** Provide kitchen, base and wall cabinets and 30-inch deep countertop minimum 10'-0" long.
- b) **Equipment.** Provide stainless steel two-compartment sink.
- c) **Additional Space.** Allow space and hookups for vending machines, refrigerator and microwave.

d) **Projection equipment** hookups and a pull-down screen are to be provided in Medium, Large and X-Large BTC Room only. Due to small size of BTC Room in the Small TEMF, no projection equipment hookup or screen will be provided in this area.

11) **Vaults.** All vault walls, floors and ceilings shall be constructed in compliance with appropriate requirements referenced below. Provision for a user provided (GFGI) intrusion detection system including motion detectors, door alarm, and camera, is required.

a) **Weapons Storage Vault.** Provide secure storage of weapons being repaired, especially vehicle-mounted weapons such as machine guns and firing port weapons. Weapons vault walls, floors and ceilings shall be constructed in compliance with AR 190-11, Physical Security of Arms, Ammunition, and Explosives. An option exists for use of prefabricated, modular vaults conforming to Fed. Spec. AA-V-2737 requirements. Provide a GSA-approved Class 5 Armory vault door with lock in accordance with Fed. Spec. AA-D-600D and a "Dutch door" style day gate. Provide an internal wire mesh partitioned space or provide space for GFGI lockable cabinets IAW installation requirements to accommodate armorer's tool kits, spare arms parts, machine gun barrels and major subassemblies. Coordinate arms rack anchor rings, common storage racks, etc with user.

b) **COMSEC Vault.** Provide secure storage of communications/cryptology equipment. Room must have a minimum 8-foot dimension. Refer to Physical Security Standards of Appendix D of AR 380-40, Policy for Safeguarding and Controlling Communications Security (COMSEC) Material (FOUO). Provide a "Dutch door" style day gate.

12) **Nonsensitive Secure Storage.** Nonsensitive Secure Storage shall be constructed to meet Secure Storage standards for Risk Level II per AR 190-51, Security of Unclassified Army Property.

13) **Telecommunications Room.** Telecommunications rooms shall be provided for voice and data. There shall be a minimum of one room on each floor, located as near the center of the building as practicable, and stacked between floors. The telecommunications rooms shall be designed in accordance with the Technical Criteria for Installation Information Infrastructure Architecture I3A Criteria and ANSI/EIA/TIA-569-B. A separate SIPRNET Room or vault within the TER Room shall also be provided for future SIPRNet connectivity in accordance with the Technical Guide for the Integration of Secret Internet Protocol Router Network (SIPRNet). Due to NEC security requirements, Mass Notification, Fire Alarm and CATV panels cannot be located in the Telecommunications Room, these panels will be located in the Electrical room. Where required, the Fire Alarm Panel may be located in the Mechanical Room.

14) **Non-Assignable Spaces and Gross Area.** The items below account for additional gross area within the core that is not specifically listed in the spaces above. These items may also vary in size contingent on site, climate, type and use.

a) **Stairwells.** Design in accordance with model and local building codes.

b) **Elevator.** Provide one passenger elevator in each two-story building. Elevator machine room is also part of the gross area of the core.

c) **Common Circulation Corridors.** All circulation corridors shall be a minimum of 6 feet wide.

d) **Waiting Area.** Locate adjacent to Admin and Shop Control pass-through window off of corridor. Size Waiting Area for the seating of a minimum of four persons.

e) **Janitorial Spaces.** Provide one janitorial space as shown on drawings with mop sink and heavy duty shelving. Expansion of the Janitorial Space to include a recycling function is optional.

f) **Mechanical Rooms.** Utility space must be provided for heating and cooling equipment. Where feasible, vertically stack like utility spaces if located on two floors. Locate first floor mechanical rooms adjacent to exterior walls for external maintenance access and ventilation. See paragraph 3.3.5 Heating, Ventilation, and Air Conditioning (HVAC) Systems, for additional requirement. Walls and floor/ceiling assemblies enclosing mechanical room shall have a sound transmission class (STC) rating of not less than 50 (45 if field tested) for air-borne noise when tested in accordance with ASTM E 90, and an impact insulation class (IIC) rating of 50 (45 if field tested) when tested in accordance with ASTM E 492.

g) **Electrical Rooms.** Locate first floor electrical rooms adjacent to exterior walls for external maintenance access and ventilation.

h) **Fluid Distribution Room.** Provide a room to house the POL central distribution equipment and unused POL storage containers (typically 55-gallon drums) for five types of lubricants/fluids. Fluids shall be dispensed by automotive lubricant type air driven pump assemblies. Motor shall be heavy-duty compressed air driven reciprocating action. For antifreeze unit all parts shall be corrosion resistant. Locate near maintenance pit to minimize length of fluid distribution lines. Compliance with UFC 3-600-01, NFPA 30, and 29 CFR 1910.106 is mandatory. Provide secondary containment in compliance with applicable federal and state environmental regulations. Square footage for this space is part of the gross area for the core.

C. TEMF FEATURES MATRICES: The following Matrices designate functions and spaces for the TEMF facility.

15) **Architectural TEMF Features Matrix**

FUNCTIONAL AREAS	COLUMN-FREE SPACE	WIRE MESH ENCLOSURE	STUDWALL PARTITIONS	CONC/CMU IMPACT RESISTANT PARTITIONS	GYPSUM BOARD IMPACT RESISTANT PARTITIONS	WINDOWS TO REPAIR BAYS	WINDOWS TO EXTERIOR	VINYL COMPOSITION TILE	CONCRETE FLOOR HARDENER	CERAMIC TILE FLOOR	PAINTED WALLS	WALL CORNER GUARDS	FINISHED CEILING	MOISTURE RESISTANT CEILING	EXPOSED STRUCTURE OVERHEAD	CEILING HEIGHT 9 FT.	CEILING HEIGHT 12 FT.	10 TON CRANE-HOOK HEIGHT 20 FT. (Note 4)	35 TON CRANE-HOOK HEIGHT 25 FT. (Note 4)	OPERABLE WINDOW FOR TESTING SIGHTS	LOCKERS	OVERHEAD COILING DOORS - 10 FT. X 10 FT.	OVERHEAD COILING DOORS - 24 FT. X 14 FT.	BOLLARDS @ OH DOORS INSIDE/OUTSIDE	GSA CLASS 5 VAULT DOOR	MAINTENANCE PIT	ISSUE WINDOW WITH COUNTER & COILING DOOR	BUILT-IN STORAGE BINS	
	ADMIN & SHOP CONTROL			1			•	•	•			•	•	•															
UNASSIGNED			1			•	•	•			•	•	•																
TOOL ROOM		3			•				•		•	•	•									•		•			•	•	
COMBAT SPARES		2			•				•		•	•	•		•							•		•			•	•	
LATRINES, SHOWERS, LOCKERS					•					•	•	•	•								•								
CLASSROOM			•				•	•			•	•	•																
BREAK, TRAINING & CONF			•				•	•			•	•	•																
CONSOLIDATED BENCH REPAIR				•					•		•	•	•								•	•	•						
WEAPONS STORAGE VAULT		2		•					•		•	•	•		•	6	•							•					
COMSEC VAULT		2		•					•		•	•	•		•	6	•							•					
NONSENSITIVE SECURE STORAGE				•					•		•	•	•		•		•												
COMMUNICATION VEHICLE DOCK																													
CORRIDOR				•				5			•	•	•			•													
MECHANICAL ROOM				•					•		•	•	•		•		•												
ELECTRICAL ROOM				•					•		•	•	•		•		•												
COMMUNICATIONS SIPRNET ROOM					•				•		•	•	•		•		•												
FLUID DISTRIBUTION									•		•	•	•		•		•					•		•					
REPAIR AREAS	•								•		•	•	•		•		•					•		•					
MAINTENANCE AREAS	•								•		•	•	•		•		•					•		•		•			
HARDSTAND																													
ORG STORAGE	•	•							•		•	•	•		•		•					•		•					
UAV MAINT. AND STORAGE BUILDING	•								•		•	•	•		•		•					•		•					
DISTRIBUTION COMPANY SUPPLY BLDG.	•	•							•		•	•	•		•		•					•		•					

Notes for Architectural TEMF Features Matrix

1. Lightweight, non-bearing partitions removable to rearrange space

2. Wire mesh partitions to subdivide where required
3. Wire mesh enclosed for tool storage to facilitate interaction of mechanics and tool room keeper, and for relocation flexibility.
4. Provide either a 10-ton or a 35-ton top running bridge crane for the repair areas and maintenance areas as noted in para. 2.1.
5. VCT in corridor on 2nd Floor (except Small TEMF).
6. Provide top of Concrete Cap at 12'-0". Provide an additional dropped ceiling to protect weapons and COMSEC equipment under repair. Top of caps shall be secure from unauthorized access.
7. All Finishes are considered minimum finishes only.
8. The Maintenance Corridor through the Core Area shall have a minimum 14'-0" clear Ceiling Height.
9. Roll-up doors or double doors may be provided for exterior access to the Fluid Distribution Room, POL and HAZMAT buildings, based on User preference.

16) **Mechanical TEMF Features Matrix**

MECHANICAL TEMF FEATURES MATRIX	HVAC				VEHICLE EMISSIONS EXHAUST SYSTEM	PLUMBING & FIRE PROTECTION										MISCELLANEOUS									
	HEAT	VENTILATE	AIR CONDITION			LAVATORY OR SINK	HOSE BIBB	WASH FOUNTAIN	WATER CLOSET	URINAL	SHOWERS	COMPRESSED AIR	EMERGENCY SHOWER & EYEWASH	SPRINKLER SYSTEM	TRENCH DRAIN AT DOORS	FLOOR DRAIN	STEAM CLEANING FOR PARTS/ENGINES	WELDING AND/OR MACHINIST AREA	POLYANTIFREEZE DISPENSING W/HOSE SYSTEM	POLYANTIFREEZE WASTE DISPOSAL SYSTEM	ENVIRONMENTAL	OUT OF SPEC WASTE FUEL STORAGE	WASTE OIL STORAGE	WASTE ANTIFREEZE STORAGE/RECYCLE	
FUNCTIONAL AREAS																									
ADMIN & SHOP CONTROL	•		•																						
UNASSIGNED	•		•																						
TOOL ROOM	•		•																						
COMBAT SPARES	•		•																						
LATRINES, SHOWERS, LOCKERS	•	•	•			•	•	8	•	•	•				•										
TRAINING ROOM	•		•																						
BREAK, TRAINING & CONF	•		•			•																			
CONSOLIDATED BENCH REPAIR	•		•								•	•	•		7										
WEAPONS STORAGE VAULT	•		•																						
COMSEC VAULT	•		•																						
NONSENSITIVE SECURE STORAGE	•	•										•													
COMMUNICATION VEHICLE DOCK																									
CORRIDOR	•		•										•												
MECHANICAL ROOM	4	•						•					•		•										
ELECTRICAL ROOM	4	•											•												
COMMUNICATIONS & SIPRNET ROOM			•										•												
FLUID DISTRIBUTION	•	•						•			•	•													
REPAIR AREAS	•	•	•			•	8				•	•	•	•	7	5	1	•	•		3	3	3		
MAINTENANCE AREAS	•	•	6			•					•	•	•	•	7			•	•		3	3	3		
HARDSTAND																									
ORG STORAGE	4	•											•												
UAV STORAGE BUILDING	4	•											•												
HAZ WASTE & POL STORAGE BLDGS			•																						
DISTRIBUTION CO. STORAGE BLDG	4	•											•												

Notes for Mechanical TEMF Features Matrix

1. Welding exhaust system in one pair of repair areas. This area will also accommodate machinist function.
2. Not used.
3. Provide secondary containment in tanks outside of building.
4. Heat for freeze protection only.
5. Provide water and power connections for hook-up of user procured (GFGI) portable steam cleaner for cleaning of engines and engine components in a pair of repair areas.

6. Provide non-sparking explosion proof exhaust from pit.
7. Convey waste water through an oil/water separator prior to discharge to sanitary sewer.
8. Provide wash fountain in 8 FT circulation bay adjacent to the core area, or outside the latrines in the core area as shown on the drawings.

17) **Electrical TEMF Features Matrix**

ELECTRICAL/ TELECOMMUNICATIONS TEMF FEATURES MATRIX	POWER								COMMUNICATIONS					LIGHTING					
	28V DC	120V SINGLE PH	208V SINGLE PH	208-230V 3 PH	208V-400 HZ	208V, 3PH, 50 HZ	FILTERED POWER	GROUND BUSBAR ON WALL	GROUNDING POINTS IN FLR OR HARDSTAND	TELEPHONE	DATA CONNECTION	INTERCOM/PAGING/MASS NOTIFICATION	INTRUSION DETECTION SYSTEM	PANABLE ZOOM CAMERA	CATV	FLUORESCENT OR SOLID STATE (LED)	(HID) METAL HALIDE OR SOLID STATE (LED)	EXPLOSION PROOF FLUORESCENT	(HID) HIGH PRESSURE SODIUM
FUNCTIONAL AREAS																			
ADMIN & SHOP CONTROL			•							•	•	•		•		•			
UNASSIGNED		•								•	•	•		•		•			
TOOL ROOM		•		12						•	•	•				•			
COMBAT SPARES			11							•	•	•				•			
LATRINES, SHOWERS, LOCKERS			•								•	•				•			
TRAINING ROOM			•							•	•	•		•		•			
BREAK, TRAINING & CONF			•							•	•	•		•		•			
CONSOLIDATED BENCH REPAIR		•	•				•	•		•	•	•				•			
WEAPONS STORAGE VAULT			•							•	•	•	•			•			
COMSEC VAULT			•					•		•	•	•	•			•			
NONSENSITIVE SECURE STORAGE			•							•	•	•	•			•			
COMMUNICATION VEHICLE DOCK			•		5			•		•	•	•				•			
CORRIDOR			•							•	•	•				•			
MECHANICAL ROOM			•							•	•					•			
ELECTRICAL ROOM			•							•	•					•			
COMMUNICATIONS/SIPRNET ROOM			•					•		•	•					•			
FLUID DISTRIBUTION			•							•	•	•				•			
REPAIR AREAS	1	•	•	10	•	4	•	•			•	•	7			•			
MAINTENANCE AREAS		•	•	•	•	4	•	•			•	•	7			•		8	
HARDSTAND				2,6	3			•											
ORGANIZATIONAL STORAGE			•							9						•			
UAV STORAGE BLDG		•	•					•		•	•					•			
HAZ WASTE & POL STORAGE BLDGS			•													•			
DISTRIBUTION CO. STORAGE BLDG			•							9						•			

Notes for Electrical TEMF Features Matrix

1. Provide power connections for hook-up of user procured (GFGI) portable steam cleaner for cleaning of engines and engine components in a pair of repair areas. Coordinate power requirements with the User. It is prohibited to locate electrical disconnects, junction boxes, receptacles, transformers, panelboards, electrical devices and exposed conduit on the masonry partition in repair areas where the partition is exposed to overhead bridge crane travel. All power connections in the Repair and Maintenance Area shall be GFCI protected.
2. MILVANS (100A), TOE vans (50A), Hospital (100A, 208V, 3-PH, 5-Wire). Each of these vans will be located adjacent to the SATS, ASLMS or Communications Van on the TEMF apron. Provide power connections on the exterior of the building for these vans, when they are required by the User.

3. LCSS Vans (to be discontinued in future), Patriot Missile Units.
4. For Engineers shop.
5. Communications Vans (100A).
6. Hospital units require 120/208V, 3-PH, 5-Wire connection.
7. Provide power and conduit and wiring system(s) for user provided panable zoom camera system; monitored in Admin and Shop Control.
8. Lighting classification for pit lighting shall be determined during the design.
9. Provide 1-4" conduit with a 6 pair copper cable to the Distribution Company

Storage and Organizational Storage Buildings from the main communications room in the TEMF. Conduit and cable routing may be to the nearest telecommunications maintenance hole before routing cable back to the TEMF main communications room. Provide Protected Entrance Terminal (PET) with one 110 type block mounted on a 4 ft by 8 ft backboard mounted vertically. Backboard treatment shall be in accordance with I3A. Provide one wall mounted telephone outlet inside the building. Ground PET in accordance with 250.50 and 800.100 of NFPA 70 National Electrical Code.

10. Provide 208V single phase power in all Repair Areas and for tire changing machine where shown on the TEMF Standard Drawings.

11. ASLMS Containers

- a) The ASLMS Container is provided with the following:

- 1) Each ASLMS container comes with a set of two – 150 foot cables with each end plug identical. MS part number for the plug used on cable is MS3456W16-10P.

- 2) Electrical circuit is 20 ampere, 120 volt, single phase.

- b) Provide the following power provisions for each ASLMS container:

- 1) Two dedicated 20 ampere, 120 volt, single phase circuits with a special receptacle for each circuit. MS part number for special receptacle to be provided is MS3451W16-10S.

12. SATS Containers

- a) The SATS Container is provided with the following:

- 1) Integrated 10 KW generator (208V, 3 phase 60 Hz)

- 2) A wall mounted 100 Amp, 208 volt, 3-phase, 60 Hz AC conforming to MIL-C-22992, Class L, Style P comprised of a MS90558 C 44 4 shell, with an MS14055 insert having insert arrangement 44-12, along with a MS90564 44 C weather-tight cover.

- 3) Signal entry panel (SEP) with the following connections: RS 232 Male/Female small and large, RJ 11 (phone), RJ 45 (LAN), 10 Base 2 (BNC), and 10 Base T (Ethernet).

- b) Provide the following power and data provisions for each SATS container:

- 1) A branch circuit sized to the full load capacity of the 10kw generator to a weatherproof wall mounted 100 amp disconnect switch located within the cable's reach.

- 2) A pre-manufacturer cable, stock number 5995-01-435-8697. This cable is 50 foot long with a plug for the SATS receptacle at one end and terminal connections on the other end. Connect the cable's terminal ends to the disconnect switch. Provide a means to hang the cable.

- 3) A weatherproof RJ 45 (phone) and RJ 45 (LAN) outlet with the conduit and cables (Category 6) to the Communication Room and connect per I3A requirements. Provide 50 feet of exterior cable with appropriate connectors on each end for each outlet. Provide a means to hang the cables.

3.3. SITE FUNCTIONAL REQUIREMENTS

A. GENERAL: Site features include vehicular hardstand, storage buildings, and site improvements.

1) **Vehicular Hardstand**: Vehicular hardstand includes Tactical Vehicle parking, building aprons, access lanes, and circulation lanes.

2) **Dock**. Provide one docking location for maintenance and electronic testing of specialized, permanently vehicle mounted, communications equipment. Provide equipment power connections and grounding points for vehicle degauss and individual personnel static discharge protection of equipment.

3) **VSAT Platform**. Provide a platform capable of supporting the VSAT receiver (approximately 500 pounds) at the south facing exterior wall of the building adjacent to the Administration and Shop Control area. The VSAT receiver unit will be secured to the platform by the user. The platform may be permanently attached to the building structure or may be self supporting and resting on the hardstand. If a self supporting platform is provided, bollards shall be designed and installed around the intended platform location.

B. PARKING:

1) **Privately Owned Vehicle (POV) Parking**: Privately Owned Vehicle (POV) parking. POV parking shall be provided at a minimum ratio of one space for 56% of the total assigned personnel.

2) **Organized Vehicle Parking**: This area consists of a rigid concrete paved area used for parking assigned vehicles (wheeled and heavy and tracked), commercial vehicles (Contractor support), trailers and generators. Organizational vehicle pavement grades shall provide positive surface drainage with a 1 percent minimum slope in the direction of drainage. Maximum pavement slope shall be 2 percent.

a) **Tactical/Military and Commercial Vehicle Parking**. Maximize vehicle parking and traffic flow to best support the operation of the TEMF. Tactical/Military Vehicle Parking spaces shall be spaced with side clearances of 3 feet and end clearances of 2 feet.

b) **POL Vehicle Parking Area**. Parking for POL vehicles is considered separate from other organizational vehicle parking and shall be segregated from other vehicle parking areas. POL parking shall be spaced a minimum of 10 feet between vehicles. POL parking area circulation lanes shall be 50 feet wide. Drainage from the POL parking area shall be isolated and shall not be allowed to enter underground storm or sanitary sewer systems without being impounded first and manually released. POL drainage impoundment shall be located 100 feet from any structure.

c) **Dead Line Vehicle Parking**. Parking for vehicles waiting for parts or for work to be performed. One dead line parking space for every pair of repair areas and shall be located in parking areas adjacent to repair bays that will service them. Dead line vehicle parking spaces shall be sized based on the largest vehicle for the assigned maintenance bay. Parking spaces shall be spaced with side clearances of 3 feet and end clearances of 2 feet.

d) **Circulation Lane**. Organizational vehicle parking circulation lanes shall be 20 feet wide when lanes are located adjacent to TEMF aprons. Parking stalls within the hardstand are to be placed back-to-back with circulation lane widths of 30 feet for vehicles less than or equal to 18 feet long and 45 feet for vehicles more than 18 feet long.

C. ACCESS DRIVES AND LANES:

1) **Entrance Drives**: Provide primary and secondary entrance drives to connect organizational vehicle hardstand to existing roads and/or tank trails.

2) **Building Aprons**: Provide concrete pavement for aprons associated with each of the facilities located in the maintenance complex.

3) **Access and Circulation Lanes**: A standard access apron clearance of 45 feet is required along both sides and both ends of the maintenance building described above. A minimum circulation lane 20

feet in width surrounds this area and is required for vehicular circulation routes. When a warehouse is provided, a 65 foot clearance is required on the side with the loading dock.

4) **Primary and Secondary Drives:** Provide a primary and secondary entrance drive into the organizational vehicle hardstand area. The primary and secondary entrance drives shall be 30 feet wide.

D. **SPECIAL SETBACKS AND PERIMETER CONTROLS:**

1) **ATFP:** Each project should be evaluated for security requirements in accordance with UFC 4-010-01.

2) **Security Fencing:** Minimum requirement is a security fence at the site perimeter consisting of 7-foot high chain link fabric plus a single outrigger with 3-strand barbed wire, designed in accordance with STD 872-90-03, FE-6, Chain-Link Security Fence Details.

3) **Clear Zone:** A zone cleared of trees and shrubs, 20 feet wide inside the fence and 10 feet wide outside the fence is required. The clear zone shall be gravel underlain by a synthetic fabric. The clear zone shall be treated with herbicides to discourage vegetative growth. **As an option, the installation may choose to use grass in the clear zone.**

4) **Vehicular Gates:** Manually operated vehicular gates, approximately 30 feet wide overall, shall be provided at each vehicle entrance/exit.

5) **TEMF Aprons:** TEMF aprons shall measure 45 feet wide on all four sides of the facility. Circulation lanes are not part of the 45-foot wide apron.

6) **Site Storage Building Aprons:** Site storage building aprons shall measure 27 feet wide along the entire building length on the vehicular access side. Circulation lanes are not part of the 27-foot wide apron.

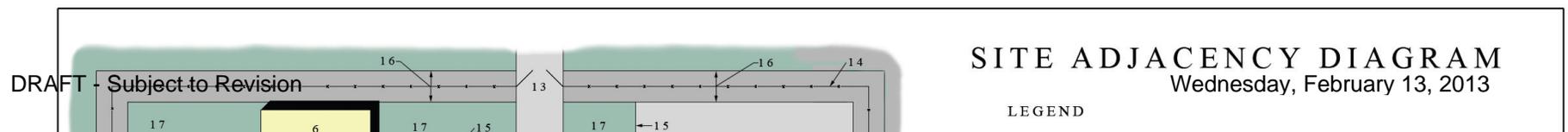
7) **Bollards:**

(a) **Bollards at TEMF Repair Bays:** Provide 12-inch diameter steel bollards filled with concrete at all TEMF repair bay openings where frequent vehicle access/egress increases the risk of damage by vehicle impact. Bollards and footings shall be designed to withstand organizational vehicular impact.

(b) **Bollards at Out of Spec Waste Fuel, Used Oil and Used Engine Coolant (Antifreeze) Storage Tank(s):** Provide 12-inch diameter by 5-foot high, concrete-filled, schedule 80 galvanized steel pipe bollards, 5 feet from edge of containment wall, painted safety yellow, around the perimeter of above-ground tank areas. Bollards shall be placed at a maximum of 10 feet O.C. spacing. Bollards and footings shall be designed to withstand organizational vehicular impact.

(c) **Bollards at Site Storage Buildings:** Provide 12-inch diameter by 5-foot high, concrete-filled, schedule 80 galvanized steel pipe bollards, 5 feet from the edge of the building. Bollards shall be placed at a maximum of 10 feet O.C. spacing. Bollard spacing may be greater than 5' O.C. if the portion of the building being protected is not in a high volume traffic area. Bollards and footings shall be designed to withstand organizational vehicular impact.

E. **HARDSTANDS:** All hardstand areas shall be rigid concrete pavement. Pavement design for organizational vehicle areas shall be designed to support the vehicles assigned to this facility and the heaviest vehicle at the installation. See RFP appendix for organizational vehicles assigned to the facility. The parking layout and configuration shall be adjusted as necessary for the site limits and space provided.



SITE ADJACENCY DIAGRAM
Wednesday, February 13, 2013

LEGEND

DRAFT Subject to Revision

3.4. SITE AND LANDSCAPE REQUIREMENTS

A. SITE STORAGE:

1) **Hazardous Waste Storage Building:** Provide a building with solid walls and roof. It is used to temporarily store used lubricants, flammable solvents, dry sweep, etc. Used anti-freeze and used POL fluids are stored separately in 500 gallon tanks and not considered to be stored in this facility. A unit is authorized 60 square feet for each 25 vehicles, or part thereof, which it maintains. A minimum of 120 square feet of hazardous waste storage space will be provided. The specific requirement for this project is specified in Para. 2.1. Provide secondary containment in compliance with applicable federal and state environmental regulations. Compliance with UFC 3-600-01, NFPA 30, and 29 CFR 1910.106 is mandatory. Maintain minimum separation distance from other buildings in accordance with the IBC in order to eliminate the need for automatic sprinkler protection. Pre-fabricated, fire-rated, self-contained, moveable steel safety storage buildings are permitted as an option. Minimum size of 120 SF per container, though multiple containers may add up to the total quantity required per satellite accumulation area. Hazardous Waste Storage Buildings do not require sprinkler protection if the following conditions are met:

- a) The buildings shall not exceed 1000 SF in area. For facilities over 1000 SF, in order to reduce costs, divide the total requirement for these facilities into multiple buildings so that each building is less than 1000 SF.
- b) The buildings shall be separated from tactical equipment maintenance facilities or other important buildings by a minimum of 60 feet.
- c) Construction and exterior separation of Hazardous Waste Storage Buildings shall be per UFC 3-600-01 and NFPA 30 as indicated with the following restrictions. Where multiple POL and Hazardous Waste Storage buildings are present, groups of POL and Hazardous Waste Storage Buildings shall not exceed two buildings and shall be separated by no less than 10 feet. Additional POL and Hazardous Waste Storage Buildings or groups of two buildings shall be separated by not less than 50 feet from adjacent POL and Hazardous Waste Storage Buildings.

2) **POL Storage Building:** Provide a building for the storage of oil, lubricants, and flammable solvents for daily use. This facility is sized to store one week's worth of materials used in the Fluid Distribution Room consisting of engine oil, gear oil, transmission fluid, grease and antifreeze stored in 55 gallon drums. A unit is authorized 60 square feet for each 25 vehicles, or part thereof, which it maintains. A minimum of 120 square feet of oil storage space will be provided. The specific requirement for this project is specified in Para. 2.1. Provide an access apron at the entry of this building. Provide secondary containment in compliance with applicable federal and state environmental regulations. Compliance with UFC 3-600-01, NFPA 30, and 29 CFR 1910.106 is mandatory. Maintain minimum separation distance from other buildings in accordance with the IBC and local codes in order to eliminate the need for automatic sprinkler protection. Pre-fabricated, fire-rated, self-contained, moveable steel safety storage buildings are permitted as an option. Minimum size of 120 SF per container, though multiple containers may add up to the total quantity required per satellite accumulation area. POL Storage Buildings do not require sprinkler protection if the following conditions are met:

- a) The buildings shall not exceed 1000 SF in area. For facilities over 1000 SF, in order to reduce costs, divide the total requirement for these facilities into multiple buildings so that each building is less than 1000 SF.
- b) The buildings shall be separated from tactical equipment maintenance facilities or other important buildings by a minimum of 60 feet.
- c) Construction and exterior separation of Hazardous Waste Storage Buildings shall be per UFC 3-600-01 and NFPA 30 as indicated with the following restrictions. Where multiple POL and Hazardous Waste Storage buildings are present, groups of POL and Hazardous Waste Storage Buildings shall not exceed two buildings and shall be separated by no less than 10 feet. Additional POL and Hazardous Waste Storage Buildings or groups of two buildings shall be separated by not less than 50 feet from adjacent POL and Hazardous Waste Storage Buildings.

- 3) **Organizational Storage Building:** This building is for storage of deployment equipment. The size of this facility is determined by the organizational structure and the number of organizational vehicles; specific to each project. Provide a **manually operated** 10' x 10' coiling door and a personnel door for each 700 SF of **company** supply area along one side of building. Wall insulation shall be protected by interior metal panels to a minimum height of 8'-0" AFF. Provide internal wire or secure partitions between each 700 SF space. Floor area of building shall be as specified in the project scope of work. Building shall be approximately 25 feet deep. The floor system of this facility should be designed to accommodate fork-lifts.
- 4) **Distribution Company Storage Facility:** Not required
- 5) **Secure Open Storage:** Where a Distribution Company Storage Facility is provided, provide a 445 SY fenced area on concrete paving for exterior storage.
- 6) **UAV Storage Building:** This building is for storage of Unmanned Aerial Vehicles (UAV). Provide a 40-foot by 45-foot (1800 SF) building to accommodate storage of assigned UAVs. Provide a 24' x 14' coiling door as well as minimum two personnel doors for emergency egress and ingress. Wall insulation shall be protected by interior metal panels to a minimum height of 8'-0" AFF.
- 7) **Used Oil Storage Tank(s):** Provide one 500-gallon above-ground used engine oil storage tank at the end of the Vehicle Corridor. Tank shall be constructed of non-corrosive material. Provide secondary containment in compliance with applicable federal and state environmental regulations. Tank construction and location shall comply with NFPA 30 requirements. Recommended location is adjacent to the Vehicle Corridor. Used oil, waste fuel, and used engine coolant storage tanks should be co-located, if possible. For Large and Extra Large TEMFS an additional tank may be required. Due to the length of these buildings a single pump may not be able to pump waste fluids from one end of the facility to the tank on the other end.
- 8) **Used Engine Coolant (antifreeze) Storage Tank(s):** Provide one 500-gallon above-ground used engine coolant storage tank at the end of the Vehicle Corridor. Tank shall be constructed of non-corrosive material. Provide secondary containment in compliance with applicable federal and state environmental regulations. Tank construction and location shall comply with NFPA 30 requirements. Recommended location is adjacent to the Vehicle Corridor. Used oil, waste fuel, and used engine coolant storage tanks should be co-located, if possible. For Large and Extra Large TEMFS an additional tank may be required. Due to the length of these buildings a single pump may not be able to pump waste fluids from one end of the facility to the tank on the other end.
- 9) **Out of Spec Waste Fuel Tank(s):** Provide one 500-gallon above-ground Out-of-Spec Waste Fuel Tank at the end of Repair Areas. Tank shall be constructed of non-corrosive material. Provide secondary containment in compliance with applicable federal and state environmental regulations. Tank construction and location shall comply with NFPA 30 requirements. **These tanks are manually filled only.** Recommended location is adjacent to the Vehicle Corridor. Used oil, waste fuel, and used engine coolant storage tanks should be co-located, if possible.
- 10) **Loading Dock:** A Loading Dock is only provided with the Distribution Company Warehouse.
- B. **STORM WATER MANAGEMENT:** Site storm water management may require controls on the peak flow that can be discharged. Installations are required to have a storm water pollution prevention plan. Implement the applicable portions of this plan using best management practices. Segregate drainage from areas likely to be contaminated (e.g., fueling area). Provide treatment for contaminated water prior to its discharge. Maintenance should not be performed outside the primary facility.
- C. **STORM DRAINAGE SYSTEM:** Construction and material specified for storm drainage installation shall be per the State's DOT requirements. All storm drainage lines constructed under organizational vehicle hardstand, entrance drives, and other surfaces subject to vehicular traffic shall be reinforced concrete pipe with watertight joints. See paragraph 6 for additional storm drainage system requirements.

D. OIL/WATER SEPARATOR: One or more oil/water separators are required to remove, oil, lubricants, floatables, and grit from contaminated water sources (e.g., repair and maintenance areas, POL fluids distribution, etc.). Oil/water separators shall be designed in accordance with local codes and standard industry practice for the specific waste stream to be treated. Minimize maintenance requirements and locate oil/water separators to minimize pipe runs, provide vehicular access, and built out of circulation areas.

E. USED AND WASTE OIL, ANTIFREEZE, SOLVENTS, CLEANING COMPOUNDS, AND HAZARDOUS MATERIALS: Hazardous materials generated in the course of maintenance operations shall be classified in accordance with 40 CFR 261. Criteria for short term storage (less than 90 days) of hazardous materials is provided in 40 CFR 262. Long-term storage is not authorized for TEMF facilities. The installation Defense Resources Management Office has responsibility for long term storage. Long term storage of hazardous materials is governed by 40 CFR 264.

F. MECHANICAL AND ELECTRICAL EQUIPMENT YARD: Provide 12-inch diameter by 5-foot high, concrete-filled, schedule 80 galvanized steel pipe bollards, 5 feet from edge of the mechanical and Electrical Equipment Yard, painted safety yellow, around the perimeter of the equipment yards. Bollards shall be placed at a maximum of 10 feet O.C. spacing. Provide vehicular access and locate out of circulation areas. Bollards and footings shall be designed to withstand organizational vehicular impact.

3.5. ARCHITECTURAL REQUIREMENTS

A. GENERAL: Building construction shall comply with requirements of UFC 3-600-01, the International Building Code and NFPA 101.

B. FLOORS: Provide concrete floors in maintenance and repair areas sloped in accordance with NFPA 30A and IBC/IPC. Provide a continuous trench drain located on the interior side of the overhead doors at repair areas and at centerline of central vehicle corridor, extending the length of maintenance areas.

C. NATURAL LIGHTING: Repair and maintenance bays, storage and admin areas shall be illuminated using hybrid lighting systems which includes electric lighting with electronic daylight controls in combination with skylights with reflective tube that channels the light into the work area and a lens that diffuses the light, clerestory windows, and translucent wall panels above overhead doors. Open maintenance and storage sheds shall use hybrid lighting systems with a dome-shape skylights. Provide operable windows for natural lighting and ventilation in administration and shop control, training room, break/training/conference room, and consolidated bench repair shop. Preference will be given for designs providing vision panels in overhead doors.

D. PARTITIONS: Fixed walls are required to separate repair areas and maintenance areas from the core areas, along corridors, and surrounding fixed areas such as latrines, vaults, storage areas and shops. Shops and storage areas may be subdivided with metal mesh partitions. Admin., training and break room walls should be non-load bearing to the greatest extent possible (for example, gypsum board on steel studs) except around latrines.

E. SOUND INSULATION: Provide sound insulation in all administration areas, training rooms, and bench repair areas to meet a minimum rating of STC 45 at walls and floor/ceiling assemblies, and a rating of STC 33 for doors. In addition to the sound insulation required, training areas shall meet a Noise Criteria (NC) 30 rating in accordance with ASHRAE Fundamentals Handbook.

F. REPAIR AREA BAY/MAINTENANCE CORRIDOR DOORS: Provide overhead doors 24 feet wide by 14 feet high in the exterior wall at each end of the structural bays and at each end of the building Maintenance Corridor. The lone exception is that 24 feet wide by 16 feet high overhead doors shall be provided in the exterior wall at each end of last structural bay to accommodate MRAP (Mine-Resistant Ambush-Protected) vehicles, or other large tactical vehicles. ~~Provide overhead doors 24 feet wide by 14'~~

~~0" feet high in the exterior wall at each end of each structural bay and each end of the building Maintenance Corridor.~~ Provide doors of coiling, sectional, or telescoping design. Provide electrically operated doors with provision for manual chain operation. Provide manual 10-foot by 10-foot overhead doors for Consolidated Bench Repair Shop, **Tool Room and Combat Spares**.

- 1) **Locking:** Provide overhead doors that are operable from the interior only. Provide doors with a positive locking mechanism that will allow the door to remain open at engine exhaust position approximately 1 foot above the floor. Coordinate door locking requirements with the using service.
- 2) **Serviceability:** Repair and maintenance bay doors shall be designed to meet heavy duty loads and high frequency of operation. Provide testing of deflection and operation of the doors prior to acceptance during construction. Doors shall be provided and installed by a commercial door company having not less than 5 years of experience in manufacturing, installing, and servicing the size and type of doors provided.
- 3) **Insulated Doors:** Preference will be given to proposals that include insulated doors for thermal resistance and noise control.

G. **PERSONNEL DOORS:** Provide exterior personnel doors in the ends of central vehicle corridor portion of maintenance areas and in the circulation bays as shown on the drawings. Provide steel doors and shall include vision panels, except at storage, janitorial, and latrine areas. Minimum size for personnel doors is 3 feet wide by 7 feet high.

3.5.1. FINISHES AND INTERIOR SPECIALITIES

A. **GENERAL:** Exterior Materials. Select exterior materials to be attractive, economical, durable, and low maintenance.

B. MINIMUM FINISH REQUIREMENTS:

- 1) **Walls:** Masonry walls are recommended at the ground floor level. Internal walls within the core should be non-load bearing to the extent possible to allow future rearrangement of spaces. Interior wall finishes shall conform to the requirements of UFC 3-600-01 and NFPA 101.
- 2) **Ceilings:** Interior ceiling finishes shall conform to the requirements of UFC 3-600-01 and NFPA 101.
- 3) **Floors:** Provide concrete floors in maintenance and repair areas and Core Areas.
- 4) **Counter Tops:** Impact resistant.

C. INTERIOR SPECIALTIES:

- 1) **Signage & Directories:**
 - a) Per installation requirements.
- 2) **Toilet Accessories**
 - a) Per installation requirements.
- 3) **Storage Shelving:**
 - a) All shelving shall be heavy duty.
- 4) **Lockers:** Single tier steel locker, minimum size 1'-0"(w) x 1'-6"(d) x 6'-0"(h).
- 5) **Fire Extinguishers, Cabinets and Brackets:** Fire Extinguisher cabinets and brackets shall be provided when fire extinguishers are required by UFC 3-600-01 and NFPA 101. Placement of cabinets and brackets shall be in accordance with NFPA 10. Semi-recessed cabinets shall be provided in finished areas and brackets shall be provided in non-finished areas (such as utility rooms, storage rooms, shops, and vehicle bays). Fire extinguishers shall not be provided in this contract.

3.6. STRUCTURAL REQUIREMENTS

A. DESIGN LOADS

1) **Live Loads**

- a) Design live loads shall be per the IBC and ASCE 7 mandated live loads.
- b) Maintenance bay slabs on grade shall be designed for worst case loading based on authorized vehicle size, weight, and axle load or tire size.

2) **Other Loads**

- a) Pre-Engineered Metal Buildings (PEMB) and foundation design shall include accommodation for support of the weight of required bridge crane and its rated capacity.

3) **Bollard Loads**

- a) Bollards and footings shall be designed for an organizational vehicle (minimum 7000#) impacting the bollard at bumper height.
- b) To the greatest extent possible, bollards shall not be fastened directly to the building column foundations.

B. STRUCTURAL DESIGN CRITERIA

1) **ATFP Requirements:**

- a) Antiterrorism/Force Protection measures shall comply with UFC 4-010-01.

2) **Foundations/Slabs-on-Grade:**

- a) The foundation is site specific and must be designed based upon known geotechnical considerations as stated in the project geotechnical report. Design the foundations as recommended by the geotechnical investigation. Coordinate the need for a vapor barrier with the architectural floor finishes and requirements of the geotechnical report. Reinforce the slabs on grade and provide a minimum thickness of five (5) inches. Design floor slab thickness and reinforcing for the loads associated with the function of the specific area considered, but not less than 5 inches.

C. **MODULAR OR PRE-ENGINEERED BUILDINGS:** The structural design of Pre-Engineered Metal Buildings (PEMB) may be delegated to a PEMB designer. THE PEMB designer shall submit design calculations and designs for review. THE PEMB designer shall coordinate all building loads and reactions with the design of the building foundations.

3.7. SEE PARAGRAPH 6.7 THERMAL PERFORMANCE – NOT USED

3.8. PLUMBING REQUIREMENTS

A. **TRENCH DRAINS:** Design trench drain for easy cleaning. Provide basket strainers to facilitate trash removal where trench drains discharge to piping systems. Convey waste to exterior oil/water separator prior to discharge to the sanitary sewer system. When a dedicated, partitioned welding area is provided, provide a solid cover to the trench drain where it runs through the welding area.

B. **EMERGENCY SHOWERS AND EYE WASHES:** See Section 3.2.2.A (3) (b) for eye wash, hand held drench hose and emergency shower requirements within the repair and maintenance areas and core area.

C. **COMPRESSED AIR:** Provide the compressed air outlets with quick disconnect couplings in all repair and maintenance areas, along the vehicle corridor, at two places in the pit, and in the Consolidated Bench Repair area. Provide one compressed air outlet per bench in Consolidated Bench Repair area. Each drop shall include an isolation valve, filter and pressure regulator, condensate trap with drain cock.

Provide air compressor with receiver, refrigerated air dryer, filtration and pressure regulation. The air compressor shall be installed building equipment. Size air compressor for 10 CFM per outlet in repair and maintenance areas and 5 cfm per outlet in the Consolidated Bench Repair area, with a 60 percent diversity (assume 60% of all drops in the facility will be in use at the same time), plus any additional compressed-air equipment in the facility. Unless otherwise indicated by the user requirements in paragraph 6, provide compressed air at 125 psi. Coordinate with the user on compressed air outlet size.

D. SUMP PUMPS: Provide sump pump in maintenance pit and elevator pit. The maintenance pit sump pump shall be explosion proof type. Both sump pump shall be submersible type and shall be capable of handling small amounts of oil and anti-freeze. Maintenance pit and elevator pit sumps shall discharge to an oil water separator.

3.9. COMMUNICATIONS AND SECURITY SYSTEMS

A. TELECOMMUNICATION SYSTEMS: Telecommunications and SIPRNET Minimum Room Sizes - Telecommunication Pathways, Outlets and Cabling. Telecommunications cabling shall be Category 6 for all voice and data connections unless length of run warrants need for multimode fiber optic cable. Provide number and type of connectors as defined by the User. Telecommunications outlets and conduits shall be provided in core areas and supply administration areas with a minimum of one outlet in each work area. Each Training Room shall have a voice outlet. Each Training Room shall have a data connection for each seat and for an instructor. Each repair area workstation shall have access to a data connection. In administration and shop control areas provide a voice and data outlet for every workstation. A data outlet shall be provided at each copier location. Provide a single jack outlet for wall mounted GFGI phones in mechanical, electrical, vaults, telecommunications room and corridors. For controlled access facilities, provide outlets for wall mounted GFGI phones at primary entrance. Additional outlet locations may be provided based on coordination with the facility User and where required for HVAC equipment or other equipment. Provide outlets per I3A technical criteria and Table 5 below. Provide Telecommunications and SIPRNET rooms minimum sizes as indicated in Table 5A below.

TABLE 5A - Minimum Size Telecommunications and SIPRNET Rooms for TEMF				
TEMF	Telecommunications Room		SIPRNET Room	
Floor	Width Feet (min)	Square Feet (min)	Width Feet (min)	Length Feet (min)
1st Small	8	150	6	6
1st Medium	8	150	6	6
2nd Medium	8	110	None	None
1st Large	8	150	6	6
2nd Large	8	110	None	None
1st EXLarge	8	150	6	6
2nd EXLarge	8	150	None	None

General Notes:

1. Width is a minimum inside edge of wall to inside edge of wall dimension inside the room. Length shall be greater than or equal to width
2. The Telecomm room shall not be less than the minimum width and square feet indicated above and the SIPRNET rooms shall not be less than the minimum width not be less than the minimum width and length indicated above Telecommunications and SIPRNET rooms shall be rectangular in shape.

B. CABLE TELEVISION (CATV): A minimum of two CATV outlets shall be provided in the Break, Training, and Conference Room and Admin and Shop Control Room. The cable television system shall consist of cabling, pathways and outlets. All building CATV systems shall conform to applicable criteria to include I3A Technical Criteria and the UFC 3-580-01 Telecommunications Building Cabling Systems Planning Design.

C. AUDIO/VISUAL SYSTEMS:

1) **Audio/Visual Systems:** Provisions (consisting of a power receptacle and conduit for signal wiring) for a GFGI projector shall be provided in each Training Room.

2) **Paging Systems:** A paging system shall be provided for the repair areas and maintenance areas with the microphone located in the administration and shop control area. The system shall be zoned for multiple bay operation and shall have input from the telephone system.

D. **SECURITY INFRASTRUCTURE:** The security infrastructure shall be installed to support GFGI equipment including cameras, door alarms, and motion sensors.

1) **Intrusion Detection and Security Systems:** Provision for user provided ICIDS intrusion detection and security systems are required for secure and restricted areas including the arms vault, COMSEC vault and SIPRNet room. Provisions shall include dedicated power circuits, telecommunications connections, and raceways and signal wiring for user installed devices. System requirements shall be coordinated with the Installation Security Office.

2) **Access Control System:** The access control system shall consist of proximity sensors throughout the facility with varying levels of security. System requirements shall be coordinated with the Installation Security Office.

E. **MASS NOTIFICATION SYSTEMS:** A mass notification system shall be provided as required by UFC 4-010-01.

F. **SECURE COMMUNICATIONS ROOM:** The SIPRNET room for future SIPR service shall be designed and constructed in accordance with the open storage area requirements at secret level outlined in the Secret Internet Protocol Router Network (SIPRNET) Technical Implementation criteria. This room shall be a separate dedicated room (minimum size shall be 6'X6') and shall include a communication signal ground busbar, connected to the main telecom room signal busbar via properly sized ground wire (see MIL-HDBK-419-A), and one dedicated 20-amp circuit for the SIPRNET rack/safe, in addition to convenience outlets. The connection to the main telecommunications room will be via a single 2-inch trade size steel conduit in accordance with the I3A Criteria. A NIPRNET data outlet also shall be provided. As an alternative, if approved by the local NEC, the space allocated for the SIPRNET room may be incorporated into the telecommunications room if an approved SIPRNET Information Processing System Security Container (IPS) is provided within the combined SIPRNET/telecommunications room.

G. **OVERVOLTAGE AND SURGE PROTECTION:** Over-voltage and surge protection shall be provided at the input power of all panels

3.10. ELECTRICAL REQUIREMENTS

A. **GENERAL:** See Paragraph 6 of the RFP for work to be performed by others (work indicated in paragraph 3 shall be a part of this contract unless otherwise indicated in paragraph 6), clarifications and additional requirements for the electric and telecommunications systems.

B. **EXTERIOR ELECTRICAL DISTRIBUTION SYSTEM:**

1) **Parking Pad and Power Connections.** Provide power connections to hardstand for existing equipment as required in Features Matrix.

C. **EXTERIOR LIGHTING:**

1) **Exterior Lighting General:** Exterior lighting systems inside the TEMF security fence shall be provided for sidewalks, roadways, service yards, facility aprons, open storage areas and parking areas. Exterior lighting shall consist of high intensity discharge (HID) or solid state (LED) light fixtures, mounted on poles located within the AT/FP fence line clear zone and elsewhere as required to attain illumination levels and uniformity. Poles located within the service yards, facility aprons and hardstand parking areas shall be located and protected to minimize damage from vehicles. Building-mounted light fixtures may be used around the building perimeter to supplement pole mounted light fixtures. Building mounted light

fixtures used solely for building perimeter and doorway lighting may be fluorescent. Illumination levels shall be 5 foot-candles within 10 feet of the bay doors for repair areas and maintenance areas and for the canopy are for AS-LMS, SATS and vans. Illumination levels shall be no less than 0.5 foot-candles for parking areas. Exterior lighting shall be controlled by a photosensor or astronomical time clock that is capable of automatically turning off the exterior lighting when sufficient daylight is available or the lighting is not required.

2) **Perimeter Security Lighting:** Protective lighting systems shall be provided in response to project specific requirements to deter trespassers and make them visible to guards. Levels of exterior lighting for protected areas shall conform to the requirements in the IESNA Lighting Handbook. Lighting circuits shall be controlled by a photosensor with manual override.

D. **INTERIOR ELECTRICAL:**

1) Electrical Power

a) **Power Service:** In the electrical equipment room provide a space for 3-phase, 200 ampere breaker with additional 3-phase, 200 ampere power capacity for this breaker in the main switch board. Installation shall conform to NFPA 70, National Electrical Code.

b) **Nonlinear Loads:** The effect of nonlinear loads such as computers and other electronic devices shall be considered and accommodated as necessary. These loads generate harmonics, which can overload conventionally sized conductors or equipment and thereby cause safety hazards and premature failures. Circuits serving such devices shall be equipped with a separate neutral conductor not shared with other circuits. Panelboards and any dry type transformers shall be rated accordingly.

2) **Receptacles:** Power receptacles shall be provided per NFPA 70 and in conjunction with the proposed equipment and furniture layouts. Provide power connectivity to each workstation. Provide a duplex receptacle adjacent to each duplex voice/data and CATV outlet.

3) **Special Power Requirements:** Electrical power outlets for special power shall be coordinated with workbench locations in shops and provided in the maintenance areas. Both low voltage and high frequency power may be required in some areas. See the TEMF Features Matrix. Coordinate with the User for the electrical characteristics of the equipment to be provided by the Government.

4) **Hazardous Locations:** Hazardous locations shall be clearly defined on the drawings by the designer based on the intended use of the facility and applicable criteria. Receptacles, devices, equipment and wiring in hazardous locations shall be designed (UL listed for the application) and installed in accordance with the NFPA codes. When hazardous locations are determined to be up to 18 inches above the finished floor, receptacles and devices and conduit routing to them shall be installed above the hazardous area, where possible.

E. **INTERIOR LIGHTING:** Lighting and lighting controls shall comply with the recommendations of the Illumination Engineering Society of North America (IESNA) and the requirements of ASHRAE 90.1.

1) **Office, Training Room and Conference Room Lighting:** Interior ambient illumination shall provide a generally glare free, high quality lighting environment conforming to IESNA RP-1-04. Training rooms and conference rooms shall have a dimmable circuit providing general lighting without glare on audio-video displays. Dimming ballasts shall be capable of dimming to 5 percent.

2) **Repair and Maintenance Areas:** Illumination of the repair maintenance areas shall consist of T5, T5HO, T8 fluorescent or solid state light fixtures. The fixture layout shall be coordinated with the traveling bridge crane requirements.

3) **Maintenance Pit Lighting:** Illumination in maintenance pits shall consist of T5, T5HO, or T8 fluorescent linear or solid state light fixtures mounted in the pit area for general illumination. Task illumination shall be provided by no fewer than four pit-mounted incandescent, compact fluorescent or metal halide adjustable or solid state swing-arm task lights. In lieu of swing-arm task lights, no fewer than two receptacles with cord and plug incandescent, compact fluorescent or metal halide portable safety lights may be provided. Each cord shall be of adequate length to service no less than 60 percent of the pit area. All equipment shall be suitable for the hazardous classification of the pit.

- 4) **Illumination Levels:** Maintained Illumination levels shall be in accordance with the Table 4 below. Maintained illumination levels in areas not included in Table 4 shall comply with the recommendations of the IESNA Lighting Handbook. Illumination levels in maintenance pits shall be calculated based on no contribution from the overhead ambient light fixtures.

TABLE 4 ILLUMINATION LEVELS	
FUNCTIONAL AREA	FOOT CANDLES
Administration and Shop Control	50
Warehouse, Storage, and Miscellaneous Rooms	20
Latrines, Showers, and Lockers	20
Break, Training, and Conference	30
Repair and Maintenance Areas	50
Weapons Storage and COMSEC Vaults	50
Maintenance Pit	15
Repair Shops (General Item, Compact Item, Special Environment, Battery, etc.)	50
Electrical/Mechanical Rooms	30

TABLE 5 OUTLET DENSITIES	
FUNCTIONAL AREA	AREA PER OUTLET (SF)
Administration and Shop Control	80
Latrines, Showers, and Lockers	0
Break, Training, and Conference	80
Repair and Maintenance Areas	500
Weapons Storage and COMSEC Vaults	80
Repair Shops (Consolidated bench repair, Battery, etc)	80

F. GROUNDING:

1) **Facility:** Each maintenance building shall have a ground counterpoise around the building perimeter for grounding incoming service, building steel, lightning protection, telephone service, piping, and internal grounding requirements. Ground busbar shall be provided on walls of each repair area. A grounding point shall be provided in each repair area and each maintenance area. Each repair area and maintenance area is 16' x 32' in size. Equipment grounding shall be in accordance with the recommendations of MIL-HNBK-419A, which is referenced in I3A. This includes, but is not limited to, the earth electrode subsystem should exhibit a resistance to earth of 10 ohms or less and multiple ground rods should be interconnected using 1/0 AWG bare copper cable. Install an interior #2 AWG bare tinned copper ground loop around the perimeter of the Fluid Distribution Room for dissipation of potential static charge. Bond ground loop to building structure and grounding riser. Provide thirty (30) #6 AWG bare copper pigtailed complete with alligator clips on both ends for grounding of metallic barrels/dispensing equipment. Length of pigtailed should be based on potential layout of equipment/drums and the location of ground ring. Additional grounding may be provided based on project requirements. Systems shall conform to NFPA 70 National Electrical Code, NFPA 780 Standard for the Installation of Lightning Protection Systems, local codes and the Technical Criteria for Installation Information Infrastructure Architecture (I3A).

2) **Exterior Grounding:** Grounding points shall be provided in vehicle and equipment parking areas on 40-foot centers (maximum) and coordinated with the parking layout. It will be acceptable to provide a minimum of one grounding point for every eight vehicles parked in a double row, and one grounding point for every four vehicles parked in a single row configuration. Equipment parking grounding shall be in accordance with the recommendations of MIL-HNBK-419A, which is referenced in I3A. This includes, but is not limited to, the earth electrode subsystem that shall exhibit a resistance to earth of 10 ohms or less, and multiple ground rods that shall be interconnected using 1/0 AWG bare copper cable. Additional grounding may be provided based on project requirements.

G. **LIGHTNING PROTECTION SYSTEM AND TRANSIENT VOLTAGE SURGE PROTECTION:** Design shall be in accordance with NFPA 780 and other referenced criteria. Provide transient voltage surge protection. All tactical equipment maintenance facilities are classified as mission essential and continuity of facility services is required for lightning protection risk assessments.

3.11. HEATING VENTILATING AND AIR CONDITIONING (HVAC) REQUIREMENTS

A. **VENTILATION SYSTEM:**

1) **Supply:** The ventilation supply and general exhaust systems for the repair and maintenance bays and the vehicle corridor shall be designed to provide 100% of outdoor air with no recirculation and sized for 1.5 cfm per square foot per ASHRAE 62.1 The supply and general exhaust systems shall operate at 0.75 cfm/sf. CO and NOx sensors shall be provided throughout the repair bays and the vehicle corridor within the core area. There shall be two setpoints for the sensors. The first setpoint be at a point below unacceptable CO and NOx levels. At the first setpoint the supply and general exhaust fans shall ramp up to provide the full 1.5 cfm per square foot of ventilation. The second setpoint shall be at unacceptable CO and NOx levels. If the sensors register concentrations above setpoint, they shall initiate an audible and visual local alarm. An alarm event shall also be generated at the Building Automation System.

2) **Fan:** The general exhaust system's fan shall be equipped with a VFD. In addition to tracking the supply system fan, the general exhaust fan reduces the exhaust airflow rate based on the operation of the vehicle exhaust systems. The repair and maintenance areas and vehicle corridor shall be maintained at negative pressure with respect to the air conditioned core area.

3) **Temperature:** The ventilation air shall be tempered to 55 degrees (F).

4) **Site buildings:** UAV Storage Building, Organizational Storage, Distribution Company Storage, POL Building, mechanical and electrical rooms, the ventilation rate shall be such that the space is maintained at a maximum of 10 degrees (F) above design ambient conditions.

B. **SYSTEM SELECTION:**

1) **Bays:** Repair and maintenance bays and the vehicle corridor are to be heated to 55 degrees F. The repair and maintenance bays shall be heated by some form of radiant heating; overhead gas infrared, in-floor hydronic, or some combination thereof. Other site storage buildings (see paragraph 3.2.1.D) are to be heated to 40 degrees F for freeze protection.

2) **Occupied Spaces:** Occupied spaces within the core shall be heated and cooled in accordance with Paragraph 5 of Section 01 10 00. Consider all viable alternative systems meeting the functional requirements of each of the areas of the facility. For the core spaces, consider packaged equipment, split systems or systems utilizing chilled/heating water from either a central plant or decentralized sources.

3) **Plenums:** Return air plenum systems are not allowed for Tactical Equipment Maintenance Facilities.

4) **Evaporative cooling:** Consider use of evaporative air pre-cooling in hot climates.

5) **Telecommunication Rooms:** Telecommunications Rooms and SIPRNet rooms will each be served by an independent and dedicated air-handling system. Air handling unit system(s) shall not be floor-space mounted within the actual space served. Rooms shall be maintained at 72 degrees F year-round. The space shall be positively pressurized. Assume 616 Watts for the equipment heat dissipation

for SIPRNet rooms and 1941 Watts for Telecommunication rooms. Contractor shall verify this load during the design stage.

C. BUILDING EXHAUST SYSTEMS: Provide general exhaust in repair and maintenance areas and exhaust systems at maintenance area pit, welding area and weapons vault. Provide portable welding exhaust. Exhaust fan shall be non-sparking. Maintenance area pit exhaust system will be ducted exhaust system with explosion proof fans. Welding exhaust shall be manually engaged during the welding activity. All other exhaust systems will operate continuously while the building is occupied. Exhaust duct openings shall be located so that they effectively remove vapor accumulations at floor level from all parts of the floor area. Exhaust shall be taken from a point within 12 inches of the floor in accordance with NFPA 70. Exhaust systems shall be in accordance with NFPA 30 and 30A. Energy recovery from exhaust air shall be used where required by ASHRAE 90.1.

D. VEHICLE EXHAUST EVACUATION SYSTEMS: Vehicle exhaust evacuation system for wheeled and tracked vehicles shall be provided at each repair area and along the vehicle corridor allowing for capturing exhaust fumes from stationary vehicles and vehicles moving in and out of the building and along the vehicle corridor. Consider viable alternative systems meeting the functional requirements of each of the areas of the facility. Size and locate the exhaust lines as required to service vehicles and equipment within the repair areas. Lines shall not interfere with maintenance operations or obstruct equipment such as the traveling bridge crane. 50% duty cycle of the total available capacity of vehicle exhaust can be considered unless specified otherwise by the using service. The using service is responsible for providing the transition connectors (if required, depending on the type of exhaust system provided) between the vehicle exhaust and the vehicle exhaust system installed in the building. All system components must be compatible with the vehicle exhaust temperatures. Unless otherwise indicated by the user, design exhaust outlets for 1400 cfm and 900 degrees F. For vehicles with higher rate requirements, two exhaust lines may be combined. No exhaust system is currently available that will satisfy the requirements of the AGT 1500 Gas Turbine. Ventilation in the maintenance and repair bays shall be as a minimum per ASHRAE 62.1. Additional makeup air may be needed compensate for the exhaust requirements.

E. HVAC CONTROLS: HVAC Controls shall be in accordance with paragraph 5.8.3. See Appendix for HVAC Controls for typical control system points schedules. These schedules identify as a minimum points to be monitored and controlled by the building automation system (BAS). See paragraph 6 for any additional installation specific points. Points schedule drawings convey a great deal of information critical to design, installation, and subsequent performance of the control system. It includes hardware input/output information, device ranges and settings, ANSI 709.1 communications protocol data, and information about data that is to be used at the operator workstation by Monitoring and Control software. These schedules are available as an excel spread sheet and as AutoCAD drawings on Engineering Knowledge Online (EKO) website <https://eko.usace.army.mil/fa/bas/>. Point schedule of system types not addressed in the appendix shall be developed by the Contractor, and shall be sufficiently detailed to a level consistent to a similar listed system in the appendix. It is recommended that all of the guidance and instruction documents be reviewed prior to using any of the info, as the documents provide necessary and critical information to the use of website drawings and other information.

3.12. ENERGY CONSERVATION REQUIREMENTS

A. GENERAL: Energy conservation shall be in accordance with Paragraph 5, GENERAL TECHNICAL REQUIREMENTS, of the RFP Statement of Work (SOW), subparagraph ENERGY CONSERVATION. An energy efficiency and sustainability study, jointly conducted by the U.S. Army Corps of Engineers and the Department of Energy, has been completed and the draft summary report is available at http://mrsi.usace.army.mil/sustain/Documents/2011_EISA_Study.pdf. This draft report is made available to designers as a reference tool to aid in meeting energy conservation mandates and targets. Any measures that exceed the requirements of ASHRAE 189.1 must be justified by a life cycle cost analysis.

B. SCHEDULES: The following load schedules must be used in all facility energy simulations for purposes of showing compliance with energy performance requirements.

Hr	Occupancy			Lighting			Plug Loads			Service Hot Water		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun
1	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
2	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
3	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
4	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
5	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
6	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
7	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
8	0.15	0	0	0.4	0.04	0.04	0.5	0.2	0.2	0.1	0.03	0.03
9	0.7	0	0	0.9	0.04	0.04	0.8	0.2	0.2	0.7	0.03	0.03
10	0.9	0	0	0.9	0.04	0.04	0.9	0.2	0.2	0.7	0.03	0.03
11	0.9	0	0	0.9	0.04	0.04	0.9	0.2	0.2	0.7	0.03	0.03
12	0.9	0	0	0.9	0.04	0.04	0.9	0.2	0.2	0.7	0.03	0.03
13	0.5	0	0	0.8	0.04	0.04	0.8	0.2	0.2	0.7	0.03	0.03
14	0.85	0	0	0.9	0.04	0.04	0.9	0.2	0.2	0.7	0.03	0.03
15	0.85	0	0	0.9	0.04	0.04	0.9	0.2	0.2	0.7	0.03	0.03
16	0.85	0	0	0.9	0.04	0.04	0.9	0.2	0.2	0.7	0.03	0.03
17	0.2	0	0	0.9	0.04	0.04	0.9	0.2	0.2	0.2	0.03	0.03
18	0	0	0	0.3	0.04	0.04	0.4	0.2	0.2	0.03	0.03	0.03
19	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
20	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
21	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
22	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
23	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03
24	0	0	0	0.04	0.04	0.04	0.2	0.2	0.2	0.03	0.03	0.03

3.13. FIRE PROTECTION REQUIREMENTS

A. **GENERAL:** Standards and Codes. All fire protection and life safety features shall be in accordance with UFC 3-600-01 and the criteria referenced therein. Tactical Equipment Maintenance Facilities shall be classified as mission essential and shall be provided with complete sprinkler protection.

B. **FIRE PROTECTION AND LIFE SAFETY ANALYSIS:** A fire protection and life safety design analysis shall be provided for all buildings in the project. The analysis shall be submitted with the interim design submittal. The analysis shall include classification of occupancy (both per the IBC and NFPA 101); type of construction; height and area limitations (include calculations for allowable area increases); life safety provisions (exit travel distances, common path distances, dead end distances, exit unit width required and provided); building separation or exposure protection; specific compliance with NFPA codes and the IBC; requirements for fire-rated walls, doors, fire dampers, etc.; analysis of automatic suppression systems and protected areas; water supplies; smoke control systems; fire alarm system, including connection to the base-wide system; fire detection system; standpipe systems; fire extinguishers; interior finish ratings; and other pertinent fire protection data. The submittal shall include a life safety floor plan for all buildings in the project showing occupant loading, occupancy classifications and construction type, egress travel distances, exit capacities, areas with sprinkler protection, fire extinguisher locations, ratings of fire-resistive assemblies, and other data necessary to exhibit compliance with life safety code requirements.

C. **SPRINKLER SYSTEM:** Provide complete sprinkler protection for Vehicle Maintenance Shops, UAV Storage Buildings, Organizational Storage Buildings, and Distribution Company Storage Buildings. Wet pipe sprinkler systems shall be provided in areas that are heated and dry pipe sprinkler systems shall

be provided in areas subject to freezing. All floors and all areas of the facilities shall be protected. The sprinkler system design shall be in accordance with UFC 3-600-01 and NFPA 13. The sprinkler hazard classifications shall be in accordance with UFC 3-600-01, NFPA 13, and other applicable criteria. Design densities, design areas and exterior hose streams shall be in accordance with UFC 3-600-01. Fire suppression for UAV aircraft bays shall be wet pipe sprinkler systems. UAV bay design density shall be 0.40 gpm/sf, design area shall be the entire UAV bay, and exterior hose stream shall be 500 gpm. Sprinklers in UAV bays shall be 286 degree F quick response type. The sprinkler systems shall be designed and all piping sized with computer generated hydraulic calculations. The exterior hose stream demand shall be included in the hydraulic calculations. A complete sprinkler system design, including sprinklers, branch lines, floor mains and risers, shall be shown on the drawings. The sprinkler system plans shall include node and pipe identification used in the hydraulic calculations. All sprinkler system drains, including main drains, test drains, and auxiliary drains, shall be routed to a 2' x 2' splash block at exterior grade.

D. SPRINKLER SERVICE MAIN AND RISER: The sprinkler service main shall be a dedicated line from the distribution main. Sprinkler service and domestic service shall not be combined. The sprinkler service main shall be provided with an exterior post indicator valve with tamper switch reporting to the fire alarm control panel (FACP). The ground floor entry penetration shall be sleeved per NFPA 13 requirements for seismic protection. The sprinkler entry riser shall include a double check backflow preventer, a fire department connection, and a wall hydrant for testing of backflow preventer. The sprinkler system shall include an indicating control valve for each sprinkler system riser, a flow switch reporting to the FACP, and an exterior alarm bell. All control valves shall be OS&Y gate type and shall be provided with tamper switches connected to the FACP. Facilities with multiple floors shall be provided with floor control valves for each floor. The floor control valve assembly shall be in accordance with UFC 3-600-01, Figure 4-1.

E. EXTERIOR HOSE STREAM: Exterior hose stream demand shall be in accordance with UFC 3-600-01. Exterior hose stream demand shall be included in the sprinkler system hydraulic calculations.

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

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

H. ELEVATORS: The fire protection features of elevators, hoist ways, machine rooms and lobbies shall be in accordance with UFC 3-600-01, ASME A17.1, NFPA 13 and NFPA 72.

I. SYSTEM COMPONENTS AND HARDWARE: Materials for the sprinkler system, fire pump system, and hose standpipe system shall be in accordance with NFPA 13 and NFPA 20.

J. PROTECTION OF PIPING AGAINST EARTHQUAKE DAMAGE: Sprinkler and fire pump piping systems shall be protected against damage from earthquakes. Seismic protection shall include flexible and rigid couplings, sway bracing, seismic separation assemblies where piping crosses building seismic separation joints, and other features as required by NFPA 13 for protection of piping against damage from earthquakes.

K. FIRE WATER SUPPLY: Fire flow test data is provided in Appendix D.

L. FIRE PUMP: The requirement for a fire pump installation shall be determined by the Contractor based on fire flow test data from the project site and fire protection system design requirements for the project. If required a complete fire pump installation shall be provided for the facility. It shall comply with the requirements of UFC 3-600-01, NFPA 13 and NFPA 20. The Contractor shall submit fire pump design analysis and drawings in the design requirements.

M. FIRE DETECTION AND ALARM:

1) **Fire alarm and detection:** A fire alarm and detection system shall be provided for this facility. It shall comply with the requirements of UFC 3-600-01 and NFPA 72. The system shall be addressable and fully compatible with and integrated with the local installation wide central monitoring system. Coordinate fire alarm system requirements with the Fire Department’s Representative during design.

2) **Initiating Devices:** All initiating devices shall be connected, Class A, Style 6, to signal line circuits (SLC). All alarm appliances shall be connected to notification appliance circuits (NAC), Class A. A looped conduit system shall be provided so that if the conduit and all conductors within are severed at any point, all NAC and SLC shall remain functional.

3) **Fire Alarm Stations:** Breakglass manual fire alarm stations shall not be used.

3.14. SEE PARAGRAPH 6.14 SUSTAINABLE DESIGN – NOT USED

3.15. SEE PARAGRAPH 6.15 ENVIRONMENTAL – NOT USED

3.16. SEE PARAGRAPH 6.16 PERMITS – NOT USED

3.17. SEE PARAGRAPH 6.17 DEMOLITION – NOT USED`

3.18. SEE PARAGRAPH 6.18 ADDITIONAL FACILITIES – NOT USED

3.19. EQUIPMENT AND FURNITURE REQUIREMENTS

3.19.1. FURNISHINGS

A. GENERAL: Furniture Systems. The following criterion describes the furnishing requirements for all room types. Furnishings, other than installed building equipment, are to be Government-furnished and Government-installed (GFGI) unless otherwise specified in this document. The following furnishings

Table 6- Room Size and Furnishings Chart

Room	Description	NSF	Comments	Furniture Required
Admin Shop Control &	Administration & Shop Control	Varies	OPEN-PLAN OFFICE	Systems furniture open plan office area with workstations, approx. 48 SF, with work surfaces, file drawers- and , overhead storage and personal storage tower each for six staff members in Small TEMF, 16 staff members in Medium TEMF, 40 staff members in Large TEMF, and 57 staff members in Extra Large TEMF. Records section to have 4-drawer 5-drawer lateral filing cabinets per building size: Small – 6, Medium -20, Large – 24, X-Large 26.
TRAINING ROOM	Training Room	1080	CLASSROOM	1 desk and chair for each 20 SF to accommodate min. 30 students.
BREAK ROOM/ CONF/ TRAIN	Break Room/ with adjacent Multi-purpose Space	Varies	STAFF BREAK AREA & CONFERENCE ROOM	Min. 10 LF base and wall cabinets with space for commercial grade refrigerator with ice maker. Provide seating and tables to accommodate approx. 40 percent of the building occupants.
ARMS VAULT	Class 5A Vault	300	CONSTRUCTED IN ACCORDANCE WITH AR 190-11, APP G.	1 double pedestal desk- to accommodate a computer , 1 task chair, 1 bookcase for manuals, one 4-drawer 5-drawer lateral file cabinet, and 1 work bench.
COMSEC VAULT DRAFT - Subject to Revision	Class 5V Vault	300	CONSTRUCTED IN ACCORDANCE WITH AR 380-5.	1 double pedestal desk- to accommodate a computer , 1 task chair, 1 bookcase for manuals, 4 lockable metal cabinets with shelves, two 4-drawer 5-drawer lateral file cabinets, industrial shelving approximately 10'x4'x6' each

Wednesday, February 13, 2014

Table 6- Room Size and Furnishings Chart				
Room	Description	NSF	Comments	Furniture Required
Admin Shop Control &	Administration & Shop Control	Varies	OPEN-PLAN OFFICE	Systems furniture open plan office area with workstations, approx. 48 SF, with work surfaces, file drawers- and , overhead storage and personal storage tower each for six staff members in Small TEMF, 16 staff members in Medium TEMF, 40 staff members in Large TEMF, and 57 staff members in Extra Large TEMF. Records section to have 4-drawer5-drawer lateral filing cabinets per building size: Small – 6, Medium -20, Large – 24, X-Large 26.
TRAINING ROOM	Training Room	1080	CLASSROOM	1 desk and chair for each 20 SF to accommodate min. 30 students.
BREAK ROOM/ CONF/ TRAIN	Break Room/ with adjacent Multi-purpose Space	Varies	STAFF BREAK AREA & CONFERENCE ROOM	Min. 10 LF base and wall cabinets with space for commercial grade refrigerator with ice maker. Provide seating and tables to accommodate approx. 40 percent of the building occupants.
ARMS VAULT	Class 5A Vault	300	CONSTRUCTED IN ACCORDANCE WITH AR 190-11, APP G.	1 double pedestal desk- to accommodate a computer , 1 task chair, 1 bookcase for manuals, one 4-drawer5-drawer lateral file cabinet, and 1 work bench.
COMSEC VAULT	Class 5V Vault	300	CONSTRUCTED IN ACCORDANCE WITH AR 380-5.	1 double pedestal desk- to accommodate a computer , 1 task chair, 1 bookcase for manuals, 4 lockable metal cabinets with shelves, two 4-drawer5-drawer lateral file cabinets, industrial shelving approximately 10'wx4'dx6'h each.
COMBAT SPARES	Spare Parts	Varies	STORAGE ROOM	1 double pedestal desk- to accommodate a computer , 1 task chair, one 4-drawer5-drawer lateral file cabinet, and 4 lockable metal cabinets with shelves.
TOOL ROOM	Tools and Tool Set Storage	Varies	STORAGE ROOM	1 double pedestal desk- to accommodate a computer , 1 task chair, one 4-drawer5-drawer lateral file cabinet, and 4 lockable metal cabinets with shelves.
SECURE STOR.	Secure Storage	300	CONSTRUCTED IN ACCORDANCE WITH RISK LEVEL II ANALYSIS OF AR 190-51.	4 lockable metal cabinets with shelves and industrial shelving approximately 10'wx2'dx6'h each - 1 for small TEMF, 2 for medium, 3 for large, and 4 for extra large.
CONSOLD. BENCH REPAIR	Consolidated Bench Repair	Varies	WORK AREA	Min. 16 SF of Static-Free work bench space for each assigned repair technician – 6 for small TEMF, 20 for Medium, 36 for Large, and 71 for Extra Large.

table(Table 6) is provided for coordination of room and office layouts to ensure suitability for their intended function.

3.19.2. EQUIPMENT

A. GENERAL: Most furniture and equipment will be provided by others. However, some equipment is necessary to make TEMF ready for daily operations and is provided as an integral part of the building construction. Table 7 shows typical contractor provided equipment that is needed to make TEMF ready for operations.

B. OVERHEAD CRANES: Crane shall be designed and constructed to CMAA 70 (Class C) or CMAA 74 (moderate requirements) for operation with hoist in accordance with ASME HST-1 or HST-4.

- 1) The 10-ton crane shall have the following rated load speeds (plus or minus 15 percent):
 - a) Hoist - 20 fpm
 - b) Trolley - 65 fpm
 - c) Bridge - 125 fpm
- 2) The 35-ton crane shall have the following rated load speeds (plus or minus 15 percent):
 - a) Hoist - 10 fpm
 - b) Trolley - 60 fpm
 - c) Bridge - 85 fpm
- 3) Hoist motor control system shall provide one speed in each direction.
- 4) Bridge and trolley main control systems shall provide one speed in each direction.
- 5) Provide runway stops at limits of crane bridge travel.
- 6) Prior to PEMB design completion, the contractor shall verify that the weight and dimensions of the selected crane and crane bridge have been coordinated with the structural support system.

TABLE 7 INSTALLED BUILDING EQUIPMENT		
Area	Equipment Class ¹	Equipment/Furniture Item
Repair Areas	CFCI	Exhaust System
	CFCI	Bridge Crane
	CFCI	Compressed Air
Maintenance Areas	CFCI	Bridge Crane
	CFCI	Maintenance Pit
	CFCI	Compressed Air
	CFCI	Dispensing/Disposal System
	CFCI	Emergency Eye Wash, hand wash and shower station
	CFCI	Fire Extinguisher Cabinets
Administration and Shop Control	CFCI	Window/Reception Counter
	CFCI	Fire Extinguisher Cabinets
Consolidated Bench	CFCI	Compressed Air
Tool Room	CFCI	Window/Reception Counter
Tool Box Storage	CFCI	
Combat Spares	CFCI	Window/Reception Counter
Latrines, Showers & Lockers	CFCI	Lockers and Benches
Break, Training, Conference Room	CFCI	Counter with Sink
Weapons & COMSEC Vaults	CFCI	Vault Door
Site	CFCI	Oil/Water Separator

A. Note¹: CFCI is Contractor Furnished/Contractor Installed equipment. This equipment is always MCA funded and is part of the construction contract.

3.20. FACILITY SPECIFIC REFERENCES

- A. 40 CFR 261, Identification and Listing of Hazardous Waste
- B. 40 CFR 262, Standards Applicable to Generators of Hazardous Waste
- C. 40 CFR 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- D. American Society of Mechanical Engineers (AMSE); ASME HST-1, Performance Standard for Electric Chain Hoists; ASME HST-4, Performance Standard for Overhead Electric Wire Rope Hoists
- E. ANSI Z358.1, American National Standard for Emergency Eyewash and Shower Equipment
- F. ANSI/TIA/EIA 606-A, Administration Standard for Commercial Telecommunication Infrastructure.
- G. AR 190-11, Physical Security of Arms, Ammunition, and Explosives (FOUO)

- H. AR 190-51, Security of Unclassified Army Property (Sensitive and Nonsensitive)
- I. AR 380-5, Department of the Army Information Security Program
- J. Crane Manufacturers Association of America (CMAA); CMAA 70, Top Running and Bridge and Gantry Type Multiple Girder Electric Overhead Traveling Cranes, No. 70; CMAA 74, Top Running and Under Running Single Girder Electric Overhead Cranes Utilizing Under Running Trolley Hoist, No. 74
- K. Fed Spec AA-V-2737, Modular Vault Systems
- L. UFC 4-020-01 DoD Security Engineering Facilities Planning Manual
- M. AR 380-40, Policy for Safeguarding and Controlling Communications Security (COMSEC) Material (FOUO).
- N. USACE STD 872-90-03, FE6 Chain-Link Security Fence Details

4.0 APPLICABLE CRITERIA (REV 2.34– 30 JUN 2012)

Unless a specific document version or date is indicated, use criteria from the most current references, including any applicable addenda, unless otherwise stated in the contract or task order, as of the date of the Contractor's latest accepted proposal or date of issue of the contract or task order solicitation, whichever is later. In the event of conflict between References and/or Applicable Military Criteria, apply the most stringent requirement, unless otherwise specifically noted in the contract or task order.

4.1. INDUSTRY CRITERIA

Applicable design and construction criteria references are listed in Table 1 below. This list is not intended to include all criteria that may apply or to restrict design and construction to only those references listed. See also Paragraph 3 for additional facility-specific applicable criteria.

Table 1: Industry Criteria

Air Conditioning and Refrigeration Institute (ARI)	
ARI 310/380	Packaged Terminal Air-Conditioners and Heat Pumps
ARI 440	Room Fan-Coil and Unit Ventilator
ANSI/ARI 430-99	Central Station Air Handling Units
ARI 445	Room Air-Induction Units
ARI 880	Air Terminals
Air Movement and Control Association (AMCA)	
AMCA 210	Laboratory Methods of Testing Fans for Rating
American Architectural Manufacturers Association (AAMA)	
AAMA 605	Voluntary Specification Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
AAMA 607.1	Voluntary Guide Specifications and Inspection Methods for Clear Anodic Finishes for Architectural Aluminum
AAMA 1503	Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections
American Association of State Highway and Transportation Officials (AASHTO)	

	Roadside Design Guide [guardrails, roadside safety devices]
	Standard Specifications for Transportation Materials and Methods of Sampling and Testing [Road Construction Materials]
	Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals
	Guide for Design of Pavement Structures, Volumes 1 and 2 [pavement design guide]
	A Policy of Geometric Design of Highways and Streets
American Bearing Manufacturers Association (AFBMA)	
AFBMA Std. 9	Load Ratings and Fatigue Life for Ball Bearings
AFBMA Std. 11	Load Ratings and Fatigue Life for Roller Bearings
American Boiler Manufacturers Association (ABMA)	
ABMA ISEI	Industry Standards and Engineering Information
American Concrete Institute	
ACI 302.2R	Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials
ACI 318	Building Code Requirements for Structural Concrete
ACI SP-66	ACI Detailing Manual
ACI 530	Building Code Requirements for Masonry Structures
ADA Standards for Accessible Design	
See US Access Board	ADA and ABA Accessibility Guidelines for Buildings and Facilities, Chapters 3-10.
American Institute of Steel Construction (AISC)	
	Manual of Steel Construction – 13 th Edition (or latest version)

American Iron and Steel Institute	
AISI S100	North American Specification for the Design of Cold-Formed Steel Structural Members
American National Standards Institute 11 (ANSI)	
ANSI Z21.10.1	Gas Water Heaters Vol. 1, Storage water Heaters with Input Ratings of 75,000 Btu per Hour or less
ANSI Z124.3	American National Standard for Plastic Lavatories
ANSI Z124.6	Plastic Sinks
ANSI Z21.45	Flexible Connectors of Other Than All-Metal Construction for Gas Appliances
ANSI/IEEE C2	National Electrical Safety Code
ANSI/AF&PA NDS	National Design Specification for Wood Construction
American Society of Civil Engineers (ASCE)	
ASCE 7	Minimum Design Loads for Buildings and Other Structures
ASCE 3777	Manual of Practice No. 77, Design and Construction of Urban Stormwater Management Systems Design and Construction of Sanitary and Storm Sewers, Manuals and Reports on Engineering Practice [sanitary sewer and storm drain design criteria]
ASCE 60	Gravity Sanitary Sewer Design and Construction (ASCE Manuals and Reports on Engineering Practice No. 60)
ASCE/SEI 31-03	Seismic Evaluation of Existing Buildings [Existing Building Alteration/Renovation]
ASCE/SEI 41-06	Seismic Rehabilitation of Existing Buildings [Existing Building Alteration/Renovation]
American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)	
ASHRAE 90.1	ANSI/ASHRAE/IESNA 90.1, Energy Standard for Buildings Except Low-Rise Residential Buildings

ASHRAE Guideline 0	The Commissioning Process
ASHRAE Guideline 1.1	The HVAC Commissioning Process
ASHRAE Handbooks	Fundamentals, HVAC Applications, Systems and Equipment, Refrigeration (Applicable, except as otherwise specified)
ASHRAE Standard 15	Safety Standard for Refrigeration Systems
ASHRAE Standard 62.1	Ventilation for Acceptable Indoor Air Quality
ASHRAE Standard 55	Thermal Environmental Conditions for Human Occupancy (Design portion is applicable, except where precluded by other project requirements.)
ASHRAE Standard 189.1-2009	Standard for the Design of High-Performance Green Buildings (ANSI Approved; USGBC and IES Co-sponsored) , - (APPLICABLE TO THE EXTENT SPECIFICALLY CALLED OUT IN THE CONTRACT)
American Society of Mechanical Engineers International (ASME)	
ASME BPVC SEC VII	Boiler and Pressure Vessel Code: Section VII Recommended Guidelines for the Care of Power Boilers
ASME A17.1	Safety Code for Elevators and Escalators
ASME B 31 (Series)	Piping Codes
American Water Works Association (AWWA)	
	Standards [standards for water line materials and construction]
American Welding Society	
	Welding Handbook
	Welding Codes and Specifications (as applicable to application, see International Building Code for example)
Architectural Woodwork Institute (AWI)	
Latest Version	AWI Quality Standards

Associated Air Balance Council (AABC)	
AABC MN-1	National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems
	AABC Associated Air Balance Council Testing and Balance Procedures
ASTM International	
ASTM C1060-90(Standard Practice for Thermographic Inspection of Insulation Installations in Envelope Cavities of Frame Buildings
ASTM E 779	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization
ASTM E1827-96	Standard Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door
Builders Hardware Manufacturers Association (BHMA)	
ANSI/BHMA	The Various BHMA American National Standards
Building Industry Consulting Service International	
	Telecommunications Distribution Methods Manual (TDMM)
	Customer-Owned Outside Plant Design Manual (CO-OSP)
Code of Federal Regulations (CFR)	
49 CFR 192	Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards
10 CFR 430	Energy Conservation Program for Consumer Products
Consumer Electronics Association	
CEA 709.1B	Control Network Protocol Specification
CEA 709.3	Free-Topology Twisted-Pair Channel Specification
CEA 852	Tunneling Component Network Protocols Over Internet Protocol Channels

Electronic Industries Association (EIA)	
ANSI/EIA/TIA 568	Structured Cabling Series
ANSI/EIA/TIA 569	Commercial Building Standard for Telecommunications Pathways and Spaces (includes ADDENDA)
ANSI/TIA/EIA-606	Administrative Standard for the Telecommunications Infrastructure of Commercial Buildings
J-STD EIA/TIA 607	Commercial Building Grounding and Bonding Requirements for Telecommunications
Federal Highway Administration (FHWA)	
	Manual on Uniform Traffic Control Devices for Streets and Highways [signage and pavement markings for streets and highways]
FHWA-NHI-01-021	Hydraulic Engineering Circular No. 22, Second Edition, URBAN DRAINAGE DESIGN MANUAL
Illuminating Engineering Society of North America (IESNA)	
IESNA RP-1	Office Lighting
IESNA RP-8	Roadway Lighting
IESNA Lighting Handbook	Reference and Application
Institute of Electrical and Electronics Engineers Inc. (IEEE)	
	Standard for Use of the International System of Units (SI): the Modern Metric System
Standard 1100	Recommended Practice for Powering and Grounding Sensitive Electronic Equipment
International Code Council (ICC)	
IBC 2009	International Building Code Note: All references in the International Building Code to the International Electrical Code shall be considered to be references to NFPA 70.

	<p>All references in the International Building Code to the International Fuel Gas Code shall be considered to be references to NFPA 54 and NFPA 58.</p> <p>All references in the International Building Code to the International Fire Code and Chapter 9 shall be considered to be references to Unified Facilities Criteria (UFC) 3-600-01.</p>
IMC	<p>International Mechanical Code –</p> <p>Note: For all references to “HEATING AND COOLING LOAD CALCULATIONS”, follow ASHRAE 90.1</p> <p>Note: For all references to “VENTILATION”, follow ASHRAE 62.1</p>
IRC	International Residential Code
IPC	International Plumbing Code
IEC	Energy Conservation Code (IEC) –Applicable only to the extent specifically referenced herein. Refer to Paragraph 5, ENERGY CONSERVATION requirements.
IGC	International Gas Code - not applicable. Follow NFPA 54, National Fuel Gas Code and NFPA 58, Liquefied Petroleum Gas Code.
International Organization for Standardization (ISO)	
ISO 6781:1983	Qualitative detection of thermal irregularities in building envelopes – infrared method
LonMark International (LonMark)	
LonMark Interoperability Guidelines	(available at www.lonmark.org), including: Application Layer Guidelines, Layer 1-6 Guidelines, and External Interface File (XIF) Reference Guide
LonMark Resource Files	(available at www.lonmark.org), including Standard Network Variable Type (SNVT) definitions
Metal Building Manufacturers Association (MBMA)	
	Metal Building Systems Manual
Midwest Insulation Contractors Association (MICA)	

	National Commercial and Industrial Insulation Standards Manual
National Association of Corrosion Engineers International (NACE)	
NACE RP0169	Control of External Corrosion on Underground or Submerged Metallic Piping Systems
NACE RP0185	Extruded, Polyolefin Resin Coating Systems with Adhesives for Underground or Submerged Pipe
NACE RP0285	Corrosion Control of Underground Storage Tank Systems by Cathodic Protection
NACE RP0286	Electrical Isolation of Cathodically Protected Pipelines
National Electrical Manufacturers Association (NEMA)	
National Environmental Balancing Bureau (NEBB)	
	Procedural Standards Procedural Standards for Testing Adjusting Balancing of Environmental Systems
National Fire Protection Association (NFPA)	
NFPA 10	Standard for Portable Fire Extinguishers
NFPA 13	Installation of Sprinkler Systems
NFPA 13R	Residential Occupancies up to and Including Four Stories in Height Sprinkler Systems
NFPA 14	Standard for the Installation of Standpipes and Hose Systems
NFPA 20	Installation of Centrifugal Fire Pumps
NFPA 24 NFPA 25	Standard for the Installation of Private Fire Service Mains and Their Appurtenances [underground fire protection system design] Inspection, Testing And Maintenance Of Water-Based Fire Protection Systems
NFPA 30	Flammable and Combustible Liquids Code
NFPA 30A	Motor Fuel Dispensing Facilities and Repair Garages

NFPA 31	Installation of Oil Burning Equipment
NFPA 54	National Fuel Gas Code
NFPA 58	Liquefied Petroleum Gas Code
NFPA 70	National Electrical Code
NFPA 70E	Standard for Electrical Safety in the Workplace
NFPA 72	National Fire Alarm Code
NFPA 76	Fire Protection of Telecommunications Facilities
NFPA 80	Standard for Fire Doors and Fire Windows
NFPA 90a	Installation of Air Conditioning and Ventilating Systems
NFPA 96	Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
NFPA 101	Life Safety Code
NFPA 780	Standard for the Installation of Lightning Protection Systems
National Roofing Contractor's Association (NRCA)	
	Roofing and Waterproofing Manual
National Sanitation Foundation, International	
NSF/ANSI Std. 2, 3, 4, 5, 6, 7, 8, 12, 13, 18, 20, 21, 25, 29, 35, 36, 37, 51, 52, 59, 169	Food Equipment Standards
ANSI/UL Std. 73, 197, 471, 621, 763	Food Equipment Standards
CSA Std. C22.2 No. 109, 120, 195	Food Equipment Standards
Occupational Safety and Health Administration (OSHA)	

Title 29, Part 1926	OSHA Construction Industry Standards, Title 29, Code of Federal Regulations, Part 1926, Safety and Health Regulations for Construction
Plumbing and Drainage Institute (PDI)	
PDI G 101	Testing and Rating Procedure for Grease Interceptors with Appendix of Sizing and Installation Data
PDI WH201	Water Hammer Arrestors
Precast Concrete Institute	
PCI Design Handbook	Precast and Prestressed Concrete
Sheet Metal and Air Conditioning Contractor's National Association (SMACNA)	
SMACNA HVAC Duct Construction Standards	HVAC Duct Construction Standards - Metal and Flexible
SMACNA Architectural Manual	Architectural Sheet Metal Manual
SMACNA HVAC TAB	HVAC Systems - Testing, Adjusting and Balancing
State/Local Regulations	
	State Department of Transportation Standard Specifications for Highway and Bridge Construction
	Sedimentation and Erosion Control Design Requirements
	Environmental Control Requirements
	Storm Water Management Requirements
Steel Door Institute (SDI)	
ANSI A250.8/SDI 100	Standard Steel Doors and Frames
Steel Deck Institute	
	SDI Diaphragm Design Manual

Steel Joist Institute	
	Catalog of Standard Specifications and Load Tables for Steel Joists and Joist Girders
Underwriters Laboratories (UL)	
UL 96A	Installation Requirements for Lightning Protection Systems
UL 300	Standard for Safety for Fire Testing of Fire Extinguishing Systems for Protection of Restaurant Cooking Areas
UNITED STATES ACCESS BOARD: U.S. ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD	
ADA and ABA Accessibility Guidelines for Buildings and Facilities	<p>ABA Accessibility Standard for DoD Facilities</p> <p>Derived from the ADA and ABA Accessibility Guidelines: Specifically includes: ABA Chapters 1 and 2 and Chapters 3 through 10.</p> <p>Use this reference in lieu of IBC Chapter 11.</p> <p>Excluded are:</p> <p>(a) Facilities, or portions of facilities, on a military installation that are designed and constructed for use exclusively by able-bodied military personnel (See Paragraph 3 for any reference to this exclusion).</p> <p>(b) Reserve and National Guard facilities, or portions of such facilities, owned by or under the control of the Department of Defense, that are designed and constructed for use exclusively by able-bodied military personnel. (See paragraph 3 for any reference to this exclusion).</p>
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES	
	FDA National Food Code
U.S. GREEN BUILDING COUNCIL (USGBC)	
LEED-NC	Green Building Rating System for New Construction & Major Renovations
	Application Guide for Multiple Buildings and On-Campus Building Projects

4.2. MILITARY CRITERIA

The project shall conform to the following criteria. Certain design impacts and features due to these criteria are noted for the benefit of the offeror. However, all requirements of the referenced criteria will be applicable, whether noted or not, unless otherwise specified herein.

- 4.2.1. Energy Policy Act of 2005 (Public Law 109-58) (applies only to the extent specifically implemented in the contract, which may or may not directly cite or reference EPACT)
- 4.2.2. Energy Independence and Security Act of 2007- "EISA" (applies only to the extent specifically implemented in the contract)
- 4.2.3. Executive Order 12770: Metric Usage In Federal Government
- (a) Metric design and construction is required except when it increases construction cost. Offeror to determine most cost efficient system of measurement to be used for the project.
- 4.2.4. TB MED 530: Occupational and Environmental Health Food Sanitation
- 4.2.5. Unified Facilities Criteria (UFC) 3-410-01FA: Heating, Ventilating, and Air Conditioning - applicable only to the extent specified in paragraph 5, herein.
- 4.2.6. UFC 3-101-01 Architectural Design, (Applies only to the extent specifically implemented herein).
- 4.2.7. UFC 3-210-10, Low Impact Development, applicable only to the extent specified herein.
- 4.2.8. UFC 3-600-01 Design: Fire Protection Engineering for Facilities. Use the latest edition of the IBC in coordination with this UFC. Use Chapters 3, 6, 7, 33 and UFC 3-600-01. If any conflict occurs between these Chapters and UFC 3-600-01, the requirements of UFC 3-600-01 take precedence. Use UFC 3-600-01 in lieu of IBC Chapters 4, 8,9,10.
- 4.2.9. UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings
- 4.2.10. UFC 4-023-03 Design of Buildings to Resist Progressive Collapse (Use most recent version, regardless of references thereto in other publications)
- (a) Note the option to use tie force method or alternate path design for Occupancy Category II.
- 4.2.11. UFC 4-021-01 Design and O&M: Mass Notification Systems
- 4.2.12. UFC 3-420-01, Plumbing Systems, (Applicable only to the extent specifically implemented herein).
- 4.2.13. Technical Criteria for Installation Information Infrastructure Architecture (I3A)
- (a) Email: DetrickISECI3Aguide@conus.army.mil
- 4.2.14. U.S. Army Information Systems Engineering Command (USAISEC) SECRET Internet Protocol (IP) Router Network (SIPRNET) Technical Implementation Criteria (STIC).. See Paragraph 3 for applicability to specific facility type. May not apply to every facility. This is mandatory criteria for those facilities with SIPRNET.
- 4.2.14.1. Draft Guide Specification for Section 27 05 28 PROTECTIVE DISTRIBUTION SYSTEM (PDS) FOR SIPRNET COMMUNICATIONS SYSTEMS, found at http://mrsi.usace.army.mil/rfp/Shared%20Documents/SECTION_270528-v3.pdf

5.0 GENERAL TECHNICAL REQUIREMENTS (REV 2.2 - 31 OCT 2012)

This paragraph contains technical requirements with general applicability to Army facilities. See also Paragraph 3 for facility type-specific operational, functional and technical requirements. Residential or similar grade finishes and materials are not acceptable for inclusion in these buildings, unless otherwise specifically allowed. References to ASHRAE Standard 189.1 are to ASHRAE Standard 189.1-2009 unless otherwise specified in this Paragraph.

5.1. SITE PLANNING AND DESIGN

5.1.1. STANDARDS AND CODES: The site planning and design shall conform to APPLICABLE CRITERIA and to paragraph 6, PROJECT SPECIFIC REQUIREMENTS.

5.1.2. SITE SELECTION: Meet the allowable site requirements of ASHRAE Standard 189.1, Section 5.3, Mandatory Provisions, and either Section 5.4, Prescriptive Option, or Section 5.5, Performance Option; and ASHRAE Standard 189.1, Section 10.3.2.1.1, unless otherwise specified by the current Department of Defense Minimum Antiterrorism Standards for Buildings, UFC 4-010-01.

5.1.3. SITE PLANNING OBJECTIVES: Group buildings in configurations that create a sense of community and promote pedestrian use. See Paragraph 3 for additional site planning requirements relating to building functions.

5.1.3.1. Enclosures and Visual Screens: Provide enclosures and or visual screening devices for Outdoor Utility such as dumpsters, emergency generators, transformers, heating, ventilation, and air conditioning units from streetscape and courtyard views to limit visual impact. Enclosures shall be compatible with the building they serve and accessible by vehicle. The location of dumpsters can have a significant visual impact and should be addressed as part of an overall building design and incorporated in site planning.

5.1.3.2. Dumpster Pads: Where included in the project, dumpster pads shall be concrete (minimum of 8 inches thick on 4 inch base course, unless site conditions dictate more conservative requirements) and directly accessible by way of a paved service drive or parking lot with adequate overhead clearance for collection vehicles. Provide space at dumpster areas for recycling receptacles. Coordinate with Installation on recycling receptacle types, sizes and access requirements and provide space at dumpster areas to accommodate them.

5.1.3.3. Vehicular Circulation: Apply design vehicle templates provided by the American Association of State Highway and Transportation Officials (AASHTO) to the site design. The passenger car class includes passenger cars and light trucks, such as vans and pick-ups. The passenger car template is equivalent to the non-organizational – privately owned vehicle (POV). The truck class template includes single-unit trucks, recreation vehicles, buses, truck tractor-semi-trailer combinations, and trucks or truck tractors with semi-trailers in combination with full trailers. Provide vehicle clearances required to meet traffic safety for emergency vehicles, service vehicles, and moving vans. Provide required traffic control signage Site entrances and site drive aisles shall maximize spacing between drives, incorporate right-angle turns, and limit points of conflict between traffic. Design Services Drives to restrict access to unauthorized vehicles by removable bollards, gates, or other barriers to meet Anti-Terrorism/Force Protection (ATFP) requirements. Orient service drives to building entrances other than the primary pedestrian entry at the front of the building.

5.1.3.4. Emergency Vehicle Access: Provide Emergency Vehicle Access around the facility and shall be in accordance with AT/FP requirements. Maintain a 33-foot clear zone buffer for emergency vehicles, designed to prevent other vehicles from entering the AT/FP standoff to the building.

5.1.3.5. Stormwater Management and Low Impact Design: Employ design and construction strategies (Best Management Practices, or BMPs) that reduce stormwater runoff, reduce discharges of polluted

water offsite and maintain or restore predevelopment hydrology with respect to temperature, rate, volume, quality and duration of flow. See "Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act (EISA)" (http://www.epa.gov/owow/NPS/lid/section438/pdf/final_sec438_eisa.pdf) and Paragraph 6, PROJECT SPECIFIC requirements for additional information. BMPs used to treat runoff must be capable of removing 80% of the average annual postdevelopment total suspended solids (TSS) load based on existing monitoring reports. BMPs are considered to meet these criteria if:

- (a) They are designed in accordance with standards and specifications from a state or local program that has adopted these performance standards OR
- (b) There exists infield performance monitoring data demonstrating compliance with the criteria. Data must conform to accepted protocol (e.g., Technology Acceptance Reciprocity Partnership [TARP], Washington State Department of Ecology) for BMP monitoring.
- (c) In addition, meet the requirements of ASHRAE Standard 189.1, Section 5.3, and either Section 5.4, Prescriptive Option or Section 5.5 Performance Option for Site Development and UFC 3-210-10. If any of the requirements in this subsection are prohibited by state law, state law shall take precedence but only as to those requirements found to be in conflict.

5.1.3.6. Erosion and Sedimentation Control: Meet the requirements of ASHRAE Standard 189.1, Section 10.3.1.3.

5.1.4. EXTERIOR SIGNAGE: Provide exterior signage in accordance with Appendix H, Exterior Signage. Provide exterior NO SMOKING signage that conveys building and grounds smoking policy. Meet the requirements of ASHRAE Standard 189.1, Section 8.3.1.4 (a).

5.1.5. EXISTING UTILITIES: Base utilities maps and capacities for this site are included as part of this RFP. See paragraph 6 for more detailed information.

5.2. SITE ENGINEERING

5.2.1. STANDARDS AND CODES: The site engineering shall conform to APPLICABLE CRITERIA.

5.2.2. SOILS:

5.2.2.1. Subsurface Conditions Report: A report has been prepared to characterize the subsurface conditions at the project site and is appended to these specifications. The report provides a general overview of the soil and geologic conditions with detailed descriptions at discrete boring locations. The Contractor's team shall include a licensed geotechnical engineer to interpret the report and develop earthwork and foundation recommendations and design parameters in which to base the contractor's design. If any additional subsurface investigation or laboratory analysis is required to better characterize the site or develop the final design, the Contractor shall perform it under the direction of a licensed geotechnical engineer. There will be no separate payment for the cost of additional tests. If differences between the Contractor's additional subsurface investigation and the government provided soils report or the reasonably expected conditions require material revisions in the design, an equitable adjustment may be made, in accordance with the provisions of the Differing Site Conditions clause. The basis for the adjustment would be the design and construction appropriate for the conditions described in the Government furnished report or the reasonably expected conditions, in comparison with any changes required by material differences in the actual conditions encountered, in accordance with the terms of contract clause Differing Site Conditions.

5.2.2.2. Geotechnical Evaluation Report: The contractor's licensed geotechnical engineer shall prepare a final geotechnical evaluation report, to be submitted along with the first foundation design submittal, as described in Section 01 33 16, *Design After Award*.

5.2.3. VEHICLE PAVEMENTS: (as applicable to the project)

5.2.3.1. Pavement Requirements: Except in Department of Energy (DOE) Climate Zones 6, 7, and 8, meet ASHRAE Standard 189.1, Section 5.3.2.1. If the project is located in DOE Climate Zones 6, 7, or 8, design procedures and materials shall conform to one of the following: 1) the USACE Pavement Transportation Computer Assisted Structural Engineering (PCASE) program, 2) American Association of State Highway and Transportation Officials (AASHTO) or, 3) the applicable state Department of Transportation standards in which the project is located. See Paragraph 5.2.2.2 and Section 01 33 16 for required information for the Contractor's geotechnical evaluation report. The minimum flexible pavement section shall consist of 2 inches of asphalt and 6 inches of base or as required by the pavement design, whichever is greater, unless specifically identified by the Government to be a gravel road. Design roads and parking areas for a life expectancy of 25 years with normal maintenance. Parking area for tactical vehicles (as applicable to the project) shall be Portland Cement Concrete (PCC) rigid pavement design. For concrete pavements, submit joint layout plan for review and concurrence. Design pavements for military tracked vehicles (as applicable to the project) IAW USACE PCASE. Traffic estimates for each roadway area will be as shown on the drawings or listed in Section 01 10 00 Paragraph 6.4.4. Pavement markings and traffic signage in all DOE Climate Zones shall comply with the Installation requirements and with the Manual on Uniform Traffic Control Devices. Develop a Transportation Management Plan that meets the requirements of ASHRAE Standard 189.1, Section 10.3.2.4.1.

5.2.3.2. Parking Requirements. This subsection is applicable only to parking lots/areas that permit POV parking:

(a) General Parking Requirements:

(1) Design POV parking spaces for the type of vehicles anticipated, but shall be a minimum of 9 ft by 18 ft for POVs, except for two wheel vehicles.

(2) Handicap POV parking. All handicap POV parking lots (where applicable in the facility specific requirements) shall meet the ADA and ABA Accessibility Guidelines for accessible parking spaces.

(3) All handicap POV parking lots (where applicable in the facility specific requirements) shall meet the ADA and ABA Accessibility Guidelines for accessible parking spaces. Design POV parking spaces for the type of vehicles anticipated, but shall be a minimum of 9 ft by 18 ft for POVs, except for two wheel vehicles.

(b) Preferred Parking:

(c) Low-Emitting and Fuel Efficient Vehicles:

5.2.3.3. Sidewalks: Design the network of walks throughout the complex (where applicable) to facilitate pedestrian traffic among facilities, and minimize the need to use vehicles. Incorporate sidewalks to enhance the appearance of the site development, while creating a sense of entry at the primary patron entrances to the buildings. Minimum sidewalk requirements are in Paragraph 3, where applicable and/or paragraph 6 and/or site plans, where applicable. In addition, meet the requirements of ASHRAE Standard 189.1, Section 5.3.2.1.

5.2.4. CATHODIC PROTECTION: Provide cathodic protection systems for all underground metallic systems and metallic fittings/portions of non-metallic, underground systems, both inside and outside the building 5 foot line that are subject to corrosion. Coordinate final solutions with the installation to insure an approach that is consistent with installation cathodic protection programs.

5.2.5. UTILITIES: See Paragraph 6.4.6 for specific information on ownership of utilities and Paragraph 5.9.3.5 below for utility metering requirements.

5.2.6. PERMITS: The CONTRACTOR shall be responsible for obtaining all permits (local, state and federal) required for design and construction of all site features and utilities.

5.2.7. IRRIGATION: Landscape and irrigation systems, if provided, shall comply with ASHRAE Standard 189.1, Section 6.3, Mandatory Provisions, and either Section 6.4, Prescriptive Option, or Section 6.5, Performance Option. In addition, meet the requirements of ASHRAE Standard 189.1, Standard 10.3.2.

5.2.8. EPA WATERSENSE PRODUCTS AND CONTRACTORS: Except where precluded in this Paragraph or by other project requirements, use EPA WaterSense labeled products and irrigation contractors that are certified through a WaterSense labeled program where available.

5.3. COMMISSIONING: Execute total building commissioning practices in order to verify performance of building components and systems and ensure that Owner Project Requirements (OPR) are met. Adopt and follow the requirements of ASHRAE Standard 189.1 Section 10.3.1.2, ASHRAE Guideline 0, ASHRAE Guideline 1.1, LEED Energy and Atmosphere (EA) Prerequisite 1 and LEED EA Credit 3. Do not use the sampling techniques discussed in ASHRAE Guideline 1.1 and in ASHRAE Guideline 0. Commission 100% of the HVAC controls and equipment. Commissioning activities shall be consistent with the Pre-Design Phase, Design Phase, Construction Phase and Occupancy and Operations Phase. Perform and document a post occupancy system monitoring and inspection to review building operation within 12 months after beneficial occupancy. Post occupancy system monitoring and inspection results will be used to verify compliance with the Owner's Project Requirements (OPR), to revise and update the Systems Manual and for completion of the Final Commissioning Report.

5.3.1.

5.3.2. Plan Development: Meet the requirements for the development of the Maintenance Plan and Service Life Plan in ASHRAE Standard 189.1, Section 10.3.2.

5.4. ARCHITECTURE AND INTERIOR DESIGN.

5.4.1. STANDARDS AND CODES: The architecture and interior design shall conform to APPLICABLE CRITERIA.

5.4.2. GENERAL: Overall architectural goal is to provide a functional, quality, meet expected usable life standards, and visually appealing facility that is a source of pride for the installation and delivered within the available budget and schedule.

5.4.3. MATERIALS AND RESOURCES: Meet ASHRAE Standard 189.1, Section 9.3, Mandatory Provisions, and either Section 9.4, Prescriptive Option, or Section 9.5, Performance Option.

5.4.3.1. Construction and Demolition (C&D) Waste Management: Meet the requirements of ASHRAE Standard 189.1, Section 9.3.1. A waste management plan and waste diversion reports are required, as detailed in Section 01 57 20.00 10, ENVIRONMENTAL PROTECTION.

5.4.4. COMPUTATION OF AREAS: See APPENDIX Q of this RFP for how to compute gross and net areas of the facility(ies).

5.4.5. BUILDING EXTERIOR: Design buildings to enhance or compliment the visual environment of the Installation and reflect a human scale to the facility. Building entrance should be architecturally defined and easily seen. Exterior materials, roof forms, and detailing shall be compatible with the surrounding development and adjacent buildings on the Installation and follow locally established architectural themes. Use durable materials that are easy to maintain. Exterior materials colors shall conform to the Installation requirements and if brick or stone, have color that is throughout the material. See Paragraph 6 for project specific requirements.

5.4.5.1. Building Numbers: Permanently attach exterior signage on two faces of each building indicating the assigned building number or address. Building number signage details and locations shall conform to Appendix H, Exterior Signage of this RFP.

5.4.5.2. Roofs and Exterior Walls: Meet the requirements of ASHRAE Standard 189.1, Section 5.3, Mandatory Provisions, and Section 5.4, Prescriptive Option, or Section 5.5, Performance Option. In addition, if a green roof is considered for this project, meet the requirements of ASHRAE Standard 6.2, Mandatory Provisions, and Section 6.3, Prescriptive Option, or Section 6.4, Performance Option.

5.4.6. BUILDING INTERIOR

5.4.6.1. Daylighting and Low Emitting Materials: Meet the requirements of ASHRAE Standard 189.1, Section 8.3, Mandatory Provisions, and either Section 8.4, Prescriptive Option, or 8.5, Performance Option. In addition, meet the daylighting requirements of ASHRAE Standard 189.1, Section 7.3, Mandatory Provisions, and either Section 7.4, Prescriptive Option, or Section 7.5, Prescriptive Option.

5.4.6.2. Surfaces and Color:

(a) Surfaces: Appearance retention is the top priority for building and furniture related finishes. Provide low maintenance, easily cleaned room finishes that are commercially standard for the facility occupancy specified, unless noted otherwise. In daylit zones, meet the requirements of ASHRAE Standard 189.1 section 8.4.1.

(b) Color: The color, texture and pattern selections for the finishes of the building shall provide an aesthetically pleasing, comfortable, easily maintainable and functional environment for the occupants. Coordinate the building colors and finishes for a cohesive design. Select colors appropriate for the building type. Use color, texture and pattern to path or way find through the building. Trendy colors that will become dated shall be limited to non-permanent finishes such as carpet and paint. Select finishes with regards to aesthetics, maintenance, durability, life safety and image. Limit the number of similar colors for each material. Use medium range colors for ceramic and porcelain tile grout help hide soiling. Plastic laminate and solid surface materials shall have patterns that are mottled, flecked or speckled. Coordinate finish colors of fire extinguisher cabinets, receptacle bodies and plates, fire alarms / warning lights, emergency lighting, and other miscellaneous items with the building interior. Match color of equipment items on ceilings (speakers, smoke detectors, grills, etc.) to the ceiling color.

5.4.6.3. Building Entrance: Meet the requirements of ASHRAE Standard 189.1, Section 8.3.1.5.

5.4.6.4. Signage: Provide interior signage for overall way finding and life safety requirements. A comprehensive interior plan shall be from one manufacturer. Include the following sign types: (1) Lobby Directory, (2) Directional Signs; (3) Room Identification Signs; (4) Building Service Signs; (5) Regulatory Signs; (6) Official and Unofficial Signs (7) Visual Communication Boards (8) NO SMOKING signage that conveys building smoking policy. Use of emblems or logos may also be incorporated into the signage plan.

5.4.6.5. Window Treatment: All exterior windows and interior windows are to receive either blinds, mini-blinds or roller shades in a color selected by the architect from the manufacturer's standard range of colors. Color shall compliment building's design theme. Maintain uniformity of treatment color and material to the maximum extent possible within a building. For all other window treatments and accessories (draperies, curtains, lining, sheers, rods, pulls), refer to Attachment A&B.

5.4.6.6. Casework: Unless, otherwise specified, all casework for Cabinetry and cases shall be "custom grade", as described in the AWI Quality Standards

5.4.7. COMPREHENSIVE INTERIOR DESIGN

5.4.7.1. SID and FF&E: Comprehensive Interior Design includes the integration of a Structural Interior Design (SID) and a Furniture, Fixtures and Equipment (FF&E) design and package. SID requires the design, selection and coordination of interior finish materials that are integral to or attached to the building structure. Completion of a SID involves the selection and specification of applied finishes for the building's interior features including, but not limited to, walls, floors, ceilings, trims, doors, windows,

window treatments, built-in furnishings and installed equipment, lighting, and signage. The SID package includes finish schedules, finish samples and any supporting interior elevations, details or plans necessary to communicate the building finish design and build out. The SID also provides basic space planning for the anticipated FF&E requirements in conjunction with the functional layout of the building and design issues such as life safety, privacy, acoustics, lighting, ventilation, and accessibility. See Section 01 33 16 for SID design procedures.

5.4.7.2. FF&E Package: The FF&E design and package includes the design, selection, color coordination and of the required furnishing items necessary to meet the functional, operational, sustainability, and aesthetic needs of the facility coordinated with the interior finish materials in the SID. The FF&E package includes the specification, procurement documentation, placement plans, ordering and finish information on all freestanding furnishings and accessories, and a cost estimate. Coordinate the selection of furniture style, function and configuration with the defined requirements. Examples of FF&E items include, but are not limited to workstations, seating, files, tables, beds, wardrobes, draperies and accessories as well as marker boards, tack boards, and presentation screens. Criteria for furniture selection include function and ergonomics, maintenance, durability, sustainability, comfort and cost. See Section 01 33 16 for FFE design procedures.

5.5. STRUCTURAL DESIGN

5.5.1. STANDARDS AND CODES: The structural design shall conform to APPLICABLE CRITERIA.

5.5.2. GENERAL: The structural system must be compatible with the intended functions and components that allows for future flexibility and reconfigurations of the interior space. Do not locate columns, for instance, in rooms requiring visibility, circulation or open space, including, but not limited to entries, hallways, common areas, classrooms, etc. Select an economical structural system based upon facility size, projected load requirements and local availability of materials and labor. Base the structural design on accurate, site specific geotechnical information and anticipated loads for the building types and geographical location. Consider climate conditions, high humidity, industrial atmosphere, saltwater exposure, or other adverse conditions when selecting the type of cement and admixtures used in concrete, the concrete cover on reinforcing steel, the coatings on structural members, expansion joints, the level of corrosion protection, and the structural systems. Analyze, design and detail each building as a complete structural system. Design structural elements to preclude damage to finishes, partitions and other frangible, non-structural elements to prevent impaired operability of moveable components; and to prevent cladding leakage and roof ponding. Limit deflections of structural members to the allowable of the applicable material standard, e.g., ACI, AISC, Brick Industry Association, etc. When modular units or other pre-fabricated construction is used or combined with stick-built construction, fully coordinate and integrate the overall structural design between the two different or interfacing construction types. If the state that the project is located in requires separate, specific licensing for structural engineers (for instance, such as in Florida, California and others), then the structural engineer designer of record must be registered in that state.

5.5.3. LOADS: See Paragraph 3 for facility specific (if applicable) and Paragraph 6 for site and project specific structural loading criteria. Unless otherwise specified in paragraph 6, use Exposure Category C for wind. If not specified, use Category C unless the Designer of Record can satisfactorily justify another Exposure Category in its design analysis based on the facility Master Plan. Submit such exceptions for approval as early as possible and prior to the Interim Design Submittal in Section "Design After Award". Design the ancillary building items, e.g. doors, window jambs and connections, overhead architectural features, systems and equipment bracing, ducting, piping, etc. for gravity, seismic, lateral loads and for the requirements of UFC 4-010-01, DOD Minimum Antiterrorism Standards for Buildings. Ensure and document that the design of glazed items includes, but is not limited to, the following items under the design loads prescribed in UFC 4-010-01:

- (a) Supporting members of glazed elements, e.g. window jamb, sill, header
- (b) Connections of glazed element to supporting members, e.g. window to header

- (c) Connections of supporting members to each other, e.g. header to jamb
- (d) Connections of supporting members to structural system, e.g. jamb to foundation.

5.5.4. **TERMITE TREATMENT AND GREEN CLEANING:** (Except Alaska) Provide termite prevention treatment in accordance with Installation and local building code requirements, using licensed chemicals and licensed applicator firm. In all States, meet the requirements of ASHRAE Standard 189.1, Section 10.3.2, regarding the building Green Cleaning Plan.

5.6. THERMAL PERFORMANCE

5.6.1. **STANDARDS AND CODES:** Building construction and thermal insulation for mechanical systems shall conform to APPLICABLE CRITERIA.

5.6.2. **BUILDING ENVELOPE SEALING PERFORMANCE REQUIREMENT:** Design and construct the building envelope for office buildings, office portions of mixed office and open space (e.g., company operations facilities), dining, barracks and instructional/training facilities with a continuous air barrier to control air leakage into, or out of, the conditioned space that shall meet the requirements of ASHRAE Standard 189.1, Section 7.3, Mandatory Provisions, and either Section 7.4, Prescriptive Option, or 7.5, Performance Option. In addition, meet the requirements of ASHRAE Standard 189.1, Sections 10.3.1.4, 10.3.1.5, 10.3.1.6, and 10.3.2 as well as UFC 3-101-01, Section 3-6. Clearly identify all air barrier components of each envelope assembly on construction documents and detail the joints, interconnections and penetrations of the air barrier components. Clearly identify the boundary limits of the building air barriers, and of the zone or zones to be tested for building air tightness on the drawings. The use of painted interior walls is not an acceptable air barrier method.

5.6.2.1. **Air Barrier:** The air barrier must be durable to last the anticipated service life of the assembly. Provide a motorized damper in the closed position and connected to the fire alarm system to open on call and fail in the open position for any fixed open louvers at elevator shafts. Coordinate the motorized elevator hoistway vent damper(s) with the Fire Protection System design in Paragraph 5.10. Ensure that the damper(s) is accessible to facilitate regular inspection and maintenance.

5.6.2.2. **Thermal Bridge.** A Thermal Bridge (or cold bridge) occurs when a thermally conductive material (such as a metal stud, steel frame or concrete beam, slab or column) penetrates or bypasses the exterior insulation system. Design the building envelope to align all insulating elements, ie, the continuous wall insulation, insulated glazing, insulated doors from top of footing to bottom of roof deck. Wrap insulation around roof overhangs. Disconnect window and door sills from interior construction. Utilize thermally broken window and door frames. Provide details to eliminate thermal bridges particularly at floor slabs, roof/wall intersections, steel lintels and relief angles, metal through-wall flashings and at building corners.

5.6.2.3. **Damper and Control:** Close all ventilation or make-up air intakes and exhausts, , etc., when leakage can occur during inactive periods. Atrium smoke exhaust and intakes shall only open when activated per IBC and other applicable Fire Code requirements.

5.6.2.4. **Garages:** Compartmentalize garages under buildings by providing air-tight vestibules at building access points.

5.6.2.5. **Spaces Under Negative Pressure:** Compartmentalize spaces under negative pressure such as boiler rooms and provide make-up air for combustion.

5.6.2.6. **TESTING, ADJUSTING AND BALANCING:** Test and balance air and hydronic systems, using a firm certified for testing and balancing by the Associated Air Balance Council (AABC), National Environmental Balancing Bureau (NEBB), or the Testing Adjusting, and Balancing Bureau (TABB). The prime contractor shall hire the TAB firm directly, not through a subcontractor. Perform TAB in accordance with the requirements of the standard under which the TAB Firm's qualifications are approved, i.e., AABC MN-1, NEBB TABES, or SMACNA HVACTAB unless otherwise specified herein. All recommendations

and suggested practices contained in the TAB Standard shall be considered mandatory. Use the provisions of the TAB Standard, including checklists, report forms, etc., as nearly as practicable to satisfy the Contract requirements. Use the TAB Standard for all aspects of TAB, including qualifications for the TAB Firm and Specialist and calibration of TAB instruments. Where the instrument manufacturer calibration recommendations are more stringent than those listed in the TAB Standard, adhere to the manufacturer's recommendations. All quality assurance provisions of the TAB Standard such as performance guarantees shall be part of this contract. For systems or system components not covered in the TAB Standard, the TAB Specialist shall develop TAB procedures. Where new procedures, requirements, etc., applicable to the Contract requirements have been published or adopted by the body responsible for the TAB Standard used (AABC, NEBB, or TABB), the requirements and recommendations contained in these procedures and requirements are mandatory.

5.6.2.7. Performance Criteria and Substantiation: Test the completed building for air tightness in accordance with UFC 3-101-01, Section 3-6.3. Submit the qualifications and experience of the testing entity for approval. Demonstrate performance of the continuous air barrier for the opaque building envelope by the following tests:

(a) Air Barrier Quality Control Plan: Develop an Air Barrier Quality Control plan to assure that a competent air barrier inspector/specialist inspects the critical components prior to them being concealed. At a minimum, three onsite inspections are required during construction to assure the completeness of the construction and design.

(b) Notification of Testing: Notify the Government at least three working days prior to the tests to provide the Government the opportunity to witness the tests. Provide the Government written test results confirming the results of all tests.

5.7. PLUMBING AND WATER CONSUMING EQUIPMENT

5.7.1. STANDARDS AND CODES: The plumbing system and water consuming equipment shall conform to APPLICABLE CRITERIA and ASHRAE Standard 189.1, Section 6.3, Mandatory Provisions, and either Section 6.4, Prescriptive Option, or Section 6.5, Performance Option. In addition, meet the requirements of ASHRAE Standard 189.1, Section 10.3.2.

5.7.2. PRECAUTIONS FOR EXPANSIVE SOILS: Where expansive soils are present, include design features for underslab piping systems and underground piping serving chillers, cooling towers, etc, to control forces resulting from soil heave. Some possible solutions include, but are not necessarily limited to, features such as flexible expansion joints, slip joints, horizontal offsets with ball joints, or multiple bell and spigot gasketed fittings. For structurally supported slabs, suspend piping from the structure with adequate space provided below the pipe for the anticipated soil movement.

5.7.3. HOT WATER SYSTEMS: For hot water heating and supply systems, meet the requirements in UFC 3-420-01 and amendments, and the service water heating requirements of ASHRAE 189.1, Section 7.4.4.

5.7.4. SIZING HOT WATER SYSTEMS: Unless otherwise specified or directed in Paragraph 3, design in accordance with ASHRAE Handbook HVAC Applications, Chapter 49, "Service Water Heating," UFC 3-420-01 and amendments, and ASHRAE 189.1, Section 7.4.3. Size and place equipment so that it is easily accessible and removable for repair or replacement.

5.7.5. JANITOR CLOSETS: In janitor spaces/room/closets, provide at minimum, a service sink with heavy duty shelf and wall hung mop and broom rack(s).

5.7.6. FLOOR DRAINS: As a minimum, provide floor drains in mechanical rooms and areas, janitor spaces/rooms/closets and any other area that requires drainage from fixtures or equipment, drain downs, condensate, as necessary.

5.7.7. WATER EFFICIENT PLUMBING FIXTURES: Indoor plumbing fixture equipment shall comply with the following criteria: ASHRAE 189.1, Section 6.3, Mandatory Provisions, and either Section 6.4, Prescriptive Option, or Section 6.5, Performance Option.

5.7.7.1. Water Closets (Toilets): ASHRAE 189.1, Sections 6.3.2.1.a and b. requirements for water closets (toilets) shall be as follows: Flushometer valve type: For single flush, maximum flush volume shall be determined in accordance with ASME A112.19.2/CSA B45.1 and shall be 1.28 gal (4.8 L). For dual-flush, the effective flush volume shall be determined in accordance with ASME A112.19.14 and shall be 1.28 gal (4.8 L). Water closets (toilets)—tank-type: Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Tank-Type High-Efficiency Toilet Specification and shall have a maximum flush volume of 1.28 gal (4.8 L).

5.7.7.2. URINALS: Non-water urinals shall comply with ASME A112.19.19 (vitreous china) or IAPMO Z124.9 (plastic) as appropriate.

5.7.7.3. PUBLIC LAVATORY FAUCETS: Lavatory faucets in a public setting shall have a maximum flow rate of 0.5 gallons per minute and be in accordance with ASME A112.18.1/CSA B125.1.

5.7.7.4. PUBLIC METERING SELF-CLOSING FAUCETS: Faucets in a public setting that supply a specific amount of water over a given period shall have a maximum water use of 0.25 gallons per cycle and be in accordance with ASME A112.18.1/CSA B125.1.

5.7.7.5. PRIVATE LAVATORY FAUCETS: Faucets in a private setting such as barracks, family housing, or hospitals shall have a maximum flow rate of 1.5 gallons per minute and be in accordance with ASME A112.18.1/CSA B125.1 and shall comply with the performance requirements of the US EPA WaterSense High-Efficiency Lavatory Faucet Specification.

5.7.7.6. KITCHEN FAUCETS: Kitchen faucets shall have a maximum flow rate of 2.2 gallons per minute and be in accordance with ASME A112.18.1/CSA B125.1.

5.7.7.7. Cooling Towers: In addition to the requirements of Subsection 5.7.1. above, conduct a one-time potable water analysis, measuring at least the following control parameters, in ppm or mg/l: calcium (Ca); total alkalinity; silica (Si); chloride (Cl); and conductivity . Calculate the number of cooling tower cycles by dividing the amount of each parameter in the condenser water by the amount in the potable makeup water. The maximum acceptable levels of the parameters in the condenser water are: Ca (as CaCO₃) and Total alkalinity – 1000 ppm; SiO₂–100 ppm; Cl – 250 ppm; Conductivity – 3500 µS/ml. Limit cooling tower cycles to avoid exceeding maximum values for any of these parameters. AND Complete the following: A system to monitor and control microbiological growth is recommended; Meter the potable makeup water to the cooling tower and blowdown from the cooling; Blowdown must be controlled with a conductivity meter; Report monthly results of the amount of potable water used, microbiological levels, blowdown, and corrosion; On cooling towers, install drift eliminators that achieve minimum efficiencies of 0.2% for counter-flow systems or 0.5% for cross-flow systems.

5.7.7.8. Drainage Systems: Do not use engineered vent or Sovent® type drainage systems.

5.7.7.9. Pipe Location and Insulation: Where the seasonal design temperature of the cold water entering a building is below the seasonal design dew point of the indoor ambient air insulate plumbing piping with a vapor barrier type of insulation to prevent condensation. Do not locate water or drainage piping over electrical wiring or equipment unless adequate protection against water (including condensation) damage is provided. Insulation alone is not adequate protection against condensation. Meet pipe insulation requirements of ASHRAE 189.1, Section 7.4.3.11 and Table C-11 of Normative Appendix C.

5.7.7.10. Pipe Protection During Construction: Cover all drain, waste and vent piping to prevent mortar or other debris during such construction activities.

5.8. ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS

5.8.1. STANDARDS AND CODES: The electrical systems for all facilities shall conform to APPLICABLE CRITERIA.

5.8.2. MATERIALS AND EQUIPMENT: Materials, equipment and devices shall, as a minimum, meet the requirements of Underwriters Laboratories (UL) where UL standards are established for those items. Wiring for branch circuits shall be copper. Motors larger than one-half horsepower shall be three phase. All electrical systems shall be pre-wired and fully operational unless otherwise indicated. Wall mounted electrical devices (power receptacles, communication outlets and CATV outlets) shall have matching colors, mounting heights and faceplates.

5.8.3. POWER SERVICE: Primary service from the base electrical distribution system to the pad-mounted transformer and secondary service from the transformer to the building service electrical equipment room shall be underground. See paragraph 6 for additional site electrical requirements.

5.8.3.1. Space Capacity: Provide 10% space for future circuit breakers in all panelboards serving residential areas of buildings and 15% spaces in all other panelboards.

5.8.4. TELECOMMUNICATION SERVICE: Connect the project's facilities to the Installation telecommunications (voice and data) system through the outside plant (OSP) telecommunications underground infrastructure cabling system per the I3A Criteria. Connect to the OSP cabling system from each facility main cross connect located in the telecommunications room.

5.8.5. LIGHTING: Comply with the recommendations of the Illumination Engineering Society (IES) and requirements of EAct-2005 and Federal Energy Management Program (FEMP) for lighting products.

5.8.5.1. Interior Lighting:

(a) Reflective Surfaces: Coordinate daylighting requirements and interior architectural space surfaces and colors with the lighting systems to provide the most energy-efficient workable combinations.

(1) Fluorescent Lighting: Fluorescent lighting systems shall utilize NEMA premium electronic ballasts and high performance fluorescent lamps with a Correlated Color Temperature (CCT) of 4100 Kelvin (K) to 5000 K. Linear fluorescent and compact fluorescent lamps shall have a Color Rendering Index (CRI) of ≥ 82 . All fluorescent lamps (compact and linear) shall be reclaimed through a process that captures and properly disposes of or recycles the mercury content. Do not use surface mounted luminaires on acoustical tile ceilings. Provide outside each building emergency egress door an un-switched emergency egress luminaire controlled by photocell or astronomical time clock. All other emergency egress luminaires shall be controlled the same as non-emergency luminaires in a shared space during normal (non-emergency) operation.

(2) Solid-State Lighting: Fixtures shall have a lumen maintenance life expectancy (L_{70}) of $\geq 36,000$ hours, a CRI of ≥ 82 , and a CCT of 4100 K to 5000 K. Each solid-state fixture model shall be tested in accordance with IES LM-79. Test reports shall verify the fixture performance (lumen output, lumen maintenance, power consumption, efficacy and color) meets or exceeds the fixture manufactures published data. Laboratory testing shall be completed by a National Voluntary Laboratory Accreditation Program laboratory. Provide a five year warranty for fixtures.

(3) Light Level Tuning: Light level tuning is a closed-loop feedback system that measures the illumination level in a space and dims the luminaires when the measured level exceeds the target level, thereby saving the energy that otherwise would be used to compensate for future light depreciation. Provide a life-cycle cost-benefit analysis (LCCA) of light level tuning for all spaces where the general lighting luminaires are equipped with dimming ballasts or LED drivers. The LCCA shall follow the methodology contained in 10 CFR 436. Provide light level tuning where the LCCA shows it to be life cycle cost effective.

- (4) Lighting Systems and Controls: Lighting systems (including lighting controls, daylighting controls, and lighting power density limits) shall comply with the requirements of Section 7.4.6 of ASHRAE Standard 189.1 and Section 9 of ANSI/ASHRAE/IES 90.1-2007. Lighting designs shall follow the recommended practices of the IES and shall target the recommended illumination levels of the IES.
- (5) Occupancy or Vacancy Sensors: Use occupancy or vacancy sensors to automatically turn off lighting a specified time after all occupants leave the space. The off time shall be user adjustable to 5, 15, or 30 minutes. Selection of the sensor type (single or dual technology, wired or wireless) shall be based on the space configuration, user functionality and life-cycle cost-benefit analysis. Single technology solutions shall incorporate signal processing technology that distinguishes between background noise and actual motion without automatically changing their sensitivity.
- (6) Automated Shading: Automated shading shall be considered in spaces utilizing daylight harvesting to maximize the energy savings of the daylighting system. The shades shall be controlled to reduce glare and unwanted heat gain while still allowing natural light to enter the space. When utilizing automated shading consider the following :
- i. For ease of use and space aesthetics, incorporate the automated shades with the lighting control system.
 - ii. For maximum energy savings the automated shading system shall predictably position the shades based on a combination of time of day, façade direction, and sky conditions.
 - iii. For maximum design flexibility and ease of installation, shade system should have the capability to address and control each shade individually.
 - iv. The shading system shall have a manual override that allows the occupant to temporarily adjust the shades to any desired position. The system shall revert back to automatic control after a specified period of time.
- (b) Provide a life-cycle cost-benefit analysis (LCCA) of automated shading for all spaces where daylight harvesting is provided. The LCCA shall follow the methodology contained in 10 CFR 436. Provide automated shading where the LCCA shows it to be economical.
- (1) Scene-Based Dimming: Use scene based dimming in multiple-use areas including auditoriums, conference rooms and classrooms. Also provide scene based dimming in dining rooms and gymnasiums with multiple functions. One button preset touch recall shall allow multiple zones of light within a space to go to the appropriate light levels, known as a scene, for a specific task or use. Scene based control shall allow the integration of AV controls, shading/projection screens and lighting to work seamlessly with one button preset touch (i.e. lights dim, projection screen lowers, and shades go down).
- (2) Personal Lighting Control: Personal lighting controls exceeding ASHRAE requirements shall be considered. Personal lighting controls allow users to vary the general light level based on the task at hand. Personal control can be achieved by wall mounted controls (hard wired or wireless), Infrared or Radio Frequency (RF) wireless devices, or via computer. Digital addressable ballasts and light emitting diode (LED) drivers allow the control flexibility of personal dimming of installed lighting on the occupant's work area (i.e. dim the luminaire over their cubicle to the appropriate light level).
- (3) Wireless and Plug-and-Play Controls: Wireless and plug-and-play lighting controls shall be considered for all installations where flexibility is paramount. To avoid interference, wireless products shall communicate in an FCC frequency band that does not allow continuous transmissions.
- (4) Testing Agent: An independent agent with no less than three years experience in testing of complex lighting control systems shall be hired to conduct and certify functional testing of lighting control devices and control systems. The testing agent shall not be directly involved in either the design or construction of the project and shall certify the installed lighting controls meet or exceed all requirements of ASHRAE Standard 189.1, ANSI/ASHRAE/IES Standard 90.1-2007, and all documented performance criteria. The lighting control manufacturer's authorized technical representative may serve as the testing agent. Submit qualifications of the testing agent for approval.
- (5) Manufacturer Support: shall include technical phone support located in the United States. The technical phone support shall be available 24 hours a day, 365 days a year.

5.8.5.2. Exterior Lighting Requirements: These requirements apply to exterior lighting illuminating any building, site, property, structure, gate, sign, roadway, parking lot, pathway, sidewalk, landscape, structure, etc. that is owned, operated by, or constructed to be leased to the Department of the Army. This includes all Sustainment, Restoration, and Modernization (SRM) and Military Construction activities within the United States, its territories, and overseas on permanent Active Army installations, Army Reserve Centers, Army National Guard Readiness Facilities, and Armed Forces Reserve Centers, regardless of funds source. See Paragraph 6.9 for site specific information, if any, on exterior lighting systems.

- (a) **General:** Exterior lighting technology should be selected based on a balance of energy performance and quality of light, while remaining life-cycle cost effective and environmentally responsible. Exterior lighting systems or luminaires selected for use should have demonstrated adherence to quality standards by being recognized by the DesignLights Consortium (reference e), the ENERGY STAR Program, the FEMP or other third-party qualifier appropriate to the technology. Manufacturers should also stand behind their products by providing a Luminaire warranty for at least five years or more. Design teams should carefully consider the occupancy and purpose of the lighting requirements and incorporate energy-saving controls, sensors, and the use of bi-level fixtures to provide exterior lighting levels only as appropriate and only during the hours of night needed. Other energy-saving and lighting quality design considerations include ensuring better uniformity of lighting distribution to required levels to reduce over-lighted hotspots and control light trespass outside the area of intended coverage.
- (b) **Exterior Lighting Performance by Application:** Exterior lighting systems should meet, at a minimum, the better of the standards below in Table 1 or the DLC Product Qualification Criteria (reference e) or current ENERGY STAR qualification or FEMP designation requirements.
- (c) **General Exterior Lighting:** Typically lighting to provide visibility for security and people moving along established circulation pathways through an illuminated area to or from a destination. Examples include roadways, parking lots, parking structures, sidewalks, tarmacs, service areas, and secondary exits from buildings.
- (d) **Architectural Lighting:** Lighting in use where exterior spaces are occupied at night for a functional purpose, such as plazas, gas stations, pavilions, or amphitheaters. Also, for use where a higher quality of light is desired, such as building entrances, wall-wash luminaires, illumination of architectural or landscaping features, sculpture, displays, exhibits, flags, gates, primary signage, etc.
- (e) **Exceptions:** Where a non-white light color is specifically desired by aesthetic design or a color-specific functional requirement (e.g. water feature lighting, entertainment, signal lights, airfield lights, marine wildlife protection, etc.), the CRI and CCT range values indicated may not apply. Specialized lighting, such as lighting for monitoring systems designed to use non-visible spectrum light, are also exempt from the minimum CRI and CCT standards as well. Luminaires primarily powered by on-site renewable energy (e.g. solar and/or wind) are also exempt from the requirements herein.

Table 1 – Minimum Exterior Lighting Performance by Application. These values represent minimum standards and do not supersede higher standards that may also be applicable or specified by design.

Application	Luminaire Efficacy	CRI	Nominal CCT Ranges	Lamp Life
General Exterior Lighting	65	65	3000-5700	50,000
Architectural Lighting	50	75	3500-5000	50,000

Units:

Luminaire Efficacy (with complete fixture load including ballast/driver loads) is in lumens per watt

CRI (Color Rendering Index) is a value without units
CCT (Correlated Color Temperature) Range is in Kelvin Temperature
Minimum Lamp Life is in Rated Hours per TM-21

(f) Life-Cycle Cost Analysis (LCCA) and Renewable Energy Opportunities. On-site renewable or alternative energy power system cost over a 25-year life-cycle should be compared to the cost of the conventional grid-connection infrastructure, operation and maintenance costs thereof, proper time-of-use grid energy cost with line losses and price escalation. Renewable or alternative energy systems should be used wherever the payback period less than or equal to the life cycle period. Design team selections and Value Engineering evaluations are to prioritize a reduced total cost of ownership during the full life-cycle period over the first costs of design and construction. The LCCA shall follow the methodology contained in 10 CFR 436.

(g) Sustainability and Environmental Impact Reduction. To meet the mercury-use reduction intent of EISA 2007 (Reference c) and other sustainability goals, lighting systems should not contain added mercury in excess of 5mg per lamp or 80 picograms per Lumen Hour. Whenever two or more viable lighting technologies are substantially equal in life-cycle cost and performance, preference should be given to the technology with the lowest mercury content per Lumen Hour.

5.8.6. TELECOMMUNICATION SYSTEM: Building telecommunications cabling systems (BCS) and OSP telecommunications cabling system shall conform to APPLICABLE CRITERIA, including but not limited to I3A Technical Criteria. An acceptable BCS encompasses, but is not limited to, copper and fiber optic (FO) entrance cable, termination equipment, copper and fiber backbone cable, copper and fiber horizontal distribution cable, workstation outlets, racks, cable management, patch panels, cable tray, cable ladder, conduits, grounding, and labeling. Items included under OSP infrastructure encompass, but are not limited to, manhole and duct infrastructure, copper cable, fiber optic cable, cross connects, terminations, cable vaults, and copper and FO entrance cable.

5.8.6.1. Testing: Design, install, label and test all telecommunications systems in accordance with the I3A Criteria and ANSI/TIA/EIA 568, 569, and 606 standards. A Building Industry Consulting Services International (BICSI) Registered Communications Distribution Designer (RCDD) with at least 2 yrs related experience shall develop and stamp telecommunications design, and prepare the test plan. See Paragraph 5.9.2.5 for design of environmental systems for Telecommunications Rooms.

5.8.6.2. Installation: The installers assigned to the installation of the telecommunications system or any of its components shall be regularly and professionally engaged in the business of the application, installation and testing of the specified telecommunications systems and equipment. Key personnel; i.e., supervisors and lead installers assigned to the installation of this system or any of its components shall be BICSI Registered Cabling Installers, Technician Level. Submit documentation of current BICSI certification for each of the key personnel. In lieu of BICSI certification, supervisors and installers shall have a minimum of 5 years experience in the installation of the specified copper and fiber optic cable and components. They shall have factory or factory approved certification from each equipment manufacturer indicating that they are qualified to install and test the provided products.

5.8.6.3. End to End Test: Perform a comprehensive end to end test of all circuits to include all copper and fiber optic cables upon completion of the BCS and prior to acceptance of the facility. Provide adequate advanced notification to the COR to allow COR and Installation personnel attendance. The BCS circuits include but are not limited to all copper and fiber optic(FO) entrance cables, termination equipment, copper and fiber backbone cable, copper and fiber horizontal distribution cable, and workstation outlets. Test in accordance with ANSI/EIA/TIA 568 standards. Use test instrumentation that meets or exceeds the standard. Submit the official test report to include test procedures, parameters tested, values, discrepancies and corrective actions in electronic format. Test and accomplish all necessary corrective actions to ensure that the government receives a fully operational, standards based, code compliant telecommunications system.

5.8.7. LIGHTNING PROTECTION SYSTEM: Provide a lightning protection system where recommended by the Lightning Risk Assessment of NFPA 780, Annex L.

5.9. HEATING, VENTILATING, AND AIR CONDITIONING

5.9.1. STANDARDS AND CODES: The HVAC system shall conform to APPLICABLE CRITERIA.

5.9.2. DESIGN CONDITIONS:

5.9.2.1. Outdoor and Indoor Calculations and Requirements: Indoor design conditions and load calculations shall be in accordance with UFC 3-410-01FA. Outdoor air and exhaust ventilation requirements for indoor air quality shall be in accordance with ASHRAE 62.1-2007. Outdoor design conditions are in UFC 3-410-01FA except that weather data is specified in paragraph 6, rather than at the URL (web link) listed in the UFC.

5.9.2.2. Indoor Air Quality: Buildings indoor air quality systems, thermal comfort, acoustical control, equipment, calculation procedures, construction and start-up shall comply with ASHRAE Standard 189.1, Section 8.3, Mandatory Provisions, and Section 8.4, Prescriptive Option, and either Section 8.5, Performance Option unless otherwise specified in this subsection.

5.9.2.3. Outdoor Air Delivery Monitoring: Spaces Ventilated by Mechanical Systems. Reference Sections 7.4.3.2, 8.3.1.2.1, and 10.3.2, of ASHRAE Standard 189.1. A densely occupied space is defined as those spaces with a design occupant density greater than or equal to 25 people per 1000 ft² (100m²).

5.9.2.4. Environmental Tobacco Smoke: a. Smoking shall not be allowed inside the building. Signage stating such shall be posted within 10 ft (3 m) of each building entrance. b. Any exterior designated smoking areas shall be located a minimum of 50 ft (7.5 m) away from *building entrances, outdoor air intakes, and operable windows*. c. Section 6.2.9 of ANSI/ASHRAE Standard 62.1 shall not apply.

5.9.2.5. High Humidity Areas: Design HVAC systems in geographical areas meeting the definition for high humidity in UFC 3-410-01FA to comply with the special criteria therein for humid areas.

5.9.2.6. Controls Maintenance: Locate all equipment so that service, adjustment and replacement of controls or internal components are readily accessible for easy maintenance.

5.9.2.7. Environmental Requirements for Telecommunications Rooms and Telecommunications Equipment Rooms, (including SIPRNET ROOMS, where applicable for specific facility type): Comply with ANSI/EIA/TIA 569 (including applicable Addenda). Maintain environmental conditions at the Class 1 and 2 Recommended Operating Environment. Before being introduced into the room, filter and pre-condition outside air to remove particles with the minimum MERV filtration quality shown in the ASHRAE HVAC Applications, Chapter 19. Maintain rooms under positive pressure relative to surrounding spaces. Design computer room air conditioning units specifically for telecommunications room applications. Build and test units in accordance with the requirements of ANSI/ASHRAE Standard 127. A complete air handling system shall provide ventilation, air filtration, cooling and dehumidification, humidification (as determined during the design phase), and heating. The system shall be independent of other facility HVAC systems and shall be required year round.

5.9.2.8. Fire dampers: dynamic type with a dynamic rating suitable for the maximum air velocity and pressure differential to which the damper is subjected. Test each fire damper with the air handling and distribution system running.

5.9.3 Utility Meters: Measurement devices with remote communication capability shall be provided to collect energy and water consumption data for each energy supply source and water supply source to each facility, including gas, water (potable, reclaimed and rainwater), electricity, and distributed energy that exceeds the thresholds listed in ASHRAE Standard 189.1. Meet the requirements of ASHRAE Standard 189.1, Sections 6.3.3, 7.3.3, 10.3.2 and AR 420-1, Chapter 22. For Government owned utilities, install meters with remote communication capability as well as have a continuous manual reading option. Water meters shall provide daily data and shall record hourly consumption. Gas and electric meters will

also provide demand readings based on consumption over a maximum of any 15 minute period. Configure all meters to transmit to a meter data management system at least daily even if no receiver for the data is currently available at the time of project acceptance. For privatized utilities, coordinate with the privatization utility(ies) for the proper meter base and meter installation. Exception: Renovation or energy projects with programmed costs less than \$200,000 shall incorporate lower-cost energy monitors when cost effective over the life-cycle of the building following the monitoring guidance as detailed in ASHRAE Standard 189.1 Section 7.3.3.

5.9.3.1 Data Storage and Retrieval. The meter data management system shall be capable of electronically storing water meter and sub-meter data and creating user reports showing calculated hourly, daily, monthly and annual water consumption for each meter and sub-meter and provide alarming notification capabilities as needed. In addition, verification of meter operation will be conducted at installation.

5.9.3.2 Evaporative Cooling Sub-metering: For buildings that use evaporative cooling, cooling tower(s), hot water makeup systems, or automatic landscape irrigation system(s), separate submeters shall be provided for each such application. Water use data shall be collected at each source (e.g. *potable water*, reclaimed water, rainwater) for any source that exceeds the thresholds of: Potable water- 3,800 L/day (1,000 gal/day); Municipally reclaimed water - 3,800 L/day (1,000 gal/day); and Alternate sources of water - 1,900 L/day (500 gal/day).

5.9.3.3 Water Sub-metering: Sub-metering shall also be provided to collect water use data for each of following building subsystems, if they are sized above the threshold levels: Cooling towers – Primary flow > 30 L/s (500 gpm); Evaporative Coolers – Makeup water > 0.04 L/s (0.6 gpm); Steam and hot water boilers - > 50 kW (500,000 Btu/h) input; Irrigated landscape area with controllers - > 2500 m² (25,000 ft²); Any large water using process – Consumption > 3,800 L/day (1000 gal/day).

5.9.3.4 Outdoor Irrigation: Outdoor irrigation shall have smart controllers that will shut off when rainfall is sensed (ASHRAE Standard 189.1 paragraph 6.3.1.3 (2011 version)). Outdoor irrigation shall be used only to temporarily for plant establishment and shall be removed within a period not to exceed 18 months of installation.

5.9.3.5 Energy Metering: Meters with remote metering capability or automatic meter reading (AMR) capability shall be provided to collect energy use data for each supply energy source (e.g. gas, electricity, district steam) to the building that exceed thresholds of: Electrical service - > 200 kVA; On-site renewable electric power – All systems > 1 kVA (peak); Gas and steam service - >300 kW (1,000,000 Btu/h); Geothermal - >300 kW (1,000,000 Btu/h) heating; Solar thermal - >10 kW (30,000 Btu/h). Utility company service entrance/interval meters are allowed to be used provided they are configured for automatic meter reading (AMR) capability. Sub-metering with remote metering capability shall be provided to collect energy use data for each subsystem component that meet the following thresholds: Chillers/heat pumps - >70 kW (240,000 Btu/h) cooling capacity; Packaged AC units - > 70 kW (240,000 Btu/h) cooling; Fans - > 15 kW (20 hp); Pumps - > 15 kW (20 hp); Cooling towers - > 15 kW (20 hp); Boilers and other heating equipment - >300 kW (1,000,000 Btu/h) input; General lighting circuits - > 100 kVA; Miscellaneous electric loads - > 100 kVA).

5.9.4 BUILDING AUTOMATION SYSTEM. Provide a Building Automation System consisting of a building control network , and integrate the building control network into the UMCS as specified.

The building control network shall be a single complete non-proprietary Direct Digital Control (DDC) system for control of the heating, ventilating and air conditioning (HVAC) systems as specified herein. The building control network shall be an Open implementation of LONWORKS® technology using ANSI/EIA 709.1B as the only communications protocol and use only LonMark Standard Network Variable Types (SNVTs), as defined in the LonMark® Resource Files, for communication between DDC Hardware devices to allow multi-vendor interoperability.

5.9.4.1 The building automation system shall be open in that it is designed and installed such that the Government or its agents are able to perform repair, replacement, upgrades, and expansions of the system without further dependence on the original Contractor. This includes, but is not limited to the following:

- (a) Install hardware such that individual control equipment can be replaced by similar control equipment from other equipment manufacturers with no loss of system functionality.
- (b) Necessary documentation (including rights to documentation and data), configuration information, configuration tools, programs, drivers, and other software shall be licensed to and otherwise remain with the Government such that the Government or its agents are able to perform repair, replacement, upgrades, and expansions of the system without subsequent or future dependence on the Contractor.

5.9.4.2 All DDC Hardware shall:

- (a) Be connected to a TP/FT-10 ANSI/EIA 709.3 control network.
- (b) Communicate over the control network via ANSI/EIA 709.1B exclusively.
- (c) Communicate with other DDC hardware using only SNVTs
- (d) Conform to the LonMark® Interoperability Guidelines.
- (e) Be locally powered; link power (over the control network) is not acceptable.
- (f) Be fully configurable via standard or user-defined configuration parameter types (SCPT or UCPT), standard network variable type (SNVT) network configuration inputs (*nci*), or hardware settings on the controller itself to support the application. All settings and parameters used by the application shall be configurable via standard or user-defined configuration parameter types (SCPT or UCPT), standard network variable type (SNVT) network configuration inputs (*nci*), or hardware settings on the controller itself
- (g) Provide input and output SNVTs required to support monitoring and control (including but not limited to scheduling, alarming, trending and overrides) of the application. Required SNVTs include but are not limited to: SNVT outputs for all hardware I/O, SNVT outputs for all setpoints and SNVT inputs for override of setpoints.
- (h) To the greatest extent practical, not rely on the control network to perform the application.

5.9.4.3 Controllers shall be Application Specific Controllers whenever an ASC suitable for the application exists. When an ASC suitable for the application does not exist use programmable controllers or multiple application specific controllers.

5.9.4.4 Application Specific Controllers shall be LonMark Certified whenever a LonMark Certified ASC suitable for the application exists. For example, VAV controllers must be LonMark certified.

5.9.4.5 Application Specific Controllers (ASCs) shall be configurable via an LNS plug-in whenever t an ASC with an LNS plug-in suitable for the application exists.

5.9.4.6 Each scheduled system shall accept a network variable of type SNVT_occupancy and shall use this network variable to determine the occupancy mode. If the system has not received a value to this network variable for more than 60 minutes it shall default to a configured occupancy schedule.

5.9.4.7 Gateways may be used provided that each gateway communicates with and performs protocol translation for control hardware controlling one and only one package unit.

5.9.4.8 Not Used

5.9.4.9 Perform all necessary actions needed to fully integrate the building control system. These actions include but are not limited to:

- (a) Configure M&C Software functionality including: graphical pages for System Graphic Displays including overrides, alarm handling, scheduling, trends for critical values needing long-term or permanent monitoring via trends, and demand limiting.
- (b) Install IP routers or ANSI/CEA-852 routers as needed to connect the building control network to the UMCS IP network. Routers shall be capable of configuration via DHCP and use of an ANSI/CEA-852 configuration server but shall not rely on these services for configuration. All communication between the UMCS and building networks shall be via the ANSI/CEA-709.1B protocol over the IP network in accordance with ANSI/CEA-852.

5.9.4.10 Provide the following to the Government for review prior to acceptance of the system:

- (a) The latest version of all software and user manuals required to program, configure and operate the system.
- (b) Points Schedule drawing that shows every DDC Hardware device. The Points Schedule shall contain the following information as a minimum:
 - (1) Device address and NodeID.
 - (2) Input and Output SNVTs including SNVT Name, Type and Description.
 - (3) Hardware I/O, including Type (AI, AO, BI, BO) and Description.
 - (4) Alarm information including alarm limits and SNVT information.
 - (5) Supervisory control information including SNVTs for trending and overrides.
 - (6) Configuration parameters (for devices without LNS plug-ins) Example Points Schedules are available at <https://eko.usace.army.mil/fa/besc/>
- (c) Riser diagram of the network showing all network cabling and hardware. Label hardware with ANSI.CEA-709.1 addresses, IP addresses, and network names.
- (d) Control System Schematic diagram and Sequence of Operation for each HVAC system.
- (e) Operation and Maintenance Instructions including procedures for system start-up, operation and shut-down, a routine maintenance checklist, and a qualified service organization list.
- (f) LONWORKS® Network Services (LNS®) database for the completed system.
- (g) Quality Control (QC) checklist (below) completed by the Contractor's Chief Quality Control (QC) Representative

Table 5-1: QC Checklist

Instructions: Initial each item, sign and date verifying that the requirements have been met.		
#	Description	Initials
1	All DDC Hardware is installed on a TP/FT-10 local control bus.	
2	Communication between DDC Hardware is only via EIA 709.1B using SNVTs. Other protocols and network variables other than SNVTs have not been used.	
3	All sequences are performed using DDC Hardware.	
4	LNS Database is up-to-date and accurately represents the final installed system	
5	All software has been licensed to the Government	
6	M&C software monitoring displays have been created for all building systems, including all override and display points indicated on Points Schedule drawings.	
7	Final As-built Drawings accurately represent the final installed system.	
8	O&M Instructions have been completed and submitted.	
9	Connections between the UMCS IP network and ANSI/CEA-709.1B building networks are through ANSI/CEA-852 Routers.	
By signing below I verify that all requirements of the contract, including but not limited to the above, been met.		
Signature: _____ Date: _____		

5.9.4.11 Perform a Performance Verification Test (PVT) under Government supervision prior to system acceptance. During the PVT demonstrate that the system performs as specified, including but not limited to demonstrating that the system is Open and correctly performs the Sequences of Operation.

5.9.4.12 Provide a 1 year unconditional warranty on the installed system and on all service call work. The warranty shall include labor and material necessary to restore the equipment involved in the initial service call to a fully operable condition.

5.9.4.13 Provide training at the project site on the installed building system, including all commissioned systems and equipment (ASHRAE Standard 189.1, Section 10.3.1.2), . Upon completion of this training each student, using appropriate documentation, should be able to start the system, operate the system, recover the system after a failure, perform routine maintenance and describe the specific hardware, architecture and operation of the system.

5.10 ENERGY CONSERVATION

5.10.1 ENERGY EFFICIENCY: The building(s), including the envelope(s), HVAC systems, service water heating, power, and lighting systems, shall meet, at a minimum, the Mandatory Provisions in Section 7.3 and either the Prescriptive Option in Section 7.4 or the Performance Option in Section 7.5 of ASHRAE Standard 189.1. ASHRAE 189.1 is the minimum requirement that incorporates by reference the requirements of ASHRAE Standard 90.1-2007 and shall be used as the project baseline for life-cycle cost comparisons. A LCCA is not required on the baseline project. Substantiation requirements are defined in Section 01 33 16, Design After Award and ASHRAE Standard 189.1, Section 10.3.2. Exception 1: The on-site renewable energy systems included in ASHRAE Standard 189.1, Section 7.4.1.1 are not required.

5.10.1.1 Minimum Energy Consumption: The building, including the building envelope, HVAC systems, service water heating, power, lighting systems and process and plug loads shall achieve an energy consumption that is a minimum of 30% below the consumption of a baseline building meeting the minimum requirements of ANSI/ASHRAE/IESNA Standard 90.1-2007 and that is life cycle cost effective. Energy calculation methodologies and substantiation requirements are defined in Section 01 33 16, Design After Award. A LCCA is required.

5.10.1.2 EISA 2007 Requirement: Design the building to achieve the maximum possible fossil fuel-generated energy consumption reduction based on the requirements of EISA 2007 Section 433 that is life cycle cost effective. A LCCA is required.

5.10.1.3 LCCA: Where a LCCA is required, an incremental LCCA shall be completed for all energy efficiency or conservation features provided in excess of the baseline to ensure the payback period is no greater than the lesser of 40 years or the projected life of the facility. Equipment procurement, fuel, maintenance, repair, replacement, and any other quantifiable benefits and costs are to be included in the LCCA. The LCCA will be documented and made part of the design analysis. The LCCA shall follow the methodology contained in 10 CFR 436.

5.10.2 EnergyStar AND FEMP PRODUCTS: The heating, ventilation, and air conditioning shall comply with Section 6 of ANSI/ASHRAE/IESNA 90.1-2007 and Section 7.4.2.1.b of ASHRAE Standard 189.1, including the Normative Appendix C of ASHRAE Standard 189.1 with the following modification: Purchase Energy Star products, except use FEMP designated products where FEMP is applicable to the product type. The term "Energy Star" means a product that is rated for energy efficiency under an Energy Star program. The term "FEMP designated" means a product that is designated under the Federal Energy Management Program of the Department of Energy as being among the highest 25 percent of equivalent products for energy efficiency. For projects located OCONUS the products listed in ASHRAE Standard 189.1, Section 7.4.7, shall have an equipment efficiency that is equivalent or greater than the criteria required to achieve the ENERGY STAR label or meets or exceeds the equivalent of FEMP designated efficiency requirements.

5.10.3 SOLAR HOT WATER HEATING: Design and construct all new construction projects with an average daily non-industrial hot water requirement of 50 gallons or more, and located in an area shown on the NREL solar radiation maps (<http://www.nrel.gov/gis/solar.html>) as receiving an annual average of 4kWh/m²/day or more to provide a minimum of 30 percent of the facility's hot water demand by solar water heating. Waste heat harvesting, integrated co-generation systems, or a combination thereof may be used in lieu of solar water heating where they achieve equivalent energy savings, as documented in the project's design analysis and commissioning analysis.

5.10.4 WATER USED FOR HEATING AND COOLING: Meet the requirements of ASHRAE 189.1 Section 6.3.2.3 – HVAC Systems and Equipment and Section 6.4.2.1 – Cooling Towers. When potable water is used to improve a building's energy efficiency, employ life-cycle cost effective water conservation measures per requirements of EPA Act 2005 Section 109. This includes potable water used for both domestic and process purposes.

5.10.5 RENEWABLE ENERGY: See Paragraph 6, PROJECT SPECIFIC REQUIREMENTS for renewable energy requirements for this project.

5.10.6 FUNDAMENTAL REFRIGERANT MANAGEMENT: Meet the requirements of ASHRAE Standard 189.1, Section 9.3.3.

5.11 FIRE PROTECTION

5.11.2 STANDARDS AND CODES Provide the fire protection system conforming to APPLICABLE CRITERIA.

5.11.3 INSPECTION AND TESTING: Inspect and test all fire suppression equipment and systems, fire pumps, fire alarm and detection systems and mass notification systems in accordance with the applicable NFPA standards. The fire protection engineer of record shall witness final tests. The fire protection engineer of record shall certify that the equipment and systems are fully operational and meet the contract requirements. Two weeks prior to each final test, the contractor shall notify, in writing, the installation fire department and the installation public work representative of the test and invite them to witness the test.

5.11.4 FIRE EXTINGUISHER CABINETS: Provide fire extinguisher cabinets and locations for hanging portable fire extinguishers in accordance with NFPA 10 Standard for Portable Fire Extinguishers. The Government will furnish and install portable fire extinguishers, which are personal property, not real property installed equipment.

5.11.5 FIRE ALARM AND DETECTION SYSTEM: Required fire alarm and detection systems shall be the addressable type. Fire alarm initiating devices, such as smoke detectors, heat detectors and manual pull stations shall be addressable. When the system is in alarm condition, the system shall annunciate the type and location of each alarm initiating device. Sprinkler water flow alarms shall be zoned by building and by floor. Supervisory alarm initiating devices, such as valve supervisory switches, fire pump running alarm, low-air pressure on dry sprinkler system, etc. shall be zoned by type and by room location.

5.11.6 ROOF ACCESS: Paragraph 2-9 of UFC 3-600-01 Fire Protection for Facilities will be modified in the next update to that UFC. Pending revision, comply with roof access and stairway requirements in accordance with the International Building Code. Where roof access is required by the IBC or other criteria, comply with UFC 4-010-01, Anti-Terrorist Force Protection, Standard 14. "Roof Access".

5.11.7 FIRE PROTECTION ENGINEER QUALIFICATIONS: In accordance with UFC 3-600-01, FIRE PROTECTION ENGINEERING FOR FACILITIES, the fire protection engineer of record shall be a registered professional engineer (P.E.) who has passed the fire protection engineering written examination administered by the National Council of Examiners for Engineering and Surveys (NCEES), or a registered P.E. in a related engineering discipline with a minimum of 5 years experience, dedicated to fire protection engineering that can be verified with documentation.

5.12 SUSTAINABLE DESIGN

5.12.1 STANDARDS: Sustainable design shall conform to APPLICABLE CRITERIA. See Paragraph 6, PROJECT-SPECIFIC REQUIREMENTS for which version of LEED applies to this project, however, this project shall achieve a minimum of LEED Silver Certification by Green Building Certification Institute (GBCI). Each building must individually comply with the requirements of paragraphs ENERGY CONSERVATION and PLUMBING AND WATER CONSUMING EQUIPMENT. The project must earn the points associated with compliance with paragraph 5.10, ENERGY CONSERVATION, of this RFP.

5.12.2 In accordance with the National Defense Appropriations Act of 2012, Section 2830, the contractor will not be compensated for any expenses associated with the express intent to obtain LEED certification above the SILVER level. It is recognized that competitive best value proposal details and requirements cited elsewhere in this document and supporting documents may provide for features which allow for a certification higher than SILVER to be obtained. Whether to achieve a future marketing advantage or for other purposes, the contractor may obtain LEED GOLD or PLATINUM certification(s) provided that achieving such certification imposes no additional cost to the government.

5.12.3 CONSTRUCTION WASTE MANAGEMENT: A minimum of 60% of non hazardous construction and demolition waste material generated prior to the issuance of the final certificate of occupancy shall be diverted from disposal in landfills and incinerators by recycling and/or reuse. Reuse includes donation of materials to charitable organization, salvage of existing materials onsite, and packaging materials returned to the manufacturer, shipper, or other source that will reuse the packaging in future shipments. Excavated soil and land clearing debris shall not be included in the calculation. Calculations are allowed to be done by either weight or volume, but shall be consistent throughout. Specific area(s) on the construction site shall be designated for collection of recyclable and reusable materials. Off-site storage and sorting of materials shall be allowed. Diversion efforts shall be tracked throughout the construction process.

5.12.4 LEED INNOVATION AND DESIGN AND REGIONAL PRIORITY CREDITS: LEED Innovation and Design (ID) credits are acceptable only if they are supported by formal written approval by GBCI (either published in USGBC Innovation and Design Credit Catalog or accompanied by a formal ruling from GBCI). LEED ID and RP credits that require any Owner actions or commitments are acceptable only

when Owner commitment is indicated in paragraph PROJECT-SPECIFIC REQUIREMENTS or Appendix LEED Project Credit Guidance.

5.12.5 DOCUMENTATION FOR CERTIFICATION: All LEED Prerequisite and Credit documentation shall be provided to GBCI and the Owner (if requested) in addition to any other documentation requirements. Online documentation shall be uploaded to GBCI and updated at each phase of the project.

5.13 SECURITY (ANTI-TERRORISM STANDARDS): Unless otherwise specified in Project Specific Requirements, only the minimum protective measures as specified by the current Department of Defense Minimum Antiterrorism Standards for Buildings, UFC 4-010-01, are required for this project. The element of those standards that has the most significant impact on project planning is providing protection against explosives effects. That protection can either be achieved using conventional construction (including specific window requirements) in conjunction with establishing relatively large standoff distances to parking, roadways, and installation perimeters or through building hardening, which will allow lesser standoff distances. Even with the latter, the minimum standoff distances cannot be encroached upon. These setbacks will establish the maximum buildable area. All standards in Appendix B of UFC 4-010-01 must be followed and as many of the recommendations in Appendix C that can reasonably be accommodated should be included. The facility requirements listed in these specifications assume that the minimum standoff distances can be met, permitting conventional construction. Lesser standoff distances (with specific minimums) are not desired, however can be provided, but will require structural hardening for the building. See Project Specific Requirements for project specific siting constraints. The following list highlights the major points but the detailed requirements as presented in Appendix B of UFC 4-010-01 must be followed.

- (a) Standoff distance from roads, parking and installation perimeter; and/or structural blast mitigation
- (b) Blast resistant windows and skylights, including glazing, frames, anchors, and supports
- (c) Progressive collapse resistance for all facilities 3 stories or higher. Unless determined otherwise by the Installation and noted in paragraphs 3 or 6, the building shall be considered to have areas of uncontrolled public access when designing for progressive collapse.
- (d) Mass notification system (shall also conform to UFC 4-021-01, Mass Notification Systems)
- (e) For facilities with mailrooms (see Paragraph 3 for applicability) – mailrooms have separate HVAC systems and are sealed from rest of building

6.0 PROJECT SPECIFIC REQUIREMENTS FORT BRAGG, NC (REV 3.5 – 30 APR 2012)

6.1. GENERAL

The requirements of this paragraph augment the requirements indicated in Paragraphs 3 through 5.

6.2. APPROVED DEVIATIONS

The following are approved deviations from the requirements stated in Paragraphs 3 through 5 that only apply to this project.

6.2.1. 21 Sep 2010 ISEC approved waiver to I3A paragraph 2.4.3.1, which requires CATV demarcation point be located in Telecommunications Room. Ft. Bragg Paragraph 6.4.6.7(a) moves that to mechanical or electrical room.

6.3. SITE PLANNING AND DESIGN

6.3.1. General:

6.3.1.1. Project Specific Requirements: See Attachment J for site features included in this task order/contract.

Attachment J, DRAWINGS provided under separate cover.

6.3.1.2. Fort Braggs' strategic goal is to achieve a "sustainable community - meeting the needs of the Soldier today, tomorrow and forever." To achieve this goal, Fort Bragg's philosophy is to apply systematic considerations of environmental impact, energy use, natural resources, economy, and quality of life so the end result is a sustainable community by:

- (a) Creating and enhancing sustainable training and urban areas to ensure military readiness and promote compatible growth of the surrounding community
- (b) Becoming the model sustainable military community by using sustainable principles throughout the life cycle of all facilities and supporting infrastructure
- (c) Achieving zero waste through acquisition and management of materials and commodities which throughout their lifecycle creates no additional waste nor requires resources for disposal
- (d) Supplying reliable services and infrastructure with no negative impacts while aggressively reducing overall demand.
- (e) Building a sustainable world-class ground transportation network providing seamless transition between multiple modes of travel while reducing harmful emissions
- (f) Creating a culture which fosters sustainable life style to enhance the quality of life of the Fort Bragg community. This encompasses the social, mental, physical and spiritual well-being of its members.
- (g) Minimize environmental impacts to natural resources using strategic planning and sustainable design to reduce project footprint ("clearing limits").

6.3.1.3. Fort Bragg's sustainable community objectives are energy savings, water savings/reuse; low-emitting, nontoxic materials, land/habitat loss minimization, reusable/recyclable building materials, tie in to "community" sustainability features (e.g. continuance of bikes lanes/walking paths), turf areas/water intensive landscapes minimization, use of native plants, and use of low-impact development strategies for stormwater management.

6.3.1.4. Design Principles

- (a) Plan and design site in a sustainable manner in accordance with all applicable references. The planning and design shall incorporate appropriate measures to address endangered, threatened, and special concern species; energy efficiency and renewable generation; materials reuse; multimodal transportation; native wildlife habitat protection and restoration; pollution prevention; public health and safety; water resources protection and restoration; and water use efficiency.
- (b) Sustainable site plan, planning, design and development will address the need to conserve green space, preserve remnant old-growth trees, protect endangered species and wetlands, achieve maximum on-site stormwater infiltration, provide for greenways and link corridors of existing natural habitat for recreational value, quality of life and for wildlife/plants conservation. Sustainable site planning should include green space planning, and corridor development for recreational use and wildlife benefits. Construction footprint shall minimize disturbance to soils to the maximum extent practicable in support of the installation sustainability goals.
- (c) Base site design on the Beaux-Arts principles of balance, axial arrangements, symmetry, and site lines.
- (d) Plant native trees, shrubs and grasses in accordance with Fort Bragg's plant list palette. See Appendix I. Theme tree emphasis will favor longleaf pine to support ecosystem management policy, sustainability, endangered species conservation, and sustainable communities.
- (e) Multiple historic districts and individual historic properties are present at Fort Bragg. Fort Bragg's Cultural Resources Management Program (CRMP) reviews all construction projects through the NEPA review and clearance process and assesses their impact on historic properties. Construction projects with the potential to affect historic properties require close coordination with CRMP throughout project development and execution. Projects determined to affect historic properties may require consultation with the North Carolina State Historic Preservation Office (SHPO) under Section 106 of the National Historic Preservation Act, as codified in 36 CFR 800. All SHPO consultations will be initiated by CRMP and are typically completed in 45 days (including the mandatory 30-day SHPO review period). Some projects may require multiple 30-day SHPO reviews to complete the consultation process. Project schedules must take into consideration and make allowance for the requirement of SHPO consultation. When SHPO consultation is required, the process must be complete prior to the commencement of construction activities. This project is not within a historic district or view shed and does not require consultation with the SHPO.

6.3.1.5. Required Submission of Plans in Electronic Format

- (a) At each submission stage project site plans and maps shall be submitted to Fort Bragg DPW, for review by Environmental Division (ED), in Bentley Microstation DGN V8 electronic format.
- (b) The standard unit of measurement (horizontal and vertical) for all site plans and maps shall be the US Survey Foot.
- (c) All site plans and maps shall be horizontally georeferenced to the NC State Plane Coordinate System, North American Datum of 1983 (NCSPCS, NAD83). All site plans and maps shall be vertically georeferenced to the North American Vertical Datum of 1988 (NAVD88).
- (d) All maps and plans shall employ layers/levels per the US National CAD Standard (NCS). The project construction boundary shall be clearly depicted and labeled.
- (e) The project construction boundary shall be comprised of closed polygons on the appropriate layer/level (C-PROP-CONS per the current NCS). Elements on the project construction boundary layer/level shall be limited to the project construction boundary. No other data will be placed on that layer/level.

Polygons shall be free and clear of duplicated vertexes and self-intersections. Point features such as borings, wells, trees, and test-pits shall be depicted by normal cells only (no shared cells).

6.3.2. Site Structures and Amenities

6.3.2.1. Supporting site structures shall preferentially include EPA-designated recovered materials products, USDA-designated bio-based products, and environmentally preferable products. The items identified in Appendix NN used in construction contracts must meet or exceed USDA Biobased and EPA RMAN requirements. Exemptions to the use of EPA-designated recovered materials products, USDA-designated bio-based products, and environmentally preferable products based on availability and performance must be cleared by the Sustainable Materials Planner or Sustainable Facilities Planner.

6.3.2.2. Supporting site structures shall utilize the same building materials and characteristics as the adjacent buildings. Provide the following site structures and amenities:

(a) Dumpster Screening shall match or compliment the surrounding facilities and current dumpster systems in the area. Locate dumpster pad to minimize backing of trash transfer vehicles. Locate dumpster pads and screening in accordance with setbacks in UFC 4-010-01. Access to dumpster pads should not be thru parking lots whenever possible to preclude mixing of large trucks, POVs, and GOVs. When required, limit the dumpster unloading vehicle backup distance to minimum distance possible.

6.3.2.3. Exterior Signage

6.3.3. Site Functional Requirements:

6.3.3.1. Stormwater Management Systems.

(a) The project shall be meet National Pollutant Discharge Elimination System (NPDES) requirements for stormwater management

(b) Comply with the NPDES General Stormwater Permit Requirements and all other associated NPDES permit requirements. The general permit is issued along with the Erosion Control permit from the NC Department of Environment and Natural Resources (NCDENR) - Land Quality Section and includes requirements to record rainfall events at the site, visually monitor and maintain records of the stormwater discharge, and maintain a log of the corrective actions required to remain in compliance. The contractor shall maintain records until the erosion control permit has been closed out by NCDENR.

(c) Develop and submit a Storm Water Pollution Prevention Plan (SWPPP) to the Contracting Officer's Representative (COR) and to the Ft. Bragg Water Management Branch for approval. After receiving approval from the Water Management Branch and concurrence from the COR, submit the SWPPP to the NC Division of Water Quality for approval. Pay all permit related fees. If the plan is found to be deficient correct the deficiencies and resubmit the plan.

(d) Design the permanent stormwater treatment measures to comply with NCDENR requirements as laid out in the NC Division of Water Quality's Stormwater BMP Manual. A copy of the BMP manual can be obtained at <http://portal.ncdenr.org/web/wq/ws/su/bmp-manual>.

(e) In addition to the NCDENR requirements:

(i) Design the permanent measures to keep the post construction rate of stormwater discharge for the 10 year, 24 hour storm at or below the pre-developed discharge rate.

(ii) Design the permanent measures to accommodate the 100 year, 24 hour storm without significant flooding or damage to the stormwater system and facilities/improvements in the surrounding area.

(iii) Calculate the pre-developed discharge rate and quantity of discharge as if the site was completely undeveloped forest land.

(iv) For Ft. Bragg use the following storm estimates. (1 year, 1 hour, 1.5 inches), (2 year, 1 hour, 1.8 inches), (10 year, 24 hour, 5.4 inches), (25 year, 24 hour, 6.5 inches), (50 year, 24 hour, 7.3 inches) and (100 year, 24 hour, 8.2 inches).

(v) Design the permanent measures to keep the post construction quantity of stormwater discharge for the 95 percentile rain event (1.8 inch 24 hr rainfall) at or below the pre-developed quantity of discharge unless it can be shown to be technically unfeasible due to soil types and/or space constraints. Infiltration of the stormwater runoff from the first 1.8 inches of rainfall is preferred, however, if infiltration is not

technically feasible other uses of the excess stormwater such as on site storage for irrigation shall be investigated. Uses other than infiltration must receive approval from Ft. Bragg. Reference EISA 2007 Section 438 and EPA 841-B-09-001 Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act.

(f) Employ Low Impact Design (LID) to the Maximum Extent Practicable. Stormwater management shall focus on infiltration of stormwater and natural methods of pollutant removal. The use of vegetated filter strips and buffers, the conveyance of stormwater by vegetated swales rather than pipes, the use of curb cuts rather than curb inlets, the use of several small grass lined infiltration pools rather than one large basin, and the use of grass paving products for emergency vehicle access lanes rather than concrete or asphalt are preferred. For sites that infiltration has been found to be unfeasible, the stormwater system shall focus on quality (nutrients/sediments/pollutants) and rate of discharge.

(g) Do not use the following structural stormwater management measures without prior approval of the Water Management Branch, Directorate of Public Works: permeable/pervious pavements, green roofs, subsurface infiltration chambers, curb inlets and sand filters.

(h) Perform borings for potential stormwater management features to identify seasonal high water table as required by the NCDENR Division of Water Quality Best Management Principles Manual.

6.3.3.2. Erosion and Sediment Control

(a) Prepare an Erosion Control Plan (ECP) in accordance with the North Carolina Erosion and Sediment Control Planning and Design Manual, latest revision.

(b) The North Carolina Sedimentation Control Pollution Act of 1973, decrees that any land disturbing activity over an acre must have approved sediment and erosion control plan before construction begins. In addition, the Installation requires that all land disturbing activity, regardless of size, have an approved sediment and erosion control plan before any land disturbing activity can commence.

(1) The Fort Bragg Water Management Branch must approve all sediment and erosion control plans prior to submittal to the North Carolina Department of Environment and Natural Resources (NCDENR). Sediment and Erosion control plans must bear the Fort Bragg Storm Water Management Branch stamp prior to acceptance by NCDENR. Both agencies will review the plan(s) to ensure that all measures to retain sediment on the site during construction and all measures to prevent erosion after construction have been designed into the construction drawings. Agencies will review sediment control measures such as silt fence, temporary sediment traps, and construction entrances/exits for the proper sizing and installation.

(2) Once the plan(s) is approved, the Ft. Bragg Water Management Branch, the Corps of Engineers and the NCDENR will inspect construction to ensure that all work is performed in adherence to the approved plan.

(3) The site shall meet the appropriate High Density Design Requirements as described in the most current edition of North Carolina Stormwater Best Management Practices Manual. Reference website can be found at Appendix BB.

(4) Prior to any revision or deviation from the approved set of Sediment and Erosion control plans, submit new plans to Fort Bragg Storm Water Management Branch for approval prior to submission to NCDENR following the same process as outlined above.

(c) All pond type trash racks shall be solid walled, anti-vortex devices. Bar-type trash racks are unacceptable.

6.3.4. Site Structures and Amenities

No additional requirements.

6.4. SITE ENGINEERING

6.4.1. Existing Topographical Conditions

6.4.1.1. See Appendix J for a topographic survey and the site plan showing this project for information only. Coordinate the design with tie in points provided. Verify the information provided and any discrepancies that are found in the furnished survey and bring this information to the immediate attention of the Contracting Officer for clarification. Any additional survey required for the complete design and construction of this project shall be the responsibility of the Contractor.

No additional requirements.

6.4.2. Existing Geotechnical conditions: See Appendix A for a preliminary geotechnical report.

6.4.2.1. Verify the results of the Government supplied information provided and bring any discrepancies found in the finished survey to the immediate attention of the Contracting Officer for clarification. The provided site layout drawings are for guidance but the Contractor proposed site layout shall be similar in design

6.4.2.2. Locate primary facilities to avoid existing above and below ground utilities, government and privatized, traversing the site whenever possible.

6.4.2.3. Locate primary facilities in accordance with all AT/FP requirements.

6.4.2.4. Coordinate the new construction activities and erosion control measures with the adjacent facilities and erosion control measures.

6.4.2.5. Limits of Construction:

(a) The Limits of Construction are shown on the provided drawings. Confine all work within the Limits of construction except as needed to tap into existing utility lines or maintenance holes.

(b) Provide drawings to Fort Bragg to coordinate locator service outside of construction limits prior to conducting any digging outside of the construction limits.

6.4.3. Fire Flow Tests See Appendix D for results of fire flow tests to use for basis of design for fire flow and domestic water supply requirements.

6.4.4. Pavement Engineering and Traffic Estimates:

6.4.4.1. A professional engineer, licensed in the State of North Carolina, shall design all rigid and flexible pavements in accordance with the Contractor's final geotechnical report.

6.4.4.2. Vehicular Parking Areas

(a) Do not use permeable pavements, including segmented pavers, pervious concrete or pervious asphalt in vehicular parking and other pavements.

(b) Design parking areas surface slopes between 0.5% and 2% with a maximum of 3% in the parking stalls. Layout parking lots so that drainage conforms to the existing general site contours to provide the maximum utilization of water gardening or bio-retention ponds on site.

(c) Hardstand slopes shall be between 0.5% and 2.0%. Slope all hardstands away from readiness and covered hardstands.

(d) Design parking lots to avoid ponding of water.

(e) Wheel stops shall be slotted along bottom edge to allow water to pass beneath the wheel stop.

(f) Parking Area access lanes shall be a 24 ft wide minimum from the edge of pavement.

(g) Motorcycle parking spaces shall be concrete, 9' x 18' long with appropriate signage. Locate motorcycle parking pad at end of parking lines to allow up to 4 motorcycles to be parked in one spot using the 18 foot side. Identify kickstand locations with inset steel plates.

6.4.4.3. Emergency Vehicle Access and Service Drives. Design emergency vehicle access with NFPA, UFC 3-600-01, and as required by the Installation (FB Fire Dept is AHJ). Consider an option for use of grass paver type products for emergency vehicle access if soils engineering studies indicate ground can support such structures.

6.4.4.4. Vehicle Crash Barriers (as applicable to certain facility types)

(a) Locate vehicle crash barriers at all emergency vehicle access and service drives to barracks and battalion headquarters buildings and all service drives leading to the company operation facilities service yard.

(b) Vehicular crash barriers shall be pad lockable in the open and closed position and meet the minimum crash certification of K1.1/L3. Barrier arm surface shall have a rust inhibiting painted surface and shall be furnished with 4-inch wide reflective paint spaced at every 20 inches.

(c) Drop arm barrier shall be counter weighted for ease of lifting by a single person.

(d) The use of removable, bollard type barriers is not allowed. Locate AT/FP measures in accordance with applicable criteria.

6.4.4.5. Sidewalks

(a) Sidewalks shall provide an ample functional system of walks connecting structures, parking areas, streets, and other walks as pedestrian traffic demands. In addition, carefully review paths of travel between buildings within this and adjacent complexes to determine a layout of sidewalks that is sufficient to meet the likely paths of travel.

(b) Locate sidewalks a minimum of 5 feet from main roads and streets. Slope sidewalks to meet all requirements for ADAAG. Construct sidewalks of Portland Cement Concrete.

(c) Emergency vehicle access and service drives shall be a concrete sidewalk designed to support multi-story ladder trucks weighing 75,500 pounds on three axles; two axles are double tired.

6.4.4.6. Flexible Pavement Design

(a) Design heavy duty flexible pavements to support H-20 loading.

(b) Design light duty flexible pavements to support 5,000 lb axial loading.

(c) Pavement designs over cohesive soil subgrades require under-drain systems.

(d) The flexible pavement design shall be larger of the calculated flexible design thickness and the minimum flexible design thickness.

6.4.4.7. Rigid Pavement Design

(a) Design rigid pavements to support H-20 loading.

(b) The minimum pavement section shall be 6 inches rigid concrete pavement over 6 inches of compacted aggregate base course.

(c) Pavement designs over cohesive soil subgrades require under drain systems.

(d) Provide a concrete joint layout plan for all concrete pavements. Show joint spacing, joint types, and joint grading.

6.4.4.8. Additional Requirements:

None.

6.4.5. Traffic Signage and Pavement Markings

6.4.5.1. A Professional Engineer (PE) licensed in the State of North Carolina, qualified and experienced in traffic engineering and signal design must perform traffic signalization plans and design work to include road closure plans.

6.4.5.2. All pavement marking and road way signage shall be in compliance with the Manual of Uniform Traffic Control Devices (MUTCD) and Federal Highway Administration (FHWA) policies.

6.4.5.3. Four (4) inch thermoplastic white reflective material is the only authorized material for stripping.

6.4.6. Base Utility Information

6.4.6.1. General.

(a) Prior to interim (or final if no interim package) site design, coordinate and validate with the survey on the locations and sizes of all existing utility services, above and below ground.

(b) Install and reconnect temporary utilities for buildings which are supported by utilities which will be demolished/or relocated during construction. Coordinate service interruption two weeks in advance with the DPW. Sandhills Utilities Service will supply the electric meter.

(c) All Building Utility meters including but not limited to: Water, Gas and Electric shall be compatible with the Army metering program pursuant to Public Law 109-58, Section 103 of the Energy Policy Act of 2005. The intent is for all utility meters to report their data to the installations base-wide Utility Monitoring and Control System (UMCS). The utility meters must provide data at least daily and measure at least hourly consumption of electricity. The means for meter data transmission will be by using ANSI/CEA 709.1b (LONWorks). Wireless is not an approved means of communication at Fort Bragg. A key element for success will be integrating these systems with the Installation's UMCS. Coordinate type of metering required for DDC monitoring with Energy Manager. Contact the DPW for more detailed specifications.

(1) All new buildings shall have a water meter installed and connected back to the Utility Monitoring & Control System (UMCS) via the buildings Direct Digital Control (DDC) system. The privatized utility provider, Old North Utility Services, Inc. (ONUS) will provide and install the meter under separate contract with the Government. The Contractor is responsible for electrical connections to the meter under this contract.

(2) Install a gas meter in all new buildings and connect back to the Utility Monitoring & Control System (UMCS) via the buildings Direct Digital Control (DDC) system. The meter shall send a Pulse output to the DDC system.

(3) Electrical power metering/ monitoring shall be from a digital metering on the main power panel (service entrance). Transfer data to the DDC panel by installed conduit and cat 6 cabling (not from the building transformer meter.) Provide a 1-inch conduit from the electric utility meter to a data collection point located in a DDC panel inside the building mechanical room. In addition, provide CAT 6 cable from the communications room to the building point of connection (BPOC) located a DDC Control panel in the building mechanical room. Coordinate location with the Ft. Bragg UMCS manager.

6.4.6.2. Storm drainage service and natural gas on this installation is not privatized.

6.4.6.3. Water and Sanitary Sewer Services:

(a) Water and Sanitary Sewer services on this installation are privatized. Contact Old North Utility Services, Inc. (ONUS), 110 N. Fourth St., Spring Lake, North Carolina 28390, 910-495-1311.

(b) Provide one separate fire sprinkler service connection, one separate potable water service connection and one separate sanitary sewer service connection per building.

(c) ONUS will act as a Prime Contractor (in a separate contract between the Government and ONUS) for design and construction of exterior potable water, fire water and exterior sanitary sewer to points of connection identified in Appendix C.

- (d) Coordinate water requirements and connections with ONUS.
- (e) Coordinate sewer requirements and connections with ONUS. No tapping of the existing water distribution or sanitary sewer system is authorized without prior approval of ONUS.
- (f) ONUS is responsible for filing, maintaining and closing water permits and sanitary sewer permits for the project. Contact ONUS for a copy of the latest approved installation standards and specifications.
- (g) Model the fire flows and inlet pressures for this facility in concert with ONUS to construct a water distribution model. Verify that the fire flow and pressure requirements for the new facility are less than or equal to the modeled flows and pressures.

6.4.6.4. Natural Gas: The existing underground gas distribution system at Fort Bragg is not privatized.

(a) An 8" gas line is located adjacent to the project site along Keerans Street, and is available for use for this project. This gas line is managed by Ft. Bragg DPW, contact number (910) 432-9760. Interruption of gas service to existing buildings shall be avoided during the construction of these facilities.

(b) Honeywell manages gas utility service laterals at Simmons Army Airfield and those which feed individual buildings on Fort Bragg: that are Honeywell installed. See Appendix C for POC.

(c) Fort Bragg manages the remaining natural gas laterals on Fort Bragg and Pope Air Force Base. See Appendix C for POC.

(d) The distribution system pressure is approximately 22 psig to 30 psig. If gas is determined to be the most life-cycle cost effective alternative, the system design shall comply as follows:

(1) Contractor shall design, tie-in, layout/route and install gas distribution system up to and within the facility (including the gas meter/regulator assembly).

(2) Coordinate and field verify site conditions prior to performing any work. See Appendix C (Utility Connection) and the site plans for additional information.

(3) Install copper or other metallic tracer wire for all new non-metallic gas lines (natural and LP). Install the tracer wire below the pipe and connect from manhole to manhole (valve to valve, etc) with enough additional length for the end to reach the ground surface for the attachment of energizing equipment. Wire shall enter the manhole so it is not cut or severed during installation. Also install metallic marking tape, approximately 18 inches below ground surface.

6.4.6.5. Chilled and Hot Water. Honeywell manages Chilled and Hot Water: Chilled Water (CW), and High Temperature Water (HW) utility services on Fort Bragg. See Appendix C, (Utility Connection) for additional information and POC.

6.4.6.6. Communications System (Government)

(a) Communication service on this installation is owned by the Government. Design and install the Outside plant (OSP) communication infrastructure including cabling from a designated maintenance hole or service delivery point into the facility main telecommunications room.

(b) Complete the design and full construction of the work to include all cable splicing, count changes, reconfigurations, over overbuilds.

6.4.6.7. Cable Television (CATV) Service

(a) Extend one 4-inch duct from the CATV backboard to nearest maintenance hole or handhole in the site vicinity. Do not locate CATV demarcation point in the facility telecommunications room. CATV service provider shall coordinate with DPW for location of CATV demarcation point, usually placed in the mechanical or electrical room.

- (b) Time Warner Cable Company (TWC) will provide and install service cabling throughout the project site, at the CATV demarcation point located in the facility mechanical or electrical room.. Coordinate site/facility interfaces with TWC.
- (c) See Appendix C: UTILITY CONNECTIONS for additional information and requirements.
- (d) Provide single sheet ¾" A-C fire-rated backboard in room where CATV building entry is located. Plywood type as per I3A para. 2.5.6.
- (e) Provide additional dedicated power outlet and grounding bar at CATV building entry area.

6.4.6.8. Telephone Service (Private Company)

The local telephone company, CENTURYLINK, will design and install outside plant (OSP), local (private) telephone service (e.g., subscription service to permanent party barracks). Coordinate with CENTURYLINK to assure duct line entry into the building.

6.4.6.9. Exterior Electrical Distribution System

The privatized electrical system contractor, Sandhills Utilities Services (SUS), will design and construct site electrical primary distribution to and within the project site under separate contract with the Government. See paragraph 6.9 and Appendix C (Utility Connection) for additional information and POC.

6.4.6.10. Underground Utility – Road Crossings. Use under-ground boring systems for all underground utilities that cross active road crossings to tie into existing utilities. Do not use open trench methods to cross roads unless a last resort and specifically approved by the Fort Bragg Director of Public Works. Support all piping, using spider spacers. Supporting with oak boards is not allowed.

6.4.7. Cut and Fill

6.4.7.1. Limit earth cut and fill slopes to no steeper than 3 horizontal to 1 vertical. Retaining or segmented walls are an option to limit the cut and fill. These slopes include the borrow pit.

6.4.7.2. Rough and possibly no cut/fill or grading in construction areas. Fill depression/holes from the removal building foundations and basements.

6.4.7.3. Compaction requirements shall be in accordance with ASTM D1557 (modified proctor), not ASTM D698 (standard proctor). The licensed geotechnical engineer or his authorized representative shall inspect, evaluate and approve all subgrades (pavements, floor slab, or foundation) prior to placement of overlying construction materials, as appropriate.

6.4.7.4. Ensure that the licensed project design geotechnical engineer oversees and directs proof rolling operations (for subgrade suitability); fill placement and compaction operations, including associated soil properties, compaction, and field density testing; and footing inspections on a full time basis. A Corps of Engineers validated geotechnical testing firm shall inspect, test, and document earthwork construction

6.4.8. Borrow Material: Presently there IS an available Borrow Pit(s) on Ft. Bragg. See location Plan. A permit is required to use the Fort Bragg soil borrow material pits per Section Borrow Pit permit.

6.4.9. Haul Routes and Staging Areas

6.4.9.1. See Location Plan for haul routes. Utilize only those haul routes identified on the drawing set included in this RFP.

6.4.9.2. Additional Site Requirements

- (a) Identification of Employees. Provide to each employee and require each employee engaged on the work site to display identification as approved and directed by the Contracting Officer. Deliver prescribed identification to the Contracting Officer for cancellation upon release of any employee. When required, obtain and provide fingerprints of persons employed on the project. All personnel shall wear identifying markings on hard hats to clearly identify the company for whom the employee works.
- (b) Employee parking. Employees shall park privately owned vehicles in an area designated by the Contracting Officer. This area will be within reasonable walking distance of the construction site. Employee parking shall not interfere with existing and established parking requirements of the Installation.
- (c) Temporary Facilities. Administrative Field Offices: Provide and maintain administrative field office facilities within the construction area of the designated site unless approved by the Contracting Officer and the Installation. Government office and warehouse facilities are not available to the Contractor's or subcontractors' employees.
- (d) Storage Area. Trailers, equipment, or materials shall not be open to public view with the exceptions of those items which are in support of ongoing work on any given day. Do not stockpile materials outside the fence in preparation for the next day's work. Park mobile equipment, such as tractors, wheeled lifting equipment, cranes, trucks, and like equipment within the fenced area at the end of each work day. Locate construction trailer(s) within limits of construction. Locate the laydown yard/storage area within the limits of the construction area unless previously approved by the Contracting Officer and the Installation.
- (e) Temporary Utilities. All temporary utilities (water, sewer, electrical, telecommunications, etc) will be at the Contractor's expense and subject to Fort Bragg regulations. In the case of privatization utility Contractors, the Utility cost information is at Appendix K. Contractor must negotiate and contract with the privatization utility directly without benefit of the Government
- (1) Coordinate with ONUS for any temporary water and sanitary sewer service. ONUS will provide estimate for connection costs.
- (2) Coordinate with Sandhills Utilities Services for any temporary electrical services. Sandhills Utilities Services will provide estimate for connection costs.
- (f) Appearance of Trailers, Storage Spaces, and Other Facilities within the Laydown Yard. Storage equipment and facilities used for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers, which, in the opinion of the Contracting Officer, require exterior painting or maintenance, will not be allowed on the Installation.
- (g) Maintenance of Storage Area. Keep fencing in a state of good repair and proper alignment. Should the Contractor elect to traverse, with construction equipment or other vehicles, grassed or unpaved areas, which are not established roadways, cover such areas with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways. Gravel gradation shall be at the Contractor's discretion. Mow grass located within the boundaries of the construction site for the duration of the project. Trim grass and vegetation along fences, buildings, under trailers, and in areas not accessible to mowers and edge neatly.
- (h) Security Provisions. Provide adequate outside security lighting at all temporary facilities. The Contractor shall be responsible for the security of its own equipment. Notify the appropriate law enforcement agency requesting periodic security checks of the temporary project field office
- (i) Project Safety Fencing. As soon as practical, but not later than 15 days after the date established for commencement of work, furnish and erect temporary project safety fencing around the construction site. This fencing shall remain the property of the Contractor. The safety fencing shall be 9 gauge chain link fence, a minimum of 72 inches high, supported and tightly secured to steel posts located on a maximum of 10 foot centers, constructed at the approved location. Maintain the safety fencing during the life of the contract and upon completion and acceptance of the work remove all fencing from the work site. Prior to erection of any temporary project safety fencing, coordinate with Fort Bragg DPW Transportation Engineer, Ray Goff; 910-907-1759 to check appropriate traffic safety sight lines. Installation and locating of project safety fencing shall consider sight triangles at intersections, curves, and construction entrances.

- (j) Temporary Hazard Safety Fencing. Furnish and erect safety fencing at temporary hazards and work site areas considered to be hazardous to the general public. This fencing shall remain the property of the Contractor. The safety fencing shall be high visibility orange, high density polypropylene grid or approved equal, a minimum of 42 inches high, supported and tightly secured to steel posts located on maximum 10 foot centers, constructed at the approved location. Maintain the safety fencing during the life of the hazard and remove all fencing upon completion and acceptance of the work.
- (k) Cleanup. Remove construction debris, waste materials, packaging material and the like from the work site daily. Clean up any dirt or mud which is tracked onto paved or surfaced roadways. Store materials resulting from demolition activities which are salvageable within the fenced area described above or at a supplemental storage area. Neatly stack stored materials, not in trailers, whether new or salvaged.
- (l) Restoration of Storage Area. Restore areas used by the Contractor for storage of equipment or material, or other use, to the original or better condition. Remove gravel used to traverse grassed areas and restore the area to original condition, including top soil tree and vegetative replanting and seeding, as necessary.
- (m) Building and Crane Height Restrictions. Verify construction activities do not interfere with Simmons Army Airfield or Pope Air Force Base aircraft glide slopes and FAA height restrictions. Submit FAA Form 7460-1 for all cranes to be used on each building and for each building in the project to the FAA. Submit this form to the FAA a minimum of 60 days before the cranes arrive on site and the vertical construction of the buildings start. FAA Form 7460-1 is available from the Contracting Officer's Representative (COR) at the area office.

6.4.10. Clearing and Grubbing:

6.4.10.1. Clear and grub all brush and vegetation from the designated site area.

6.4.10.2. Tree Removal Plan. Develop a Tree Removal and Restoration Plan. Include a pre-existing tree survey (drawing) that clearly depicts: removed and retained trees; a table containing type tree species, size range (dbh) and number of trees to be removed and a functional replacement value for each size range (if tree replanting is applicable), as outlined by the Fort Bragg Tree Replacement Policy and Table, Appendix II.

- (a) For projects under one acre, the tree survey will document tree size (by dbh), species, and location on the pre-existing tree survey drawing. Include the table identified above.
- (b) Projects impacting vegetation will require habitat restoration (e.g. controlled burns, thinning, and/or mechanical or chemical mid-story hardwood removal) or tree restoration contingent upon project location and scale. Fort Bragg DPW Environmental Branch compliance officer will notify DPW and COE project manager and determine habitat or tree restoration requirements.
- (c) Tree replacement plans must attempt functional replacement value by replanting trees on-site. If not applicable, replace trees off-site or a combination of both on-site and off-site may apply. Projects > 1 acre determine tree functional tree replacement value is at a ratio of 1:1 (acre for acre) to eliminate negative forest fragmentation effects. Include replanting locations and planting specification with each design submittal.
- (d) Landscaping plan must consider providing species diversity, green space planning, corridor development, wildlife value, etc. Plantings must consider "natural community" (i.e., aggregate clumping and composition, and structural layers (ground, mid-story and over-story). Green space areas should be juxtaposed to preexisting natural habitat to facilitate dispersal pathways (e.g., population demographics) for animals and plants, as well as, provide for recreational value.
- (e) Plant pine trees during late fall (October-November) or early spring (February-March) to ensure maximum survivability and diminish likelihood of replacement. All replanting will be covered under a one year warranty and will be replaced under corresponding project funding.

Habitat restoration may be required in lieu of tree replacement contingent upon federal regulator guidance, available tree replacement locations, and benefit to impacts natural resources. Habitat restoration will be specified by the appropriate Environmental Management Branch subject matter experts and associated costs will be requested and included in the overall project funding. Habitat restoration may include one or a combination of the following: controlled burns, pine thinning, and/or mechanical or chemical mid-story hardwood removal.

6.4.10.3. Timber Harvesting. This project requires timber harvesting and merchantable tree sales are required for this site. Delineate the clearing limits by placing BLUE paint on perimeter trees on the side facing the area to be cleared. Notify the Government when this has been accomplished. Designate representative knowledgeable about the marking to answer any questions that may arise regarding clearing limits. Merchantable Timber is defined as: Government assets of pine trees greater than 5 inches in diameter at 4.5 feet above the ground (DBH) and hardwood trees greater than 10 inches DBH shall be considered as merchantable timber. The Government will make arrangements for their timber harvesting crews to clear the timber. Allow the Government 60 calendar days to remove merchantable timber once the Contractor has flagged the trees to be removed. Merchantable timber sales do not include stump or limb removal. Remove all stumps and limbs from the project site. A valid NCDENR sediment and erosion control permit is required prior to removal of stumps from the project site.

(a)

6.4.11. Landscaping:

6.4.11.1. Develop a sustainable landscape plan in accordance with the Installation sustainable communities' goals and priority.

6.4.11.2. Plant native trees, shrubs and grasses in accordance with Fort Bragg's plant list palette (Appendix I). Theme tree emphasis favors longleaf pine to support ecosystem management policy, sustainability, endangered species conservation, and sustainable communities.

(a) Place dense native evergreen mass vegetation (such Yaupon Holly, *Ilex vomitoria*, shrubbery) along all concrete, gravel, soil, and other pathway intersections to prevent 'short-cutting' outside the designated pathway surface. The length of dense native evergreen mass vegetation plantings shall generally extend at least 15 feet from the intersection edge along each pathway

(b) Do not specify invasive and/or exotic species (plant materials) in the Landscape Plan.

(c) Consider site utilities when developing the landscape plan to prevent conflicts. Avoid placing trees under light fixtures or shrubs in front of equipment doors and fire hydrants.

(d) If a temporary irrigation system is used, its use shall be limited to a period of one year to support turf establishment". Remove the system upon completion of turf establishment.

6.4.11.3. The source water for all areas receiving irrigation shall be from rainwater harvesting, process water recovery, or other non-potable source. This does not include water wells.

6.4.12. Turf: Provide turf in all high traffic troop congested areas such as barracks, administrative facilities and dining facilities.

(a) Use centipede grass (*Eremochloa ophiuroides*) for low traffic grass turf areas.

(b) Use zoysia grass (*Zoysia* spp) for high traffic grass turf areas.

(c) The Fort Bragg preferred turf and seeding requirements are in Appendix I.

6.5. ARCHITECTURE

6.5.1. General: To the maximum extent possible within the contract cost limitation, the buildings shall conform to the look and feel of the architectural style and shall use the same colors as adjacent facilities as expressed herein. The Government will evaluate the extent to which the proposal is

compatible with the architectural theme expressed in the RFP during the contract or task order competition. The first priority in order of importance is that the design provides comparable building mass, size, height, and configuration compared to the architectural theme expressed herein. The second priority is that design is providing compatible exterior skin appearance based upon façade, architectural character (period or style), exterior detailing, matching nearby and installation material/color pallets, as described herein.

6.5.2. Design

6.5.2.1. Appendix F is provided "For Information Only", to establish the desired site and architectural themes for the area. Appendix F identifies the desired project look and feel based Fort Bragg's Installation Architectural Theme from existing and proposed adjacent building forms; i.e. building exterior skin, roof lines, delineation of entrances, proportions of fenestration in relation to elevations, shade and shadow effects, materials, textures, exterior color schemes, and organizational layout.

6.5.2.2. The design should address Fort Bragg's identified preferences. Implement these preferences considering the following:

- (a) Achievable within the Construction Contract Cost Limitation (CCL)
- (b) Meets Milestones within Maximum Performance Duration.
- (c) Achieves Full Scope identified in this Solicitation
- (d) Best Life-Cycle Cost Design
- (e) Meets the Specified Sustainable Design and LEED requirements.
- (f) Complies with Energy Conservation Requirements Specified in this RFP.

6.5.2.3. Priority #1 Visual Compatibility: Facility Massing (Size, Height, Spacing, Architectural Theme, etc.), Exterior Aesthetic Considerations: The buildings massing, exterior functional aesthetics, and character shall create a comprehensive and harmonious blend of features that are sympathetic to the style and context of the Installation. The Installation's intent for this area is as indicated in Appendix F. Site and architectural conceptual drawings that meet this objective are shown in Appendix F.

6.5.2.4. Priority #2. Architectural Compatibility: Exterior Design Elements (Materials, Style, Construction Details, etc.) Roofs, Exterior Skin, and Windows & Door Fenestrations should promote a visually appealing compatibility with the desired character while not sacrificing the integrity and technical competency of building systems.

6.5.2.5. See Appendix F for exterior colors that apply to Architectural character at Fort Bragg. The manufacturers and materials referenced are intended to establish color only, and are not intended to limit manufacturers and material selections.

6.5.2.6. Additional architectural requirements:

- (a) Install fall protection anchor points on all roofs with a slope greater than 2:12
- (b) Provide a Knox 4400 Series (single lock model) recessed wall mounted key vault for Fire Department use at each building exterior. Locate adjacent to the main building entrance. Coordinate purchase of key vault through the Installation Fire Department for purchase order information and forms.
- (c) In addition to building number signage on building as indicated in paragraph 5, provide freestanding exterior building signage in accordance with Appendix H.
- (d) No building shall be over six stories or penetrate identified air space management zones.
- (e) Exterior Wall Protection: Construct the bottom five feet of exposed exterior walls of a durable material resistant (masonry or equivalent) to moisture damage and decay as well as impact damage

caused during day-to-day soldier activities expected for the function of the facility. Material shall be easily maintained and/or repaired.

(f) Prepare and present for approval an exterior building finishes scheme no later than at interim design submittal. Present original samples of this scheme to reviewers no later than at the interim design review conference for each facility included in the contract.

(g) See Appendix L for Installation LEED preferences relating to exteriors.

6.5.3. Programmable Electronic Key Card Access Systems:

6.5.3.1. Programmable electronic key card access systems is not required in the TEMF.

6.5.3.2. Installation Key System: Installation keying system for non-card locks is Best Lock Corporation. Cores for locksets other than those for mechanical, electrical and communications rooms only shall extend the existing Installation Keying System. Key locksets for mechanical, electrical and communications rooms to the existing Post Utilities Master Keying System. All locksets and exit devices shall accept the same interchangeable cores.

6.5.4. INTERIOR DESIGN

6.5.4.1. Prepare and present for approval an interior building finishes scheme no later than at interim design submittal. Present original samples of this scheme to reviewers no later than at the interim design review conference for each facility included in the contract. Interior color scheme for each facility shall comply with one of the color schemes indicated for the facility type in Appendix F.

6.5.4.2. Toilet rooms, vestibules, bulkheads, stairs, message center, mail sorting, telecom rooms/SIPR (where specifically applicable to Project) and storage rooms will have painted gypsum board ceilings that meet CRITERIA. Mechanical rooms will have exposed structure. All other areas, including electrical rooms, will have two foot by two foot Omni-directional mildew resistant/moisture resistant acoustic ceiling tiles.

6.5.4.3. Provide a State of North Carolina licensed elevator inspector to inspect the installation, test all new elevators, applicable to project, and certify in writing that they meet all requirements. Provide the preventive maintenance program for the elevator for the initial warranty period of one year.

6.5.4.4. Where gypsum wall board (GWB) is used for interior walls, provide impact resistant GWB. For high abuse areas such as corridors. Interior paint shall be semi-gloss in wet areas and eggshell in all other areas. Provide ceramic tile walls, minimum 6'-0" high in toilet rooms and janitor closets.

6.5.4.5. Items not included in contract (NIC):

(a) The Government will Provide and install (GF/GI) Furniture and accessories under separate contract.

(b) While fire extinguisher brackets and cabinets are Contractor furnished, the fire extinguishers are not in contract.

6.6. STRUCTURAL DESIGN

6.6.1. Treat subgrades under all facility foundations to resist subterranean and other wood destroying insects known to exist in the vicinity of the site. Treatment shall be in accordance with the environmental criteria referenced in this document.

6.6.2. Slabs on Grade. All interior slabs on grade, including storage and mechanical rooms, garages and carports, shall be underlain by a moisture vapor barrier consisting of lapped polyethylene sheeting having a minimum thickness of 6 mil and a minimum 4-inch thick capillary water barrier of open

graded, washed pea gravel, or crushed stone, such as Nos. 57, 67, 78 or 89, except where a passive vapor intrusion mitigation system is required.

6.6.3. Structural Loading. Design building structures for the following types of minimum site specific live loads per most recent versions of ASCE-7 and IBC.

6.6.3.1. Roof live loads – (20 psf)

6.6.3.2. Snow load – (pg – snow ground load – 10 psf)

6.6.3.3. Wind load – 95 mph

6.6.3.4. Seismic loading - Use applicable references. Seismic design also includes the various systems, piping, hangars, etc.

6.7. THERMAL PERFORMANCE

No additional requirements.

6.8. PLUMBING

6.8.1. Reduce potable water use for building sewage conveyance by 50 percent through the use of water conserving or non-potable water fixtures. This can be accomplished through the implementation of high-efficiency and very high efficiency toilets, rainwater harvesting/use, sensing low flow and very-low flow faucets, and other appropriate technologies.

6.8.2. Non-Water Using Urinals – Install with urinal rim 17 inches AFF. Provide concealed chair carriers. If urinals use a replaceable cartridge, provide four (4) additional, long-life type cartridges for each urinal installed along with any tools necessary to remove/install cartridge, and an additional quart of biodegradable liquid for each urinal installed.

6.8.3. Wall hung water closets are not preferred. Tank type (6-liter) water closets are preferred.

6.8.4. Preferred sink is vanity with counter mounted lavatory.

6.8.5. Floor mounted water coolers are not preferred.

6.8.6. All fixtures shall be white and exposed fittings polished chrome.

6.8.7. Piping

(a) Use plastic pipe (Sch 40 PVC) for drainage and venting including under concrete slabs or inside buildings.

(b) Do not use cellular foam core piping.

(c) Use CPVC and Type L (or above) copper for water supply above slabs.

(d) Use type K (copper) for water supply under slabs.

(e) Provide wall hydrants at a maximum spacing interval of 200 feet around the exterior wall of the building. Hydrant will be box type, freeze proof, with an integral vacuum breaker/backflow preventer.

(f) Elevator Sump Pump. Terminate waste discharge from elevator sump into the sanitary sewer system (where elevators are provided). Provide an oil separator to accept the waste discharge prior to emptying into the sanitary sewer system. When an “approved alarm system “ is provided and installed, an oil separator is not required and as a minimum, the alarm should provide a local audible and visual alarm, and shall provide a remote indication to the Building UMCS or similar monitoring system.

6.8.8. Provide domestic hot water equipment that provides the best Life Cycle Cost Analysis (LCCA) and not limited to gas fired or electric hot water heater.

6.9. SITE ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS

6.9.1. General. Site development work shall include selected exterior electrical demolition, construction of secondary service, communications service, Cable TV, as shown on the drawings and as described in the contract or task order.

6.9.2. Building Electrical Site Work and Coordination. Conduct electrical site coordination meetings at the start of design and when necessary thereafter. Meetings shall include government representatives (DPW and NEC), privatized electric utility company (Sandhills Utilities Services), the local cable TV company (Time-Warner) and all other utilities involved in the site work, and the Corps of Engineers Contracting Officers Representative.

6.9.3. Exterior Electrical Distribution System

6.9.3.1. Design and construct the site electrical secondary distribution. Coordinate with SUS through the Contracting Officer, regarding primary routing and transformer locations, sizes, and impedances. Use power and telecommunication poles only as a last resort when no other method is readily available.

6.9.3.2. Design and construct exterior circuits connected beyond the Meter for sump pumps, irrigation pumps and other electrical and mechanical equipment. Stand alone circuits should be beyond a meter and SUS end at the line side of the meter socket. .

6.9.3.3. Do not locate above ground distribution equipment within 33 feet of buildings, including transformers. Small pedestrian lights, less than 4" base diameter, are excluded from this requirement.

6.9.3.4. SUS will demolish any existing exterior SUS above ground equipment no longer required on project site. Any below ground demo will need to be negotiated due to depth and location of underground facilities.

6.9.3.5. All work done by SUS shall be under a separate contract with the Government. THIS WORK IS NOT PART OF THIS CONTRACT.

6.9.3.6. Low voltage secondary service ductlines shall be direct burial, thick wall type minimum. Concrete encase in vehicular traffic areas (including construction vehicular traffic areas).

6.9.3.7. Provide rigid galvanized steel conduit, for transitions from below to above grade. Fittings for steel conduit shall be steel threaded or compression type. Screw, clamp or other type fittings are not acceptable.

6.9.3.8. Provide secondary service cables to the secondary compartment of the transformer. The cables shall be clearly marked [color coded or taped] and sufficient of length to facilitate their connection to the secondary lugs of the transformer. SUS will install the cable terminators and connect to the transformer.

6.9.3.9. See Appendix C: UTILITY CONNECTIONS for additional information and requirements.

6.9.4. Exterior Lighting

6.9.4.1. Lighting within the Old Post Historic District must meet the requirements of the Old Post Historic District Design Guidelines

6.9.4.2. Design the site lighting for installation by SUS (under separate contract). Supply the site design to SUS for them to plan installation of supporting conduits, exterior lighting bases, and other equipment.

6.9.4.3. See Appendix C; UTILITY CONNECTIONS for additional information and requirements.

6.9.5. Site Telecommunications

6.9.5.1. Reference I3A Para 3.7.4.5. Connect to the OSP, extending a new duct line, maintenance hole and cable system to the building main communications room. Each ductline between maintenance holes shall be minimum 4-way 4-inch, Schedule 40 PVC conduits. Coordinate design, construction and connection point location with the installation NEC. Typical drawings required for design can be found in I3A figures C2 thru C6. Entrance ducts shall be a minimum of a 3-way 4-inch duct line to the building main communications room.

6.9.5.2. Do not use the last remaining duct in any pathway system/ductbank. Include one spare duct for maintenance purposes in any segment of pathway or duct bank design.

6.9.5.3. Coordinate planning and design of outside plant communications systems on Fort Bragg with the Fort Bragg NEC. NEC will provide the following information and assistance for the proposed communication design

- (a) Location of nearest fiber optic service and available strand count
- (b) Location of the nearest copper service and available cable count
- (c) Location of nearest maintenance hole, hand hole, or installation cable support infrastructure that can provide a duct tie-in point.

6.9.5.4. When no existing outside plant communications infrastructure is available near the proposed facility, the following requirements apply:

- (a) Provide outside plant communications infrastructure from the nearest Area Distribution Node (ADN) or Remote Switch Unit (RSU).
- (b) Provide a 3-way 4-inch duct line to the building main communications room. Use one duct to place the copper service cable. Use the second duct to place the fiber optic service cable along with one 3", 3 cell fabric mesh innerduct. The remaining duct is a spare.

6.9.5.5. Reference to I3A Para 3.7.8. Use Fabric Mesh Innerduct for duct and cable installations. Install 3 each, 3 inch, 3 cell fabric mesh with each fiber cable installation and in one of four newly installed ducts.

6.9.5.6. Reference I3A Fig C-5. Maintenance holes shall be 38YJ4 and shall include a moveable ladder.

6.9.5.7. Reference I3A, paragraph 3.7.1.3 (a). Size 30" maintenance hole lids are required unless otherwise specified or approved. Maintenance hole lids larger than the standard 30" size are extremely cumbersome when providing maintenance on cable infrastructure.

6.9.5.8. Outside Plant (OSP) Voice and Fiber Optic Service Cables: Provide OSP Voice and Fiber building service cables as follows:

- (a) Extend all service cables through the new building service duct line.
- (b) Terminate all OSP Voice Only service entrance cables on protected terminal blocks and all Fiber Optic cables on service entrance termination hardware located in the main communications room.

(c) Provide service entrance termination hardware for fiber optics service cables. Terminate the facility service data fiber optic cables on a patch panel, on 19-inch floor mounted standard racks. Terminate cables with 'SC' connectors at facility service entrance. Terminate the facility's data communication at an RJ45 patch panel in this rack. Provide patch cables (fiber and copper) and connect as required by NEC to meet I3A requirements.

(d) Demolish and remove any existing OSP cabling and communications duct bank no longer required on the project site.

6.9.6. Lightning Protection. Lightning risk assessment calculations shall be in accordance with NFPA 780, Appendix L, and other referenced criteria, utilizing the following variables:

6.9.6.1. Fort Bragg Lightning Flash Density Index "Ng" Value = 4

6.9.6.2. Determination of Environmental Coefficient Index "C1" = 1 (Isolated structure, no other structures located within a distance of 3H)

6.9.6.3. Determination of Structure Contents Coefficient Index "C3" Minimum value = 1 (Use larger if applicable)

6.9.6.4. Determination of Structural Occupancy Coefficient "C4" = 1 (Normally occupied)

6.9.6.5. Determination of Lightning Consequences Coefficient Index "C5" = 5 (Continuity of facility services required, no environmental impact.

6.9.6.6. Provide transient voltage surge protection.

6.10. FACILITY ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS

6.10.1. Coordinate all work with Fort Bragg NEC.

6.10.2. Voice/Data Communications

6.10.2.1. LAN Hubs shall be Government Furnished/Government Installed.

6.10.2.2. Provide a quadplex power outlet and voice/data communications outlet every eight (8) feet of open wall space to support modular training in one classroom.

6.10.2.3. Reference the I3A Technical Criteria, paragraph 2.5.6. Cover no less than two walls with AC fire rated plywood.

6.10.2.4. Reference the I3A Technical Criteria, paragraph 2.3.3.1. Wire all copper outlets, patch panels, and connectors per T568A.

6.10.2.5. Use the following Cable Jacket and RJ-45 Color Code: Green - The standard wire and jack color for UNCLASSIFIED. Red - The standard wire and jack color for CLASSIFIED (SECRET). Yellow - The standard wire and jack color for CLASSIFIED (TOP SECRET).

6.10.2.6. Label in accordance with the Fort Bragg standard labeling scheme shown below:

6.10.3. Special Circuits – Fire Alarm and Utility Monitoring and Control Systems (UMCS).

6.10.3.1. Coordinate cabling and locations of demarcation points for all special circuits with DPW engineers or Emergency Services personnel for the associated discipline. Provide the premise cable design, installation and testing for all special circuits. Ft Bragg NEC responsibility for special circuit connectivity is at the Telecommunications Room only. Ft Bragg NEC is responsible for providing "IP"

addresses for the special circuits along with any telecommunications room cross connects that will activate the circuit.

6.10.3.2. Terminate all special circuits to the first premise cable patch panel on ports 21-24, starting at 24 working in reverse. Label fire alarm circuits "FACP" and label Utility Monitoring & Control Systems circuits "UMCS".

6.10.4. SIPRNET (Where specifically applicable to Project – see paragraph 3)

6.10.4.1. The entire SIPRNET infrastructure including PDS, wiring, and equipment (except for the GFGI encrypted servers) installed under this contract (if applicable) shall meet the Technical Guide for Integration of SIPRNET version 5.0 as a Hardened Carrier PDS and the following requirements:

6.10.4.2. Mount Distribution Systems (PDS) lock boxes sixty seven (67) inches above the finished floor in all private offices, unless otherwise allowed in designated Controlled Access Areas (CAA) areas.

6.10.4.3. Submit all PDS design and material data sheets to the NEC for approval, prior to procurement or installation to save from costly revisions or change orders. Design the PDS in strict compliance with the national security criteria.

6.10.4.4. Install a Holocom, Wiremold/Legrand or other Central TEMPEST Technical Authority (CTTA) approved expandable type PDS System. The PDS System attributes shall include an interlocking "clam-shell" design that enhances security and flexibility in that it can be securely closed and locked, and then re-opened for security inspections and network changes or enhancements. The PDS must also include an electrostatic powder coating, which provides an aesthetically pleasing appearance.

Per national security references, each agency, service, or organization is afforded interpretation and approval authority, by the Designated Approving Authority (DAA), per the respective manual when assessing any PDS design and installation methodology.

6.10.5. System Furniture:

Reference I3A paragraph 2.3.5.3. Ensure that telecommunication and power are installed in channels designed for such purpose. Do not install cables in panel gaps or interstitial space. Connect the furniture to the building cabling infrastructure through a ceiling mounted power pole, a wall mounted junction box (j-box) or underneath via a raised floor system and then channeled through the furniture. Do not expose cables between j-boxes and the furniture. Contain cables in flexible conduit. SIPRNET, if installed, shall enter through its own power pole system and channeled through an approved PDS. This configuration should provide all separation necessary to comply with TEMPEST requirements.

6.10.6. Elevators

Install conduit, wiring, and a telephone device as the emergency phone in the elevator cab. Government is responsible for making telephone operable including coordinating with the Ft Bragg NEC for service and connection to the Ft Bragg DES 911 Emergency Call Center.

6.10.7. Cable television (CATV).

Provide CATV in all private offices, conference, and classrooms. The cable television system shall consist of cabling, pathways, and outlets. All building CATV systems shall conform to APPLICABLE CRITERIA to include I3A criteria.

6.11. HEATING, VENTILATING, AND AIR CONDITIONING

6.11.1. The existing UMCS is an LCS-8520 that utilizes the LonWorks® Technology to integrate LNS databases into a single front-end. The UMCS is based on UFGS 25-10-10.

6.11.1.1. Fort Bragg's System Integration (SI) Contractor will integrate the building's BAS in accordance with UFGS 25-10-10 and the Fort Bragg UMCS Integration SOW, under separate contract with the Government. Coordinate through Fort Bragg's UMCS System Manager.

6.11.1.2. General Requirements

(a) Do not modify the chiller microprocessor supplied with the equipment. Control and safety functions should be the chiller manufacture's responsibility.

(b) Do not modify the boiler microprocessor supplied with the equipment. Control and safety functions should be the chiller manufacture's responsibility. If heating water systems are used, then design such systems to maintain the boiler manufacture's minimum temperature when in operation but vary the heating water supply temperature as required to meet the buildings requirements.

(c) Provide all DDC software, equipment and devices from a single common manufacturer whenever possible.

6.11.2. Mechanical Equipment Maintenance and Accessibility Requirements

6.11.2.1. Selected mechanical systems must be compatible with the existing systems and composed of standard commercially available items with readily available service and repair parts.

6.11.2.2. Any mechanical rooms above the first floor shall have an external access (door, removable louvers, etc of ample size such that the largest piece of installed equipment could be removed through the opening.

6.11.2.3. Install all piping, except individual fixture pipes, to permit equipment access without requiring removal of permanent walls, floor, or ceilings.

6.11.2.4. Arrange all equipment, piping, etc in mechanical rooms so that each piece of equipment can be removed without having to remove any other piece of equipment. Consider things such as coil pull areas in the mechanical room layouts.

6.11.2.5. Chillers: Chillers shall include as a minimum the following features

(a) Scroll or screw type compressors with 5-year parts warranty

(b) Microprocessor controllers with self-diagnostic capabilities

(c) Low ambient controls to zero (0) degrees F.

6.11.2.6. Fuels

Natural gas is the preferred fuel source for heating.

6.11.2.7. Pumps

(a) Hot Water and Chilled Water pumps shall operate at 1,750 rpm or less

(b) Mechanical Rooms: Heat to 40 F for freeze protection where piping may be subject to freezing.

6.11.3. Site Mechanical Equipment. Design all exterior mechanical equipment to be compatible with existing mechanical equipment within the surrounding area. This includes color and screening.

6.11.4. Outdoor Design Conditions

[Not Supplied - PS_HVAC : HVAC]

6.12. ENERGY CONSERVATION

6.12.1. Inclusion of Renewable Energy Features. The following renewable energy features have been determined lifecycle cost effective, are included in the project budget and shall be provided:

NONE IDENTIFIED.

6.13. FIRE PROTECTION

6.13.1. Provide fire extinguisher cabinets and brackets when fire extinguishers are required by UFC 3-600-01 and NFPA 101. Place cabinets and brackets shall in accordance with NFPA 10.

6.13.2. Provide semi-recessed cabinets in finished areas and brackets in non-finished areas (such as utility rooms, storage rooms, shops and vehicle bays).

6.13.3. Fire Extinguishers are Government Furnished/Government Installed for this project. Advise Government of required size and type Fire Extinguisher for each type building and service location

6.13.4. Fire Alarm System. Fire alarm panels must be addressable and must be able to communicate alarms to the Honeywell Enterprise Building Integrator System (EBI) located at the Fort Bragg 911 Center. Coordinate fire alarm zone descriptions and number with the fire department. (Single-story buildings typically require a minimum of 8 to 11 fire alarm zones; each floor above the first floor requires an additional 6 fire alarm zones.) Manual pull stations shall be metal, double action type, and shall not use break rods.

6.13.5. Mass Notification System

6.13.5.1. Provide a combined system that performs both as an individual building MNS and as the building Fire Alarm voice evacuation system. The MNS shall communicate with the base wide system. The base wide system is by Federal Signal and communication is by wireless transmission.

6.13.5.2. In addition to the applicable references and design criteria in paragraphs 4 and 5, see Appendix F for Fort Bragg Implementation Directions to Building Mass Notifications Specifications and Installation Guidelines

6.14. SUSTAINABLE DESIGN

6.14.1. LEED Rating Tool Version. This project shall be executed using LEED-NC Version 2.2.

6.14.2. The minimum requirement for this project is to achieve LEED Silver level. Each non-exempt facility (building plus sitework) must achieve this level. In addition to any facilities indicated as exempt in paragraph 3, the following facilities are exempt from the minimum LEED achievement requirement: Organizational Storage Building, POL Storage Building and Hazardous Waste Storage Building are exempt from the requirement to achieve LEED Silver certification. See paragraph Additional Sustainable Information..

6.14.3. Credit Validation: LEED registration, compiling of documentation at LEED OnLine and use of the LEED Letter Templates is required. Registration and payment of registration fees will be by the Government. Administration/team management of the online project will be by the Contractor. Validation of credits will be accomplished by the Government. LEED certification of the project by the Contractor is required. The Contractor will obtain LEED certification prior to project closeout. Application, payment of certification of fees and all coordination with USGBC during the certification process will be by the Contractor. GBCI interim review of design phase data is not required by the Government but is

recommended. Government validation during project execution does not relieve or modify in any way the Contractor's responsibility to satisfy all requirements for certification as defined by LEED and GBCI. Contractor is not responsible for design phase LEED documentation of any unaltered portion of the design that is accomplished by others. If the project includes unaltered complete design by others, during the certification process Contractor will coordinate all GBCI comments on LEED credits that fall outside Contractor's scope of responsibility with the Government for coordination with the Designer of Record, and Contractor will not be penalized if project fails to achieve certification at the minimum required level due to loss of credits that are the responsibility of others.

6.14.4. Commissioning: See Appendix M for Owner's Project Requirements document(s).

6.14.5. LEED Credits Coordination. The following information is provided relative to Sustainable Sites and other credits.

SS Credit 1 Site Selection:

Project site **IS NOT** considered prime farmland.

Delineation of 100-year flood elevation is shown on site drawings provided in this CONTRACT.

Project site contains no habitat for threatened or endangered species.

No portion of project site lies within 100 feet of any water, wetlands or areas of special concern.

Project site **WAS NOT** previously used as public parkland.

SS Credit 2 Development Density & Community Connectivity.

Project site **DOES NOT** meets the criteria for this credit.

SS Credit 3 Brownfield Redevelopment.

Project site **DOES NOT** meets the criteria for this credit.

SS Credit 4.1 Public Transportation Access.

Project site **DOES NOT** meets the criteria for this credit.

EA Credit 6 Green Power.

35% of the project's electricity **WILL NOT** be provided through an Installation renewable energy contract. Do not purchase Renewable Energy Credits (REC's) to earn this credit.

MR Credit 2 Construction Waste Management.

The Installation has an on-post recycling facility.

6.14.6. LEED Credit Preferences, Guidance and Resources. See Appendix L LEED Project Credit Guidance for supplemental information relating to individual credits.

6.14.7. Not Used

6.14.8. For all Fort Bragg projects using LEED Online, invite **the following individuals at the beginning of the project, assigned QA/QC role: Lynda.s.pfau.ctr@mail.mil, Judith.f.milton@usace.army.mil, Stephen.d.bentley@usace.army.mil, Savannah District Project Manager,**

~~Fort Bragg Project Manager (name varies - coordinate at kickoff meeting).thomas.s.blue@us.army.mil to join the LEED online project at beginning of project. No team assignment is needed once he joins, as he is a reviewer.~~

6.14.8.1. Additional Information

Project has been registered under Version 2.2 by the Government. Project administration will be transferred to Contractor after award.

6.15. ENVIRONMENTAL

6.15.1. Spill Response Procedure and Plan

6.15.1.1. Notify the Fire Department immediately in the event of a hazardous spill. The first person on-scene that identifies the hazard must notify the Fire Department – this may or may not be the designated POC.

6.15.1.2. After notifying the Fire Department, call the DPW Environmental Compliance Branch and the Contracting Officer.

6.15.1.3. The Fort Bragg Fire Department and DPW Environmental Compliance Branch are responsible for any off-installation notification.

6.15.1.4. Provide a Spill Response Plan for review. Include a list of reporting channels, telephone numbers, a listing of the hazardous materials stored on site, copies of Material Safety Data Sheets for the hazardous materials, and a site diagram outlining where the storage sites are located. Train all supervisors on site in the execution of the Spill Plan. Document all training.

6.15.2. Wetlands and Stream Crossing

6.15.2.1. Do not enter, disturb, or allow any discharge (soil, sediment, and/or pollutants) into any wetlands.

6.15.2.2. Comply with all local, state, and federal laws and regulations pertaining to the protection of wetlands under the CWA Section 404/401 regulatory program and North Carolina DENR Division of Water Quality.

6.15.2.3. If wetland impacts are unavoidable, abide by CWA Section 404 regulatory program and apply for applicable wetland permits. All wetland permit costs, delineations, and compensatory mitigation costs will be the contractor's responsibility.

6.15.2.4. Comply with avoidance, minimization strategies prior to approval of any wetland impact in accordance with CWA Section 404 (CWA 33 USC 1344).

6.15.2.5. All stream crossings will avoid impacts to navigable waters and wetlands. Do not enter, disturb, destroy, or allow discharge (fill) of soil, sediment, or contaminants into the stream.

6.15.2.6. Comply with all local, State, and Federal laws and regulations pertaining to the protection of surface waters to include but not limited to lakes, ponds, streams, creeks, rivers, and bayous.

6.15.3. Safety and Health Requirements for Construction Activities

6.15.3.1. Work performed under this contract shall comply with EM 385-1-1, specifically 28.A, applicable Federal, State, and local safety and occupational health laws and regulations. This includes, but is not limited to, Occupational Safety and Health Administration (OSHA) standards, CFR 29 Part

1910, especially Section .120, "Hazardous Waste Site Operations and Emergency Response" and CFR 29 Part 1926, especially Section .65, "Hazardous Waste Site Operations and Emergency Response". Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this contract, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply.

6.15.3.2. Ensure that all subsurface disturbing activities are monitored by a competent person using a direct reading instrument capable of detecting any VOCs that may be released.

6.15.3.3. Develop a Site Safety and Health Plan (SSHP) to cover the safety and health aspects of the subsurface contamination detailed in Section 6.12.1, which may be encountered during the execution of this project. In some areas the Contractor may encounter contaminated groundwater which may need to be dewatered to execute construction activities. Although the contamination is in the soil, VOC vapors may also be released during excavation of footers, utility trenches, and other subsurface disturbing activities.

6.15.3.4. The Savannah District Safety and Occupational Health Office are required to review and accept the Site Safety and Health Plan. In addition to the requirements detailed in 385-1-1 28.A, submit the following as part of the SSHP: Certifications of Hazard Waste Site Training and Experience, Medical Clearances, and Licenses. Do not submit materials with full social security numbers or personal medical data. Black out this information.

6.15.4. Dewatering

6.15.4.1. If dewatering of excavations is required, the water being removed shall be considered as contaminated with SVOCs and/or VOCs.

6.15.4.2. Fort Bragg Directorate of Public Works Environmental Compliance Branch (DPW-ECB) and Water Management Branch (WMB) must approve the specific structural stormwater management measures.

6.15.4.3. All stormwater management requirements apply to dewatering activities, materials, and water. All OSHA health and safety requirements apply to dewatering activities.

6.15.5. Not used.

6.15.6. Existing Monitoring Wells

6.15.6.1. Should any wells be damaged, or found to be placed in an area where they will become damaged, contact the USACE project manager for directions on how to close and where to re-install the wells. Close and reinstall GW monitoring wells at no additional cost to the Government. For further information, reference Fort Bragg's Standing Operating Procedure (SOP) #6003.

6.15.6.2. Protect all groundwater monitoring wells at construction sites with known contaminated areas.

6.15.6.3. Raise the tops of or lower existing monitoring wells located in pavements and sidewalks to meet new finished grades and replace the tops with vehicle rated tops.

6.15.6.4. Relocate ground-water monitoring wells located within building footprints only after written approval from the State and the Contracting Officer.

6.15.6.5. Repair or replace any monitoring wells damaged as a result of construction at the Contractor's expense.

6.15.7. Contractor Generated Spills

- (a) Manage, store, dispose and dispense petroleum products, hazardous materials, and hazardous wastes according to all Federal, state, and local regulations (including Fort Bragg Regulations 200-1, 200-2, and 200-3).
- (b) Transport generated hazardous waste off Government property to a permitted transportation, storage, and disposal facility (TSDF).
- (c) Coordinate with the DPW Environmental Compliance Branch Hazardous Waste Program Manager to obtain the EPA ID number for the standard manifest. Hazardous waste cannot leave the installation without the designated representative from the DPW Environmental Office signing and obtaining a copy of the manifest.

6.15.8. Historic Properties. Inadvertent Discovery of Cultural Material. If any artifacts or objects related to cultural resources become evident during construction or construction-related activity, stop ground disturbing activities immediately and notify the Contracting Officer and the Fort Bragg Cultural Resources Program Manager at 910-396-6680. Cultural resource objects or artifacts include but are not limited to: bone, shell, stone tools, ceramics, bottle glass as well as metal objects relating to any time period before 1950 but excluding post-1940 military training debris (e.g. shell casings, shrapnel, wire etc.

6.16. PERMITS

6.16.1. The Government has not obtained any permits/licenses related to this project.

6.16.2. Obtain ALL applicable permits as part of the design process and secure ALL permits necessary for construction of the project. Determine fee basis and pay all filing fees at no additional cost to the Government.

6.16.3. Comply with provisions of the Installation permits, compliance agreements, plans with regulating authorities/agencies.

6.16.4. Submit copies of permits to the Contracting Officer and Ft Bragg Environmental Division in sufficient time to allow for review and revision with ultimate submittal 10 days prior for the associated permitted activity. Provide copies of permit amendments to the Contracting Officer representative and Ft Bragg Environmental Division.

6.16.5. Erosion and Sediment control ((E&SC) Permit: After issuance by , NC DENR Department of Water Quality (DWQ), changes to the issued permit are prohibited.

6.16.6. Water and Sanitary Sewer Permit. ONUS, as the Fort Bragg water and sewer privatization contractor, is responsible for all aspects of obtaining and closing the potable water and sanitary sewer permits for this project.

6.16.7. Borrow Pit Permit. A permit is required to use the Fort Bragg soil borrow material pits. Process soil borrow pit permits with the Environmental Branch of the Directorate of Public Works Environmental Sustainment Division through the Contracting Officer Representative.

- (a) Permits are issued for the life of the contract only.
- (b) Borrow material may only be used on the project for which the permit(s) are issued.
- (c) Keep a copy of the signed permit with the borrow hauling vehicle throughout the borrow operation period.
- (d) Copies of the borrow permit can be found in Appendix DD.

6.16.8. Construction and Demolition (C&D) Waste

6.16.8.1. Obtain and pay for all permits associated with demolition.

6.16.8.2. Landfill tipping fees for construction debris **WILL NOT** be charged to the Contractor at time of award contract. If applicable, the landfill tipping fees are identified in Appendix CC.

6.16.8.3. Construction and Demolition (C&D) permit is required to use the Fort Bragg LaMont Road Construction and Demolition Landfill Facility (Permit No 26-08). Follow requirements identified at <http://www.bragg.army.mil/envbr/solidwaste.aspx> regarding disposal of inert construction and demolition waste in the Ft Bragg C& D landfill sites.

(a) Process the Construction and Demolition (C&D) permit with the Environmental Branch of the Directorate of Public Works Environmental Sustainment Division through the Contracting Officer Representative.

(b) Permits are issued for the life of the contract only.

(c) Only materials produced on the project for which the permit(s) are issued may be disposed of in the land clearing and inert debris/demolition landfills.

(d) Keep a copy of the signed permit with the hauling vehicle(s) throughout the borrow operation period.

(e) Copies of the disposal permit can be found in Appendix CC.

(f) Obtain and pay for all permits associated with demolition.

(g) The contractor is encouraged to recycle commodities through the Ft. Bragg QRP.

6.16.9. Fort Bragg Excavation (Dig) Permits

6.16.9.1. Present an Excavation Permit, FB Form 1605, to the Resident Engineer for approval by the Facilities Engineer prior to any excavation that penetrates the ground by 6 or more inches. A sample of this form is included at Appendix HH or can be obtained from the Resident Office upon request.

6.16.9.2. Spot all utility lines using an independent spotting service prior to beginning excavation. Keep a signed copy of the digging permit on site at all times. Fort Bragg may conduct back check spotting excavation during the excavation portion of this contract.

6.16.10. Title V Air Permits

6.16.10.1. Coordinate with Fort Bragg's Environmental Branch, point-of-contact (POC) Gary Cullen (910-432-8464), Air Program Manager, in obtaining all required and applicable permits as part of the design process. Secure all permits necessary for construction of this project to include the purchase of any add-on emission control devices (if applicable) associated with this project, and at no additional cost to the Government.

6.16.10.2. Fort Bragg operates under a Title V Air Permit for air quality requirements. Perform a regulatory review of all air sources in the project and submit for approval to the Environmental Compliance Branch (ECB).

(a) New sources must be reviewed for Prevention of Significant Deterioration (PSD) applicability. Each Congressional Appropriation is defined as one project. Additionally, new sources must be reviewed for NESHAP (National Emissions Standards for Hazardous Air Pollutants) applicability.

(b) Develop required air permit application(s) and/or coordinate with ECB on any on-going permit applications.

(c) Pay all Air Permitting fees to NCDENR (North Carolina Department of Environment and Natural Resources). Obtain all required permits prior to construction of any new sources.

- (d) Comply with all State regulatory requirements for boilers fired by either natural gas or distillate oil. Ensure that the boiler(s) is included in the Installations Title V Air Permit.
- (e) New boilers with input greater than 10 million BTU/hr shall meet 40 CFR Part 60, New Source Performance Standards.
- (f) All new boilers shall include low NOx burners.
- (g) Obtain an air permit for each type of material (i.e. concrete, rock crushing, and asphalt batch plants) that will produce dust and other harmful particulates within the boundaries of the installation.
- (h) The Contractor may not unilaterally change the Installation's Title V Air Permit. Coordinate any and all changes/modifications through the designated Environmental Branch staff.

6.16.10.3. Air Permit Submittal Requirements (Boilers and Domestic Water Heaters). Pursuant to satisfying requirements under the Clean Air Act, at or before the 60 percent design stage, submit the following to the installation's environmental office, point-of-contact (POC) Gary Cullen , Air Program Manager:

- (a) A listing of boilers and domestic hot water heaters that will be fired by natural gas, propane, and/or fuel oil
- (b) The fuel or fuels (primary and backup, if applicable) that will be utilized for each piece of equipment
- (c) The quantity of each particular size
- (d) The respective input firing rate.
- (e) Provide a point of contact and an alternate point of contact, should the environmental office require additional information from the designer of record during the permitting process.
- (f) Send two copies of the document to the Savannah District: one to the Project Manager for placement in Central Files, and another to the Mechanical Section.

6.16.10.4. Document Changes

- (a) Do not send the Air Permit prematurely, since any increase in boiler sizing subsequent to submission of the document will require revision to the permitting process,
- (b) If there is a change in equipment sizing during refinement of the design process, submit an updated copy of said document.

6.16.10.5. Incorporate the equipment accessories required for compliance with the governing environmental laws into the design. This includes, but is not limited to, determining the need for individual metering and the level of emissions monitoring required.

6.16.10.6. The interim design narrative shall specifically address those features that will be incorporated into the boiler system design to assure compliance with the applicable environmental laws of the State.

6.16.10.7. Normally, for fast track design-build contracts, the Air Permit construction permit will not have been obtained prior to award of the design-build contract.

- (a) No construction associated with the building(s) housing the boiler(s) or other source(s) of contaminant can be done prior to obtaining the required permit.
- (b) The following things can be done prior to possession of the permit: clearing and grading, access roads, driveways, parking lots, underground utilities up to the 5-foot line of the buildings, and ancillary structures (structures not associated with housing the sources of contaminants).

6.16.10.8. If the use of temporary rental or leased equipment is required during demolition, renovation, or construction of the project, the emissions from those pieces of equipment need to be qualitatively and quantitatively reviewed for air quality permitting requirements.

(a) Assess those needs and any permitting required will be the responsibility of the contractor.

(b) Contractor is responsible for any permitting fees or resulting permit compliance associated with the temporary equipment. Examples include the use of temporary electrical generators, boilers, painting operations, abrasive blasting operations etc. to support the project. Per 15A NCAC 2D .0300

6.16.11. State of North Carolina Required Applications and Permits. Prepare, sign, and submit the following list of commonly required State of North Carolina applications and permits for Fort Bragg projects

6.16.11.1. North Carolina State Demolition Permits

6.16.11.2. North Carolina State Asbestos Removal Permit

Required.

6.16.11.3. North Carolina Erosion and Sedimentation Control Permit. Create and implement an Erosion and Sedimentation Control (ESC) Plan that conforms to the Fort Bragg EPA Construction General Permit, and local erosion and sedimentation control standards/ codes in effect at the time of award.

6.16.11.4. North Carolina General Permit to Discharge Stormwater under the National Pollutant Discharge Elimination System

6.16.11.5. North Carolina Stormwater Management Permit Application Form

6.16.11.6. North Carolina Notice of Intent (NOI) and Notice of Termination (NOT) Documents. Prepare, sign, and submit the NOI and NOT documents to the State of North Carolina.

6.16.11.7. Obtain any North Carolina additional applications and permits not listed as required for the construction of this project.

6.17. DEMOLITION

6.17.1. The Government will identify buildings and other existing features to be demolished in the site plans, as applicable to the project. Demolish building(s) and other demolition work within the construction footprint to include demolition, asbestos containing materials (ACM) abatement and hazardous building materials (HBM) removal, removal of foundations, capping underground utilities (water, sewer, natural gas, heating and chilled water, etc.) and other site improvements. Comply with Federal, State and local statutes, ordinances agreements and as described in this RFP.

(a) The Contractor **IS NOT** authorized to perform a full remediation of the site under this Contract.

6.17.2. Copies of ACM and HBM surveys are included in the RFP in Appendix AA, where applicable to the project.

6.17.3. The construction and waste management plan shall identify the materials to be diverted from disposal and sorted onsite.

6.17.4. In the case of buildings that are in the direct footprint of the project, the Government will move demolition building occupants and furnishings prior to the Contract NTP date except where movement is not in the best interests of the Government. Such cases will be identified in the Contract.

6.17.5. Notify Directorate of Public Works (DPW) through service orders (Telephone 910-396-0321) to disconnect all utilities to demolition buildings to include electricity, natural gas, propane gas, and fuel oil.

6.17.6. Demolition of potable or fire water mains and lines or sanitary sewer mains and lines.

ONUS under separate contract with the Government will disconnect, cap and/or demolish water and sewer mains and/or lines. Utility cost outside the five foot line are not a part of this contract.

6.17.7. If the Contractor plans to use a demolition building for administrative or storage:

6.17.7.1. Notify the Government through the Corps of Engineers in writing of their intent during contract negotiations.

6.17.7.2. DPW will disconnect utility services, but not remove them.

6.17.7.3. The Contractor is responsible for installing appropriate electrical, water, and gas meters for the building. If connecting to privatized utility (water, gas, or sewer), contractor must coordinated with privatized utility company for installation of services. All costs associated with the connection shall be paid for by the contractor

6.17.7.4. DPW will reconnect the metered services upon notification by Corps of Engineers.

6.17.7.5. The government bears no responsibility for the condition of the demolition buildings between the Request for Proposal (RFP) and the contract or task order Notice to Proceed (NTP) date.

6.17.7.6. The Government maintains the right to salvage all materials from the building until the NTP date.

6.17.8. Assume that all demolition buildings will have no salvage value.

6.17.9. Do not assume that any building within the project footprint can be an administrative or storage building. If a building is missing structural components (windows, doors, etc), equipment (commodes, sinks, HVAC units, etc) or utilities (electricity, water, natural gas, fuel oil), it is the Contractor's responsibility to restore these components to make the building habitable for their use.

6.17.10. DPW will notify NEC to disconnect government telephone and CATV service to buildings.

6.17.11. DPW will notify CENTURYLINK / Time Warner to disconnect privately owned telephone and CATV service to buildings.

6.17.12. Fort Bragg DPW charges three hundred dollars (\$300.00) per building to disconnect utilities.

6.17.13. Fill depressions caused by the removal of demolished materials such as building foundations, pavements, sidewalks, utility lines and pad, etc., to grade, compacted per soil compaction requirements, and slope to drain towards the nearest appropriate structural stormwater management measure.

6.17.14. If fuel contaminated soils are found during the demolition or cut/fill operations, cease work immediately and notify either the Contracting Officer representative or the Contracting Officer for resolution that can include removal of contaminated soil, filling and capping area with clean, uncontaminated soil.

6.17.15. Asbestos/Hazardous Material Removal

- 6.17.15.1. The Contracting Officer representative will provide copies of all asbestos inspection reports, permits and disposal documents and Asbestos Removal, Transportation, and Disposal Documentation Forms to the ECB Asbestos Program Manager. North Carolina accredited personnel must perform all asbestos activities.
- 6.17.15.2. Dispose of all abated ACM in accordance with all Federal, State, and local regulations at the Fort Bragg Landfill on LaMont Road.
- 6.17.15.3. If asbestos/ lead based paint/ hazardous materials are positively identified during building or site demolition, cease work immediately and notify either the Contracting Officer representative or the Contracting Officer for resolution.
- 6.17.16. Utility Demolition
- 6.17.16.1. Coordinate with the privatized electrical company (Sandhills Utilities Services), privatized water/sewer company (Old North Utility Service), Directorate of Information Management, and Directorate of Public Works during design phase and before construction.
- 6.17.16.2. Completely remove and cap existing utilities located beneath new building footprints (if abandoned) or reroute if utilities are being used by existing buildings. Coordinate demolition of existing utilities serving occupied buildings with construction of new utilities so that utilities to occupied buildings remain in service at all times.
- 6.17.17. AST/UST Demolition
- 6.17.17.1. The project area may be located in a **UNKNOWN** contaminated area. Typical contamination constituents are from former heating oil and diesel underground storage tanks (USTs). Other sources of soil and groundwater contamination are old unlined dump sites and aboveground storage tank (AST) spill sites.
- 6.17.17.2. The location of USTs removed by others is provided to the Contractor as "Information Only", and may not be complete. If an unknown underground storage tank is discovered during construction, please adhere to Appendix MM. If an unknown tank meets the criteria for a Differing Site Condition under said contract clause, the clause provides an equitable adjustment for increased costs and/or delays associated with discovery and removal.
- 6.17.17.3. Remove and dispose of Underground Storage Tanks (UST) identified as "closed in place". Remove and dispose of tanks and all remaining appurtenances, preferably, at a recycling center.
- 6.17.17.4. Fort Bragg requires that all tanks have a closure report stating the size, condition, and final disposition of the tank.
- 6.17.17.5. Non-leaking heating tanks are not regulated by the State of North Carolina. However, should it be discovered that there were leaks or that free product is present, complete and submit to the Contracting Officer a closure report that is in accordance with North Carolina regulations.
- 6.17.17.6. Although the Government will furnish all site investigations and reports documenting project area contamination, the possibility exists that soils with previously-unknown contamination may be discovered. Appendix MME addresses this situation.
- 6.17.17.7. Pump out and dispose of any free product/sediment that is in the tank and remove up to 140 cubic yards of contaminated soil per UST. All fill must be clean and replaced to grade. Clean fill is defined as any soil removed from the excavation that is less than 10 pap (North Carolina UST action level).

6.17.17.8. Where applicable, remove Above Ground Storage Tanks (AST) and deliver to DPW for re-issue. Contact DPW to arrange for removal of any fuel that may be remaining in the tank. Render the tank safely inert for explosive hazard prior to removal. Address inerting and moving procedures as an Appendix in the Accident Prevention Plan. Up to 10 cubic yards of contaminated soil can be removed from an AST site.

6.17.17.9. Dispose of all contaminated soils and contaminated wash waters at a licensed facility.

6.17.17.10. Remove all contaminated soils and wash waters within 15 days of stockpiling.

6.17.17.11. Secure contaminated soils and prevent run-off by adequate containment practices. The Contractor is responsible for any surface contamination caused by inadequate site protection.

6.17.17.12. Provide Disposal receipts to the Contracting Officer Representative within 10 days of removal from the site.

6.17.18. Demolition Material Disposal. Contractor See Appendix CC_for information on disposing of demolition materials in Fort Bragg's Landfill.

6.18. ADDITIONAL FACILITIES

This project includes the abatement and demolition of the following buildings; asbestos and hazardous material reports are included in Appendix AA:

A- 3229

A-3527

A-3726

A-3728

A-3732

A-3734

A-3736

A-4638

End of Section 01 10 00

SECTION 01 32 01.00 10
REV 5.3 - 30 APR 2012
PROJECT SCHEDULE

1.0 GENERAL

1.1. REFERENCES

1.2. QUALIFICATION

2.0 PRODUCTS (NOT APPLICABLE)

3.0 EXECUTION

3.1. GENERAL REQUIREMENTS

3.2. BASIS FOR PAYMENT AND COST LOADING

3.3. PROJECT SCHEDULE DETAILED REQUIREMENTS

3.4. PROJECT SCHEDULE SUBMISSIONS

3.5. SUBMISSION REQUIREMENTS

3.6. PERIODIC SCHEDULE UPDATE MEETINGS

3.7. REQUESTS FOR TIME EXTENSIONS

3.8. DIRECTED CHANGES

3.9. WEEKLY PROGRESS MEETINGS

3.10. OWNERSHIP OF FLOAT

3.11. TRANSFER OF SCHEDULE DATA INTO RMS/QCS

1.0 GENERAL

1.1. REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE) ER 1-1-11 (1995) Progress, Schedules, and Network Analysis Systems

ECB 2005-10 (2005) Scheduling Requirements for Testing of Mechanical Systems in Construction

(Both are available through the Publications page of the US Army Corps of Engineers TECHINFO Website at <http://www.hnd.usace.army.mil/techinfo/>. See link for Engineer Regulation ER 1-1-11).

1.2. QUALIFICATIONS

Designate an authorized representative who shall be responsible for the preparation of the schedule and all required updating (statusing) and preparation of reports. The authorized representative shall be experienced in electronic scheduling (has developed, created, and maintained) at least 2 projects similar in nature to this project and shall be experienced in the use of the scheduling software that meets the requirements of this specification.

1.3. SUBMITTALS

Government approval is required for submittals with a "G" designation. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Project Schedule and required updates thereto: G

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION

3.1. GENERAL REQUIREMENTS

3.1.1. Submit a project schedule pursuant to Contract Clause, SCHEDULE FOR CONSTRUCTION CONTRACTS and as specified herein for approval, showing the sequence in which the Contractor proposes to perform the work and dates on which the Contractor contemplates starting and completing all schedule activities. The scheduling of the entire project, including the design and construction sequences is required. Contractor management personnel shall actively participate in its development. Designers, subcontractors and suppliers working on the project shall also contribute in developing an accurate project schedule. The schedule must be a forward planning as well as a project monitoring tool.

3.1.2. **Approved Project Schedule.** The approved project schedule shall be used to measure the progress of the work and to aid in evaluating requests for excusable time extensions. The schedule shall be cost loaded and activity coded as specified herein. The schedule will provide the basis for all progress payments. If the Contractor fails to submit any schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule

3.1.3. **Schedule Status Report.** Status the schedule on at least a monthly basis, as specified herein. If in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress including those that may be required by the

Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained. See paragraph 3.7.4.

3.1.4. **Default Terms.** Failure of the Contractor to comply with the requirements of the Contracting Officer shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of the contract.

3.2. BASIS FOR PAYMENT AND COST LOADING

The schedule shall be the basis for determining contract earnings during each update period and therefore the amount of each progress payment. Lack of an approved schedule update or qualified scheduling personnel will result in an inability of the Contracting Officer to evaluate contract earned value for the purposes of payment. Failure of the Contractor to provide all information, as specified herein will result in the disapproval of the preliminary, initial and subsequent schedule updates. In the event schedule revisions are directed by the Contracting Officer and those revisions have not been included in subsequent revisions or updates, the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until such revisions to the project schedule have been made. Activity cost loading shall be reasonable as determined by the Contracting Officer. The aggregate value of all activities coded to a contract CLIN as specified herein shall equal the value of the CLIN on the Schedule.

3.3. PROJECT SCHEDULE DETAILED REQUIREMENTS

The computer software system utilized to produce and update the project schedule shall be capable of meeting all requirements of this specification. Failure of the Contractor to meet the requirements of this specification will result in the disapproval of the schedule. ~~Scheduling software that meets the activity-coding structure defined in the Standard Data Exchange Format (SDEF) in ER-1-1-11(1995) referenced herein are Primavera Project Planner (P3) by Primavera, and Open Plan by Deltek.~~

3.3.1. Use of the Critical Path Method

Use the Critical Path Method (CPM) of network calculation to generate the project schedule. Prepare the project schedule using the Precedence Diagram Method (PDM).

3.3.2. Level of Detail Required

Develop the project schedule to an appropriate level of detail. Failure to develop the project schedule to an appropriate level of detail, as determined by the Contracting Officer, will result in its disapproval. The Contracting Officer will consider, but is not limited to, the following characteristics and requirements to determine appropriate level of detail:

3.3.2.1. Activity Durations

Reasonable activity durations are those that allow the progress of ongoing activities to be accurately determined between update periods. Less than 2 percent of all non-procurement activities shall have Original Durations (OD) greater than 20 work days or 30 calendar days. Procurement activities are defined herein.

3.3.2.2. Design and Permit Activities

Include design and permit activities, including necessary conferences and follow-up actions and design package submission activities. Include the design schedule in the project schedule, showing the sequence of events involved in carrying out the project design tasks within the specific contract period. This shall be at a detailed level of scheduling sufficient to identify all major design tasks, including those that control the flow of work. Include review and correction periods associated with each item.

3.3.2.3. Procurement Activities

Include activities associated with the submittal, approval, procurement, fabrication and delivery of long lead materials, equipment, fabricated assemblies and supplies. Long lead procurement activities are those with an anticipated procurement sequence of over 90 calendar days. A typical procurement sequence includes the string of activities: submit, approve/review, procure, fabricate, and deliver.

3.3.2.4. Mandatory Tasks

Include and properly schedule the following tasks (See also the Sample Preliminary Submittal Register Input Form):

- (a) Submission, review and acceptance of design packages, including BIM
- (b) Submission of mechanical/electrical/information systems layout drawings
- (c) Submission and approval of O & M manuals
- (d) Submission and approval of as-built drawings
- (e) Submission and approval of 1354 data and installed equipment lists
- (f) Submission and approval of testing and air balance (TAB)
- (g) Submission of TAB specialist design review report
- (h) Submission and approval of fire protection specialist
- (i) Submission and approval of testing and balancing of HVAC plus commissioning plans and —data. Develop the schedule logic associated with testing and commissioning of mechanical systems to a level of detail consistent with the contract commissioning requirements **as well as -ECB 2005-10**
- (j) Air and water balancing
- (k) HVAC commissioning
- (l) Controls testing plan submission
- (m) Controls testing
- (n) Performance Verification testing
- (o) Other systems testing, if required
- (p) Contractor's pre-final inspection
- (q) Correction of punch list from Contractor's pre-final inspection
- (r) Government's pre-final inspection
- (s) Correction of punch list from Government's pre-final inspection
- (t) Final Inspection

3.3.2.5. Government Activities. Show Government and other agency activities that could impact progress. These activities include but are not limited to: approvals, design reviews, review conferences, release for construction of design package(s), environmental permit approvals by State regulators, inspections, utility tie-ins, Government Furnished Property/Equipment (GFP) and **Notice to Proceed for** phasing requirements, if any.

3.3.2.6. Activity Responsibility Coding (RESP)

Assign Responsibility Code for all activities to the Prime Contractor, Subcontractor or Government agency responsible for performing the activity. Activities coded with a Government Responsibility code include, but are not limited to: Government approvals, Government design reviews, environmental permit approvals by State regulators, Government Furnished Equipment (GFE) and **Notice to Proceed (NTP) for authorization to proceed with** phasing requirements. Code all activities not coded with a Government Responsibility Code to the Prime Contractor or Subcontractor responsible to perform the work. Activities shall not have more than one Responsibility Code. Examples of acceptable activity code values are: DOR (for the designer of record); ELEC (for the electrical subcontractor); MECH (for the mechanical subcontractor); and GOVT (for USACE). Unacceptable code values are abbreviations of the names of subcontractors.

3.3.2.7. Activity Work Area Coding (AREA)

Assign Work Area code to activities based upon the work area in which the activity occurs. Define work areas based on resource constraints or space constraints that would preclude a resource, such as a particular trade or craft work crew from working in more than one work area at a time due to restraints on resources or space. Examples of Work Area Coding include different areas within a floor of a building, different floors within a building, and different buildings within a complex of buildings. Activities shall not have more than one Work Area Code. Not all activities are required to be Work Area coded. A lack of Work Area coding will indicate the activity is not resource or space constrained.

3.3.2.8. Contract Changes/Requests for Equitable Adjustment (REA) Coding (MODF)

Assign Activity code to any activity or sequence of activities added to the schedule as a result of a Contract Modification, when approved by Contracting Officer, with a Contract Changes/REA Code. Key all Code values to the Government's modification numbering system. Any activity or sequence of activities added to the schedule as a result of alleged constructive changes made by the Government may be added to a copy of the current schedule, subject to the approval of the Contracting Officer. Assign Activity codes for these activities with a Contract Changes/REA Code. Key the code values to the Contractor's numbering system. Approval to add these activities does not necessarily mean the Government accepts responsibility and therefore liability for such activities and any associated impacts to the schedule, but rather the Government recognizes such activities are appropriately added to the schedule for the purposes of maintaining a realistic and meaningful schedule. Such activities shall not be Responsibility Coded to the Government unless approved. An activity shall not have more than one Contract Changes/REA Code

3.3.2.9. Contract Line Item (CLIN) Coding (BIDI)

Code all activities to the CLIN on the Contract Line Item Schedule to which the activity belongs. An activity shall not contain more than one CLIN Item Code. CLIN Item code all activities, even when an activity is not cost loaded.

3.3.2.10. Phase of Work Coding (PHAS)

Assign Phase of Work Code to all activities, based upon the phase of work in which the activity occurs. Code activities to either a Design Phase or a Construction Phase. Code fast track design and construction phases proposed by the Contractor to allow filtering and organizing the schedule by fast track design and construction packages. If the contract specifies construction phasing with separately defined performance periods, identify a Construction Phase Code to allow filtering and organizing the schedule accordingly. Each activity shall have only one Phase of Work code.

3.3.2.11. Category of Work Coding (CATW)

Assign Category of Work code to all Activities based upon the category of work which the activity belongs. Category of Work Code must include, but is not limited to: Design, Design Submittal, design reviews, review conferences, Construction Submittal, Approvals (if any), Acceptance, Procurement, Fabrication, Delivery, Weather Sensitive Installation, Non-Weather Sensitive Installation, Start Up, Test, and Turnover. Assign a Category of Work code to each activity. Each activity shall have only one Category of Work Code.

3.3.2.12. Definable Features of Work Coding (FOW1, FOW2, FOW3)

Assign a Definable Feature of Work Code to appropriate activities based on the definable feature of work to which the activity belongs. Definable Feature of Work is defined in Specification Section 01 45 04.00 10, Contractor Quality Control. An activity shall not have more than one Definable Feature of Work Code. Not all activities are required to be Definable Feature of Work Coded.

3.3.3. Scheduled Project Completion and Activity Calendars

The schedule interval shall extend from NTP date to the required contract completion date. The contract completion activity (End Project) shall finish based on the required contract duration, as adjusted for any approved contract time extensions. The first scheduled work period shall be the day after NTP is acknowledged by the Contractor. Schedule activities on a calendar to which the activity logically belongs. Activities may be assigned to a 7 day calendar when the contract assigns calendar day durations for the activity such as a Government Acceptance activity. If the Contractor intends to perform physical work less than seven days per week, schedule the associated activities on a calendar with non-work periods identified including weekends and holidays. Assign the Category of Work Code - Weather Sensitive Installation to those activities that are weather sensitive. Original durations must account for anticipated normal adverse weather. The Government will interpret all work periods not identified as non-work periods on each calendar as meaning the Contractor intends to perform work during those periods.

3.3.3.1. Project Start Date

The schedule shall start no earlier than the date on which the NTP was acknowledged. Include as the first activity in the project schedule an activity called "Start Project" or "NTP". The "Start Project" activity shall have an "ES" constraint date equal to the date that the NTP was acknowledged, with a zero day duration.

3.3.3.2. Schedule Constraints and Open Ended Logic

Constrain completion of the last activity in the schedule by the contract completion date. Schedule calculations shall result in negative float when the calculated early finish date of the last activity is later than the contract completion date. Include as the last activity in the project schedule an activity called "End Project". The "End Project" activity shall have an "LF" constraint date equal to the contract completion date for the project, and with a zero day duration or by using the "project must finish by" date in the scheduling software. The schedule shall have no constrained dates other than those specified in the contract. The use of artificial float constraints such as "zero fee float" or "zero total float" are typically prohibited. There shall only be 2 open ended activities: Start Project (or NTP) with no predecessor logic and End Project with no successor logic.

3.3.3.3. Early Project Completion

In the event the Preliminary or Initial project schedule calculates an early completion date of the last activity prior to the contract completion date, the Contractor shall identify those activities that it intends to accelerate and/or those activities that are scheduled in parallel to support the Contractor's "early" completion. The last activity shall have a late finish constraint equal to the contract completion date and the schedule will calculate positive float. The Government will not approve an early completion schedule

with zero float on the longest path. The Government is under no obligation to accelerate activities for which it is responsible to support a proposed early contract completion.

3.3.4. Interim Completion Dates

Constrain contractually specified interim completion dates to show negative float when the calculated early finish date of the last activity in that phase is later than the specified interim completion date.

3.3.4.1. Start Phase

Include as the first activity for a project phase an activity called "Start Phase X" where "X" refers to the phase of work. The "Start Phase X" activity shall have an "ES" constraint date equal to the date on which the NTP was acknowledged, and a zero day duration.

3.3.4.2. End Phase

Include as the last activity for a project phase an activity called "End Phase X" where "X" refers to the phase of work. The "End Phase X" activity shall have an "LF" constraint date equal to the specified completion date for that phase and a zero day duration.

3.3.4.3. Phase "X" Hammock

Include a hammock type activity for each project phase called "Phase X" where "X" refers to the phase of work. The "Phase X" hammock activity shall be logically tied to the earliest and latest activities in the phase.

3.3.5. Default Progress Data Disallowed

Do not automatically update Actual Start and Finish dates with default mechanisms that may be included in the scheduling software. Activity Actual Start (AS) and Actual Finish (AF) dates assigned during the updating process shall match those dates provided from Contractor Quality Control Reports. Failure of the Contractor to document the AS and AF dates on the Daily Quality Control report for every in-progress or completed activity, and failure to ensure that the data contained on the Daily Quality Control reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's updated schedule and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. Updating of the percent complete and the remaining duration of any activity shall be independent functions. Disable program features which calculate one of these parameters from the other.

3.3.6. Out-of-Sequence Progress

Activities that have progressed before all preceding logic has been satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case basis subject to approval by the Contracting Officer. Propose logic corrections to eliminate all out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project schedule..

3.3.7. Negative Lags and Start to Finish Relationships

Lag durations contained in the project schedule shall not have a negative value. Do not use Start to Finish relationships (SF).

3.3.8. Calculation Mode

Schedule calculations shall retain the logic between predecessors and successors even when the successor activity starts and the predecessor activity has not finished. Software features that in effect

sever the tie between predecessor and successor activities when the successor has started and the predecessor logic is not satisfied ("progress override") will not be allowed.

3.3.9. Milestones

Include milestone activities for each significant project event including but not limited to: milestone activities for each fast track design package released for construction; design complete; foundation/substructure construction complete; superstructure construction complete; -building dry-in or enclosure complete to allow the initiation of finish activities; permanent power complete; and building systems commissioning complete.

3.3.10. Use of Primavera "P6"

If P6 is being used, the following settings are mandatory in the Preliminary Project Schedule, Initial Project Schedule and all schedule submissions to the Government:

- 3.3.10.1. Activity Codes shall be Project Level not Global or EPS level.
- 3.3.10.2. Calendars shall be Project Level not Global or Resource level.
- 3.3.10.3. Set Activity Duration Types to "Fixed Duration & Units".
- 3.3.10.4. Set Percent Complete Types to "Physical".
- 3.3.10.5. Use Default Time Period Admin Preferences "8.0 hr/day, 40 hr/week, 172 hr/month, 2000 hr/year". Set Calendar Work Hours/Day to 8.0 Hour days. This is not to mandate the Contractor's work week. Alternate workweeks may be set up in "Calendar Settings".
- 3.3.10.6. Set Schedule Option for defining Critical Activities "Longest Path".
- 3.3.10.7. Set Schedule Option for defining progressed activities "Retained Logic".
- 3.3.10.8. Set up Cost loading a single lump sum Resource. The Price/Unit shall be \$1/hr, Default Units/Time shall be "8h/d", and select settings "Auto Compute Actuals" and "Calculate costs from units".
- 3.3.10.9. Activity ID's shall not exceed 10 characters.
- 3.3.10.10. Activity Names shall have the most defining and detailed description within the first 30 characters.

3.4. PROJECT SCHEDULE SUBMISSIONS

Provide the submissions as described below. The data CD, reports, and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS.

3.4.1. Preliminary Project Schedule Submission

Submit the Preliminary Project Schedule, defining the Contractor's planned operations for the first 90 calendar days for approval within 15 calendar days after the NTP is acknowledged. The approved Preliminary Project Schedule will be used for payment purposes not to exceed 90 calendar days after NTP. Completely cost load the Preliminary Project Schedule to balance the contract award CLINS shown on the Price Schedule. Detail it for the first 90 calendar days. It may be summary in nature for the remaining performance period. It must be early start and late finish constrained and logically tied as previously specified. The Preliminary Project Schedule forms the basis for the Initial Project Schedule specified herein and must include all of the required Plan and Program preparations, submissions and

approvals identified in the contract (for example, Quality Control Plan, Safety Plan, and Environmental Protection Plan) as well as design activities, the planned submissions of all early design packages, permitting activities, design review conference activities and other non-construction activities intended to occur within the first 90 calendar days. Schedule any construction activities planned for the first 90 calendar days after NTP. Constrain planned construction activities by Government acceptance of the associated design package(s) and all other specified Program and Plan approvals. Activity code any activities that are summary in nature after the first 90 calendar days with Responsibility Code (RESP) and Feature of Work code (FOW1, FOW2, FOW3)

3.4.2. Initial Project Schedule Submission

Submit the Initial Project Schedule for approval within 42 calendar days after NTP. The schedule shall demonstrate a reasonable and realistic sequence of activities which represent all work through the entire contract performance period. The Initial Schedule shall be at a reasonable level of detail as determined by the Contracting Officer. Include detailed design and permitting activities, including but not limited to identification of individual design packages, design submission, reviews and conferences; permit submissions and any required Government actions; and long lead procurement activities required prior to design completion. The Initial Project Schedule shall include the entire construction sequence and all fast track construction activities, with as much detail as is known at the time but, as a minimum, shall include all construction start and completion milestone activities, and detailed construction activities through the dry-in milestone, including all activity coding and cost loading. Include the remaining construction, including cost loading, but it may be scheduled summary in nature. As the design proceeds and design packages are developed, fully detail the remaining construction activities concurrent with the monthly schedule updating process. Constrain construction activities by Government acceptance of associated designs. When the design is complete, incorporate into the then approved schedule update all remaining detailed construction activities that are planned to occur after the dry-in milestone.

3.4.3. Design Package Schedule Submission:

With each design package submitted to the Government, submit a frag-net schedule extracted from the then current Preliminary, Initial or Updated schedule which covers the activities associated with that Design Package including construction, procurement and permitting activities.

3.4.4. Periodic Schedule Updates

Based on the result of the meeting specified in PERIODIC SCHEDULE UPDATE MEETINGS, submit periodic schedule updates. These submissions shall enable the Contracting Officer to assess Contractor's progress. If the Contractor fails or refuses to furnish the information and project schedule data, which in the judgment of the Contracting Officer or authorized representative is necessary for verifying the Contractor's progress, the Contractor shall be deemed not to have provided an estimate upon which progress payment may be made. Update the schedule to include detailed lower WBS activities procurement and construction activities as the design progresses, but not later than the submission of the final, un-reviewed design submission for each separate design package. The Contracting Officer may require submission of detailed schedule activities for any distinct construction that is started prior to submission of a final design submission, if such activity is authorized.

3.4.5. Standard Activity Coding Dictionary

Use the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER 1-1-11, Appendix A. This exact structure is mandatory, even if some fields are not used. A template SDEF compatible schedule backup file (sdef.prx) is available on the QCS website: <http://rms.usace.army.mil> .

The SDEF format is as follows:

Field	Activity Code	Length	Description
-------	---------------	--------	-------------

1	WRKP	3	Workers per Day
2	RESP	4	Responsible Party (e.g. GC, subcontractor, USACE)
3	AREA	4	Area of Work
4	MODF	6	Modification or REA number
5	BIDI	6	Bid Item (CLIN)
6	PHAS	2	Phase of Work
7	CATW	1	Category of Work
8	FOW1	10	Feature of Work (used up to 10 characters in length)
9	FOW2	10	Feature of Work (used up to 20 characters in length)
10	FOW3	10	Feature of Work (used up to 30 characters in length)

3.5. SUBMISSION REQUIREMENTS

Submit the following items for the Preliminary Schedule, Initial Schedule, and every Periodic Schedule Update throughout the life of the project:

3.5.1. Data CD's

Provide two sets of data CD's containing the project schedule in the backup format. Each CD shall also contain all previous update backup files. File medium shall be CD. Label each CD, indicating the type of schedule (Preliminary, Initial, Update), full contract number, Data Date and file names. Each schedule shall have a unique file name as determined by the Contractor.

3.5.2. Narrative Report

Provide a Narrative Report with the Preliminary, Initial, and each Periodic Update of the project schedule, as the basis of the progress payment request. The Narrative Report shall include: a description of activities along the 2 most critical paths where the total float is less than or equal to 20 work days, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. The narrative report is expected to communicate to the Government, the Contractor's thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through its analysis. Identify and explain why any activities that, based their calculated late dates, should have either started or finished during the update period but did not.

3.5.3. Approved Changes Verification

Include only those project schedule changes in the schedule submission that have been previously approved by the Contracting Officer. The Narrative Report shall specifically reference, on an activity by

activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

3.5.4. Schedule Reports

The format, filtering, organizing and sorting for each schedule report shall be as directed by the Contracting Officer. Typically reports shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date Total Float, Actual Start Date, Actual Finish Date, and Percent Complete. The following lists typical reports that will be requested. One or all of these reports may be requested for each schedule submission.

3.5.4.1. Activity Report

A list of all activities sorted according to activity number.

3.5.4.2. Logic Report

A list of detailed predecessor and successor activities for every activity in ascending order sorted by activity number.

3.5.4.3. Total Float Report

A list of all incomplete activities sorted in ascending order of total float. List activities which have the same amount of total float in ascending order of Early Start Dates. Do not show completed activities on this report.

3.5.4.4. Earnings Report by CLIN

A compilation of the Contractor's Total Earnings on the project from the NTP to the data date. This report shall reflect the earnings of specific activities based on the agreements made in the schedule update meeting defined herein. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining progress payments. Group activities by CLIN Item number and sort by activity number. This report shall: sum all activities coded to a particular CLIN and provide a CLIN Item percent earned value; and complete and sum CLIN items to provide a total project percent complete. The printed report shall contain, for each activity: the Activity Number, Activity Description, Original Budgeted Amount, Quantity to Date, Percent Complete (based on cost), and Earnings to Date.

3.5.5. Network Diagram

The network diagram is required for the Preliminary, Initial and Periodic Updates. Depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.5.5.1. Continuous Flow

Show a continuous flow from left to right with no arrows from right to left. Show the activity number, description, duration, and estimated earned value on the diagram.

3.5.5.2. Project Milestone Dates

Show dates on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.5.5.3. Critical Path

Clearly show the critical path.

3.5.5.4. Banding

Organize activities as directed to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work, work area and/or responsibility.

3.5.5.5. S-Curves

Earnings curves showing projected early and late earnings and earnings to date.

3.6. PERIODIC SCHEDULE UPDATE MEETINGS

Conduct periodic schedule update meetings for the purposes of reviewing the Contractor's proposed out of sequence corrections, determining causes for delay, correcting logic, maintaining schedule accuracy and determining earned value. Meetings shall occur at least monthly within five days of the proposed schedule data date and after the Contractor has updated the schedule with Government concurrence respecting actual start dates, actual finish dates, remaining durations and percent complete for each activity it intend to status. Match the ~~actual~~ actual start and finish dates with the dates exported, as described in paragraph 3.3.5. Provide a computer with the scheduling software loaded and a projector during the meeting which allows all meeting participants to view the proposed schedule update during the meeting. The meeting and resultant approvable schedule update shall be a condition precedent to a formal submission of the update as described in SUBMISSION REQUIREMENTS and to the submission of an invoice for payment. The meeting will be a working interactive exchange which will allow the Government and the Contractor the opportunity review the updated schedule on a real time and interactive basis. The Contractor's authorized scheduling representative will organize, sort, filter and schedule the update as requested by the Government. The meeting will last no longer than 8 hours. A rough draft of the proposed activity logic corrections and narrative report shall be provided to the Government 48 hours in advance of the meeting. The Contractor's Project Manager and Authorized Scheduler shall attend the meeting with the Authorized Representative of the Contracting Officer.

3.6.1. Update Submission Following Progress Meeting

Submit a complete update of the project schedule containing all approved progress, revisions, and adjustments, pursuant to paragraph SUBMISSION REQUIREMENTS not later than 4 working days after the periodic schedule update meeting, reflecting only those changes made during the previous update meeting.

3.6.2. Status of Activities

Update statusing information, including Actual Start Dates (AS), Actual Finish Dates (AF), Remaining Durations (RD) and Percent Complete shall be subject to the approval of the Government prior to the meeting. As a minimum, address the following items on an activity by activity basis during each progress meeting:

3.6.2.1. Actual Start and Finish Dates

Accurately status the AS and/or AF dates for each activity currently in-progress or completed since the last update. The Government may allow an AF date to be assigned with the percent complete less than 100% to account for the value of work remaining but not restraining successor activities. Only assign AS dates when actual progress occurs on an activity.

3.6.2.2. Remaining Duration

Update the estimated RD for all incomplete activities independent of Percent Complete. Remaining durations may exceed the activity OD or may exceed the activity's prior update RD if the Government considers the current OD or RD to be understated based on current progress, insufficient work crews actually manning the job, unrealistic OD or deficiencies that must be corrected that restrain successor activities.

3.6.2.3. Percent Complete

Update the percent complete for each activity started based on the realistic assessment of earned value. Activities which are complete but for remaining minor punch list work and which do not restrain the initiation of successor activities may be statused 100 percent complete. To allow for proper schedule management, cost load the correction of punch list from Government pre-final inspection activity(ies) not less than 1% of the total contract value, which activity(ies) may be declared 100 percent complete upon completion and correction of all punch list work identified during Government pre-final inspection(s).

3.6.2.4. Logic Changes

Specifically identify and discuss all logic changes pertaining to NTP on change orders, change orders to be incorporated into the schedule, contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, and other changes that have been made pursuant to contract provisions. The Government will only approve logic revisions for the purpose of keeping the schedule valid in terms of its usefulness in calculating a realistic completion date, correcting erroneous logic ties, and accurately sequencing the work.

3.6.2.5. Other Changes

Other changes required due to delays in completion of any activity or group of activities include: 1) delays beyond the Contractor's control, such as strikes and unusual weather. 2) delays encountered due to submittals, Government Activities, deliveries or work stoppages which make re-planning the work necessary. 3) Changes required to correct a schedule that does not represent the actual or planned prosecution and progress of the work.

3.7. REQUESTS FOR TIME EXTENSIONS

In the event the Contractor believes it is entitled to an extension of the contract performance period, completion date, or any interim milestone date, furnish the following for a determination by the Contracting Officer: justification, project schedule data, and supporting evidence as the Contracting Officer may deem necessary. Submission of proof of excusable delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is a condition precedent to any approvals by the Government. In response to each Request For Proposal issued by the Government, the Contractor shall submit a schedule impact analysis demonstrating whether or not the change contemplated by the Government impacts the critical path.

3.7.1. Justification of Delay

The project schedule shall clearly display that the Contractor has used, in full, all the float time available for the work involved with its request. The Contracting Officer's determination as to the number of allowable days of contract extension shall be based upon the project schedule updates in effect for the time period in question, and other factual information.

Actual delays that are found to be caused by the Contractor's own actions, which result in a calculated schedule delay, will not be a cause for an extension to the performance period, completion date, or any interim milestone date.

3.7.2. Submission Requirements

Submit a justification for each request for a change in the contract completion date of less than 2 weeks based upon the most recent schedule update at the time of the NTP or constructive direction issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

3.7.2.1. A list of affected activities, with their associated project schedule activity number.

3.7.2.2. A brief explanation of the causes of the change

3.7.2.3. An analysis of the overall impact of the changes proposed.

3.7.2.4. A sub-network of the affected area

Identify activities impacted in each justification for change by a unique activity code contained in the required data file.

3.7.3. Additional Submission Requirements

The Contracting Officer may request an interim update with revised activities for any requested time extension of over 2 weeks. Provide this disk within 4 days of the Contracting Officer's request.

3.7.4. If Progress Falls Behind the Approved Project Schedule

3.7.4.1. Should progress fall behind the approved schedule (more than 20 work days of negative float) due to Contractor generated problems, promptly provide a supplemental recovery or completion schedule that illustrates its efforts to regain time to assure a completion by the required contract completion date.

3.7.4.2. The supplemental recovery or completion schedule will not replace the original, approved schedule as the official contract schedule. Continue to update the original, approved schedule on at least a monthly basis. In addition, the Contractor and the Contracting Officer will monitor the supplemental recovery or completion schedule on at least a bi-weekly basis to determine its effect on regaining the rate of progress to assure project completion by the contractually required completion date.

3.7.4.3. Do not artificially improve progress by simply revising the schedule logic, modifying or adding constraints, or shortening future work activity durations. Resource and manpower load the supplemental recovery schedule or completion schedule with crew size and productivity for each remaining activity, indicating overtime, weekend work, and/or double shifts needed to regain the schedule, in accordance with FAR 52.236.15, without additional cost to the Government. Indicate assumptions made and the basis for any logic, constraint, or duration changes used in the creation of the supplemental recovery or completion schedule in a narrative submitted for the Contracting Officer's approval. Any additional resources or manpower must be evident at the work site. Do not modify the official contract schedule to include these assumptions.

3.7.4.4. Failure to perform work and maintain progress in accordance with the supplemental recovery or completion schedule may result in an interim and final unsatisfactory performance rating and/or may result in corrective action by the Contracting Officer in accordance with FAR 52.236-15.

3.8. DIRECTED CHANGES

If the NTP is issued for changes prior to settlement of price and/or time, submit proposed schedule revisions to the Contracting Officer within 2 weeks of the NTP being issued. The Contracting Officer will approve proposed revisions to the schedule prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor with suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until revisions are submitted and final changes and impacts have been negotiated.

If the Contractor has any objections to the revisions furnished by the Contracting Officer, advise the Contracting Officer within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor shall continue to update the schedule with the Contracting Officer's revisions until a mutual agreement in the revisions is reached. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

3.9. WEEKLY PROGRESS MEETINGS

3.9.1. The Government and the Contractor shall meet weekly (or as otherwise mutually agreed to) between the meetings described in paragraph PERIODIC SCHEDULE UPDATE MEETINGS for the purpose of jointly reviewing the actual progress of the project as compared to the as planned progress and to review planned activities for the upcoming two weeks. The then current and approved schedule update shall be used for the purposes of this meeting and for the production and review of reports. The Contractor's Project Manager and the Authorized Representative of the Contracting Officer shall attend. The weekly progress meeting will address the status of RFI's, RFP's and Submittals.

3.9.2. Provide a bar chart produced by the scheduling software, organized by Total Float and Sorted by Early Start Date, and a two week "look-ahead" schedule by filtering all schedule activities to show only current ongoing activities and activities schedule to start during the upcoming two weeks, organized by Work Area Code (AREA) and sorted by Early Start Date.

3.9.3. The Government and the Contractor shall jointly review the reports. If it appears that activities on the longest path(s) which are currently driving the calculated completion date (driving activities), are not progressing satisfactorily and therefore could jeopardize timely project completion, corrective action must be taken immediately. Corrective action includes but is not limited to: increasing the number of work crews; increasing the number of work shifts; increasing the number of hours worked per shift; and determining if Government responsibility coded activities require Government corrective action.

3.10. OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

3.11. TRANSFER OF SCHEDULE DATA INTO RMS/QCS

Download and upload the schedule data into the Resident Management System (RMS) prior to RMS databases being transferred to the Government and is considered to be additional supporting data in a form and detail required by the Contracting Officer pursuant to FAR 52.232-5 - Payments under Fixed-Price Construction Contracts. The receipt of a proper payment request pursuant to FAR 52.232-27 - Prompt Payment for Construction Contracts is contingent upon the Government receiving both acceptable and approvable hard copies and electronic export from QCS of the application for progress payment.

End of Section 01 32 01.00 10

SECTION 01 33 00
REV 4.1 - 30 APR 2010
SUBMITTAL PROCEDURES

1.0 GENERAL

- 1.1. DEFINITIONS
- 1.2. NOT USED
- 1.3. SUBMITTAL CLASSIFICATION
- 1.4. APPROVED OR CONCURRED WITH SUBMITTALS
- 1.5. DISAPPROVED SUBMITTALS
- 1.6. WITHHOLDING OF PAYMENT
- 1.7. GENERAL
- 1.8. SUBMITTAL REGISTER
- 1.9. SCHEDULING
- 1.10. TRANSMITTAL FORM (ENG FORM 4025)
- 1.11. SUBMITTAL PROCEDURES
- 1.12. CONTROL OF SUBMITTALS
- 1.13. GOVERNMENT APPROVED SUBMITTALS
- 1.14. INFORMATION ONLY SUBMITTALS
- 1.15. STAMPS

1.0 GENERAL

1.1. DEFINITIONS

1.1.1. Submittal

Contract Clauses "FAR 52.236-5, Material and Workmanship," paragraph (b) and "FAR 52.236-21, Specifications and Drawings for Construction," paragraphs (d), (e), and (f) apply to all "submittals."

1.1.2. Submittal Descriptions (SD)

Submittals requirements are specified in the technical sections. Submittals are identified by SD numbers and titles as follows.

SD-01 Preconstruction Submittals

- Certificates of insurance.
- Surety bonds.
- List of proposed subcontractors.
- List of proposed products.
- Construction Progress Schedule.
- Submittal register.
- Schedule of prices.
- Accident Prevention Plan.
- Work plan.
- Quality control plan.
- Environmental protection plan.

SD-02 Shop Drawings

- Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.
- Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project.
- Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated.

SD-03 Product Data

- Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials or equipment for some portion of the work.
- Samples of warranty language when the contract requires extended product warranties.

SD-04 Samples

- Physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.
- Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.
- Field samples and mock-ups constructed on the project site establish standards by which the ensuring work can be judged. Includes assemblies or portions of assemblies that are to be incorporated into the project and those which will be removed at conclusion of the work.

SD-05 Design Data

- Calculations, mix designs, analyses or other data pertaining to a part of work.
- Design submittals, design substantiation submittals and extensions of design submittals.

SD-06 Test Reports

- Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. (Testing must have been within three years of date of contract award for the project.)
- Report which includes findings of a test required to be performed by the Contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.
- Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.
- Investigation reports.
- Daily checklists.
- Final acceptance test and operational test procedure.

SD-07 Certificates

- Statements printed on the manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of project contract and clearly name the project.
- Document required of Contractor, or of a supplier, installer or subcontractor through Contractor, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.
- Confined space entry permits.
- Text of posted operating instructions.

SD-08 Manufacturer's Instructions

- Preprinted material describing installation of a product, system or material, including special notices and Material Safety Data sheets concerning impedances, hazards and safety precautions.

SD-09 Manufacturer's Field Reports

- Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- Factory test reports.

SD-10 Operation and Maintenance Data

- Data that is furnished by the manufacturer, or the system provider, to the equipment operating and maintenance personnel. This data is needed by operating and maintenance personnel for the safe and efficient operation, maintenance and repair of the item.

SD-11 Closeout Submittals

- Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

1.1.3. Approving Authority

Office authorized to approve submittal.

1.1.4. Work

As used in this section, on- and off-site construction required by contract documents, including labor necessary to produce submittals, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction.

1.2. NOT USED

1.3. SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.3.1. Designer of Record Approved (DA)

1.3.1.1. Designer of Record (DOR) approval is required for all extensions of design, critical materials, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings". Provide the Government the number of copies designated hereinafter of all DOR approved submittals, after the DOR has taken appropriate action. The DOR shall ensure that submittals conform to the Solicitation, the Accepted Proposal and the completed design, however see below for those submittals proposing a deviation to the contract or a substitution of a material, system, or piece of equipment that was identified by manufacturer, brand name or model description in the accepted contract proposal.

1.3.1.2. The DOR shall ensure that the submittals comply with all applicable Buy American Act and Trade Agreement Act clauses in the contract. The DOR may confer with the Contracting Officer's Representative for advice and interpretation of those clauses, as necessary.

1.3.1.3. The Government may, but is not required to, review any or all DOR approved submittals for conformance to the solicitation, accepted proposal and the completed design. Except for submittals designated as deviating from the Solicitation, the Accepted Proposal or completed design, the Contractor may proceed with acquisition and installation upon DOR approval. Government Approved (GA)

1.3.2. Government Approved (GA)

Government approval is required for any item specifically designated as requiring Government approval in the Solicitation, for internal and external color finish selections and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

1.3.3. Government Conformance Review of Design (CR)

The Government will review all intermediate and final design submittals for conformance with the technical requirements of the solicitation. Section 01 33 16 **DESIGN AFTER AWARD** covers the design submittal and review process in detail. Review will be only for conformance with the applicable codes, standards and contract requirements. Design data includes the design documents described in Section 01 33 16 **DESIGN AFTER AWARD**. Generally, design submittals should be identified as SD-05 Design Data submittals.

1.3.4. Designer of Record Approved/Government Conformance Review (DA/CR)

1.3.4.1. Deviations to the Accepted Design. Designer of Record approval and the Government's concurrence are required for any proposed deviation from the accepted design which still complies with the contract (the Solicitation and Accepted Proposal) before the Contractor is authorized to proceed with material acquisition or installation. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings." If necessary to facilitate the project schedule, the Contractor and the DOR may discuss a submittal proposing a deviation with the Contracting Officer's Representative prior to officially submitting it to the Government. However, the Government reserves the right to review the submittal before providing an opinion, if it deems it necessary. In any case, the Government will not formally agree to or provide a preliminary opinion on any deviation without the DOR's approval or recommended approval. The Government reserves the right to non-concur with any deviation from the design, which may impact furniture, furnishings, equipment selections or operations decisions that were made, based on the reviewed and concurred design.

1.3.4.2. Substitutions. Unless prohibited or provided for otherwise elsewhere in the Contract, where the accepted contract proposal named products, systems, materials or equipment by manufacturer, brand name and/or by model number or other specific identification, and the Contractor desires to substitute manufacturer or model after award, submit a requested substitution for Government concurrence. Include substantiation, identifying information and the DOR's approval, as meeting the contract requirements and that it is equal in function, performance, quality and salient features to that in the accepted contract proposal.

1.3.5. Designer of Record Approved/Government Approved (DA/GA)

Any proposed deviation to the solicitation and/or the accepted proposal constitutes a change to the contract. In addition to the above stated requirements for proposed deviations to the accepted design, both Designer of Record and Government Approval and, where applicable, a contract modification are required before the Contractor is authorized to proceed with material acquisition or installation for any proposed deviation to the contract. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings". The Government reserves the right to accept or reject any such proposed deviation at its discretion.

1.3.6. Information Only

All submittals not requiring Designer of Record or Government approval will be for information only. Provide the Government "For Information Only" copies of all submittals not requiring Government approval or concurrence, after the Designer of Record has taken the appropriate action.

1.4. APPROVED OR CONCURRED WITH SUBMITTALS

Do not construe the Contracting Officer's approval of or concurrence with submittals as a complete check, but only that design, general method of construction, materials, detailing and other information appear to meet the Solicitation and Accepted Proposal. Approval or concurrence will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for design, dimensions, all design extensions, such as the design of adequate connections and details, etc., and the satisfactory construction of all work. The Government won't consider re-submittals for the purpose of substituting previously approved materials or equipment unless accompanied by an explanation of why a substitution is necessary.

1.5. DISAPPROVED SUBMITTALS

Make all corrections required by the Contracting Officer, obtain the Designer of Record's approval when applicable, and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. Resubmit any "information only" submittal found to contain errors or unapproved deviations from the Solicitation or Accepted Proposal as one requiring "approval" action, requiring both Designer of Record and Government approval. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, provide prompt notice in accordance with the Contract Clause "Changes" to the Contracting Officer.

1.6. WITHHOLDING OF PAYMENT

No payment for materials incorporated in the work will be made if all required Designer of Record or required Government approvals have not been obtained. No payment will be made for any materials incorporated into the work for any conformance review submittals or information only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

1.7. GENERAL

Make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, the Contractor's Quality Control (CQC) System Manager and the Designer of Record, if applicable, shall check, approve, sign, and stamp all items, indicating action taken. Clearly identify proposed deviations from the contract requirements. Include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Schedule and make submittals requiring Government approval prior to the acquisition of the material or equipment covered thereby. Pick up and dispose of samples remaining upon completion of the work in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

1.8. SUBMITTAL REGISTER (GA)

Develop a complete list of submittals, including each separate design package submittal. Submit the initial submittal register within 15 days after Notice to Proceed, including, as a minimum, the design packages and other initial submittals required elsewhere in the contract. The Designer of Record shall identify required submittals in the specifications, and use the list to prepare the Submittal Register, utilizing the government-provided software, QCS (see Section 01 45 01.10), to create the ENG Form 4288. Appendix R is a preliminary submittal register input form for use with the Quality Management System and the Resident Office Management System (QCS and RMS). The Government will provide the Contractor the actual Excel Spreadsheet version of this sample input form after award to modify and to use for input into QCS. The Excel Spreadsheet is not totally inputable into QCS, so additional keystroke input will be necessary. The sample input form is not all-inclusive. In addition, additional submittals may be required by other parts of the contract. After award, the parties will meet to discuss contract specific (or task order specific for a task order contract) distribution for the submittals all-inclusive and additional submittals may be required by other parts of the contract. Develop and complete the submittal register as the design is completed. Submit it to the Contracting Officer with the un-reviewed final design package submission or as soon as the design specifications are completed, if before the final design submission. When applicable, if the Contractor elects to fast track design and construction, using multiple design package submissions, update the submittal register to reflect the submittals associated with each design submission, clearly denoting all revisions to the previous submission. The submittal register serves as a scheduling document for submittals and for control of submittal actions throughout the contract period. Coordinate the submit dates and need dates used in the submittal register with dates in the Contractor prepared progress schedule. Submit monthly updates to the submittal register showing the Contractor action codes and actual dates with Government action codes and actual dates or until all submittals have been satisfactorily completed. Revise and submit the submittal register when revising the progress schedule.

1.9. SCHEDULING

Schedule submittals covering component items forming a system or items that are interrelated to be coordinated and submitted concurrently. Schedule certifications to be submitted with the pertinent drawings. Allow adequate time (a minimum of 15 calendar days exclusive of mailing time) and show on the register for those items requiring Government approval or concurrence. No delay damages or time extensions will be allowed for time lost in late submittals by the Contractor.

1.10. TRANSMITTAL FORM (ENG FORM 4025)

Use the transmittal form (ENG Form 4025) for submitting submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor or are included in the QCS software if the Contractor is required to use QCS for this contract. Use a separate transmittal form for each specification section. Complete this form by filling out all the heading blank spaces and identify

each item submitted. Exercise special care to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

1.11. SUBMITTAL PROCEDURES

Make submittals as follows:

1.11.1. Procedures

The Government will further discuss detailed submittal procedures with the Contractor at the Post-Award Conference.

1.11.2. Deviations

For submittals which include proposed deviations requested by the Contractor, check the column "variation" of ENG Form 4025. Set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

1.12. CONTROL OF SUBMITTALS

Carefully control his procurement operations to ensure that each individual submittal is made on or before the scheduled submittal date shown on the approved "Submittal Register."

1.13. GOVERNMENT APPROVED OR CONCURRED WITH SUBMITTALS

Upon completion of review of submittals requiring Government approval or concurrence, the Government will stamp and date the submittals as approved or concurred.. The Government will retain one (1) copies of the submittal and return one (1) copy(ies) of the submittal.

1.14. INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe. **The Government will retain zero(0) copies of information only submittals.**

1.15. STAMPS

Use stamps similar to the following on the submittal data to certify that the submittal meets contract requirements:

CONTRACTOR

(FIRM NAME)

Approved

Approved with corrections as noted on submittal data and/or attached sheet(s)

Signature:

Title:

Date:

For design-build construction, both the Contractor Quality Control System Manager and the Designer of Record shall stamp and sign to certify that the submittal meets contract requirements.

SECTION 01 33 16
REV 2.38 – 31 AUG 2012
DESIGN AFTER AWARD

1.0 GENERAL INFORMATION

1.1. INTRODUCTION

1.2. DESIGNER OF RECORD

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION

3.1. PRE-WORK ACTIVITIES & CONFERENCES

3.1.1. Design Quality Control Plan

3.1.2. Post Award Conference

3.1.3. Partnering & Project Progress Processes

3.1.4. Initial Design Conference

3.1.5. Pre-Construction Conference

3.2. STAGES OF DESIGN SUBMITTALS AND OVER THE SHOULDER PROGRESS REVIEWS

3.2.1. Site/Utilities

3.2.2. Interim Design Submittals

3.2.3. Over-the-Shoulder Progress Reviews

3.2.4. Final Design Submissions

3.2.5. Design Complete Submittals

3.2.6. Holiday Periods for Government Review or Actions

3.2.7. Late Submittals and Reviews

3.3. DESIGN CONFIGURATION MANAGEMENT

3.3.1. Procedures

3.3.2. Tracking Design Review Comments

3.3.3. Design and Code Checklists

3.4. INTERIM DESIGN REVIEWS AND CONFERENCES

3.4.1. General

- 3.4.2. Procedures
- 3.4.3. Conference Documentation
- 3.5. INTERIM DESIGN REQUIREMENTS
 - 3.5.1. Drawings
 - 3.5.2. Design Analyses
 - 3.5.3. Geotechnical Investigations and Reports
 - 3.5.4. LEED Documentation
 - 3.5.5. Energy Conservation
 - 3.5.6. Specifications
 - 3.5.7. Building Rendering
 - 3.5.8. Interim Building Design Contents
- 3.6. FINAL DESIGN REVIEWS AND CONFERENCES
- 3.7. FINAL DESIGN REQUIREMENTS
 - 3.7.1. Drawings
 - 3.7.2. Design Analysis
 - 3.7.3. Specifications
 - 3.7.4. Submittal Register
 - 3.7.5. Preparation of DD Form 1354 (Transfer of Real Property)
 - 3.7.6. Acceptance and Release for Construction
- 3.8. DESIGN COMPLETE CONSTRUCTION DOCUMENT REQUIREMENTS
- 3.9. SUBMITTAL DISTRIBUTION, MEDIA AND QUANTITIES
 - 3.9.1. Submittal Distribution and Quantities
 - 3.9.2. Web based Design Submittals
 - 3.9.3. Mailing of Design Submittals
- 3.10. AS-BUILT DOCUMENTS

ATTACHMENT A STRUCTURAL INTERIOR DESIGN (SID) REQUIREMENTS

ATTACHMENT B FURNITURE, FIXTURES AND EQUIPMENT REQUIREMENTS

ATTACHMENT C TRACKING COMMENTS IN DRCHECKS

ATTACHMENT D SAMPLE FIRE PROTECTION AND LIFE SAFETY CODE REVIEW

ATTACHMENT E LEED SUBMITTALS

ATTACHMENT F BUILDING INFORMATION MODELING REQUIREMENTS

ATTACHMENT G DESIGN SUBMITTAL DIRECTORY AND SUBDIRECTORY FILE ARRANGEMENT

1.0 GENERAL INFORMATION

1.1. INTRODUCTION

1.1.1. The information contained in this section applies to the design required after award. After award, the Contractor will develop the accepted proposal into the completed design, as described herein.

1.1.2. The Contractor may elect to fast track the design and construction that is, proceed with construction of parts of the sitework and facilities prior to completion of the overall design. To facilitate fast tracking, the Contractor may elect to divide the design into no more than six (6) design packages per major facility type and no more than three (3) design packages for site and associated work. Designate how it will package the design, consistent with its overall plan for permitting (where applicable) and construction of the project. See Sections 01 33 00 SUBMITTAL PROCEDURES and 01 32 01.00 10 PROJECT SCHEDULE for requirements for identifying and scheduling the design packaging plan in the submittal register and project schedule. See also Sections 01 10 00 STATEMENT OF WORK and 01 57 20.00 10 ENVIRONMENTAL PROTECTION for any specified permit requirements. If early procurement of long-lead item construction materials or installed equipment, prior to completion of the associated design package, is necessary to facilitate the project schedule, also identify those long-lead items and how it will assure design integrity of the associated design package to meet the contract requirements (The Contract consists of the Solicitation requirements and the accepted proposal). Once the Government is satisfied that the long-lead items meet the contract requirements, the Contracting Officer will allow the Contractor to procure the items at its own risk.

1.1.3. The Contractor may proceed with the construction work included in a separate design package after the Government has reviewed the final (100%) design submission for that package, review comments have been addressed and resolved to the Government's satisfaction and the Contracting Officer (or the Administrative Contracting Officer) has agreed that the design package may be released for construction.

1.1.4. INTEGRATED DESIGN. To the maximum extent permitted for this project, use a collaborative, integrated design process for all stages of project delivery with comprehensive performance goals for siting, energy, water, materials and indoor environmental quality and ensures incorporation of these goals. Consider all stages of the building lifecycle, including deconstruction.

1.2. DESIGNER OF RECORD

Identify, for approval, the Designer of Record ("DOR") that will be responsible for each area of design. One DOR may be responsible for more than one area. Listed, Professional Registered, DOR(s) shall account for all areas of design disciplines. The DOR's shall stamp, sign, and date each design drawing and other design deliverables under their responsible discipline at each design submittal stage (see contract clause Registration of Designers). If the deliverables are not ready for release for construction, identify them as "preliminary" or "not for release for construction" or by using some other appropriate designation. The DOR(s) shall also be responsible for maintaining the integrity of the design and for compliance with the contract requirements through construction and documentation of the as-built condition by coordination, review and approval of extensions of design, material, equipment and other construction submittals, review and approval or disapproval of requested deviations to the accepted design or to the contract, coordination with the Government of the above activities, and by performing other typical professional designer responsibilities.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION

3.1. PRE-WORK ACTIVITIES & CONFERENCES

3.1.1. Design Quality Control Plan

Submit for Government acceptance, a Design Quality Control Plan in accordance with Section 01 45 04.00 10 CONTRACTOR QUALITY CONTROL before design may proceed.

3.1.2. Post Award Conference

3.1.2.1. The government will conduct a post award contract administration conference at the project site, as soon as possible after contract award. This will be coordinated with issuance of the contract notice to proceed (NTP). The Contractor and major sub-contractor representatives shall participate. All designers need not attend this first meeting. Government representatives will include COE project delivery team members, facility users, facility command representatives, and installation representatives. The Government will provide an agenda, meeting goals, meeting place, and meeting time to participants prior to the meeting.

3.1.2.2. The post award conference shall include determination and introduction of contact persons, their authorities, contract administration requirements, discussion of expected project progress processes, and coordination of subsequent meetings for quality control (see Section 01 45 04.00 10 CONTRACTOR QUALITY CONTROL), Partnering (see below and SCR: Partnering), and the initial design conference (see below).

3.1.2.3. The government will introduce COE project delivery team members, facility users, facility command representatives, and installation representatives. The DB Contractor shall introduce major subcontractors, and other needed staff. Expectations and duties of each person shall be defined for all participants. A meeting roster shall be developed and distributed by the government with complete contact information including name, office, project role, phone, mailing and physical address, and email address.

3.1.3. Partnering & Project Progress Processes

3.1.3.1. The initial Partnering conference may be scheduled and conducted at any time with or following the post award conference. The Government proposes to form a partnership with the DB Contractor to develop a cohesive building team. This partnership will involve the COE project delivery team members, facility users, facility command representatives, installation representatives, Designers of Record, major subcontractors, contractor quality control staff, and contractor construction management staff. This partnership will strive to develop a cooperative management team drawing on the strengths of each team member in an effort to achieve a quality project within budget and on schedule. This partnership will be bilateral in membership and participation will be totally voluntary. All costs, excluding labor and travel expenses, shall be shared equally between the Government and the Contractor. The Contractor and Government shall be responsible for their own labor and travel costs. Normally, partnering meetings will be held at or in the vicinity of the project installation.

3.1.3.2. As part of the partnering process, the Government and Contractor shall develop, establish, and agree to comprehensive design development processes including conduct of conferences, expectations of design development at conferences, fast-tracking, design acceptance, Structural Interior Design (SID)/ Furniture, Fixtures & Equipment (FF&E) design approval, project closeout, etc. The government will explain contract requirements and the DB Contractor shall review their proposed project schedule and suggest ways to streamline processes.

3.1.4. Initial Design Conference

The initial design conference may be scheduled and conducted at the project installation any time after the post award conference, although it is recommended that the partnering process be initiated with or before the initial design conference. Any design work conducted after award and prior to this conference should be limited to site and is discouraged for other items. All Designers of Record shall participate in

the conference. The purpose of the meeting is to introduce everyone and to make sure any needs the contractor has are assigned and due dates established as well as who will get the information. See also Attachment F, BUILDING INFORMATION MODELING REQUIREMENTS for discussion concerning the BIM Implementation Plan demonstration at this meeting. The DB Contractor shall conduct the initial design conference.

3.1.5. Pre-Construction Conference

Before starting construction activities, the Contractor and Government will jointly conduct a pre-construction administrative conference to discuss any outstanding requirements and to review local installation requirements for start of construction. It is possible there will be multiple Pre-Construction Conferences based on the content of the design packages selected by the Contractor. The Government will provide minutes of this meeting to all participants.

3.2. STAGES OF DESIGN SUBMITTALS AND OVER THE SHOULDER PROGRESS REVIEWS

The stages of design submittals described below define Government expectations with respect to process and content. The Contractor shall determine how to best plan and execute the design and review process for this project, within the parameters listed below. As a minimum, the Government expects to see at least one interim design submittal, at least one final design submittal before construction of a design package may proceed and at least one Design Complete submittal that documents the accepted design. The Contractor may sub-divide the design into separate packages for each stage of design and may proceed with construction of a package after the Government accepts the final design for that package. See discussion on waivers to submission of one or more intermediate design packages where the parties partner during the design process. See also Attachment F, BUILDING INFORMATION MODELING REQUIREMENTS for discussion concerning BIM and the various stages of design submittals and over-the-shoulder progress reviews.

3.2.1. Site/Utilities

To facilitate fast-track design-construction activities the contractor may submit a final (100%) site and utility design as the first design submittal or it may elect to submit interim and final site and utility design submittals as explained below. Following review, resolution, and incorporation of all Government comments, and submittal of a satisfactory set of site/utility design documents, after completing all other pre-construction requirements in this contract and after the pre-construction meeting, the Government will allow the Contractor to proceed with site development activities, including demolition where applicable, within the parameters set forth in the accepted design submittal. For the first site and utility design submission, whether an interim or final, the submittal review, comment, and resolution times from this specification apply, except that the Contractor shall allow the Government a 14 calendar day review period, exclusive of mailing time. No on-site construction activities shall begin prior to written Government clearance to proceed.

3.2.2. Interim Design Submittals

The Contractor may submit either a single interim design for review, representing a complete package with all design disciplines, or split the interim design into smaller, individual design packages as it deems necessary for fast-track construction purposes. As required in Section 01 32 01.00 10 PROJECT SCHEDULE, the Contractor shall schedule its design and construction packaging plan to meet the contract completion period. This submission is the Government's primary opportunity to review the design for conformance to the solicitation and to the accepted contract proposal and to the Building Codes at a point where required revisions may be still made, while minimizing lost design effort to keep the design on track with the contract requirements. The requirements for the interim design review submittals and review conferences are described hereinafter. This is not necessarily a hold point for the design process; the Contractor may designate the interim design submittal(s) as a snapshot and proceed with design development at its own risk. See below for a waiver, where the parties establish an effective

over-the-shoulder progress review procedure through the partnering process that would eliminate the need for or expedite a formal intermediate design review on one or more individual design packages.

3.2.3. Over-the-Shoulder Progress Reviews

To facilitate a streamlined design-build process, the Government and the Contractor may agree to one-on-one reviewer or small group reviews, electronically, on-line (if available within the Contractor's standard design practices) or at the Contractor's design offices or other agreed location, when practicable to the parties. The Government and Contractor will coordinate such reviews to minimize or eliminate disruptions to the design process. Any data required for these reviews shall normally be provided in electronic format, rather than in hard copy. If the Government and Contractor establish and implement an effective, mutually agreeable partnering procedure for regular (e.g., weekly) over-the-shoulder review procedures that allow the Government reviewers the opportunity to keep fully informed of the progress, contents, design intent, design documentation, etc. of the design package, the Government will agree to waive or to expedite the formal intermediate design review period for that package. The Contractor shall still be required to submit the required intermediate design documentation, however the parties may agree to how that material will be provided, in lieu of a formal consolidated submission of the package. It should be noted that Government funding is extremely limited for non-local travel by design reviewers, so the maximum use of virtual teaming methods must be used. Some possible examples include electronic file sharing, interactive software with on-line or telephonic conferencing, televideo conferencing, etc. The Government must still perform its Code and Contract conformance reviews, so the Contractor is encouraged to partner with the reviewers to find ways to facilitate this process and to facilitate meeting or bettering the design-build schedule. The Contractor shall maintain a fully functional configuration management system as described herein to track design revisions, regardless of whether or not there is a need for a formal intermediate design review. The formal intermediate review procedures shall form the contractual basis for the official schedule, in the event that the partnering process determines that the formal intermediate review process to be best suited for efficient project execution. However, the Government pledges to support and promote the partnering process to work with the Contractor to find ways to better the design schedule.

3.2.4. Final Design Submissions

This submittal is required for each design package prior to Government acceptance of that design package for construction. The requirements for the final design submittal review conferences and the Government's acceptance for start of construction are described herein after.

3.2.5. Design Complete Submittals

After the final design submission and review conference for a design package, revise the design package to incorporate the comments generated and resolved in the final review conferences, perform and document a back-check review and submit the final, design complete documents, which shall represent released for construction documents. The requirements for the design complete submittals are described hereinafter.

3.2.6. Holiday Periods for Government Review or Actions

Do not schedule meetings, Government reviews or responses during the last two weeks of December or other designated Government Holidays (including Friday after Thanksgiving). Exclude such dates and periods from any durations specified herein for Government actions.

3.2.7. Late Submittals and Reviews

If the Contractor cannot meet its scheduled submittal date for a design package, it must revise the proposed submittal date and notify the government in writing, at least one (1) week prior to the submittal, in order to accommodate the Government reviewers' other scheduled activities. If a design submittal is

over one (1) day late in accordance with the latest revised design schedule, or if notification of a proposed design schedule change is less than seven (7) days from the anticipated design submission receipt date, the Government review period may be extended up to seven (7) days due to reviewers' schedule conflicts. If the Government is late in meeting its review commitment and the delay increases the Contractor's cost or delays completion of the project, the Suspension of Work and Defaults clauses provide the respective remedy or relief for the delay.

3.3. DESIGN CONFIGURATION MANAGEMENT

3.3.1. Procedures

Develop and maintain effective, acceptable design configuration management (DCM) procedures to control and track all revisions to the design documents after the Interim Design Submission through submission of the As-Built documents. During the design process, this will facilitate and help streamline the design and review schedule. After the final design is accepted, this process provides control of and documents revisions to the accepted design (See Special Contract Requirement: Deviating From the Accepted Design). The system shall include appropriate authorities and concurrences to authorize revisions, including documentation as to why the revision must be made. Include the DCM procedures in the Design Quality Control Plan. The DCM data shall be available to the Government reviewers at all times. The Contractor may use its own internal system with interactive Government concurrences, where necessary or may use the Government's "DrChecks Design Review and Checking System" (see below and Attachment C).

3.3.2. Tracking Design Review Comments

Although the Contractor may use its own internal system for overall design configuration management, the Government and the Contractor shall use the DrChecks Design Review and Checking System to initiate, respond to, resolve and track Government design compliance review comments. This system may be useful for other data which needs to be interactive or otherwise available for shared use and retrieval. See Attachment C for details on how to establish an account and set-up the DrChecks system for use on the project.

3.3.3. Design and Code Checklists

Develop and complete various discipline-specific checklists to be used during the design and quality control of each submittal. Submit these completed checklists with each design submittal, as applicable, as part of the project documentation. See Section 01 45 04.00 10 Contractor Quality Control, Attachment D for a Sample Fire Protection and Life Safety Code review checklist and Attachment E for LEED SUBMITTALS.

3.4. INTERIM DESIGN REVIEWS AND CONFERENCES

3.4.1. General

At least one interim design submittal, review and review conference is required for each design package (except that, per paragraph 3.2.1, the Contractor may skip the interim design submission and proceed directly to final design on the sitework and utilities package). The DB Contractor may include additional interim design conferences or over-the-shoulder reviews, as needed, to assure continued government concurrence with the design work. Include the interim submittal review periods and conferences in the project schedule and indicate what part of the design work is at what percentage of completion. The required interim design conferences shall be held when interim design requirements are reached as described below. See also Paragraph: **Over-the-Shoulder Progress Reviews** for a waiver to the formal interim design review.

3.4.2. Procedures

After receipt of an Interim Design submission, allow the Government fourteen (14) calendar days after receipt of the submission to review and comment on the interim design submittal. For smaller design packages, especially those that involve only one or a few separate design disciplines, the parties may agree on a shorter review period or alternative review methods (e.g., over-the-shoulder or electronic file sharing), through the partnering process. For each interim design review submittal, the COR will furnish, to the Contractor, a single consolidated, validated listing of all comments from the various design sections and from other concerned agencies involved in the review process using the DrChecks Design Review and Checking System. The review will be for conformance with the technical requirements of the solicitation and the Contractor's RFP proposal. If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he/she must clearly outline, with ample justification, the reasons for noncompliance within five (5) days after receipt of these comments in order that the comment can be resolved. Furnish disposition of all comments, in writing, through DrChecks. The Contractor is cautioned that if it believes the action required by any comment exceeds the requirements of this contract, that it should take no action and notify the COR in writing immediately. The Interim Review conference will be held for each design submittal at the installation. Bring the personnel that developed the design submittal to the review conference. The conference will take place the week after the receipt of the comments by the Contractor. For smaller fast-track packages that involve only a few reviewers, the parties may agree to alternative conferencing methods, such as teleconferencing, or televideo, where available, as determined through Partnering.

3.4.3. Conference Documentation

3.4.3.1. In order to facilitate and accelerate the Government code and contract conformance reviews, identify, track resolution of and maintain all comments and action items generated during the design process and make this available to the designers and reviewers prior to the Interim and subsequent design reviews.

3.4.3.2. The DB Contractor shall prepare meeting minutes and enter final resolution of all comments into DrChecks. 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. Incorporate valid comments. The Government reserves the right to reject design document submittals if comments are significant. Participants shall determine if any comments are critical enough to require further design development prior to government concurrence. Participants shall also determine how to proceed in order to obtain government concurrence with the design work presented.

3.5. INTERIM DESIGN REQUIREMENTS

Interim design deliverables shall include drawings, specifications, and design analysis for the part of design that the Contractor considers ready for review.

3.5.1. Drawings

Include comments from any previous design conferences incorporated into the documents to provide an interim design for the "part" submitted.

3.5.2. Design Analyses

3.5.2.1. The designers of record shall prepare and present design analyses with calculations necessary to substantiate and support all design documents submitted. Address design substantiation required by the applicable codes and references and pay particular attention to the following listed items:

3.5.2.2. For parts including sitework, include site specific civil calculations.

3.5.2.3. For parts including structural work, include structural calculations.

- (a) Identify all loads to be used for design.
- (b) 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.
- (c) Provide calculations for all principal roof, floor, and foundation members and bracing and secondary members.
- (d) Provide complete seismic analyses for all building structural, mechanical, electrical, architectural, and building features as dictated by the seismic zone for which the facility is being constructed.
- (e) Computer generated calculations must identify the program name, source, and version. Provide input data, including loads, loading diagrams, node diagrams, and adequate documentation to illustrate the design. The schematic models used for input must show, as a minimum, nodes/joints, element/members, materials/properties, and all loadings, induced settlements/deflections, etc., and a list of load combinations. Include an output listing for maximum/minimum stresses/forces and deflections for each element and the reactions for each loading case and combination.
- (f) See also the Security (Anti-Terrorism) requirements below for members subject to Anti-Terrorist Force Protection (ATFP) and Progressive Collapse requirements.
- (g) Fully coordinate and integrate the overall structural design between two different or interfacing construction types, such as modular and stick-built or multistory, stacked modular construction. Provide substantiation of structural, consolidation/settlement analysis, etc., as applicable, through the interfaces.

3.5.2.4. For Security (Anti-Terrorism): Provide a design narrative and calculations where applicable, demonstrating compliance with each of the 22 standards in UFC 4-010-01, which includes Design of Buildings to Resist Progressive Collapse (use the most recent version of UFC 4-023-03, regardless of references to any specific version in UFC 4-010-01). Where sufficient standoff distance is not being provided, show calculations for blast resistance of the structural system and building envelope. Show complete calculations for members subjected to ATFP loads, e.g., support members of glazed items (jambs, headers, sills) connections of windows to support members and connections of support members to the rest of the structure. For 3 story and higher buildings, provide calculations to demonstrate compliance with progressive collapse requirements.

3.5.2.5. For parts including architectural work, include building floor area analysis.

3.5.2.6. For parts including mechanical work, include HVAC analysis and calculations. Include complete design calculations for mechanical systems. Include computations for sizing equipment, compressed air systems, 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 is required (see paragraph 3.5.5.2 for list of acceptable software). Based on the results of calculations, provide a complete list of the materials and equipment proposed with the manufacturer's published cataloged product installation specifications and roughing-in data.

3.5.2.7. For parts including life safety, include building code analysis and sprinkler and other suppression systems. Notwithstanding the requirements of the Codes, address the following:

- (a) A registered fire protection engineer (FPE) must perform all fire protection analyses. Provide the fire protection engineer's qualifications. See Section 01 10 00, paragraph 5 for qualifications.
- (b) Provide all references used in the design including Government design documents and industry standards used to generate the fire protection analysis.
- (c) Provide classification of each building in accordance with fire zone, building floor areas and height and number of stories.

(d) Provide discussion and description of required fire protection requirements including extinguishing equipment, detection equipment, alarm equipment and water supply. Alarm and detection equipment shall interface to requirements of Electronic Systems.

(e) Provide hydraulic calculations based on water flow test for each sprinkler system to insure that flow and pressure requirements can be met with current water supply. Include copies of Contractor's water flow testing done to certify the available water source.

3.5.2.8. For parts including plumbing systems:

(a) List all references used in the design.

(b) Provide justification and brief description of the types of plumbing fixtures, piping materials and equipment proposed for use.

(c) Detail calculations for systems such as sizing of domestic hot water heater and piping; natural gas piping; LP gas piping and tanks, fuel oil piping and tanks, etc., as applicable.

(d) When the geotechnical report indicates expansive soils are present, indicate in the first piping design submittal how piping systems will be protected against damage or backfall/backflow due to soil heave (from penetration of slab to the 5 foot building line).

3.5.2.9. For elevator systems:

(a) List all criteria codes, documents and design conditions used.

(b) List any required permits and registrations for construction of items of special mechanical systems and equipment.

3.5.2.10. For parts including electrical work, include lighting calculations to determine maintained foot-candle levels, electrical load analysis and calculations, electrical short circuit and protective device coordination analysis and calculations and arc fault calculations.

3.5.2.11. For parts including telecommunications voice/data (including SIPRNET, where applicable), include analysis for determining the number and placement of outlets

3.5.2.12. For Cathodic Protection Systems, provide the following stamped report by the licensed corrosion engineer or NACE specialist with the first design submission. The designer must be qualified to engage in the practice of corrosion control of buried or submerged metallic surfaces. He/she must be accredited or certified by the National Association of Corrosion Engineers (NACE) as a NACE Accredited Corrosion Specialist or a NACE certified Cathodic Protection Specialist, or must be a registered professional engineer with a minimum of five years experience in corrosion control and cathodic protection, Clearly describe structures, systems or components in soil or water to be protected. Describe methods proposed for protection of each.

3.5.2.13. Air Barrier System: Provide a narrative of the design and installation requirements for the Air Barrier system. As part of the design quality control process an air barrier consultant shall review drawing details to assure that details of critical Air Barrier components are properly detailed and incorporated during the design drawings and process (i.e. window flashing details, penetration in air barrier details, door flashing details, roofing/ceiling barrier interface details and etc.). Furnish the Government written review details and results.

3.5.2.14. Life Cycle Cost Analysis (LCCA) Documentation: Sufficient documentation is required for all life cycle cost analyses required in paragraph 5 of Section 01 10 00, the Statement of Work. Each LCCA must be complete and substantial, sufficient of being read as a standalone document which defines all the parameters of the analysis. Use of commercially available software programs to calculate life cycle costs are acceptable, however, provide the LCCA Documentation requirements, as outlined below in addition to any input/output documents generated by the software. As a minimum, include the following items in the LCCA documentation:

- (a) Definition of Baseline Condition
- (b) Narrative Identification/Explanation of Each Alternative Considered
- (c) Energy Usage Analysis (Narrative explanation as well as computer outputs)
- (d) Energy Costs Used (Source of Rate Structure or Utility Rates)
- (e) First Cost of Baseline Condition and Each Alternative (Cost information must demonstrate inclusion of applicable components and sub-components - single line, lump sum cost estimates for the baseline or alternative conditions are not acceptable)
- (f) Cyclical Replacement Costs (Identify data source for equipment/component life used)
- (g) Annual/Recurring Maintenance Costs (Identify data source for required maintenance tasks and duration/cost of tasks)
- (h) Salvage Values (Identify data source for equipment/component life used)
- (i) Life Cycle Cost Results Including:
 - (1) Life Cycle Cost of the Baseline Condition
 - (2) Life Cycle Cost of Each Alternative Evaluated
 - (3) Simple Payback Calculations for Each Alternative
 - (4) Savings to Investment Ratio for Each Alternative
 - (5) Study Period Utilized
 - (6) Net Savings for Each Alternative (As Applicable)
- (7) Narrative Discussion/Analysis of Results
- (8) Uncertainty Analysis
- (9) Certification that the analysis conducted and documented is compliant with the terms, instructions, and conditions of 10 CFR 436 Subpart A.

3.5.3. Geotechnical Investigations and Reports:

3.5.3.1. The contractor's licensed geotechnical engineer shall prepare a final geotechnical evaluation report, to be submitted along with the first foundation design submittal. Make this information available as early as possible during the over-the-shoulder progress review process. Summarize the subsurface conditions and provide recommendations for the design of appropriate utilities, foundations, floor slabs, retaining walls, embankments, and pavements. Include compaction requirements for fill and backfill under buildings, sidewalks, other structures and open areas. Recommend foundation systems to be used, allowable bearing pressures for footings, lateral load resistance capacities for foundation systems, elevations for footings, grade beams, slabs, etc. Provide an assessment of post-construction settlement potential including total and differential. Provide recommendations regarding lateral earth pressures (active, at-rest, passive) to be used in the design of retaining walls. Include the recommended spectral accelerations and Site Class for seismic design along with an evaluation of any seismic hazards and recommendations for mitigation, if required. Include calculations to support the recommendations for bearing capacity, settlement, and pavement sections. Include supporting documentation for all recommended design parameters such as Site Class, shear strength, earth pressure coefficients, friction factors, subgrade modulus, California Bearing Ratio (CBR), etc. Provide earthwork recommendations, expected frost penetration, expected groundwater levels, recommendations for dewatering and groundwater control and the possible presence of any surface or subsurface features that may affect the construction of the project such as sinkholes, boulders, shallow rock, old fill, old structures, soft areas, or unusual soil conditions. Include pH tests, salinity tests, resistivity measurements, etc., required to design corrosion control and grounding systems. Include the raw field data. Arrange a meeting with the Government subsequent to completion and evaluation of the site specific geotechnical exploration to outline any differences encountered that are inconsistent with the Government provided preliminary soils

information. Clearly outline differences which require changes in the foundation type, or pavement and earthwork requirements from that possible and contemplated using the Government furnished preliminary soils investigation, which result in a change to the design or construction. Any equitable adjustment is subject to the provisions of the contract's Differing Site Conditions Clause.

3.5.3.2. Vehicle Pavements: The Contractor's geotechnical report shall contain flexible and rigid pavement designs, as applicable for the project, including design CBR and modulus of subgrade reaction and the required compaction effort for subgrades and pavement layers. Provide Information on the types of base course materials available in the area and design strengths.

3.5.3.3. The Contractor and the professional geotechnical engineer consultant shall certify in writing that the design of the project has been developed consistent with the Contractor's final geotechnical report. The certification shall be stamped by the consulting professional geotechnical engineer and shall be submitted with the first design submission. If revisions are made to the initial design submission, a new certification shall be provided with the final design submission.

3.5.4. LEED Documentation:

Assign a LEED Accredited Professional, responsible to track LEED planning, performance and documentation for each LEED credit through construction closeout. Incorporate LEED credits in the plans, specifications and design analyses. Develop LEED supporting documentation as a separable portion of the Design Analysis and provide with each required design submittal. Include the LEED Project checklist for each non-exempt facility (one checklist may be provided for multiple facilities in accordance with the LEED-NC Application Guide for Multiple Buildings and On-Campus Building Projects and the LEED SUBMITTALS (Attachment E, herein) with each submittal. Final design submittal for each portion of the work must include all required design documentation relating to that portion of work (example - all site credit design documents with final site design). Submittal requirements are as indicated in Attachment E, LEED SUBMITTALS. Submit all documentation indicated on Attachment E as due at final design at final design submittal (for fast-track projects with multiple final design submittals, this shall be at the last scheduled final design submittal). All project documentation related to LEED shall conform to USGBC requirements for both content and format, including audit requirements and be separate from other design analyses. Maintain and update the LEED documentation throughout project progress to construction closeout and shall compile product data, receipts, calculations and other data necessary to substantiate and support all credits claimed. The Government may audit any or all individual credits. Audit documentation is not required to be submitted unless requested. These requirements apply to all projects. If the project requires the Contractor to obtain USGBC certification, the Contractor shall also be responsible for obtaining USGBC certification and shall provide written evidence of certification with the construction closeout LEED documentation submittal. Install the USGBC building plaque at the location indicated by the Government upon receipt. If Contractor obtains USGBC interim design review, submit the USGBC review to the Government within 30 days of receipt for information only.

3.5.4.1. LEED Documentation for Technology Solution Set. If the Solicitation provides a Prescriptive Technology Solution Set, use of the Technology Solution set has no effect on LEED documentation requirements. Provide all required LEED documentation, including energy analysis, in accordance with LEED requirements when using the Technology Solution Set.

3.5.5. Energy Conservation:

3.5.5.1. Refer to Section 01 10 00, Paragraph 5. Interim and Final Design submittals shall demonstrate that each building including the building envelope, HVAC systems, service water heating, power, and lighting systems meet the Mandatory Provisions and the Prescriptive Path requirements of ASHRAE 90.1. Use Compliance Documentation forms available from ASHRAE and included in the ASHRAE 90.1 User's Manual for this purpose. The Architectural Section of the Design Analysis shall include completed forms titled "Building Envelope Compliance Documentation Parts I and II". The Heating Ventilating and Air Conditioning (HVAC) Section of the Design Analysis shall include a completed form titled "HVAC Simplified Approach Option - Part I" if this approach is allowed by the Standard. Otherwise, the HVAC

Section of the Design Analysis shall include completed forms titled "HVAC Mandatory Provisions - Part II" and "HVAC Prescriptive Requirements - Part III". The Plumbing Section of the Design Analysis shall include a completed form titled "Service Water Heating Compliance Documentation". The Electrical Section of the Design Analysis shall include an explanatory statement on how the requirements of ASHRAE 90.1 Chapter 8 Power were met. The Electrical Section of the Design Analysis shall also include a completed form titled "Lighting Compliance Documentation".

3.5.5.2. Interim and Final Design submittals which address energy consuming systems, (heating, cooling, service hot water, lighting, power, etc.) must also include calculations in a separate Energy Conservation Section of the Design Analysis which demonstrate and document (a) the baseline energy consumption for the facility or facilities under contract, that would meet the requirements of ANSI/ASHRAE/IESNA Standard 90.1 and (b) the energy consumption of the facility or facilities under contract utilizing the materials and methods required by this construction contract. Use the USGBC Energy and Atmosphere (EA) Credit 1 compliance template / form or an equivalently detailed form for documenting compliance with the energy reduction requirements. This template / form is titled PERFORMANCE RATING METHOD and is available when the project is registered for LEED. The calculation methodology used for this documentation and analysis shall follow the guidelines set forth in Appendix G of ASHRAE 90.1, with two exceptions: a) receptacle and process loads may be omitted from the calculation; and b) the definition of the terms in the formula for Percentage Improvement found in paragraph G1.2 are modified as follows: Baseline Building Performance shall mean the annual energy consumption calculated for a building design intended for use as a baseline for rating above standard design meeting the minimum requirements of the energy standard, and Proposed Building Performance shall mean annual energy consumption calculated for the proposed building design intended for construction. This calculation shall address all energy consuming systems in a single integrated methodology. Include laboratory fume hoods and kitchen ventilation loads in the energy calculation. They are not considered process loads. Individual calculations for heating, cooling, power, lighting, power, etc. systems will not be acceptable. The following building simulation software is acceptable for use in calculating building energy consumption: Hourly Analysis Program (HAP) by Carrier Corp., TRACE 700 by Trane Corp., DOE-2 by US Department of Energy, EnergyPlus by DOD/DOE.

3.5.6. Specifications

Specifications may be any one of the major, well known master guide specification sources. Use only one source. Examples include specifications from MASTERSPEC from the American Institute of Architects, SPECTEXT from Construction Specification Institute or Unified Facility Guide Specifications (UFGS using MASTERFORMAT 2004 numbering system), etc. The UFGS are available through the "Whole Building Design Guide" website, using a websearch engine. Manufacturers' product specifications, utilizing CSI's Manu-Spec, three part format may be used in conjunction with the selected specifications. The designers of record shall edit and expand the appropriate Specifications to insure that all project design requirements, current code requirements, and regulatory requirements are met. Specifications shall clearly identify, where appropriate, specific products chosen to meet the contract requirements (i.e., manufacturers' brand names and model numbers or similar product information). Note that the UFGS are NOT written for Design-Build and must be edited appropriately. For instance, they assume that the Government will approve most submittals, whereas in Design-Build, the Designer of Record has that action, unless this Solicitation requires Government approval for specific submittals. The Designer of Record should also note that some UFGS sections might either prescribe requirements exceeding the Government's own design standards in applicable references or contain requirements that should be selected where appropriately required by the applicable references. At any rate, where the UFGS are consistent with other major, well known master commercial guide specifications, then generally retain such requirements, as good practices.

3.5.7. Building Rendering

Present and provide a draft color computer, artist, or hand drawn rendering with the conceptual design submittal of the building exterior. Perspective renderings shall include a slightly overhead view of the

entire building to encompass elevations and the roof configuration of the building. After Government review and acceptance, provide a final rendering, including the following:

Three (3) 18" x 24" color prints, framed and matted behind glass with project title underneath the print.

One (1) Image file (high resolution) in JPG format on CD for those in the submittal distribution list.

3.5.8. Interim Building Design Contents

The following list represents what the Government considers should be included in the overall completed design for a facility or project. It is not intended to limit the contractor from providing different or additional information as needed to support the design presented, including the require design analyses discussed above. As the Contractor develops individual design packages and submits them for Interim review, include as much of the applicable information for an individual design package as is developed at the Interim design level for review purposes. These pieces shall be developed as the design progresses toward the design complete stage.

3.5.8.1. Lawn and Landscaping Irrigation System

3.5.8.2. Landscape, Planting and Turfing

3.5.8.3. Architectural

- (a) Design Narrative
- (b) Architectural Floor Plans, Typical Wall and Roof Sections, Elevations
- (c) Finish schedule
- (d) All required equipment
- (e) Special graphics requirements
- (f) Door and Window Schedules
- (g) Hardware sets using BHMA designations
- (h) Composite floor plan showing all pre-wired workstations
- (i) Structural Interior Design (SID) package: See ATTACHMENT A for specific requirements
- (j) Furniture, Fixtures & Equipment (FF&E) design package: See ATTACHMENT B for specific requirements
- (k) Air Barrier Design: Details of all Air Barrier components, (i.e. window flashing details, penetrations in air barrier details, door flashing details, roofing/ceiling barrier interface details and etc.)

3.5.8.4. Structural Systems. Include:

- (a) Drawings showing principal members for roof and floor framing plans as applicable
- (b) Foundation plan showing main foundation elements where applicable
- (c) Typical sections for roof, floor, and foundation conditions

3.5.8.5. Plumbing Systems

- (a) Show locations and general arrangement of plumbing fixtures and major equipment
- (b) Plan and isometric riser diagrams of all areas including hot water, cold water, waste and vent piping. Include natural gas (and meter as required), (natural gas and meter as required), (LP gas), (fuel oil) and other specialty systems as applicable.

(c) Include equipment and fixture connection schedules with descriptions, capacities, locations, connection sizes and other information as required

3.5.8.6. HVAC Systems

(a) Mechanical Floor Plans: The floor plans shall show all principle architectural features of the building which will affect the mechanical design. The floor plans shall also show the following:

- (1) Room designations.
- (2) Mechanical legend and applicable notes.
- (3) Location and size of all ductwork and piping.
- (4) Location and capacity of all terminal units (i.e., registers, diffusers, grilles, hydronic baseboards).
- (5) Pre-Fabricated Paint Spray Booth (where applicable to project scope)
- (6) Paint Preparation Area (where applicable to project scope)
- (7) Exhaust fans and specialized exhaust systems.
- (8) Thermostat location.
- (9) Location of heating/cooling plant (i.e., boiler, chiller, cooling tower, etc).
- (10) Location of all air handling equipment.
- (11) Air balancing information.
- (12) Flue size and location.
- (13) Piping diagram for forced hot water system (if used).

(b) Equipment Schedule: Provide complete equipment schedules. Include:

- (1) Capacity
- (2) Electrical characteristics
- (3) Efficiency (if applicable)
- (4) Manufacturer's name
- (5) Optional features to be provided
- (6) Physical size
- (7) Minimum maintenance clearances

(a) Details: Provide construction details, sections, elevations, etc., only where required for clarification of methods and materials of design.

(b) HVAC Controls: Submit complete HVAC controls equipment schedules, sequences of operation, wiring and logic diagrams, Input/Output Tables, equipment schedules, and all associated information. See the Statement of Work for additional specific requirements.

3.5.8.7. Fire Protection and Life Safety.

(a) Provide plan for each floor of each building that presents a compendium of the total fire protection features being incorporated into the design. Include the following types of information:

- (1) The location and rating of any fire-resistive construction such as occupancy separations, area separations, exterior walls, shaft enclosures, corridors, stair enclosures, exit passageways, etc.
- (2) The location and coverage of any fire detection systems
- (3) The location and coverage of any fire suppression systems (sprinkler risers, standpipes, etc.)
- (4) The location of any other major fire protection equipment

- (5) Indicate any hazardous areas and their classification
- (6) Schedule describing the internal systems with the following information: fire hazard and occupancy classifications, building construction type, GPM/square foot sprinkler density, area of operation and other as required
- (b) Working plans and all other materials submitted shall meet NFPA 13 requirements, with respect to required minimum level of detail.

3.5.8.8. Elevators. Provide:

- (a) Description of the proposed control system
- (b) Description, approximate capacity and location of any special mechanical equipment for elevators.

3.5.8.9. Electrical Systems.

- (a) Electrical Floor Plan(s): Show all principle architectural features of the building which will affect the electrical design. Show the following:
 - (1) Room designations.
 - (2) Electrical legend and applicable notes.
 - (3) Lighting fixtures, properly identified.
 - (4) Switches for control of lighting.
 - (5) Receptacles.
 - (6) Location and designation of panelboards. Clearly indicate type of mounting required (flush or surface) and reflect accordingly in specifications.
 - (7) Service entrance (conduit and main disconnect).
 - (8) 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.
- (b) Building Riser Diagram(s) (from pad-mounted transformer to unit load center panelboard): Indicate the types and sizes of electrical equipment and wiring. Include grounding and metering requirements.
- (c) Load Center Panelboard Schedule(s): Indicate the following information:
 - (1) Panelboard Characteristics (Panel Designation, Voltage, Phase, Wires, Main Breaker Rating and Mounting).
 - (2) Branch Circuit Designations.
 - (3) Load Designations.
 - (4) Circuit Breaker Characteristics. (Number of Poles, Trip Rating, AIC Rating)
 - (5) Branch Circuit Connected Loads (AMPS).
 - (6) Special Features
- (d) Lighting Fixture Schedule(s): Indicate the following information:
 - (1) Fixture Designation.
 - (2) General Fixture Description.
 - (3) Number and Type of Lamp(s).

- (4) Type of Mounting.
- (5) Special Features.
- (e) Details: Provide construction details, sections, elevations, etc. only where required for clarification of methods and materials of design.

3.5.8.10. Electronic Systems including the following responsibilities:

- (a) Fire Detection and Alarm System. Design shall include layout drawings for all devices and a riser diagram showing the control panel, annunciator panel, all zones, radio transmitter and interfaces to other systems (HVAC, sprinkler, etc.)
- (b) Fire Suppression System Control. Specify all components of the Fire Suppression (FS) System in the FS section of the specifications. Clearly describe how the system will operate and interact with other systems such as the fire alarm system. Include a riser diagram on the drawings showing principal components and interconnections with other systems. Include FS system components on drawing legend. Designate all components shown on floor plans "FS system components" (as opposed to "Fire Alarm components"). Show location of FS control panels, HVAC control devices, sensors, and 120V power panel connections on floor plans. Indicate zoning of areas by numbers (1, 2, 3) and detectors sub-zoned for cross zoning by letter designations (A and B). Differentiate between ceiling mounted and under floor detectors with distinct symbols and indicate sub-zone of each.
- (c) Public Address System
- (d) Special Grounding Systems. Completely reflect all design requirements in the specifications and drawings. Specifications shall require field tests (in the construction phase), witnessed by the Government, to determine the effectiveness of the grounding system. Include drawings showing existing construction, if any.
- (e) Cathodic Protection.
- (f) Intrusion Detection, Card Access System
- (g) Central Control and Monitoring System
- (h) Mass Notification System
- (i) Electrical Power Distribution Systems

3.5.8.11. Separate detailed Telecommunications drawings for Information Systems including the following responsibilities:

- (a) Telecommunications Cabling
- (b) Supporting Infrastructure
- (c) Outside Plant (OSP) Cabling - Campus or Site Plans - Exterior Pathways and Inter-Building Backbones
- (d) Include a layout of the voice/data outlets (including voice only wall & pay phones) on telecommunication floor plan drawing, location of SIPRNET data outlets (where applicable), and a legend and symbol definition to indicate height above finished floor. Show size of conduit and cable type and size on Riser Diagram. Do not show conduit runs between backboard and outlets on the floor plans. Show underground distribution conduit and cable with sizing from point of presence to entrance facility of building.
- (e) Layout of complete building per floor - Serving Zone Boundaries, Backbone Systems, and Horizontal Pathways including Serving Zones Drawings - Drop Locations and Cable ID's
- (f) Communication Equipment Rooms - Plan Views - Tech and AMEP/Elevations - Racks and Walls. Elevations with a detailed look at all telecomm rooms. Indicate technology layout (racks, ladder-racks, etc.), mechanical/electrical layout, rack elevation and backboard elevation. They may also be an enlargement of a congested area of T1 or T2 series drawing.

3.6. FINAL DESIGN REVIEWS AND CONFERENCES

A final design review and review conference will be held upon completion of final design at the project installation, or – where equipment is available - by video teleconference or a combination thereof, for any design package to receive Government acceptance to allow release of the design package for construction. For smaller separate design packages, the parties may agree on alternative reviews and conferences (e.g., conference calls and electronic file sharing, etc.) through the Partnering process. Include the final design conference in the project schedule and shall indicate what part of the design work is at 100% completion. The final design conference will be held after the Government has had seven (7) calendar days after receipt of the submission to review the final design package and supporting data. For smaller packages, especially those involving only one or a few design disciplines the parties may agree on a shorter period.

3.7. FINAL DESIGN REQUIREMENTS

Final design deliverables for a design package shall consist of 100% complete drawings, specifications, submittal register and design analyses for Government review and acceptance. The 100% design submission shall consist of drawings, specifications, updated design analyses and any permits required by the contract for each package submitted. In order to expedite the final design review, prior to the conference, ensure that the design configuration management data and all review comment resolutions are up-to-date. Include the 100% SID and 100% FF&E binders for government approval. The Contractor shall have performed independent technical reviews (ITR's) and back-checks of previous comment resolutions, as required by Section 01 45 04.00 10 CONTRACTOR QUALITY CONTROL, including providing documentation thereof. Use DrChecks or other acceptable comment tracking system during the ITR and submit the results with each final design package

3.7.1. Drawings

3.7.1.1. Submit drawings complete with all contract requirements incorporated into the documents to provide a 100% design for each package submitted.

3.7.1.2. Prepare all drawings with the Computer-Aided Design and Drafting (CADD)/Computer-Aided Design (CAD) system, organized and easily referenced electronically, presenting complete construction information.

3.7.1.3. Drawings shall be complete. The Contractor is encouraged to utilize graphics, views, notes, and details which make the drawings easier to review or to construct but is also encouraged to keep such materials to those that are necessary.

3.7.1.4. Provide detail drawings that illustrate conformance with the contract. Include room finish schedules, corresponding color/finish/special items schedules, and exterior finish schedules that agree with the submitted SID binders.

3.7.1.5. The design documents shall be in compliance with the latest version of the A/E/C CAD Standard, available at <https://cadbim.usace.army.mil/CAD>. Use the approved vertical Corps of Engineers title blocks and borders on all drawings with the appropriate firm name included within the title block area.

3.7.1.6. CAD System and Building Information Modeling (BIM) (NOTE: If this is a Single Award or Multiple Award, Indefinite Delivery/Indefinite Quantity Contract, this information will be provided for each task order.)

All CAD files shall be fully compatible with MicroStation V8 format. Save all design CAD files as MicroStation V8 format files. All submitted BIM Models and associated Facility/Site Data shall be fully compatible with file formats. ~~All CAD files shall be fully compatible with MicroStation V8 or higher. Save all design CAD files as~~

~~MicroStation V8 or higher files. All submitted BIM Models and associated Facility Data shall be fully compatible with Bentley BIM file format and the USACE Bentley BIM v8 Workspace.~~

(a) CAD Data Final File Format: During the design development capture geo-referenced coordinates of all changes made to the existing site (facility footprint, utility line installations and alterations, roads, parking areas, etc) as a result of this contract. There is no mandatory methodology for how the geo-referenced coordinates will be captured, however, Engineering and Construction Bulletin No. 2006-15, Subject: Standardizing Computer Aided Design (CAD) and Geographic Information Systems (GIS) Deliverables for all Military Design and Construction Projects identifies the format for final as-built drawings and data sets to be delivered to the government. Close-out requirements at the as-built stage; require final geo-referenced GIS Database of the new facility along with all exterior modifications. The Government will incorporate this data set into the Installation's GIS Masterplan or Enterprise GIS System. See also, Section 01 78 02.00 10 Closeout Submittals.

(b) Electronic Drawing Files: In addition to the native CAD design files, provide separate electronic drawing files (in editable CAD format and Adobe Acrobat PDF version 7.0 or higher) for each project drawing.

(c) Each file (both CAD and PDF) shall represent one complete drawing from the drawing set, including the date, submittal phase, and border. Each drawing file shall be completely independent of any data in any other file, including fonts and shapes not included with the basic CAD software program utilized. Fonts that are not included as part of the default CAD software package installation or recognized as an allowable font by the A/E/C CAD Standard are not acceptable in delivered CAD files. All displayed graphic elements on all levels of the drawing files shall be part of the project drawing image. The drawing files shall not contain any graphic element that is not part of the drawing image.

(d) Deliver BIM Model and associated Facility Data files in their native format. At a minimum, BIM files shall address major architecture design elements, major structural components, mechanical systems and electrical/communication distribution and elements as defined in Attachment F. See Attachment F for additional BIM requirements.

(e) Drawing Index: Provide an index of drawings sheet in CAD as part of the drawing set, and an electronic list in Microsoft Excel of all drawings on the CD. Include the electronic file name, the sheet reference number, the sheet number, and the sheet title, containing the data for each drawing.

(f) Hard Copies: Plot submitted hard copy drawings directly from the "electronic drawing files" and copy for quantities and sizes indicated in the distribution list at the end of this specification section. The Designers of Record shall stamp, sign and date original hard copy sheets as Released For Construction, and provide copies for distribution from this set.

3.7.2. Design Analyses

3.7.2.1. The designers of record shall update, finalize and present design analyses with calculations necessary to substantiate and support all design documents submitted.

3.7.2.2. The responsible DOR shall stamp, sign and date the design analysis. Identify the software used where, applicable (name, version, vendor). Generally, provide design analyses, individually, in an original (file copy) and one copy for the assigned government reviewer.

3.7.2.3. All disciplines review the LEED design analysis in conjunction with their discipline-specific design analysis; include a copy of the separable LEED design analysis in all design analysis submittals.

3.7.2.4. Do not combine multi-disciplined volumes of design-analysis, unless multiple copies are provided to facilitate multiple reviewers (one copy per each separate design analysis included in a volume).

3.7.3. Specifications

Specifications shall be 100% complete and in final form.

3.7.4. Submittal Register

Prepare and update the Submittal Register and submit it with the 100% design specifications (see Specification Section 01 33 00, SUBMITTAL PROCEDURES) with each design package. Include the required submittals for each specification section in a design package in the submittal register.

3.7.5. Preparation of DD Form 1354 (Transfer of Real Property)

This form itemizes the types, quantities and costs of various equipment and systems that comprise the project, for the purpose of transferring the new construction project from the Corps Construction Division to the Installation's inventory of real property. The Government will furnish the DB Contractor's design manager a DD Form 1354 checklist to use to produce a draft Form 1354. Submit the completed checklist and prepared draft Form DD 1354 with the 100% design in the Design Analysis. The Corps will use these documents to complete the final DD 1354 upon completion of construction.

3.7.6. Acceptance and Release for Construction

3.7.6.1. At the conclusion of the Final Design Review (after resolutions to the comments have been agreed upon between DOR and Government reviewers), the Contracting Officer or the ACO will accept the Final Design Submission for the design package in writing and allow construction to start for that design package. The Government may withhold acceptance until all major corrections have been made or if the final design submission requires so many corrections, even though minor, that it isn't considered acceptably complete.

3.7.6.2. Government review and acceptance of design submittals is for contract conformance only and shall not relieve the Contractor from responsibility to fully adhere to the requirements of the contract, including the Contractor's accepted contract proposal, or limit the Contractor's responsibility of design as prescribed under Special Contract Requirement: "Responsibility of the Contractor for Design" or limit the Government's rights under the terms of the contract. The Government reserves the right to rescind inadvertent acceptance of design submittals containing contract deviations not separately and expressly identified in the submittal for Government consideration and approval.

3.8. DESIGN COMPLETE CONSTRUCTION DOCUMENT REQUIREMENTS

After the Final Design Submission and Review Conference and after Government acceptance of the Final Design submission, revise the design documents for the design package to incorporate the comments generated and resolved in the final review conference, perform and document a back-check review and submit the final, design complete documents. Label the final design complete documents "FOR CONSTRUCTION" or use similar language. In addition to the final drawings and specifications, the following deliverables are required for distribution and field use. The deliverable includes all documentation and supporting design analysis in final form, as well as the final review comments, disposition and the back-check. As part of the quality assurance process, the Government may perform a back-check of the released for construction documentation. Promptly correct any errors or omissions found during the Government back-check. The Government may withhold retainage from progress payments for work or materials associated with a final design package until this submittal has been received and the Government determines that it is complete.

3.9. SUBMITTAL DISTRIBUTION, MEDIA AND QUANTITIES

3.9.1. Submittal Distribution and Quantities

General: The documents which the Contractor shall submit to the Government for each submittal are listed and generally described in preceding paragraphs in this Section. Provide copies of each design submittal and design substantiation as follows (NOTE: If this is a Single Award or Multiple Award, Indefinite Delivery/Indefinite Quantity Contract, this information will be provided for each task order):

Activity and Address	Drawing Size (Full Size) 22 x 34 Full Sets/ *Partial Sets	Design Analyses & Specs Full Sets/ *Partial Sets	Drawing Size (Half Size) 11 x 17 Full Sets/ *Partial Sets	Non-BIM Data CD-ROM or DVD as Necessary (PDF & .dgn)	Furniture Submittal (Per Attachment B)	Structural Interior Design Submittal	BIM Data DVD (Per Attachment F)
Commander, U.S. Army Engineer District CESAS	2/0	6/0	6/0	6	1	1	1
Commander, U.S. Army Engineer District, Center of Standardization CESAS, Brinson	0/0	2/0	2/0	2	1	1	1
Installation	0/0	7/7	7/7	7	2	0	0
U.S. Army Corps of Engineers Construction Area Office	2/0	4/0	2/0	2	1	1	0
Information Systems Engineering Command (ISEC)	0/0	0/1	0/0	1	*Partial Set (Work Station/System Furniture- IT Details)	N/A	1
Huntsville Engineer & Support Center, Central Furnishings Program	N/A	N/A	N/A	N/A	1 Interim/Refer to attachment B for the final submission Qty	N/A	N/A
Other Offices	0/0	0/0	0/0	0	N/A	0	0

***NOTE: For partial sets of drawings, specifications and design analyses, see paragraph 3.9.3.3, below.**

****NOTE: When specified below in 3.9.2, furnish Installation copies of Drawings as paper copies, in lieu of the option to provide secure web-based submittals.**

3.9.2. Web based Design Submittals

Except for full or half-sized drawings for Installation personnel, as designated in the Table above, Web based design submittals will be acceptable as an alternative to the paper copies listed in the Table above,

provided a single hard-copy PDF based record set is provided to the Contracting Officer for record purposes. Where the contract requires the Contractor to submit documents to permitting authorities, still provide those authorities paper copies (or in an alternate format where required by the authority). Web based design submittal information shall be provided with adequate security and availability to allow unlimited access those specifically authorized to Government reviewers while preventing unauthorized access or modification. File sizes must be of manageable size for reviewers to quickly download or open on their computers. As a minimum, drawings shall be full scale on American National Standards Institute (ANSI) D sheets (34" x 22"). In addition to the optional website, provide the BIM data submission on DVD to each activity and address noted above in paragraph 3.9.1 for each BIM submission required in Attachment F.

3.9.3. Mailing of Design Submittals

3.9.3.1. 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 (or individual task order if this is an indefinite delivery/indefinite quantity, task order contract). Mail the submittals to five (5) different addresses. Assemble drawing sheets, specs, design analyses, etc. into individual sets; do not combine duplicate pages from individual sets so that the government has to assemble a set.

3.9.3.2. 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.

3.9.3.3. Provide partial sets of drawings, specifications, design analyses, etc., as designated in the Table in paragraph 3.9.1, to those reviewers who only need to review their applicable portions of the design, such as the various utilities. The details of which office receives what portion of the design documentation will be worked out after award.

3.10. AS-BUILT DOCUMENTS

Provide as-built drawings and specifications in accordance with Section 01 78 02.00 10, CLOSEOUT SUBMITTALS. Update LEED design phase documentation during construction as needed to reflect construction changes and advancing project completion status (example - Commissioning Plan updates during construction phase) and include updated LEED documentation in construction closeout submittal.

ATTACHMENT A STRUCTURAL INTERIOR DESIGN (SID) REQUIREMENTS

1.0 GENERAL INFORMATION

Structural Interior Design includes all building related elements and components generally part of the building itself, such as wall finishes, ceilings finishes, floor coverings, marker/bulletin boards, blinds, signage and built in casework. Develop the SID in conjunction with the furniture footprint.

2.0 STRUCTURAL INTERIOR DESIGN (SID) REQUIREMENTS FOR THE INTERIM AND FINAL DESIGN SUBMITTALS

2.1. FORMAT AND SCHEDULE

Prepare and submit for approval an interior and exterior building finishes scheme for an interim design submittal. The DOR shall meet with and discuss the finish schemes with the appropriate Government officials prior to preparation of the schemes to be presented. Present original sets of the schemes to reviewers at an interim design conference.

At the conclusion of the interim phase, after resolutions to the comments have been agreed upon between DOR and Government reviewers, the Contractor may proceed to final design with the interior finishes scheme presented.

The SID information and samples are to be submitted in 8 ½" x 11" format using three ring binders with pockets on the inside of the cover. When there are numerous pages with thick samples, use more than one binder. Large D-ring binders are preferred to O-ring binders. Use page protectors that are strong enough to keep pages from tearing out. Anchor large or heavy samples with mechanical fasteners, Velcro, or double-faced foam tape rather than rubber cement or glue. Fold out items must have a maximum spread of 25 ½". Provide cover and spine inserts sheets identifying the document as "Structural Interior Design" package. Include the project title and location, project number, Contractor/A/E name and phone number(s), submittal stage and date.

Design submittal requirements include, but are not limited to:

2.1.1. Narrative of the Structural Interior Design Objectives

The SID shall include a narrative that discusses the building related finishes. Include topics that relate to base standards, life safety, sustainable design issues, aesthetics, durability and maintainability, discuss the development and features as they relate to the occupants requirements and the building design.

2.1.2. Interior Color Boards

Identify and key each item on the color boards to the contract documents to provide a clear indication of how and where each item will be used. Arrange finish samples to the maximum extent possible by room type in order to illustrate room color coordination. Label all samples on the color boards with the manufacturer's name, patterns and colors name and number. Key or code samples to match key code system used on contract drawings.

Material and finish samples shall indicate true pattern, color and texture. Provide photographs or colored photocopies of materials or fabrics to show large overall patterns in conjunction with actual samples to show the actual colors. Finish samples must be large enough to show a complete pattern or design where practical.

Color boards shall include but not be limited to original color samples of the following:

All walls finishes and ceiling finishes, including corner guards, acrylic wainscoting and wall guards/chair rail finishes

All tile information, including tile grout color and tile patterns.

- All flooring finishes, including patterns.
- All door, door frame finishes and door hardware finishes
- All signage, wall base, toilet partitions, locker finishes and operable/folding partitions and trim
- All millwork materials and finishes (cabinets, counter tops, etc.)
- All window frame finishes and window treatments (sills, blinds, etc.)

Color board samples shall reflect all actual finish textures, patterns and colors required as specified. Patterned samples shall be of sufficient size to adequately show pattern and its repeat if a repeat occurs.

2.1.3. Exterior Color Boards

Prepare exterior finishes color boards in similar format as the interior finishes color boards, for presentation to the reviewers during an interim design conference. Provide original color samples of all exterior finishes including but not limited to the following:

- All Roof Finishes
- All Brick and Cast Stone Samples
- All Exterior Insulation and Finish Samples
- All Glass Color Samples
- All Exterior Metals Finishes
- All Window & Door Frame Finishes
- All Specialty Item Finishes, including trim

Identify each item on the exterior finishes color boards and key to the building elevations to provide a clear indication of how and where each item will be used.

2.2. STRUCTURAL INTERIOR DESIGN DOCUMENTS

2.2.1. General

Structural interior design related drawings must indicate the placement of extents of SID material, finishes and colors and must be sufficiently detailed to define all interior work. The following is a list of minimum requirements:

2.2.2. Finish Color Schedule

Provide finish color schedule(s) in the contract documents. Provide a finish code, material type, manufacturer, series, and color designations. Key the finish code to the color board samples and drawings.

2.2.3. Interior Finish Plans

Indicate wall and floor patterns and color placement, material transitions and extents of interior finishes.

2.2.4. Furniture Footprint Plans

Provide furniture footprint plans showing the outline of all freestanding and systems furniture for coordination of all other disciplines.

2.2.5. Interior Signage

Include interior signage plans or schedules showing location and quantities of all interior signage. Key each interior sign to a quantitative list indicating size, quantity of each type and signage text.

2.2.6. Interior Elevations, Sections and Details

Indicate material, color and finish placement.

ATTACHMENT B FURNITURE, FIXTURES & EQUIPMENT (FF&E) REQUIREMENTS

1.0 FF&E REQUIREMENTS FOR THE INTERIM AND FINAL DESIGN SUBMITTALS

1.1. FORMAT AND SCHEDULE

Prepare and submit for approval a comprehensive FF&E scheme for an interim design submittal. The Contractor's interior designer, NOT A FURNITURE DEALER, shall develop the design. FF&E is the selection, layout, specification and documentation of furniture and includes but is not limited to workstations, seating, tables, storage and shelving, filing, trash receptacles, clocks, framed artwork, artificial plants, and other accessories. Contract documentation is required to facilitate pricing, procurement and installation. The FF&E package is based on the furniture footprint developed in the Structural Interior Design (SID) portion of the interior design. Develop the FF&E package concurrently with the building design to ensure that there is coordination between the electrical outlets, switches, J-boxes, communication outlets and connections, and lighting as appropriate. In addition, coordinate layout with other building features such as architectural elements, thermostats, location of TV's, GF/GI equipment (for example computers, printers, copiers, shredders, faxes), etc. Locate furniture in front of windows only if the top of the item falls below the window and unless otherwise noted, do not attach furniture including furniture systems to the building. If project has SIPRNET and/or NIPRNET, coordinate furniture layout with SIPRNET and NIPRNET separation requirements. Verify that access required by DOIM for SIPRNET box and conduit is provided. The DOR shall interview appropriate Government personnel to determine FF&E requirements for furniture and furnishings prior to preparation of the scheme to be presented. Determine FFE items and quantities by, but not limited to: (1) the number of personnel to occupy the building, (2) job functions and related furniture/office equipment to support the job function, (3) room functions, (4) rank and grade. Present original sets of the scheme to reviewers at an interim design conference upon completion of the interim architectural submittal or three months prior to the submittal of the final FF&E package (whichever comes first).

Design may proceed to final with the FF&E scheme presented at the conclusion of the interim phase, after resolutions to the comments have been agreed upon between DOR and Government reviewers.

Provide seven copies of the electronic versions of all documents upon completion of the final architectural submittal or ten months prior to the contract completion date (whichever comes first), to ensure adequate time for furniture acquisition. Provide six compact disks with all drawings files needed to view the complete drawings unbound and in the latest version AutoCAD. Provide six additional compact disks of all text documents in Microsoft Word or Excel..

Submit five copies of the final and complete FF&E information and samples in 8 ½" x 11" format using three ring binders with pockets on the inside of the cover upon completion of the final architectural submittal or ten months prior to the contract completion date (whichever comes first). Use more than one binder when there are numerous pages with thick samples. Large D-ring binders are preferred to O-ring binders. Use page protectors that are strong enough to keep pages from tearing out for upholstery and finish boards. Anchor large or heavy samples with mechanical fasteners, Velcro, or double-faced foam tape rather than rubber cement or glue. Fold out items must have a maximum spread of 25 ½". Provide cover and spine inserts sheets identifying the document as "Furniture, Fixtures & Equipment" package and include the project title and location, project number, Contractor/A/E name and phone number(s), submittal stage and date.

Design submittal requirements include, but are not limited to:

1.1.1. Narrative of Interior Design Objectives

Provide a narrative description of the furniture, to include functional, safety and ergonomic considerations, durability, sustainability, aesthetics, and compatibility with the building design.

1.1.2. Furniture Order Form

Prepare one Furnishings Order Form for each item specified in the design. This form identifies all information required to order each individual item. In addition to the project name and location, project number, and submittal phase, the order form must include:

- (a) Furniture item illustration and code
- (b) Furniture item name
- (c) Job name, location, and date
- (d) General Services Administration (GSA) FSC Group, part, and section
- (e) GSA Contract Number, Special Item Number (SIN), and contract expiration date
- (f) Manufacturer, Product name and Product model number or National Stock Number (NSN)
- (g) Finish name and number (code to finish samples)
- (h) Fabric name and number, minimum Wyzenbeek Abrasion Test double rubs (code to fabric samples)
- (i) Dimensions
- (j) Item location by room number and room name
- (k) Quantity per room
- (l) Total quantity
- (m) Special instructions for procurement ordering and/or installation (if applicable)
- (n) Written Product Description: include a non-proprietary paragraph listing the salient features of the item to include but not limited to:
 - (1) required features and characteristics
 - (2) ergonomic requirements
 - (3) functional requirements
 - (4) testing requirements
 - (5) furniture style
 - (6) construction materials
 - (7) minimum warranty

The following is an example for “m” features and characteristics, ergonomic requirements and functional requirements:

Chair Description:

- (1) Mid-Back Ergonomic Task Chair
- (2) Pneumatic Gaslift; Five Star Base
- (3) Mesh Back; Upholstered Seat
- (4) Height and Width Adjustable Task Arms:
 - a. Arm Height: 6”- 11” (+-1/2”)
 - b. Arm Width: 2”– 4” adjustment
- (5) Height Adjustable Lumbar Support

- (6) Adjustable Seat Height 16"-21" (+- 1")
- (7) Sliding Seat Depth Adjustment 15"-18" (+-1")
- (8) Standard Hard Casters (for carpeted areas)
- (9) Overall Measurements:
 - a. Overall width: 25" - 27"
 - b. Overall depth: 25"- 28"
- (10) Must have a minimum of the following adjustments (In addition to the above):
 - a. 360 Degree Swivel
 - b. Knee-Tilt with Tilt Tension
 - c. Back angle
 - d. Forward Tilt
 - e. Forward Tilt and Upright Tilt Lock

For projects with systems furniture, also provide a written description of the following minimum requirements:

- (1) Type furniture systems (panel, stacking panels, spine wall, desk based system, or a combination)
- (2) Minimum noise reduction coefficient (NRC)
- (3) Minimum sound transfer coefficient (STC)
- (4) Minimum flame spread and smoke development
- (5) UL testing for task lighting and electrical system
- (6) Panel widths and heights and their locations (this may be done on the drawings) Worksurface types and sizes (this may be done on the drawings)
- (7) Worksurface edge type
- (8) Varying panel/cover finish materials and locations (locations may be shown on the drawings)
- (9) Storage requirements
- (10) Keyboard requirements
- (11) Lock and keying requirements
- (12) Accessory components (examples: tack boards, marker boards, paper management)
- (13) Electrical and communication raceway requirement; type, capacity and location (base, beltline, below and/or above beltline)
- (14) Locations of communication cables (base, beltline, below and/or above beltline, top channel)
- (15) Types of electrical outlets
- (16) Types of communication jacks; provided and installed by others
- (17) Locations of electrical outlets and communication jacks (this may be done on the drawings)
- (18) Type of cable (examples: Cat. 5, Cat. 6, fiber optic; UTP or STP, etc.) system needs to support; provided and installed by others

1.1.3. Manufacturer & Alternate Manufacturer List

Provide a table consisting of all the major furniture items in the order forms and two alternate manufacturers for each item. ALTERNATE MANUFACTURER ITEMS MUST BE SELECTED FROM

GSA SCHEDULE AND MEET ALL THE SALIENT FEATURES OF THE ORIGINALLY SPECIFIED ITEM. Provide manufacturer name, address, telephone number, product series and product name for each item and the two alternate items. Major furniture items include, but are not limited to, casegoods, furniture systems, seating, and tables. Organize matrix by item code and item name.

1.1.4. FF&E Procurement List

Provide a table that lists all FF&E furniture, mission unique equipment and building Contractor Furnished/Contractor Installed (CF/CI) items. Give each item a code and name and designate whether item will be procured as part of the FF&E furniture, mission unique equipment or the building construction contract. Use the item code to key all FF&E documents including location plans, color boards, data sheets, cost estimate, etc. Divide the FF&E package into different sections based on this listing, applies to order forms and cost estimates.

1.1.5. Points of Contact (POCs)

Provide a comprehensive list of POCs needed to implement the FF&E package. This would include but not be limited to appropriate project team members, using activity contacts, interior design representatives, construction contractors and installers involved in the project. In addition to name, address, phone, fax and email, include each contact's job function. Divide the FF&E package into different sections based on this listing, applies to order forms and cost estimates.

1.1.6. Color Boards

Provide color boards for all finishes and fabrics for all FF&E items. Finishes to be included but not limited to paint, laminate, wood finish, fabric, etc.

1.1.7. Itemized Furniture Cost Estimate

Provide an itemized cost estimate of furnishings keyed to the plans and specifications of products included in the package. This cost estimate should be based on GSA price schedules. The cost estimate must include separate line items for general contingency, installation, electrical hook-up for systems furniture or other furniture requiring hardwiring by a licensed electrician, freight charges and any other related costs. Installation and freight quotes from vendors should be used in lieu of a percentage allowance when available. Include a written statement that the pricing is based on GSA schedules. An estimate developed by a furniture dealership may be provided as support information for the estimate, but must be separate from the contractor provided estimate.

1.2. INTERIOR DESIGN DOCUMENTS

1.2.1. Overall Furniture and Area Plans

Provide floor Plans showing locations and quantities of all freestanding, and workstation furniture proposed for each floor of the building. Key each room to a large scale Furniture Placement Plan showing the furniture configuration, of all furniture. Provide enlarged area plans with a key plan identifying the area in which the building is located. Key all the items on the drawings by furniture item code. Do not provide manufacturer specific information such as product names and numbers on drawings, Drawings shall be non-proprietary. This is typical for FFE on all plans, including those mentioned below. Coordinate the overall furniture and area plans with the Life Safety Code Review to ensure adequate clearances are provided for egress. Provide a narrative of this coordination to accompany the Furniture and Area plans.

1.2.2. Workstation Plans

Show each typical workstation configuration in plan view. In addition, provide either elevations or an isometric view. Drawings shall illustrate panels and all major components for each typical workstation configuration. Identify workstations using the same numbering system as shown on the project drawings. Key components to a legend on each sheet which identifies and describes the components along with dimensions. Provide the plan, elevations and isometric of each typical workstation together on the same drawing sheet.

1.2.3. Panel Plans

Show panel locations and critical dimensions from finished face of walls, columns, panels including clearances and aisle widths. Key panel assemblies to a legend which shall include width, height, configuration of frames, panel fabric and finishes (if there are different selections existing within a project), powered or non-powered panel and wall mount locations.

1.2.4. Desk Plans

Provide typical free standing desk configurations in plan view. In addition, provide either elevation or an isometric view and identify components to clearly represent each desk configuration.

1.2.5. Reflected Ceiling Plans

Provide typical plans showing ceiling finishes and heights, lighting fixtures, heating ventilation and air conditioning supply and return, and sprinkler head placement for coordination of furniture.

1.2.6. Electrical and Telecommunication Plans

Show power provisions including type and locations of feeder components, activated outlets and other electrical components. Show locations and quantities of outlets for workstations. Clearly identify different outlets, i.e. electrical, LAN and telecommunication receptacles indicating each type proposed. Show wiring configuration, (circuiting, switching, internal and external connections) and provide as applicable.

1.2.7. Artwork Placement Plans

Provide an Artwork Placement Plan to show location of artwork, assign an artwork item code to each piece of artwork. As an alternative, artwork can be located on the Furniture Plans. Provide a schedule that identifies each piece by room name and number. Provide installation instructions; include mounting height.

1.2.8. Window Drapery Plans

Provide Interior Window Drapery Plans. Key each drapery treatment to a schedule showing color, pattern, material, drapery size and type, draw direction, location and quantities.

1.2.9. Portable Fire extinguishers:

Provide a list of all required portable fire extinguishers, with descriptions (location, size, type, etc.) and total number per type. See also attachment D, "SAMPLE FIRE PROTECTION AND LIFE SAFETY CODE REVIEW", paragraph 1.14.

1.3. FURNITURE SELECTION

1.3.1. Select furniture from the GSA Schedules. Specify furniture available open market when an item is not available on the GSA Schedules. Provide justification for items not available on the GSA Schedules.

1.3.2. To the greatest extent possible when specifying furniture work within a manufacturer's family of furniture for selections, example: Steelcase, Turnstone, Brayton International, Metro, and Vecta are all Steelcase companies. Each alternate should also be specified from a manufacturer's family of furniture, example: first set of alternates would be specified from Knoll's family of furniture and the second from Herman Miller family of furniture. It may be necessary to make some selections from other than a manufacturer's family of furniture if costs are not reasonable for particular items, some items are not available or appropriate for the facility or the items are not on GSA Schedule. If this occurs, consider specifying product from an open line that is accessible by numerous dealerships. Select office furniture including case goods, tables, storage, seating, etc. that is compatible in style, finish and color. Select furniture that complies with ANSI/BIFMA and from manufacturer's standard product line as shown in the most recent published price list and/or amendment and not custom product.

1.4. CONSTRUCTION

1.4.1. Provide knee space at workstations and tables that is not obstructed by panels/legs that interfere with knee space of seated person and specify modesty panels at walls to be of a height or be hinged to allow access to building wall electrical outlets and communication jacks. Provide desks, storage and tables with leveling devices to compensate for uneven floors.

1.4.2. Unless otherwise noted, specify workstations and storage of steel construction. Provide high pressure laminate worksurface tops constructed to prevent warpage (thermallyfused worksurfaces are not acceptable). Provide user friendly features such as radius edges. Do not use sharp edges and exposed connections and ensure the underside of desks, tables and worksurfaces are completely and smoothly finished. Provide abutting worksurfaces that mate closely and are of equal heights when used in side-by-side configurations in order to provide a continuous and level worksurface.

1.4.3. Drawers shall stay securely closed when in the closed position and protect wires from damage during drawer operation. Include a safety catch to prevent accidental removal when fully open

1.4.4. Unless otherwise noted, provide lockable desks and workstations, filing cabinets and storage. Key all locks within a one person office the same; key all one person offices within a building differently. If an office or open office area has more than one workstation, key all the workstations differently, but key all locks within an individual workstation the same. Use tempered glass glazing when glazing is required. Use light-emitting diode (LED)/solid state lighting where task lighting is required in furniture.

1.5. FINISHES AND UPHOLSTERY

1.5.1. Specify neutral colors for casegoods, furniture systems, storage and tables. Specify desk worksurfaces and table tops that are not too light or too dark in color and have a pattern to help hide soiling. Accent colors are allowed in break and lounge areas. Keep placement of furniture systems panel fabric accent colors to a minimum. All finishes shall be cleanable with ordinary household cleaning solutions.

1.5.2. Use manufacturer's standard fabrics; including textile manufacturers fabrics that have been graded into the furniture manufactures fabric grades and are available through their GSA Schedule. Customers Own Material (COM) can be used in headquarter buildings in command suites with executive furniture. Coordinate specific locations with Corps of Engineers Interior Designer.

1.5.3. Specify seating upholstery that meets Wyzenbeek Abrasion Test, 55,000 minimum rubs. Specify a soil retardant finish for woven fabrics if Crypton or vinyl upholstery is not provided for seating in dining areas. Use manufacturer's standard fabrics. This includes textile manufacturers fabrics that have been graded into the furniture manufactures fabric grades and are available through their GSA Schedule. Specify upholstery and finish colors and patterns that help hide soiling. Specify finishes that can be cleaned with ordinary household cleaning solutions.

1.6. ACCESSORIES

1.6.1. Specify all accessories required for completely finished furniture installation. Provide filing cabinets and storage for office supplies. Provide tack surfaces at workstations with overhead storage. Provide tackable surfaces at workstations with overhead storage.

1.6.2. Not Used.

1.6.3. Workstations are to be equipped with stable keyboard trays that have height adjustability, tilting capability, including negative tilt, have a mouse pad at same height as the keyboard tray that can accommodate both left and right handed users, and retractable under worksurface.

1.7. MISSION UNIQUE EQUIPMENT

Funding for FF&E furniture items and mission unique equipment (MUE) items are from two different sources. Separate the designs and procurement documentation for FFE items and MUE. MUE includes, but is not limited to, items such as commercial appliances, fitness equipment, IT equipment and supporting carts. The User will purchase and install mission unique equipment items, unless otherwise noted. Identify locations of known MUE items such as commercial appliances, etc. for space planning purposes.

1.8. SUSTAINABILITY

1.8.1. For all designs provided regardless of facility type, make every effort to implement all aspects of sustainability to the greatest extent possible for all the selections made in the FF&E package. This includes but is not limited to the selection of products that consider: **Material Chemistry and Safety of Inputs** (What chemicals are used in the construction of the selections?); **Recyclability** (Do the selections contain recycled content?); **Disassembly** (Can the selections be disassembled at the end of their useful life to recycle their materials?).

1.8.2. Make selections to the greatest extent possible of products that possess current McDonough Braungart Design Chemistry ([MBDC](#)) certification or other "third-party" certified Cradle to Cradle program, Forest Stewardship Council (FSC) certification, GREENGAURD certification or similar "third-party" certified products consisting of low-emitting materials.

1.9. FURNITURE SYSTEMS

1.9.1. General.

Where appropriate, design furniture systems in open office areas. Coordinate style and color of furniture systems with other storage, seating, etc. in open office areas. Minimize the number of workstation typicals and the parts and pieces required for the design to assist in future reconfiguration and inventorying.

1.9.2. Connector Systems.

Specify a connector system that allows removal of a single panel or spine wall within a typical workstation configuration without requiring disassembly of the workstation or removal of adjacent panels. Specify connector system with tight connections and continuous visual seals. When Acoustical panels are used, provide connector system with continuous acoustical seals. Specify concealed clips, screws, and other construction elements, where possible.

1.9.3. Panels and Spine Walls

Specify panels and spine walls with hinged or removable covers that permit easy access to the raceway when required but are securely mounted and cannot be accidentally dislodged under normal conditions. Panels shall be capable of structurally supporting more than 1 fully loaded component per panel per side. Raceways are to be an integral part of the panel and must be able to support lay-in cabling and have a large capacity for electrical and IT. Do not thread cables through the frame.

1.9.4. Electrical And Information/Technology (IT)

Design furniture with electrical systems that meets requirements of UL 1286 when powered panels are required and UL approved task lights that meet requirements of NFPA 70. Dependent on user requirements and Section 01 10 00, paragraph 3 requirements, it is recommended that workstation electrical and IT wiring entry come from the building walls to eliminate the use of power poles and access at the floor. Design electrical and IT systems that are easily accessed in the spine wall and panels without having to move return panels and components. Electrical and IT management will be easily accessible by removable wall covers which can be removed while workstation components are still attached. Specify connector system that has continuation of electrical and IT wiring within workstations and workstation to workstation.

1.9.5. Pedestals

Specify pedestals that are interchangeable from left to right, and right to left, and retain pedestal locking system capability.

1.10. EXECUTIVE FURNITURE

1.10.1. Design for executive furniture in command areas, coordinate specific locations with Corps of Engineers Interior Designer. Use upgraded furniture, upholsteries and finishes in command suites. This includes but is not limited to wood casegoods, seating and tables. Select executive furniture casegoods from a single manufacturer and style line, to include workstations, credenzas, filing, and storage, etc.

1.10.2. Specify furniture with wood veneer finish with mitered solid wood edge of same wood type. Other executive office furniture such as seating, tables, executive conference room furniture, etc. shall be compatible in style, finish and color with executive furniture casegoods.

1.11. SEATING

1.11.1. General

Specify appropriate chair casters and glides for the floor finish where the seating is located. All task seating shall support up to a minimum of 250 lbs.

1.11.2. Desk and Guest Seating

Select ergonomic desk chairs with casters, waterfall front, swivel, tilt, variable back lock, adjustable back height or adjustable lumbar support, pneumatic seat height adjustment, and padded, contoured upholstered seat and back. Desk and guest chair backs may be other than upholstered such as mesh fabric if it is ergonomically designed, forms to back and is comfortable. Depending on scale of desk chair provide seat pan forward and back adjustment to increase or decrease depth of seat pan. All desk chairs shall have an adjustable seat height range of 4 1/2", range to include 16 1/2"-20". Select guest chairs that are compatible in style, finish and color with the desk chairs.

1.11.3. Conference Room Seating

At tables, select ergonomic conference seating with casters, non-upholstered arms, waterfall front, swivel, tilt, pneumatic seat height adjustment, and padded, contoured seat and back, unless otherwise noted.

Select arm height and/or design that allows seating to be moved up closely to the table top. Conference chair backs may be other than upholstered such as mesh fabric if it is ergonomically designed, forms to back and is comfortable. Perimeter conference chairs shall be compatible in style, finish and color with conference seating at the tables.

1.11.4. Lounge, Waiting and Reception Area Seating

Select seating with arms and cushioned, upholstered seat and back. In heavy use areas, arms shall be easily cleaned such as non-upholstered arms or upholstered arms with wood arm caps unless otherwise noted.

1.11.5. Break Room Seating

Select stackable seating that is easily cleaned. Seating shall be appropriate for table and counter heights as applicable with non-upholstered arms if arms are required. Chairs shall have metal legs and composite materials for seats.

1.12. FILING AND STORAGE.

Select storage and shelving units that meet customer's functional load requirements for stored items. Specify counterweights for filing cabinets when required by the manufacturer for stability. File drawers shall allow only one drawer to be opened at a time. Provide heavy duty storage and shelving if information is not available.

1.13. TRAINING TABLES.

training tables shall be reconfigurable, moveable and storable; lighter weight folding with dollies or casters as necessary. Plastic laminate self edges are unacceptable. Specify power and data requirements and dollies as required.

1.14. FURNITURE WARRANTIES.

Specify manufacturer's performance guarantees or warranties that include parts, labor and transportation as follows:

Furniture System, unless otherwise noted – 10 year minimum
Furniture System Task Lights – 2 year minimum, excluding bulbs
Furniture System Fabric – 3 year minimum
Wood Desks - 10 year minimum

Metal Desks – 12 year minimum
Seating, unless otherwise noted - 10 year minimum
Seating Mechanisms and Pneumatic Cylinders - 10 years
Seating Fabric - 3 years minimum
Wood Filing and Storage - 10 year minimum

Tables, unless otherwise noted - 10 year minimum
Table Mechanisms – 5 year minimum
Table Ganging Device - 1 year minimum
Items not listed above - 1 year minimum

ATTACHMENT C TRACKING COMMENTS IN DRCHECKS

1.0 General

The Government and DB Contractor shall set up the project in Dr Checks. Throughout the design process, the parties shall enter, track, and back-check comments using the DrChecks system. Government and Contractor reviewers enter design review comments into DrChecks. Designers of Record shall annotate comments timely and specifically to indicate for the review conference exactly what action will be taken or why the action is not required. After the design review conference and prior to the next design submittal for the package, the DOR's will annotate those comments that require DOR action, design revision, etc. to show how and where it has been addressed in the design documents, This shall be part of the required design configuration management plan. Comments considered critical by the conference participants shall be flagged as such.

2.0 DrChecks Review Comments

The Contractor and the Government shall monitor DrChecks to assure all comments are annotated and resolved prior to the next submittal. Print and include the DrChecks comments and responses and included in the design analysis for record in the next design submittal for that package.

2.1. Upon review of comments prior to the design review conference, the DOR(s) shall identify whether they concur, non-concur, mark it "for information only" or mark it "check and resolve". Indicate exactly what action will be taken or why the action is not required.

2.2. Conference participants (reviewers) will expect coordination between Design Analysis calculations and the submitted design. Reviewers will also focus on the design submittal's satisfaction of the contract requirements.

2.3. After the conference, the DOR(s) shall formally respond to each applicable comment in DrChecks a second time prior to the next submittal, clearly indicating what action was taken and what drawing/spec/design analysis changed. Designers of Record are encouraged to directly contact reviewers to discuss and agree to the formal comment responses rather than relying only on DrChecks and review meetings to discuss comments. With the next submittal, reviewers will back-check answers to the comments against the new submittal, in addition to reviewing additional design work.

2.4. Clearly annotate in DrChecks those comments that, in the DB Contractor's opinion, require effort outside the scope of the contract. Do not proceed with work outside the contract until a modification to the contract is properly executed, if one is necessary.

3.0 DrChecks Initial Account Set-Up

To initialize an office's use of DrChecks, choose a contact person within the office to call the DrChecks Help Desk at 800-428-HELP, M-F, 8AM-5PM, Central time. This POC will be given an office password to distribute to others in the office. Individuals can then go to the hyperlink at <http://www.projnet.org> and register as a first time user. Upon registration, each user will be given a personal password to the DrChecks system.

3.1. Once the office and individuals are registered, the COE's project manager or lead reviewer will assign the individuals and/or offices to the specific project for review. At this point, persons assigned can make comments, annotate comments, and close comments, depending on their particular assignment.

4.0 DrChecks Reviewer Role

The Contractor is the technical reviewer and the Government is the compliance reviewer of the DB's design documents. Each reviewer enters their own comments into the Dr Checks system. To enter comments:

- 4.1. Log into DrChecks.
- 4.2. Click on the appropriate project.
- 4.3. Click on the appropriate review conference. An Add comment screen will appear.
- 4.4. Select or fill out the appropriate sections (particularly comment discipline and type of document for sorting) of the comment form and enter the comment in the space provided.
- 4.5. Click the Add Comment button. The comment will be added to the database and a fresh screen will appear for the next comment you have.
- 4.6. Once comments are all entered, exit DrChecks by choosing "My Account" and then Logout.

5.0 DrChecks Comment Evaluation (Step 1 of 2)

The role of the DOR(s) is to evaluate and respond to the comments entered by the Government's and DB Contractor's reviewers. To respond to comments:

- 5.1. Log into DrChecks.
- 5.2. Click on the appropriate project.
- 5.3. Under "Evaluate" click on the number under "Pending".
- 5.4. Locate the comments that require your evaluation. (Note: If you know the comment number you can use the Quick Pick window on your home page in DrChecks; enter the number and click on go.)
- 5.5. Select the appropriate evaluation radio button (concur, non-concur, for information only, or check and resolve) and respond with a brief explanation in the Discussion field. An explanation other than to say "concur" is not necessary for "Concur", but may be useful for the Design Configuration Management purposes.
- 5.6. Click on the Add button. The evaluation will be added to the database and a fresh screen will appear with the next comment.
- 5.7. Once evaluations are all entered, exit DrChecks by choosing "My Account" and then Logout.

6.0 DrChecks Comment Evaluation (Step 2 of 2)

This is where the DOR(s) respond to each applicable comment in DrChecks after the design review conference, prior to the next submittal, clearly indicating what action was taken and what drawing/spec/design analysis changed. Respond to the previous comments, following the same steps as above, adding the narrative in the discussion field.

7.0 DrChecks Back-Check

At the following design conference, (where applicable) or at some other agreed time, Government and Contractor reviewers will back-check comment annotations against newly presented documents to verify that the designers' responses are acceptable and that all revisions have been completed. Reviewers

shall either enter additional back-check comments, if necessary, or close those where actions are complete.

- 7.1. Log into DrChecks.
- 7.2. Click on the appropriate project.
- 7.3. Under "My Backcheck" click on the number under "Pending".
- 7.4. If you agree with the designer's response select "Close Comment" and add a closing response if desired.
- 7.5. If you do not agree with the designer's response or the submittal does not reflect the response given, select "Issue Open", enter additional information.
- 7.6. Click on the Add button. The back-check will be added to the database and a fresh screen will appear with the next comment.
- 7.7. Once back-checks are all entered, exit DrChecks by choosing "My Account" and then Logout. The design is completed and final when there are no pending comments to be evaluated and there are no pending or open comments under back-check.

ATTACHMENT D
SAMPLE FIRE PROTECTION AND LIFE SAFETY CODE REVIEW

Instructions: Use the information outlined in this document to provide the minimum requirement for development of Fire Protection and Life Safety Code submittals for all building projects. Additional and supplemental information may be used to further develop the code review. Insert N/A after criteria, which may be "not applicable".

1.0 SAMPLE FIRE PROTECTION AND LIFE SAFETY CODE REVIEW

- 1.1. Project Name (insert name and location)
- 1.2. Applicable Codes and Standards
 - 1.2.1. Unified Facilities Criteria (UFC): 3-600-01, Design: Fire Protection Engineering For Facilities
 - 1.2.2. International Building Code (IBC) for fire resistance requirements, allowable floor area, building height limitations and building separation distance requirements, except as modified by UFC 3-600-01.
 - 1.2.3. National Fire Protection Association (NFPA) 101 Life Safety Code (latest edition), for building egress and life safety and applicable criteria in UFC 3-600-01.
 - 1.2.4. ADA and ABA Accessibility Guidelines. For Buildings and Facilities See Section 01 10 00, Paragraph 3 for facility specific criteria.
- 1.3. Occupancy Classification
IBC chapters 3 and 4
- 1.4. Construction Type
IBC chapter 6
- 1.5. Area Limitations
IBC chapter 5, table 503
- 1.6. Allowable Floor Areas
IBC section 503, 505
- 1.7. Allowable area increases
IBC section 506, 507
- 1.8. Maximum Height of Buildings
IBC section 504
- 1.9. Fire-resistive substitution
- 1.10. Occupancy Separations
IBC table 302.3.2
- 1.11. Fire Resistive Requirements
 - 1.11.1. Exterior Walls - [] hour rating, IBC table 601, 602

- 1.11.2. Interior Bearing walls - [] hour rating
- 1.11.3. Structural frame - [] hour rating
- 1.11.4. Permanent partitions - [] hour rating
- 1.11.5. Shaft enclosures - [] hour rating
- 1.11.6. Floors & Floor-Ceilings - [] hour rating
- 1.11.7. Roofs and Roof Ceilings - [] hour rating
- 1.12. Automatic Sprinklers and others used to determine the need for automatic Extinguishing Equipment, Extinguishing Systems, Foam Systems, Standpipe
- 1.12.1. UFC 3-600-01, chapters 4 and 6 systems, wet chemical systems, etc. State which systems are required and to what criteria they will be designed.
- 1.12.2. UFC 3-600-01, Appendix B Occupancy Classification. Note the classification for each room. This may be accomplished by classifying the entire building and noting exceptions for rooms that differ (E.g. The entire building is Light Hazard except boiler room and storage rooms which are [], etc.)
- 1.12.3. UFC 3-600-01, Chapter 3 Sprinkler Design Density, Sprinkler Design Area, Water Demand for Hose Streams (supply pressure and source requirements).
- 1.12.4. UFC 3-600-01, Chapter 4 Coverage per sprinkler head. Extended coverage sprinkler heads are not permitted.
- 1.12.5. Available Water Supply. Provide the results of the water flow tests showing the available water supply static pressure and residual pressure at flow. Based on this data and the estimated flow and pressure required for the sprinkler system, determine the need for a fire pump.
- 1.12.6. NFPA 13, Para. 8.16.4.6.1. Provide backflow preventer valves as required by the local municipality, authority, or water purveyor. Provide a test valve located downstream of the backflow preventer for flow testing the backflow preventer at full system demand flow. Route the discharge to an appropriate location outside the building.
- 1.13. Kitchen Cooking Exhaust Equipment
Describe when kitchen cooking exhaust equipment is provided for the project. Type of extinguishing systems for the equipment should be provided. per NFPA 96. Show all interlocks with manual release switches, fuel shutoff valves, electrical shunt trips, exhaust fans, and building alarms.
- 1.14. Portable Fire Extinguishers, fire classification and travel distance. per NFPA 10
- 1.15. Enclosure Protection and Penetration Requirements. - Opening Protectives and Through Penetrations
- 1.15.1. IBC Section 712, 715 and Table 715.3. Mechanical rooms, exit stairways, storage rooms, janitor [] hour rating. IBC Table 302.1.1
- 1.15.2. Fire Blocks, Draft Stops, Through Penetrations and Opening Protectives
- 1.16. Fire Dampers. Describe where fire dampers and smoke dampers are to be used (IBC Section 716 and NFPA 90A). State whether isolation smoke dampers are required at the air handler.

- 1.17. Detection Alarm and Communication. UFC 3-600-01, (Chapter 5); NFPA 101 para. 3.4 (chapters 12-42); NFPA 72
- 1.18. Mass Notification. Describe building/facility mass notification system (UFC 4-021-01) type and type of base-wide mass notification/communication system. State whether the visible notification appliances will be combined with the fire alarm system or kept separate. (Note: Navy has taken position to combine visible notification appliances with fire alarm).
- 1.19. Interior Finishes (classification). NFPA 101.10.2.3 and NFPA 101.7.1.4
- 1.20. Means of Egress
- 1.20.1. Separation of Means of Egress, NFPA 101 chapters 7 and 12-42; NFPA101.7.1.3
- 1.20.2. Occupant Load, NFPA101.7.3.1 and chapters 12-42.
- 1.20.3. Egress Capacity (stairs, corridors, ramps and doors) NFPA101.7.3.3
- 1.20.4. Number of Means of Egress, NFPA101.7.4 and chapters 12-42.
- 1.20.5. Dead end limits and Common Path of Travel, NFPA 101.7.5.1.6 and chapters 12-42.
- 1.20.6. Accessible Means of Egress (for accessible buildings), NFPA101.7.5.4
- 1.20.7. Measurement of Travel Distance to Exits, NFPA101.7.6 and chapters 12-42.
- 1.20.8. Discharge from Exits, NFPA101.7.7.2
- 1.20.9. Illumination of Means of Egress, NFPA101.7.8
- 1.20.10. Emergency Lighting, NFPA101.7.9
- 1.20.11. Marking of Means of Egress, NFPA101.7.10
- 1.21. Elevators, UFC 3-600-01, Chapter 6; IBC and ASME A17.1 - 2000,(Safety Code for Elevators and Escalators)
- 1.22. Accessibility Requirements, ADA and ABA Accessibility Guidelines for Buildings and Facilities
- 1.23. Certification of Fire Protection and Life Safety Code Requirements. (Note: Edit the Fire team membership if necessary). Preparers of this document certify the accuracy and completeness of the Fire Protection and Life Safety features for this project in accordance with the attached completed form(s).
- 1.24. Designer of Record. Certification of Fire protection and Life Safety Code Requirements. (Note: Edit the Fire team members if necessary). Preparers of this document certify the accuracy and completeness of the Fire Protection and Life Safety features of this project.

Fire Protection Engineer of Record:

Signature and Stamp

Date

OR

Architect of Record:

Signature and Stamp

Date

Mechanical Engineer of Record:

Signature and Stamp

Date

Electrical Engineer of Record:

Signature/Date

**ATTACHMENT E
LEED SUBMITTALS**

LEED Credit Paragraph	Contractor Check Here if Credit is Claimed	LEED 2.2 Documentation Requirements and Submittals Checklist for Government-Validated Project	Provide for Credit Audit Only	REQUIRED DOCUMENTATION	Date Submitted (to be filled in by Contractor)	Government Reviewer's Use - Comments/Approved
PAR		FEATURE	DUE AT		DATE	REV
GENERAL						
		GENERAL - All calculations shall be in accordance with LEED 2.2 Reference Guide.				
		GENERAL: Obtain excel version of this spreadsheet at http://en.sas.usace.army.mil , "Engineering Criteria".				
		GENERAL - For all credits, narrative/comments may be added to describe special circumstances or considerations regarding the project's credit approach.				
		GENERAL - Include all required LEED drawings indicated below in contract drawings with applicable discipline drawings, labeled For Reference Only.				
		NOTE: Each submittal indicated with "*" differs from USGBC certified project submittals by either having a different due date or being an added submittal not required by USGBC.				
			Closeout	List of all Final Design submittals revised after final design to reflect actual closeout conditions. Revised Final Design submittals. - OR - Statement confirming that no changes have been made since final design that effect final design submittal documents.		
CATEGORY 1 - SUSTAINABLE SITES						
SSPR1		Construction Activity Pollution Prevention (PREREQUISITE)	**Final Design	List of drawings and specifications that address the erosion control, particulate/dust control and sedimentation control measures to be implemented.		
			**Final Design	Narrative that indicates which compliance path was used (NPDES or Local standards) and describes the measures to be implemented on the project. If a local standard was followed, provide specific information to demonstrate that the local standard is equal to or more stringent than the NPDES program.		
SS1		Site Selection	Final Design	Statement confirming that project does not meet any of the prohibited criteria.		
			Final Design	LEED Site plan drawing that shows all proposed development, line depicting boundary of all bodies of water and/or wetlands within 100 feet of project boundary and a line depicting 5' elevation above 100 year flood line that falls within project boundary. Not required if neither condition applies.		
SS2		Development Density & Community Connectivity	Final Design	Option 1: LEED Site vicinity plan showing project site and surrounding development. Show density boundary or note drawing scale.		
			Final Design	Option 1: Table indicating, for project site and all surrounding sites within density radius (keyed to site vicinity plan), site area and building area. Project development density calculation. Density radius calculation. Development density calculation within density radius.		
			Final Design	Option 2: LEED Site vicinity plan showing project site, the 1/2 mile community radius, pedestrian walkways and the locations of the residential development(s) and Basic Services surrounding the project site.		
			Final Design	Option 2: List (including business name and type) of all Basic Services facilities within the 1/2 mile radius, keyed to site vicinity plan.		
SS3		Brownfield Redevelopment	Final Design	Narrative describing contamination and the remediation activities included in project. Include statement indicating how site was determined to be a brownfield.		
SS4.1		Alternative Transportation: Public Transportation Access	Final Design	Statement indicating which option for compliance applies. State whether public transportation is existing or proposed and, if proposed, cite source of this information.		
			Final Design	Option 1: LEED Site vicinity plan showing project site, mass transit stops and pedestrian path to them with path distance noted.		
			Final Design	Option 2: LEED Site vicinity plan showing project site, bus stops and pedestrian path to them with path distance noted.		
SS4.2		Alternative Transportation: Bicycle Storage & Changing Rooms	Final Design	FTE calculation. Bicycle storage spaces calculation. Shower/changing facilities calculation.		
			Final Design	List of drawings that show the location(s) of bicycle storage areas. Statement indicating distance from building entrance.		
			Final Design	List of drawings that show the location(s) of shower/changing facilities and, if located outside the building, statement indicating distance from building entrance.		
SS4.3		Alternative Transportation: Low Emitting & Fuel Efficient Vehicles	Final Design	Statement indicating which option for compliance applies. FTE calculation. Statement indicating total parking capacity of site.		
			Final Design	Option 1: Low-emission & fuel-efficient vehicle calculation.		
			Final Design	Option 1: List of drawings and specification references that show location and number of preferred parking spaces for low-emission & fuel-efficient vehicles and signage.		
			Final Design	Option 1: Statement indicating quantity, make, model and manufacturer of low-emission & fuel-efficient vehicles to be provided. Statement confirming vehicles are zero-emission or indicating ACEEE vehicle scores.		

LEED Credit Paragraph	Contractor Check Here if Credit is Claimed	LEED 2.2 Documentation Requirements and Submittals Checklist for Government-Validated Project	Provide for Credit Audit Only	REQUIRED DOCUMENTATION	DATE	REV
PAR		FEATURE	DUE AT			
			Final Design	Option 2: Low-emission & fuel-efficient vehicle parking calculation.		
			Final Design	Option 2: List of drawings and specification references that show location and number of preferred parking spaces and signage.		
			Final Design	Option 3: Low-emission & fuel-efficient vehicle refueling station calculation.		
			Final Design	Option 3: List of drawings and specifications indicating location and number of refueling stations, fuel type and fueling capacity for each station for an 8-hour period.		
			Closeout	Option 3: Construction product submittals indicating what was provided and confirming compliance with respect to fuel type and fueling capacity for each station for an 8-hour period.		
SS4.4		Alternative Transportation: Parking Capacity	Final Design	Statement indicating which option for compliance applies.		
			Final Design	Option 1: Preferred parking calculation including number of spaces required, total provided, preferred spaces provided and percentage.		
			Final Design	Option 2: FTE calculation. Preferred parking calculation including number of spaces provided, preferred spaces provided and percentage.		
			Final Design	Options 1 and 2: List of drawings and specification references that show location and number of preferred parking spaces and signage.		
			Final Design	Option 3: Narrative indicating number of spaces required and provided and describing infrastructure and support programs with description of project features to support them.		
SS5.1		Site Development: Protect or Restore Habitat	**Final Design	Option 1: List of drawing and specification references that convey site disturbance limits.		
			**Final Design	Option 2: LEED site plan drawing that delineates boundaries of each preserved and restored habitat area with area (sf) noted for each.		
			**Final Design	Option 2: Percentage calculation of restored/preserved habitat to total site area. List of drawings and specification references that convey restoration planting requirements.		
SS5.2		Site Development: Maximize Open Space	Final Design	Option 2: LEED site plan drawing delineating boundary of vegetated open space adjacent to building with areas of building footprint and designated open space noted.		
SS6.1		Stormwater Design: Quantity Control	Final Design	Statement indicating which option for compliance applies.		
			Final Design	Option 1: Indicate pre-development and post-development runoff rate(cfs) and runoff quantity (cf) -OR - Narrative describing site conditions, measures and controls to be implemented to prevent excessive stream velocities and erosion.		
			Final Design	Option 2: Indicate pre-development and post-development runoff rate(cfs) and runoff quantity (cf). Indicate percent reduction in each.		
SS6.2		Stormwater Design: Quality Control	Final Design	For non-structural controls, list all BMPs used and, for each, describe the function of the BMP and indicate the percent annual rainfall treated. List all structural controls and, for each, describe the pollutant removal and indicate the percent annual rainfall treated.		
SS7.1		Heat Island Effect: Non-Roof	**Final Design	LEED site plan drawing indicating locations and quantities of each paving type, including areas of shaded pavement. Percentage calculation indicating percentage of reflective/shaded/open grid area.		
SS7.2		Heat Island Effect: Roof	Final Design	Option 1: Percentage calculation indicating percentage of SRI compliant roof area. List of drawings and specification references that convey SRI requirements and roof slopes.		
			Closeout	Option 1: List of installed roof materials indicating, for each, manufacturer, product name and identification, SRI value and roof slope.		
			Closeout	X Option 1: Manufacturer published product data or certification confirming SRI		
			Final Design	Option 2: Percentage calculation indicating percentage of vegetated roof area.		
			Final Design	Option 3: Combined reflective and green roof calculation.		
			Closeout	Option 3: List of installed roof materials indicating, for each, manufacturer, product name and identification, SRI value and roof slope.		

LEED Credit Paragraph	Contractor Check Here if Credit is Claimed	LEED 2.2 Documentation Requirements and Submittals Checklist for Government-Validated Project	Provide for Credit Audit Only	REQUIRED DOCUMENTATION	DATE	REV
PAR		FEATURE	DUE AT			
			Closeout	X Option 3: Manufacturer published product data or certification confirming SRI		
SS8		Light Pollution Reduction	Final Design	Interior Lighting: List of drawings and specification references that convey interior lighting requirements (location and type of all installed interior lighting, location of non-opaque exterior envelope surfaces, allowing confirmation that maximum candela value from interior fixtures does not intersect non-opaque building envelope surfaces). - OR - List of drawings and specification references that show automatic lighting controls that turn off non-essential lighting during non-business hours.		
			Final Design	Exterior Lighting: List of drawings and specification references that convey exterior lighting requirements (location and type of all site lighting and building facade/landscape lighting).		
			Final Design	Exterior Site Lighting Power Density (LPD): Tabulation for exterior site lighting indicating, for each location identification or description, units of measure, area or distance of the location, actual LPD using units consistent with ASHRAE 90.1, and the ASHRAE allowable LPD for that type of location. Percentage calculation of actual versus allowable LPD for all site lighting.		
			Final Design	Exterior Building Facade/Landscape Lighting Power Density (LPD): Tabulation for exterior building facade/landscape lighting indicating, for each location identification or description, units of measure, area or distance of the location, actual LPD using units consistent with ASHRAE 90.1, and the ASHRAE allowable LPD for that type of location. Percentage calculation of actual versus allowable LPD for all building facade/landscape lighting.		
			Final Design	Exterior Lighting IESNA Zone: Indicate which IESNA zone is applicable to the project.		
			Final Design	Exterior Lighting Site Lumen table indicating, for each fixture type, quantity installed, initial lamp lumens per luminaire, initial lamp lumens above 90 degrees from Nadir, total lamp lumens and total lamp lumens above 90 degrees. Percentage of site lamp lumens above 90 degrees from nadir to total lamp lumens.		
			Final Design	Exterior Lighting Narrative describing analysis used for addressing requirements for light trespass at site boundary and beyond.		
CATEGORY 2 – WATER EFFICIENCY						
WE1.1		Water Efficient Landscaping: Reduce by 50%	Final Design	Statement indicating which option for compliance applies.		
			Final Design	Calculation indicating, for baseline and design case, total water applied, total potable water applied, total non-potable water applied. Design case percent potable water reduction. If nonpotable water is used, indicate source of nonpotable water.		
			Final Design	List of landscape plan drawings.		
			Final Design	Narrative describing landscaping and irrigation design strategies, including water use calculation methodology used to determine savings and, if non-potable water is used, specific information about source and available quantity.		
WE1.2		Water Efficient Landscaping: No Potable Water Use or No Irrigation	Same as WE1.1	Same as WE1.1		
WE2		Innovative Wastewater Technologies	Final Design	Statement confirming which option for compliance applies.		
			Final Design	Statement confirming which occupancy breakdown applies (default or special). For special occupancy breakdown, indicate source and explanation for ratio.		
			Final Design	Occupancy calculation including male/female numbers for FTEs, visitors, students, customers, residential and other type occupants/users		
			Final Design	Statement indicating percent of male restrooms with urinals. Statement indicating annual days of operation.		
			Final Design	Baseline flush fixture calculation spreadsheet indicating, for each fixture type, gender, flush rate, daily uses per person for each occupant type identified in occupancy calculation and annual baseline flush fixture water usage.		
			Final Design	Design case flush fixture calculation spreadsheet indicating, for each fixture type, gender, fixture manufacturer, fixture model number, flush rate, percent of occupants using this fixture type, daily uses per person for each occupant type identified in occupancy calculation and annual design case flush fixture water usage.		

LEED Credit Paragraph	Contractor Check Here if Credit is Claimed	LEED 2.2 Documentation Requirements and Submittals Checklist for Government-Validated Project	Provide for Credit Audit Only		Date Submitted (to be filled in by Contractor)	Government Reviewer's Use - Comments/Approved
PAR		FEATURE	DUE AT	REQUIRED DOCUMENTATION	DATE	REV
			Final Design	Option 1: Space summary listing, for each building use, the conditioned area, unconditioned area and total area and include total area for each category		
			Final Design	Option 1: List of all simulation output advisory message data and show difference between baseline and proposed design		
			Final Design	Option 1: Comparison summary for energy model inputs including description of baseline and design case energy model inputs, showing both by element type		
			Final Design	Option 1: Energy type summary listing, for each energy type, utility rate description, units of energy and units of demand		
			Final Design	Option 1: Statement indicating whether project uses on-site renewable energy. If yes, list all sources and indicate, for each source, backup energy type, annual energy generated, rated capacity and renewable energy cost		
			Final Design	Option 1: If analysis includes exceptional calculation methods, statement describing how exceptional calculation measure cost savings is determined		
			Final Design	Option 1: If analysis includes exceptional calculation methods, for each exceptional calculation method indicate energy types and, for each energy type, annual energy savings, annual cost savings, and brief descriptive narrative		
			Final Design	Option 1: Baseline performance rating compliance report table indicating, for each energy end use, whether it is a process load, energy type, annual and peak energy demand for all four orientations. For each orientation indicate total annual energy use for each orientation and total annual process energy use.		
			Final Design	Option 1: Baseline energy cost table indicating, for each energy type, annual cost for all four orientations and building total energy cost.		
			Final Design	Option 1: Proposed Design performance rating compliance report table indicating, for each energy end use, whether it is a process load, energy type, annual and peak energy demand, baseline annual and peak energy demand and percent savings. Indicate total annual energy use and total annual process energy use for both proposed design and baseline and percent savings.		
			Final Design	Option 1: Proposed Design energy cost table indicating, for each energy type, annual cost for all four orientations and building total energy cost.		
			Final Design	Option 1: Energy cost and consumption by energy type report indicating, for each energy type, proposed design and baseline annual use and annual cost, percent savings annual use and annual cost. Indicate for renewable energy annual energy generated and annual cost. Indicate exceptional calculations annual energy savings and annual cost savings. Indicate building total annual energy use, annual energy cost for proposed design and baseline and indicate percent savings annual energy use and annual energy cost.		
			Final Design	Option 1: Compliance summaries from energy simulation software. If software does not produce compliance summaries provide output summaries and example input summaries for baseline and proposed design supporting data in the tables. Output summaries must include simulated energy consumption by end use and total energy use and cost by energy type. Example input summaries should represent most common systems and must include occupancy, use pattern, assumed envelope component sizes and descriptive features and assumed mechanical equipment types and descriptive features		
			Final Design	Option 1: Energy rate tariff from project energy providers (only if not using LEED Reference Guide default rates)		
EA2.1		On-Site Renewable Energy	Final Design	Statement indicating which compliance path option applies.		
			Final Design	List all on-site renewable energy sources and indicate, for each source, backup energy type, annual energy generated, rated capacity and renewable energy cost. Indicate total annual energy use (all sources), total annual energy cost (all sources) and percent renewable energy cost.		
			Final Design	Option 1: Indicate, for renewable energy, proposed design total annual energy generated and annual cost.		
			Final Design	Option 2: Indicate CBECS building type and building gross area. Provide the following CBECS data: median annual electrical intensity, median annual non-electrical fuel intensity, average electric energy cost, average non-electric fuel cost, annual electric energy use and cost, annual non-electric fuel use and cost.		
			Final Design	Option 2: Narrative describing renewable systems and explaining calculation method used to estimate annual energy generated, including factors influencing performance.		
EA2.2		On-Site Renewable Energy	Same as EA2.1	Same as EA2.1		

LEED Credit Paragraph	Contractor Check Here if Credit is Claimed	LEED 2.2 Documentation Requirements and Submittals Checklist for Government-Validated Project	Provide for Credit Audit Only	REQUIRED DOCUMENTATION	DATE	REV
EA2.3		On-Site Renewable Energy	Same as EA2.1	Same as EA2.1		
EA3		Enhanced Commissioning	**Final Design	**Owner's Project Requirements document (OPR)		
			**Final Design	**Basis of Design document for commissioned systems (BOD)		
			**Final Design	**Commissioning Plan		
			**Final Design	Statement confirming all commissioning requirements have been incorporated into construction documents.		
			Closeout	**Commissioning Report		
			**Final Design	Statement by CxA confirming Commissioning Design Review		
			Closeout	Statement by CxA confirming review of Contractor submittals for compliance with OPR and BOD		
			Closeout	**Systems Manual		
			Closeout	Statement by CxA confirming completion of O&M staff and occupant training		
			Closeout	**Scope of work for post-occupancy review of building operation, including plan for resolution of outstanding issues		
			**Predesign	Statement confirming CxA qualifications and contractual relationships relative to work on this project, demonstrating that CxA is an independent third party.		
EA4		Enhanced Refrigerant Management	Final Design	Refrigerant impact calculation table with all building data and calculation values as shown in LEED 2.2 Reference Guide Example Calculations		
			Final Design	Narrative describing light trespass analysis conducted to determine compliance		
			Closeout	X Cut sheets highlighting refrigerant data for all HVAC components.		
EA5		Measurement & Verification	Closeout	Statement indicating which compliance path option applies.		
			Closeout	Measurement and Verification Plan		
			Closeout	**Scope of work for post-occupancy implementation of M&V plan		
EA6		Green Power	Closeout	Statement indicating which compliance path option applies.		
			Closeout	Option 1: Indicate proposed design total annual electric energy usage		
			Closeout	Option 2: Indicate actual total annual electric energy usage		
			Closeout	Option 3: Calculation indicating building type, total gross area, median electrical intensity and annual electric energy use		
			Closeout	Green power provider summary table indicating, for each purchase type, provider name, annual quantity green power purchased and contract term. Indicate total annual green power use and indicate percent green power		
			Closeout	Narrative describing how Green Power or Green Tags are purchased		
CATEGORY 4 – MATERIALS AND RESOURCES						
MRPR1		Storage & Collection of Recyclables (PREREQUISITE)	Final Design	Statement confirming that recycling area will accommodate recycling of plastic, metal, paper, cardboard and glass. Narrative indicating any other materials addressed and coordination with pickup.		
MR1.1		Building Reuse: Maintain 75% of Existing Walls, Floors & Roof	**Final Design	If project includes a building addition, confirm that area of building addition does not exceed 2x the area of the existing building.		
			**Final Design	Spreadsheet listing, for each building structural/envelope element, the existing area and reused area. Total percent reused.		
MR1.2		Building Reuse: Maintain 95% of Existing Walls, Floors & Roof	Same as MR1.1	Same as MR1.1		
MR1.3		Building Reuse: Maintain 50% of Interior Non-Structural Elements	**Final Design	If project includes a building addition, confirm that area of building addition does not exceed 2x the area of the existing building.		
			**Final Design	Spreadsheet listing, for each building interior non-structural element, the existing area and reused area. Total percent reused.		
MR2.1		Construction Waste Management: Divert 50% From Disposal	**Preconstruction	Waste Management Plan		
			**Construction Quarterly and Closeout	Spreadsheet calculations indicating material description, disposal/diversion location (or recycling hauler), weight, total waste generated, total waste diverted, diversion percentage		
			Preconstruction	**Implementation Strategy Plan consisting of spreadsheet indicated above, filled in with estimated quantities to show strategy for achieving goal.		

LEED Credit Paragraph	Contractor Check Here if Credit is Claimed	LEED 2.2 Documentation Requirements and Submittals Checklist for Government-Validated Project	Provide for Credit Audit Only	REQUIRED DOCUMENTATION	DATE	REV	Date Submitted (to be filled in by Contractor)	Government Reviewer's Use - Comments/Approved
PAR		FEATURE	DUE AT					
			**Construction Quarterly and Closeout	Receipts/tickets for all items on spreadsheet				
MR2.2		Construction Waste Management: Divert 75% From Disposal	Same as MR2.1	Same as MR2.1				
MR3.1		Materials Reuse: 5%	Closeout	Statement indicating total materials value and whether default or actual.				
			Closeout	Spreadsheet calculations indicating, for each reused/salvaged material, material description, source or vendor, cost. Total reused/salvaged materials percentage.				
MR3.2		Materials Reuse: 10%	Same as MR3.1	Same as MR3.1				
MR4.1		Recycled Content: 10% (post-consumer + 1/2 pre-consumer)	Closeout	Statement indicating total materials value and whether default or actual.				
			Closeout	Spreadsheet calculations indicating, for each recycled content material, material name/description, manufacturer, cost, post-consumer recycled content percent, pre-consumer recycled content percent, source of recycled content data. Total post-consumer content materials cost, total pre-consumer content materials cost, total combined recycled content materials cost, recycled content materials percentage.				
			Final Design or NLT Preconstruction	**Implementation Strategy Plan consisting of spreadsheet indicated above, filled in with estimated quantities to show strategy for achieving goal.				
			Closeout	Manufacturer published product data or certification, confirming recycled content percentages in spreadsheet				
MR4.2		Recycled Content: 20% (post-consumer + 1/2 pre-consumer)	Same as MR4.1	Same as MR4.1				
MR5.1		Regional Materials:10% Extracted, Processed & Manufactured Regionally	Closeout	Statement indicating total materials value and whether default or actual.				
			Closeout	Spreadsheet calculations indicating, for each regional material, material name/description, manufacturer, cost, percent compliant, harvest distance, manufacture distance, source of manufacture and harvest location data. Total regional materials cost, regional materials percentage.				
			Final Design or NLT Preconstruction	**Implementation Strategy Plan consisting of spreadsheet indicated above, filled in with estimated quantities to show strategy for achieving goal.				
			Closeout	Manufacturer published product data or certification confirming regional material percentages in spreadsheet				
MR5.2		Regional Materials:20% Extracted, Processed & Manufactured Regionally	Same as MR5.1	Same as MR5.1				
MR6		Rapidly Renewable Materials	Closeout	Statement indicating total materials value and whether default or actual.				
			Closeout	Spreadsheet calculations indicating, for each rapidly renewable material, material name/description, manufacturer, cost, rapidly renewable content percent, rapidly renewable product value. Total rapidly renewable product value, rapidly renewable materials percentage.				
			Final Design or NLT Preconstruction	**Implementation Strategy Plan consisting of spreadsheet indicated above, filled in with estimated quantities to show strategy for achieving goal.				
			Closeout	Manufacturer published product data or certification confirming rapidly renewable material percentages in spreadsheet				
MR7		Certified Wood	Closeout	Statement indicating total materials value and whether default or actual.				
			Closeout	Spreadsheet calculations indicating, for each certified wood material, material name/description, vendor, cost, wood component percent, certified wood percent of wood component, FSC chain of custody certificate number. Total certified wood product value, certified wood materials percentage.				

LEED Credit Paragraph	Contractor Check Here if Credit is Claimed	LEED 2.2 Documentation Requirements and Submittals Checklist for Government-Validated Project	Provide for Credit Audit Only	REQUIRED DOCUMENTATION	DATE	REV
PAR		FEATURE	DUE AT			
			Final Design or NLT Preconstruction	**Implementation Strategy Plan consisting of spreadsheet indicated above, filled in with estimated quantities to show strategy for achieving goal.		
			Closeout	Vendor invoices, FSC chain of custody certificates and manufacturer published product data or certification confirming all certified wood materials percentages in spreadsheet.		
CATEGORY 5 – INDOOR ENVIRONMENTAL QUALITY						
EQPR1		Minimum IAQ Performance (PREREQUISITE)	Final Design	Statement indicating which option for compliance applies, stating applicable criteria/requirement, and confirming that project has been designed to meet the applicable requirements.		
			Final Design	Narrative describing the project's ventilation design, including specifics about fresh air intake volumes and special considerations.		
EQPR2		Environmental Tobacco Smoke (ETS) Control (PREREQUISITE)	Final Design	Statement indicating which option for compliance applies, stating applicable criteria/requirement, and confirming that project has been designed to meet the applicable requirements.		
			Final Design	List of drawing and specification references that convey conformance to applicable requirements (signage, exhaust system, room separation details, etc).		
EQ1		Outdoor Air Delivery Monitoring	Final Design	Statement indicating which option for compliance applies and confirming that project has been designed to meet the applicable requirements.		
			Final Design	List of drawing and specification references that convey conformance to applicable requirements.		
			Final Design	Narrative describing the project's ventilation design and CO2 monitoring system, including specifics about monitors, operational parameters and setpoints.		
			Closeout	X Cut sheets for CO2 monitoring system.		
EQ2		Increased Ventilation	Final Design	Statement indicating which option for compliance applies and confirming that project has been designed to meet the applicable requirements.		
			Final Design	Narrative describing the project's ventilation design, including specifics about zone fresh air intake volumes and demonstrating compliance.		
			Final Design	Option 2: Narrative describing design method used for determining natural ventilation design, including calculation methodology/model results and demonstrating compliance.		
			Final Design	List of drawing and specification references that convey conformance to applicable requirements.		
EQ3.1		Construction IAQ Management Plan: During Construction	**Preconstruction	Construction IAQ Management Plan		
			Closeout	Statement confirming whether air handling units were operated during construction		
			Closeout	Dated jobsite photos showing examples of IAQ management plan practices being implemented. Label photos to indicate which practice they demonstrate. Minimum one photo of each practice at each building.		
			Closeout	Spreadsheet indicating, for each filter installed during construction, the manufacturer, model number, MERV rating, location installed, and if it was replaced immediately prior to occupancy.		
EQ3.2		Construction IAQ Management Plan: Before Occupancy	**Preconstruction	Construction IAQ Management Plan		
			Closeout	Statement indicating which option for compliance applies and confirming that required activities have occurred that meet the applicable requirements.		
			Closeout	Option 1a: Narrative describing the project's flushout process, including specifics about temperature, airflow and duration, special considerations (if any) and demonstrating compliance.		
			Closeout	Option 1b: Narrative describing the project's pre-occupancy and post-occupancy flushout processes, including specifics about temperature, airflow and duration, special considerations (if any) and demonstrating compliance.		
			Closeout	Option 2: Narrative describing the project's IAQ testing process, including specifics about contaminants tested for, locations, remaining work at time of test, retest parameters and special considerations (if any).		
			Closeout	Option 2: IAQ testing report demonstrating compliance.		

LEED Credit Paragraph	Contractor Check Here if Credit is Claimed	LEED 2.2 Documentation Requirements and Submittals Checklist for Government-Validated Project	Provide for Credit Audit Only	REQUIRED DOCUMENTATION	Date Submitted (to be filled in by Contractor)	Government Reviewer's Use - Comments/Approved
PAR		FEATURE	DUE AT		DATE	REV
EQ4.1		Low Emitting Materials: Adhesives & Sealants	Closeout	Spreadsheet indicating, for each applicable indoor adhesive, sealant and sealant primer used, the manufacturer, product name/model number, VOC content, LEED VOC limit, and source of VOC data.		
			Closeout	Spreadsheet indicating, for each applicable indoor aerosol adhesive, the manufacturer, product name/model number, VOC content, LEED VOC limit, and source of VOC data - OR - Statement confirming no indoor aerosol adhesives were used for the project.		
			Closeout	Manufacturer published product data or certification confirming material VOCs in spreadsheet		
EQ4.2		Low Emitting Materials: Paints & Coatings	Closeout	Spreadsheet indicating, for each applicable indoor paint and coating used, the manufacturer, product name/model number, VOC content, LEED VOC limit, and source of VOC data.		
			Closeout	Spreadsheet indicating, for each applicable indoor anti-corrosive/anti-rust paint and coating used, the manufacturer, product name/model number, VOC content, LEED VOC limit, and source of VOC data - OR - Statement confirming no indoor anti-corrosive/anti-rust paints were used for the project .		
			Closeout	Manufacturer published product data or certification confirming material VOCs in spreadsheet		
EQ4.3		Low Emitting Materials: Carpet Systems	Closeout	Spreadsheet indicating, for each indoor carpet used, the manufacturer, product name/model number, if it meets LEED requirement (yes/no) and source of LEED compliance data.		
			Closeout	Spreadsheet indicating, for each indoor carpet cushion used, the manufacturer, product name/model number, if it meets LEED requirement (yes/no) and source of LEED compliance data - OR - Statement confirming no indoor carpet cushion was used for the project.		
			Closeout	Manufacturer published product data or certification confirming material CRI label in spreadsheet		
EQ4.4		Low Emitting Materials: Composite Wood & Agrifiber Products	Closeout	Spreadsheet indicating, for each indoor composite wood and agrifiber product used, the manufacturer, product name/model number, if it contains added urea formaldehyde (yes/no) and source of LEED compliance data.		
			Closeout	Manufacturer published product data or certification confirming material urea formaldehyde in spreadsheet		
EQ5		Indoor Chemical & Pollutant Source Control	Final Design	Spreadsheet indicating, for each permanent entryway system used, the manufacturer, product name/model number and description of system. Roll-up and carpet systems requiring weekly cleaning to earn this credit are not a permitted option for Army projects.		
			Final Design	List of drawing and specification references that convey locations and installation methods for entryway systems.		
			Final Design	Spreadsheet indicating, for each chemical use area, the room number, room name, description of room separation features (walls, floor/ceilings, openings) and pressure differential from surrounding spaces with doors closed - OR - Statement confirming that project includes no chemical use areas and that no hazardous cleaning materials are needed for building maintenance.		
			Final Design	If project includes chemical use areas: List of drawing and specification references that convey locations of chemical use areas, room separation features and exhaust system.		
			Final Design	If project includes chemical use areas: Spreadsheet indicating, for AHUs/mechanical ventilation equipment serving occupied areas, the manufacturer, model number, MERV rating, location installed, and if it was replaced immediately prior to occupancy (yes/no) - OR - Statement confirming that project does not use mechanical equipment for ventilation of occupied areas.		
EQ6.1		Controllability of Systems: Lighting	Final Design	Calculation indicating total number of individual workstations, number of workstations with individual lighting controls and the percentage of workstations with individual lighting controls.		
			Final Design	For each shared multi-occupant space, provide a brief description of lighting controls.		

LEED Credit Paragraph	Contractor Check Here if Credit is Claimed	LEED 2.2 Documentation Requirements and Submittals Checklist for Government-Validated Project	Provide for Credit Audit Only	REQUIRED DOCUMENTATION	DATE	REV
PAR		FEATURE	DUE AT			
			Final Design	Narrative describing lighting control strategy, including type and location of individual controls and type and location of controls in shared multi-occupant spaces.		
EQ6.2		Controllability of Systems: Thermal Comfort	Final Design	Calculation indicating total number of individual workstations, number of workstations with individual thermal comfort controls and the percentage of workstations with individual thermal comfort controls.		
			Final Design	For each shared multi-occupant space, provide a brief description of thermal comfort controls.		
			Final Design	Narrative describing thermal comfort control strategy, including type and location of individual and shared multi-occupant controls.		
EQ7.1		Thermal Comfort: Design	Final Design	Design criteria spreadsheet indicating, for spring, summer, fall and winter, maximum indoor space design temperature, minimum indoor space design temperature and maximum indoor space design humidity.		
			Final Design	Narrative describing method used to establish thermal comfort control conditions and how systems design addresses the design criteria, including compliance with the referenced standard.		
EQ7.2		Thermal Comfort: Verification	Final Design	Narrative describing the scope of work for the thermal comfort survey, including corrective action plan development		
EQ8.1		Daylight & Views: Daylight 75% of Spaces	Final Design	Option 1: Table indicating all regularly occupied spaces with space area and space area with 2% daylighting factor. Sum of regularly occupied areas and regularly occupied areas with 2% daylighting factor. Percentage calculation of areas with 2% daylighting factor to total regularly occupied areas.		
			Final Design	Option 1: Glazing factor calculation table		
			Final Design	Option 2: Simulation model method, software and output data		
			Final Design	Option 2: Table indicating all regularly occupied spaces with space area, space area with minimum 25 footcandles daylighting illumination, and method of providing glare control. Sum of regularly occupied areas and regularly occupied areas with 25 fc daylighting. Percentage calculation of areas with 25 fc daylighting to total regularly occupied areas.		
			Final Design	For all occupied spaces excluded from the calculation, provide narrative indicating reasons for excluding the space.		
			Final Design	List of drawing and specification references that convey exterior glazed opening head and sill heights and glazing performance properties.		
			Closeout	Manufacturer published product data or certification confirming glazing Tvis in spreadsheet		
EQ8.2		Daylight & Views: Views for 90% of Spaces	Final Design	Table indicating all regularly occupied spaces with space area and space area with access to views. Sum of regularly occupied areas and regularly occupied areas with access to views. Percentage calculation of areas with views to total regularly occupied areas.		
			Final Design	For all occupied spaces excluded from the calculation, provide narrative indicating reasons for excluding the space.		
			Final Design	LEED Floor plan drawings showing line of sight diagramming of views areas in each regularly occupied space. List of drawing/specification references that convey exterior glazed opening head and sill heights.		
CATEGORY 6 – FACILITY DELIVERY PROCESS						
IDc1.1		Innovation in Design	Varies	Narrative describing intent, requirement for credit, project approach to the credit. List of drawings and specification references that convey implementation of credit. All other documentation that validates claimed credit.		
IDc1.2		Innovation in Design	Varies			
IDc1.3		Innovation in Design	Varies			
IDc1.4		Innovation in Design	Varies			
IDc2		LEED Accredited Professional	Final Design	Narrative indicating name of LEED AP, company name of LEED AP, description of LEED AP's role and responsibilities in the project.		

ATTACHMENT F
Version 09-13-2012

BUILDING INFORMATION MODELING REQUIREMENTS

1.0 Section 1 - General

1.1. Definitions. See Section 7 for definitions of terms used in this document.

1.2. Submittal Format

1.2.1. The Model shall be developed using Building Information Modeling (“BIM”) supplemented with Computer Aided Design (“CAD”) content as necessary to produce a complete set of Construction Documents. Submitted drawings shall be 22 x 34 size, suitable for half-size scaled reproduction.

1.2.2. BIM submittals shall conform to the requirements of Sections 3.0 and 4.0 below.

1.2.3. For each Center of Standardization (CoS) facility type included in this Project, all Models and associated Facility/Site Data shall be submitted in the BIM format and version as determined by the Customer, Geographic District BIM Manager, and the CoS District BIM Manager. For this project, the BIM submittal format will be . The submittals shall be fully operable, compatible, and editable within the native BIM tools.

2.0 Section 2 – BIM Requirements

2.1. Use of BIM. Contractor shall use BIM application(s) and software(s) to develop Projects consistent with the following requirements.

2.1.1. Baseline Model. The Contractor will not be provided a baseline multi-discipline BIM Project Model.

2.1.2. BIM Program Configuration Standards.

2.1.3. Reference. Refer to ERDC TR-06-10, “U.S. Army Corps of Engineers Building Information Modeling Road Map” from the CAD/BIM Technology Center website for more information on the USACE BIM implementation goals.

2.1.4. Industry Foundation Class (IFC) Support. The Contractor’s selected BIM application(s) and software(s) must be consistent with the current IFC property sets. Any deviations from or additions to the IFC property sets for any new spaces, systems, and equipment must be submitted for Government acceptance.

2.1.5. BIM Project Execution Plan.

2.1.5.1. Develop a BIM Project Execution Plan (“Plan” or “PxP”) documenting mandatory and Contractor-elected BIM Uses, analysis technologies and workflows.

2.1.5.2. Contractors shall use the USACE BIM PROJECT EXECUTION PLAN (PxP) Template located at <https://caddim.usace.army.mil> to develop an acceptable Plan.

2.2. BIM Content.

2.2.1. Facility/Site Data. Develop the Facility/Site Data to include material definitions and attributes that are necessary for the Project facility design and construction as described in Section 4.0. Additional data in support of Section 6.0 Contractor Electives is encouraged to be added to the Model.

2.2.2. Model Content. The Model and Facility/Site Data shall include, at a minimum, the requirements of Section 4.0 below.

2.3. Output. Submitted Drawings (e.g., plans, elevations, sections, schedules, details, etc.) shall be derived (commonly known as extractions, views or sheets) from the Model and Facility/Site Data. Drawings derived from the Model shall remain connected to the Model for the life of the Project and documented in the PxP. Drawings not derived from the Model shall also be documented in the PxP.

2.3.1. Drawings derived from the Model shall be compliant with the A/E/C CAD Standard. Deliver electronic CAD files used for the creation of the Construction Documents per requirements in Section 01 33 16, the criteria of the USACE CESAS District, and as noted herein.

2.3.2. The CAD file format specified for drawings shall not dictate which application(s) are used for development and execution of the Model and Facility/Site Data. Application(s) used shall be documented in the PxP.

2.4. Quality Control Parameters. Implement quality control ("QC") parameters for the Model, including:

2.4.1. Model Standards Checks. Provide QC checks demonstrating that the Project Facility/Site Data set has no undefined, incorrectly defined or duplicated elements. Identify and report non-compliant elements and submit a corrective action plan. Provide the Government with detailed justification and request Government acceptance for any non-compliant element that the Contractor proposes to be allowed to remain in the Model.

2.4.2. CAD Standards Checks. Provide QC checks demonstrating that the fonts, dimensions, line styles, levels and other construction document formatting issues are followed per requirements in Section 01 33 16. Identify and report non-compliant content and submit a corrective action plan.

2.4.3. Other Parameters. Develop such other QC parameters as Contractor deems appropriate for the Project and provide to the Government for acceptance.

2.5. Design and Construction Reviews. The Model and Facility/Site Data will be used to perform reviews at each submittal stage under Section 3.0 to test the Model, including Over-The-Shoulder Progress Reviews:

2.5.1. Visual Checks. Checking to demonstrate the design intent has been followed and that there are no unintended elements in the Model.

2.5.2. Interference Management Checks. Locate conflicting spatial data in the Model where two elements are occupying the same space. Log hard interferences (e.g., mechanical vs. structural, or mechanical vs. mechanical, overlaps in the same location) and soft interferences, (e.g., conflicts regarding equipment clearance, service access, fireproofing, insulation, code space requirements) in a written report and resolve.

2.5.3. Over-The-Shoulder Progress Reviews. Periodic quality control meetings or construction progress review meetings shall include quality control reviews on the implementation and use of the Model, including interference management and design change tracking information.

2.6. Other Parameters. Develop other design and construction review parameters as the Contractor deems appropriate for the Project and provide to the Government for acceptance.

3.0 Section 3 – BIM Submittal Requirements

3.1. General Submittal Requirements.

3.1.1. Provide submittals in compliance with the PxP deliverables at stages as described below.

3.1.2. For each Submittal as set forth in Paragraphs 3.3 through 3.5, provide a Contractor-certified written report confirming that consistency checks as identified in Paragraphs 2.4 and 2.5 above have been completed. This report shall be discussed as part of the review process and shall address cross-discipline interferences, if any.

3.1.3. At each Submittal as set forth in Paragraphs 3.3 through 3.5, provide the Government with:

3.1.3.1. The Model, Facility/Site Data, Workspace and CAD Data files in the native BIM/CAD format.

3.1.3.2. A copy of the Model in an interactive review format such as Bentley Navigator, Autodesk Navisworks, Adobe 3D PDF 7.0 (or later), Google Earth KMZ or other format per PxP requirements. The format for reviews can change between submittals.

3.1.3.3. A list of all submitted electronic files including a description, directory, and file name for each file submitted. For all CAD printed sheets, include a list of the sheet titles and sheet numbers. Identify which files have been produced from the Model and Facility/Site Data.

3.1.3.4. IFC Coordination View. Provide an IFC Coordination View in IFC Express format for all deliverables. Provide exported property set data for all IFC supported named building elements.

3.1.4. The Government shall confirm acceptability of all submittals identified in Section 3.0 in coordination with the USACE Geographic District BIM Manager.

3.2. Initial Design Conference Submittal.

3.2.1. Submit a digital copy of the PxP and M3 where, in addition to Paragraph 3.1.4, the USACE Geographic District BIM Manager will coordinate with the USACE CoS BIM Manager to confirm acceptability of the Plan or advise as to additional processes or activities necessary to be incorporated into the PxP.

3.2.2. Within thirty (30) days after the acceptance of the PxP and M3, conduct a demonstration to review the Plan for clarification, and to verify the functionality of planned Model technology workflow and processes. If modifications are required, the Contractor shall complete the modifications and resubmit the PxP performing a subsequent demonstration for Government acceptance. There will be no payment for design or construction until the PxP is completed and accepted by the Government. The Government may also withhold payment if there is design and construction for unacceptable performance in executing the accepted PxP.

3.3. Interim Design Submittals.

3.3.1. BIM and CAD Data. Submit the Model with Facility/Site Data per the requirements identified in Paragraphs 2.2 and 2.3 as applicable to the Interim Design package(s).

3.4. Final Design Submissions and Design Complete Submittals.

3.4.1. BIM and CAD Data. Submit the Model with Facility/Site Data per the requirements identified in Paragraphs 2.2 and 2.3. Acceptance according to Paragraph 3.1.4 is required before commencement of construction, as described in Paragraph 3.7.6 of Section 01 33 16.

3.5. Final As-Built BIM and CAD Data Submittal. Submit the final Model, Facility/Site Data, and CAD files reflecting as-built construction conditions for Government acceptance, as specified in Section 01 78 02.00 10, Closeout Submittals.

4.0 Section 4 – Minimum Modeling and Data Requirements

4.1. Minimum Modeling Matrix (M3)

4.1.1. Develop an M3 documenting elements included in the facility and site. The M3 describes the minimum modeling and data requirements by defining the Level of Development (“LOD”) and Element Grade.

4.1.2. Contractors shall use the USACE Minimum Modeling Matrix (M3) Template located at <https://cadbim.usace.army.mil> and submitted as part of the PxP.

4.2. Additional Requirements.

4.2.1. Classification. All modeled elements shall include Facility/Site Data referencing one or more classification system(s).

4.2.2. Spatial Data. The Model shall include spatial data defining actual net square footage and net volume, and holding data to develop the room finish schedule including room names and numbers. Include program information to verify design space against programmed space, using this information to validate area quantities.

4.2.3. Schedules. Schedules shall be produced from the Facility/Site Data within the Model. Any exceptions should be documented in the PxP and submitted to the USACE for review.

4.2.4. Details and Enlarged Sections. All details and enlarged sections necessary for construction shall be derived from the Model when possible. For those details and enlarged sections not derived directly from the Model, Contractor must verify that geometry and data depicting the details and enlarged sections are consistent with Model elements. Details with significant drafted content such as 'standard' and 'typical' details shall not contradict the model and shall utilize the model as an underlay when possible for the purposes of verification and coordination. Three dimensional, isometric, and section isometric details derived from the model are preferred.

4.2.5. Legends. Model Elements shall be used to produce representations shown in the legends and shall match graphical representations shown in plans, sections, and elevations.

4.2.6. Drawing Indices. Where BIM authoring platform supports it, drawing indexes should be derived from a model-driven schedule.

5.0 Section 5 - Ownership and Rights in Data

5.1. Ownership. The Government has ownership of and rights at the date of Closeout Submittal to all CAD files, BIM Model, and Facility/Site Data developed for the Project in accordance with FAR Part 27, clauses incorporated in Section 00 72 00, Contract Clauses and Special Contract Requirement 1.14 GOVERNMENT RE-USE OF DESIGN (Section 00 73 00). The Government may make use of this data following any deliverable.

6.0 Section 6 – Contractor Electives

6.1. Applicable Criteria. If the Contractor elected to include one or more of the following features as an elective in its accepted contract proposal for additional credit, as described in the proposal submission requirements and evaluation criteria, the requirements of paragraphs 6.2 through 6.5 are as applicable for those elective feature(s) that will be included in the project.

6.2. COBIE Compliance. The Model and Facility/Site Data for the Project shall fulfill Construction Operations Building Information Exchange (COBIE) requirements on the Whole Building Design Guide

website (www.wbdg.org) , including all requirements for the indexing and submission of Portable Document Format (PDF) and other appropriate records that would otherwise be printed and submitted in compliance with Project operations and maintenance handover requirements.

6.3. Project Scheduling using the Model. In the PxP and during the Initial Design Conference Submittal Demonstration, provide an overview of the use of BIM in the development and support of the Project construction schedule.

6.3.1. Submittal Requirements. During the Stages identified in Paragraphs 3.3 through 3.4, the Contractor shall deliver the construction schedule linked to the Model.

6.3.1.1. Construction Submittals – Over-The-Shoulder Progress Reviews. Periodic quality control meetings or construction progress review meetings shall include quality control reviews on the implementation and use of the Model for Project scheduling.

6.4. Cost Estimating. In the PxP and during the Initial Design Conference Submittal Demonstration, provide an overview of the use of BIM in the development and support of cost estimating, or other costing applications such as comparative cost analysis for proposed changes and estimate validation.

6.4.1. Submittal Requirements. During the Stages identified in Paragraphs 3.3 through 3.5, the Contractor shall deliver cost estimating information derived from the Model.

6.4.2. Project Completion. At Project completion, the Contractor shall provide an Micro Computer Aided Cost Estimating System Generation II ("MII") Cost Estimate that follows the USACE Cost Engineering Military Work Breakdown System ("WBS"), a modified Unifomat, to at least the sub-systems level and uses quantity information supplied directly from Model output to the maximum extent possible, though other "gap" quantity information will be included by the contractor as necessary for a complete and accurate Cost Estimate. (See Paragraph 6.4.2.2).

6.4.2.1. Sub system level extracted quantities from the Model for use within the Estimate shall be provided according to how detailed line items or tasks should be installed/built so that accurate costs can be developed and/or reflected. When developing a Model, the contractor shall be cognizant of construction sequencing at the beginning stages of Model development, such as recognizing tasks performed on the first floor versus the same task on higher floors that will be more labor intensive and, therefore, need to have a separate quantity and be priced differently. Tasks and their extracted quantities from the Model shall be broken down by their location (proximity in the structure) as well as the complexity of installation.

6.4.2.2. At all design Stages it shall be acknowledged that BIM output will not generate all quantities that are necessary in order to develop a complete and accurate cost estimate of the Project based on the design alone. (An example of this would be plumbing that is less than 1.5" diameter and, therefore, not expected to be modeled due to permitted level of design granularity; this information is commonly referred to as "The Gap". Quantities addressing "The Gap" and their associated costs shall be included in the final Project actual Cost Estimates as well even though not derived directly from the Model data).

6.5. Other Analyses and Reports. Structural, energy and efficiency, EPACK 2005 & EISA 2007, lighting design, daylighting, electrical power, psychrometric processing, shading, programming, LEED, fire protection, code compliance, Life Cycle Cost, acoustic, plumbing and other analyses that may be generated from the Model or reports summarizing the data compiled from these analyses shall be submitted in the form established by contractor in its accepted PxP.

7.0 Definitions

7.1. The following definitions apply specifically to the USACE BIM Requirements.

7.2. “Model”: A digital representation of physical and functional characteristics of a facility or a part thereof, comprised of “Model Elements” with “Facility/Site Data”.

7.3. “Model Element”: A self-contained element with a unique identification, whose behavior and properties are defined by Facility/Site Data and software processes. Model Elements can represent a physical entity, such as a pump or a concrete wall, and range from the simple to the complex.

7.4. “Facility/Site Data”: The non-graphical information attached to objects in the Model that defines various characteristics of the object. Facility/Site Data can include properties such as parametric values that drive physical sizes, material definitions and characteristics (e.g. wood, metal), manufacturer data, industry standards (e.g. AISC steel properties), and project identification numbers. Facility/Site Data can also define supplementary physical entities that are not shown graphically in the Model, such as insulation around a duct, hardware on a door, content of conduit, or transformer properties.

7.5. “Workspace”: A collection of content libraries and supporting files that define and embody a BIM standard. A workspace includes BIM libraries such as wall types, standard steel shapes, furniture, HVAC fittings, and sprinkler heads. It also contains sheet libraries such as print/plot configurations, font and text style libraries, and sheet borders and title blocks. The USACE has developed Workspaces specific to USACE BIM standards; these workspaces are dependent on specific versions of the BIM applications they serve. All USACE BIM Workspaces can be downloaded from the CAD/BIM Technology Center (<https://cadbim.usace.army.mil>). In some cases, there is a specific Workspace for a given CoS Facility Standard Design.

7.6. “IFC”: Industry Foundation Class, a standard and file format used for the exchange of BIM data; see www.iai-tech.org. Note: In the context of this attachment, IFC does not mean “Issued For Construction.”

ATTACHMENT G**DESIGN SUBMITTAL DIRECTORY AND SUBDIRECTORY FILE ARRANGEMENT**

Organize electronic design submittal files in a subdirectory/file structure in accordance with the following table.

The Contractor may suggest a slightly different structure, subject to the discretion of the government.

Design Submittal Directory and Subdirectory File Arrangement.

Directory	Sub-Directory	Sub-Directory or Files	Files
Submittal/Package Name	Narratives	PDF file or files with updated design narrative for each applicable design discipline	
	Drawings	PDF (subdirectory)	Single PDF file with all applicable drawing sheets - bookmarked by sheet number and name
		BIM (subdirectory) See Attachment F.	BIM project folder (with files) per the USACE Workspace. Include an Excel drawing index file with each drawing sheet listed by sheet #, name and corresponding dgn file name (Final Design & Design Complete only)
	Design Analysis & Calculations	Individual PDF files containing design analysis and calculations for each discipline applicable to the submittal	
		PDF file with Fire Protection and Life Safety Code Review checklist	
	LEED	PDF file with updated Leed Check List	
		PDF file or files with LEED Templates for each point with applicable documentation included in each file.	
		LEED SUBMITTALS	
	Energy Analysis	PDF with baseline energy consumption analysis	
		PDF with actual building energy consumption analysis	
	Specifications	Single PDF file with table of contents and all applicable specifications sections.	
		Submittal Register (Final Design & Design Complete submittal only)	
	Design Quality Control	PDF file or files with DQC checklist(s) and/or statements	
	Building Rendering(s)	PDF file of rendering for each building type included in contract (Final Design & Design Complete).	

ATTACHMENT H
REV 1.0 31 May 2011

USACE BIM Project Execution Plan (PxP) Template Version 1.0

This template is a tool that is provided to assist in the development of a USACE BIM Project Execution Plan as required per contract. The template provides a standard format for organizations to establish their general means and methods for meeting the scope and deliverable requirements in Attachment F. It was adapted from the buildingSMART alliance™ (bSa) Project “BIM Project Execution Planning” as developed by The Computer Integrated Construction (CIC) Research Group of The Pennsylvania State University. The bSa project is sponsored by The Charles Pankow Foundation, Construction Industry Institute (CII), Penn State Office of Physical Plant (OPP), and The Partnership for Achieving Construction Excellence (PACE). The template can be found at the following link:

https://mrsi.usace.army.mil/rfp/Shared%20Documents/USACE_BIM_PXP_TEMPLATE_V1.0.pdf

Please note: Instructions and examples to assist with the completion of this template are currently in grey. The text can and should be modified to suit the needs of the organization filling out the template. If modified, the format of the text should be changed to match the rest of the document. This can be completed, in most cases, by selecting the normal style in the template styles.

SECTION 01 45 01.10

REV 3.0 - 30 JUN 2007

QUALITY CONTROL SYSTEM (QCS)

1.0 GENERAL

- 1.1. CORRESPONDENCE AND ELECTRONIC COMMUNICATIONS
- 1.2. QCS SOFTWARE
- 1.3. SYSTEM REQUIREMENTS
- 1.4. RELATED INFORMATION
- 1.5. CONTRACT DATABASE
- 1.6. DATABASE MAINTENANCE
- 1.7. IMPLEMENTATION
- 1.8. DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM
- 1.9. MONTHLY COORDINATION MEETING
- 1.10. NOTIFICATION OF NONCOMPLIANCE

1.0 GENERAL

The Government will use the Resident Management System for Windows (RMS) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit various information throughout the contract period. The Contractor module, user manuals, updates, and training information can be downloaded from the RMS web site. This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

- Administration
- Finances
- Quality Control
- Submittal Monitoring
- Scheduling
- Import/Export of Data
- Request for Information
- Accident Reporting
- Safety Exposure Manhours

1.1. CORRESPONDENCE AND ELECTRONIC COMMUNICATIONS

For ease and speed of communications, both Government and Contractor will exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

1.2. OTHER FACTORS

Particular attention is directed to Contract Clause, "Schedules for Construction Contracts", Contract Clause, "Payments", Section 01 32 01.00 10, PROJECT SCHEDULE, Section 01 33 00, SUBMITTAL PROCEDURES, and Section 01 45 04.00 10, CONTRACTOR QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through QCS. Also, there is no separate payment for establishing and maintaining the QCS database; all costs associated therewith shall be included in the contract pricing for the work.

1.3. QCS SOFTWARE

QCS is a Windows-based program that can be run on a stand-alone personal computer or on a network. The Government will make available the QCS software to the Contractor after award of the construction contract. Prior to the Pre-Construction Conference, the Contractor shall be responsible to download, install and use the latest version of the QCS software from the Government's RMS Internet Website. Upon specific justification and request by the Contractor, the Government can provide QCS on CD-ROM. Any program updates of QCS will be made available to the Contractor via the Government RMS Website as they become available.

1.4. SYSTEM REQUIREMENTS

The following listed hardware and software is the minimum system configuration that the Contractor shall have to run QCS:

- (a) Hardware
 - IBM-compatible PC with 1000 MHz Pentium or higher processor
 - 256 MB RAM for workstation / 512+ MB RAM for server

- 1 GB hard drive disk space for sole use by the QCS system
- Compact disk (CD) Reader, 8x speed or higher
- SVGA or higher resolution monitor (1024 x 768, 256 colors)
- Mouse or other pointing device
- Windows compatible printer (Laser printer must have 4+ MB of RAM)
- Connection to the Internet, minimum 56K BPS

(b) Software

- MS Windows 2000 or higher
- MS Word 2000 or newer
- Latest version of : Netscape Navigator, Microsoft Internet Explorer, or other browser that supports HTML 4.0 or higher
- Electronic mail (E-mail), MAPI compatible
- Virus protection software that is regularly upgraded with all issued manufacturer's updates

1.5. RELATED INFORMATION

1.5.1. QCS USER GUIDE

After contract award, the Contractor shall download instructions for the installation and use of QCS from the Government RMS Internet Website. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

1.5.2. CONTRACTOR QUALITY CONTROL (CQC) TRAINING

The use of QCS will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class.

1.6. CONTRACT DATABASE

Prior to the pre-construction conference, the Government will provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed, generally by using the government's SFTP repository built into QCS import/export function. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

1.7. DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the QCS database throughout the duration of the contract. The Contractor shall establish and maintain the QCS database at the Contractor's site office. Data updates to the Government, e.g., daily reports, submittals, RFI's, schedule updates, payment requests, etc. shall be submitted using the government's SFTP repository built into QCS export function. If permitted by the Contracting Officer, email or CD-ROM may be used instead (see Paragraph DATA SUBMISSION VIA CD-ROM). The QCS database typically shall include current data on the following items:

1.7.1. ADMINISTRATION

1.7.1.1. Contractor Information

The database shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver Contractor administrative data in electronic format.

1.7.1.2. Subcontractor Information

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade shall be assigned a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver subcontractor administrative data in electronic format.

1.7.1.3. Correspondence

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office shall be prefixed with "S". Letters initiated by the Contractor's home (main) office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

All Requests For Information (RFI) shall be exchanged using the Built-in RFI generator and tracker in QCS.

1.7.1.4. Equipment

The Contractor's QCS database shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

1.7.1.5. Management Reporting

QCS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of QCS. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

1.7.2. FINANCES

1.7.2.1. Pay Activity Data

The QCS database shall include a list of pay activities that the Contractor shall develop in conjunction with the design and construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

1.7.2.2. Payment Requests

All progress payment requests shall be prepared using QCS. The Contractor shall complete the payment request worksheet prompt payment certification, and payment invoice in QCS. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using QCS. The Contractor shall submit the payment request, prompt payment certification, and payment invoice with supporting data by using the government's SFTP repository built into QCS export function. If permitted by the Contracting Officer, E-mail or a CD-ROM may be used. A signed paper copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

1.7.3. Quality Control (QC)

QCS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report. The Contractor shall provide the Government a Contractor

Quality Control (CQC) Plan within the time required in Section 01 45 04.00 10, CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, the Contractor shall submit a QCS update reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

1.7.3.1. Daily Contractor Quality Control (CQC) Reports

QCS includes the means to produce the Daily CQC Report. The Contractor may use other formats to record basic QC data. However, the Daily CQC Report generated by QCS shall be the Contractor's official report. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the QCS-generated Daily CQC Report. Daily CQC Reports shall be submitted as required by Section 01 45 04.00 10, CONTRACTOR QUALITY CONTROL. Reports shall be submitted electronically to the Government within 24 hours after the date covered by the report. The Contractor shall also provide the Government a signed, printed copy of the daily CQC report.

1.7.3.2. Deficiency Tracking

The Contractor shall use QCS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC punch list items. The Contractor shall maintain a current log of its QC punch list items in the QCS database. The Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of both QC and QA punch list items.

1.7.3.3. QC Requirements

The Contractor shall develop and maintain a complete list of QC testing and required structural and life safety special inspections required by the International Code Council (ICC), transferred and installed property, and user training requirements in QCS. The Contractor shall update all data on these QC requirements as work progresses, and shall promptly provide this information to the Government via QCS.

1.7.3.4. Three-Phase Control Meetings

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in QCS.

1.7.3.5. Labor and Equipment Hours

The Contractor shall log labor and equipment exposure hours on a daily basis. This data will be rolled up into a monthly exposure report.

1.7.3.6. Accident/Safety Tracking Reporting

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize QCS to advise the Government of any accidents occurring on the jobsite. This supplemental entry is not to be considered as a substitute for completion of mandatory notification and reports, e.g., ENG Form 3394 and OSHA Form 300.

1.7.3.7. Features of Work

The Contractor shall include a complete list of the features of work in the QCS database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

1.7.3.8. Hazard Analysis

The Contractor shall use QCS to develop a hazard analysis for each feature of work included in its CQC Plan. The hazard analysis shall address any hazards, or potential hazards, that may be associated with the work

1.7.4. Submittal Management

The Government will provide the submittal register form, ENG Form 4288, SUBMITTAL REGISTER, in electronic format. The Contractor and Designer of Record (DOR) shall develop and maintain a complete list of all submittals, including completion of all data columns and shall manage all submittals. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use QCS to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update, ENG Form 4288, shall be produced using QCS. QCS and RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

1.7.5. Schedule

The Contractor shall develop a design and construction schedule consisting of pay activities, in accordance with Section 01 32 01.00 10, PROJECT SCHEDULE, as applicable. This schedule shall be input and maintained in the QCS database either manually or by using the Standard Data Exchange Format (SDEF) (see Section 01 32 01.00 10 PROJECT SCHEDULE). The updated schedule data shall be included with each pay request submitted by the Contractor.

1.7.5.1. Import/Export of Data

QCS includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data from RMS, and schedule data using SDEF.

1.8. IMPLEMENTATION

Contractor use of QCS as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its QCS database, and to provide the Government with regular database updates. QCS shall be an integral part of the Contractor's management of quality control.

1.9. DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM

The Government-preferred method for Contractor's submission of QCS data is by using the government's SFTP repository built into QCS export function.. Other data should be submitted using E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of CD-ROM for data transfer. Data on CDs shall be exported using the QCS built-in export function. If used, CD-ROMs will be submitted in accordance with the following:

1.9.1. File Medium

The Contractor shall submit required data on CD-ROMs. They shall conform to industry standards used in the United States. All data shall be provided in English.

1.9.2. Disk Or Cd-Rom Labels

The Contractor shall affix a permanent exterior label to each diskette and CD-ROM submitted. The label shall indicate in English, the QCS file name, full contract number, contract name, project location, data date, name and telephone number of person responsible for the data.

1.9.3. File Names

The files will be automatically named by the QCS software. The naming convention established by the QCS software shall not be altered in any way by the Contractor.

1.10. MONTHLY COORDINATION MEETING

The Contractor shall update the QCS database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, the Contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions.

The Contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable QCS export file is received.

1.11. NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification.

End of Section 01 45 01.10

SECTION 01 45 04.00 10
REV 2.15- 15 DEC 2011
CONTRACTOR QUALITY CONTROL

1.0 GENERAL

1.1. REFERENCES

1.2. PAYMENT

2.0 PRODUCTS (NOT APPLICABLE)

3.0 EXECUTION

3.1. GENERAL REQUIREMENTS

3.2. QUALITY CONTROL PLAN

3.3. COORDINATION MEETING

3.4. QUALITY CONTROL ORGANIZATION

3.5. SUBMITTALS AND DELIVERABLES

3.6. CONTROL

3.7. TESTS

3.8. COMPLETION INSPECTION

3.9. DOCUMENTATION

3.10. NOTIFICATION OF NONCOMPLIANCE

1.0 GENERAL

1.1. REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only. Refer to the latest edition, as of the date of the contract solicitation.

- ASTM INTERNATIONAL (ASTM)
- ASTM D 3740 Minimum Requirements for Agencies
Engaged in the Testing and/or Inspection
of Soil and Rock as Used in Engineering
Design and Construction
- ASTM E 329 Agencies Engaged in the Testing
and/or Inspection of Materials Used in
Construction
- U.S. ARMY CORPS OF ENGINEERS (USACE)
ER 1110-1-12 Quality Management

1.2. PAYMENT

There will be no separate payment for providing and maintaining an effective Quality Control program. Include all costs associated therewith in the applicable unit prices or lump-sum prices contained in the Contract Line Item Schedule.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION

3.1. GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product, which complies with the contract requirements. The system shall cover all design and construction operations, both onsite and offsite, and shall be keyed to the proposed design and construction sequence. The site project superintendent is responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager at the site, responsible for the overall site activities, including but not limited to quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site. Different contractors have different names for the on-site overall project supervisor. For clarification, the term "site project superintendent" refers to the Contractor's senior site representative or "on-site manager", or other similar title, as those terms are used in contract Clause 52.236-7, "Superintendence by the Contractor" and in the Division 00 Section(s) of the solicitation for this contract or task order, or elsewhere in the contract. It does not refer to a construction superintendent, unless that person is also the Contractor's permanently assigned senior site representative in charge of all on-site activities.

3.2. QUALITY CONTROL PLAN

Furnish for Government review, not later than 30 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Design and construction may begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. The Government will not permit work outside of the features of work included in an accepted interim plan to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started. Where the applicable Code issued by the International Code Council calls for an inspection by the Building Official, the Contractor shall include the inspections in the Quality Control Plan and shall perform the inspections. The Designer of Record shall develop a program for any special inspections required by the applicable International Codes and the Contractor shall perform these inspections, using qualified inspectors. Include the special inspection plan in the QC Plan.

3.2.1. Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all design and construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents subcontractors, designers of record, consultants, architect/engineers (AE), fabricators, suppliers, and purchasing agents:

3.2.1.1. A description of the quality control organization. Include a chart showing lines of authority and an acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. A CQC System Manager shall report to the project superintendent or someone higher in the contractor's organization.

3.2.1.2. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function. Also include those responsible for performing and documenting the inspections required by the International Codes and the special inspection program developed by the designer of record.

3.2.1.3. A copy of the letter to the CQC System Manager, signed by an authorized official of the firm, which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Furnish copies of these letters.

3.2.1.4. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents subcontractors, designers of record, consultants, architect engineers (AE), offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

3.2.1.5. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. Use only Government approved Laboratory facilities.

3.2.1.6. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

3.2.1.7. Procedures for tracking design and construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.

3.2.1.8. Reporting procedures, including proposed reporting formats.

3.2.1.9. A list of the definable features of work. A definable feature of work is a task, which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable feature under a particular section. This list will be agreed upon during the coordination meeting.

3.2.1.10. A list of all inspections required by the International Codes and the special inspection program required by the code and this contract.

3.2.2. Additional Requirements for Design Quality Control (DQC) Plan

The following additional requirements apply to the Design Quality Control (DQC) plan:

3.2.2.1. The Contractor's QCP Plan shall provide and maintain a Design Quality Control (DQC) Plan as an effective quality control program which will assure that all services required by this design-build contract are performed and provided in a manner that meets professional architectural and engineering quality standards. As a minimum, competent, independent reviewers identified in the DQC Plan shall review all documents. Use personnel who were not involved in the design effort to produce the design to perform the independent technical review (ITR). The ITR is intended as a quality control check of the design. Include, at least, but not necessarily limited to, a review of the contract requirements (the accepted contract or task order proposal and amended RFP), the basis of design, design calculations, the design configuration management documentation and check the design documents for errors, omissions, and for coordination and design integration. The ITR team is not required to examine, compare or comment concerning alternate design solutions but should concentrate on ensuring that the design meets the contract requirements. Correct errors and deficiencies in the design documents prior to submitting them to the Government.

3.2.2.2. Include in the DQC Plan the discipline-specific checklists to be used during the design and quality control of each submittal. Submit these completed checklists at each design phase as part of the project documentation.

3.2.2.3. A Design Quality Control Manager, who has the responsibility of being cognizant of and assuring that all documents on the project have been coordinated, shall implement the DQC Plan. This individual shall be a person who has verifiable engineering or architectural design experience and is a registered professional engineer or architect. Notify the Government, in writing, of the name of the individual, and the name of an alternate person assigned to the position.

3.2.2.4. Develop and maintain effective, acceptable design configuration management (DCM) procedures to control and track all revisions to the design documents after the Interim Design Submission through submission of the As-Built documents. Include the DCM plan as a subset of the DQC Plan. See Section 'Design After Award'.

3.2.3. Acceptance of Plan

Government acceptance of the Contractor's plan is required prior to the start of design and construction. Acceptance is conditional and will be predicated on satisfactory performance during the design and construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4. Notification of Changes

After acceptance of the CQC Plan, notify the Government in writing of any proposed change. Proposed changes are subject to Government acceptance.

3.3. COORDINATION MEETING

After the Postaward Conference, before start of design or construction, and prior to acceptance by the Government of the CQC Plan, the Contractor and the Government shall meet and discuss the Contractor's quality control system. Submit the CQC Plan for review a minimum of 7 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, design activities, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. The Government will prepare minutes of the meeting for signature by both parties. . The minutes shall become a part of the contract file. There may be occasions when either party will call for subsequent conferences to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4. QUALITY CONTROL ORGANIZATION

3.4.1. Personnel Requirements

The requirements for the CQC organization are a CQC System Manager, a Design Quality Manager, and sufficient number of additional qualified personnel to ensure contract compliance. The CQC organization shall also include personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. Provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Promptly furnish complete records of all letters, material submittals, shop drawing submittals, schedules and all other project documentation to the CQC organization. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2. CQC System Manager

Identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, graduate architect, or a BA/BS graduate of an ACCE accredited construction management college program. The CQC system Manager may alternately be an engineering technician with at least 2 years of college and an ICC certification as a Commercial Building Inspector (Residential Building Inspector certification will be required for Military Family Housing projects). In addition, the CQC system manager shall have a minimum of 5 years construction experience on construction similar to this contract. The CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. Assign the CQC System Manager no other duties (except may also serve as Safety and Health Officer, if qualified and if allowed by Section 00 73 00, or by Section 00 73 10 if this is a task order). Identify an alternate for the CQC System Manager in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager but the alternate may have other duties in addition to serving in a temporary capacity as the acting QC manager.

3.4.3. CQC Personnel

3.4.3.1. In addition to CQC personnel specified elsewhere in the contract provide specialized CQC personnel to assist the CQC System Manager in accordance with paragraph titled Area Qualifications.

3.4.3.2. These individuals may be employees of the prime or subcontractor; be responsible to the CQC System Manager; **are not intended to be full time, but must be physically present at the construction site during work on their areas of responsibility**; have the necessary education and/or

experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan. **One person may cover more than one area, provided that they are qualified to perform QC activities for the designated areas below and provided that they have adequate time to perform their duties:**

3.4.4. Experience Matrix

3.4.4.1. Area Qualifications

3.4.4.1.1. Civil - Graduate Civil Engineer or (BA/BS) graduate in construction management with 4 years experience in the type of work being performed on this project or engineering technician with 5 yrs related experience.

3.4.4.1.2. Mechanical - Graduate Mechanical Engineer or (BA/BS) graduate in construction management with 4 yrs related experience or engineering technician with an ICC certification as a Commercial Mechanical Inspector with 5 yrs related experience.

3.4.4.1.3. Electrical - Graduate Electrical Engineer or (BA/BS) graduate in construction management with 4 yrs related experience or engineering technician with an ICC certification as a Commercial Electrical Inspector with 5 yrs related experience.

3.4.4.1.4. Structural - Graduate Structural Engineer or (BA/BS) graduate in construction management with 4 yrs related experience or person with an ICC certification as a Reinforced Concrete Special Inspector and Structural Steel and Bolting Special Inspector (as applicable to the type of construction involved) with 5 yrs related experience.

3.4.4.1.5. Plumbing - Graduate Mechanical Engineer or (BA/BS) graduate in construction management with 4 yrs related experience, or person with an ICC certification as a Commercial Plumbing Inspector with 5 yrs related experience.

3.4.4.1.6. Concrete, Pavements and Soils Materials Technician (present while performing tests) with 2 yrs experience for the appropriate area

3.4.4.1.7. Testing, Adjusting and Balancing Specialist must be a member (TAB) Personnel of AABC or an experienced technician of the firm certified by the NEBB (present while testing, adjusting, balancing).

3.4.4.1.8. Design Quality Control Manager Registered Architect or Professional Engineer (not required on the construction site)

3.4.4.1.9. Registered Fire Protection Engineer with 4 years related experience or engineering technician with 5 yrs related experience (but see requirements for Fire Protection Engineer of Record to witness final testing in Section 01 10 00, paragraph 5.10, Fire Protection).

3.4.4.1.10. QC personnel assigned to the installation of the telecommunication system or any of its components shall be Building Industry Consulting Services International (BICSI) Registered Cabling Installers, Technician Level. Submit documentation of current BICSI certification. In lieu of BICSI certification, QC personnel shall have a minimum of 5 years experience in the installation of the specified copper and fiber optic cable and components. They shall have factory or factory approved certification from each equipment manufacturer indicating that they are qualified to install and test the provided products. QC personnel shall witness and certify the testing of telecommunications cabling and equipment.

3.4.5. Additional Requirement

In addition to the above experience and/or education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management for Contractors". This course is periodically offered at Carolina AGC AT (704-372-1450 X 5248 OR 5254. Inquire of the District or Division sponsoring the course for fees and other expenses involved, if any, for attendance at this course.

3.4.6. Organizational Changes

When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5. SUBMITTALS AND DELIVERABLES

Make submittals as specified in Section 01 33 00 **SUBMITTAL PROCEDURES**. The CQC organization shall certify that all submittals and deliverables are in compliance with the contract requirements.

3.6. CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. The CQC organization shall conduct at least three phases of control for each definable feature of the construction work as follows:

3.6.1. Preparatory Phase

Perform this phase prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

3.6.1.1. A review of each paragraph of applicable specifications, reference codes, and standards. Make a copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field at the preparatory inspection. Maintain these copies in the field, available for use by Government personnel until final acceptance of the work.

3.6.1.2. A review of the contract drawings.

3.6.1.3. A check to assure that all materials and/or equipment have been tested, submitted, and approved.

3.6.1.4. Review of provisions that have been made to provide required control inspection and testing.

3.6.1.5. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.

3.6.1.6. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

3.6.1.7. A review of the appropriate activity hazard analysis to assure safety requirements are met.

3.6.1.8. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

3.6.1.9. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

3.6.1.10. Discussion of the initial control phase.

3.6.1.11. Notify the Government at least 24 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. Document the results of the preparatory phase actions by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2. Initial Phase

Accomplish this phase at the beginning of a definable feature of work. Include the following actions:

3.6.2.1. Check work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

3.6.2.2. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.

3.6.2.3. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

3.6.2.4. Resolve all differences.

3.6.2.5. Check safety to include compliance with and upgrading of the Accident Prevention plan and activity hazard analysis. Review the activity analysis with each worker.

3.6.2.6. Notify the Government at least 24 hours in advance of beginning the initial phase. The CQC System Manager shall prepare and attach to the daily CQC report separate minutes of this phase. Indicate exact location of initial phase for future reference and comparison with follow-up phases.

3.6.2.7. Repeat the initial phase any time acceptable specified quality standards are not being met.

3.6.3. Follow-up Phase

Perform daily checks to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Conduct final follow-up checks and correct deficiencies prior to the start of additional features of work which may be affected by the deficient work. Do not build upon nor conceal non-conforming work.

3.6.4. Additional Preparatory and Initial Phases

Conduct additional preparatory and initial phases on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7. TESTS

3.7.1. Testing Procedure

Perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements and project design documents. Upon request, furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory, or establish an approved testing laboratory at the project

site. The Contractor may elect to use a laboratory certified and accredited by the Concrete and cement Reference Laboratory (CCRL) or by AASHTO Materials Reference Laboratory (AMRL) for testing procedures that those organizations certify. The Contractor shall perform the following activities and record and provide the following data:

3.7.1.1. Verify that testing procedures comply with contract requirements and project design documents.

3.7.1.2. Verify that facilities and testing equipment are available and comply with testing standards.

3.7.1.3. Check test instrument calibration data against certified standards.

3.7.1.4. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

3.7.1.5. Include results of all tests taken, both passing and failing tests, recorded on the CQC report for the date taken. Include specification paragraph reference, location where tests were taken, and the sequential control number identifying the test. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. Provide an information copy of tests performed by an offsite or commercial test facility directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2. Testing Laboratories

3.7.2.1. Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

3.7.2.2. Capability Recheck

If the selected laboratory fails the capability check, the Government will assess the Contractor a charge of \$1,375 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3. Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4. Furnishing or Transportation of Samples for Government Quality Assurance Testing

The Contractor is responsible for costs incidental to the transportation of samples or materials. Deliver samples of materials for test verification and acceptance testing by the Government to the Corps of Engineers Laboratory, f.o.b., at the following address:

- For delivery by mail:
US Army Engineer District, Savannah
Environmental & Materials Unit
200 North Cobb Parkway, Building 400, Suite 404

- Marietta, GA 30062
- For other deliveries:
 - N/A
 - N/A
 - N/A
 - N/A

The area or resident office will coordinate, exact delivery location, and dates for each specific test.

3.8. COMPLETION INSPECTION

3.8.1. Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the SPECIAL CONTRACT REQUIREMENTS Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. Prepare a punch list of items which do not conform to the approved drawings and specifications and include in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2. Pre-Final Inspection

As soon as practicable after the notification above, the Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Correct any items noted on the Pre-Final inspection in a timely manner. Accomplish these inspections and any deficiency corrections required by this paragraph within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3. Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall attend the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups and major commands may also attend. The Government will formally schedule the final acceptance inspection based upon results of the Pre-Final inspection. Provide notice to the Government at least 14 days prior to the final acceptance inspection and include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9. DOCUMENTATION

3.9.1. Maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers using

government-provided software, QCS (see Section 01 45 01.10). The report includes, as a minimum, the following information:

3.9.1.1. Contractor/subcontractor and their area of responsibility.

3.9.1.2. Operating plant/equipment with hours worked, idle, or down for repair.

3.9.1.3. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.

3.9.1.4. Test and/or control activities performed with results and references to specifications/drawings requirements. Identify the applicable control phase (Preparatory, Initial, Follow-up). List deficiencies noted, along with corrective action.

3.9.1.5. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.

3.9.1.6. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.

3.9.1.7. Offsite surveillance activities, including actions taken.

3.9.1.8. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

3.9.1.9. Instructions given/received and conflicts in plans and/or specifications.

3.9.1.10. Provide documentation of design quality control activities. For independent design reviews, provide, as a minimum, identity of the ITR team, the ITR review comments, responses and the record of resolution of the comments.

3.9.2. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. Furnish the original and one copy of these records in report form to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, submit one report for every 7 days of no work and on the last day of a no work period. Account for all calendar days throughout the life of the contract. The first report following a day of no work shall be for that day only. The CQC System Manager shall sign and date reports. The report shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel. The Contractor may submit these forms electronically, in lieu of hard copy.

3.10. NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

End of Section 01 45 04.00 10

SECTION 01 50 02
REV 2.7 - 31 JUL 2011

TEMPORARY CONSTRUCTION FACILITIES

1.0 OVERVIEW

1.1. GENERAL REQUIREMENTS

1.2. AVAILABILITY AND USE OF UTILITY SERVICES

1.3. BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

1.4. PROTECTION AND MAINTENANCE OF TRAFFIC

1.5. MAINTENANCE OF CONSTRUCTION SITE

1.6. GOVERNMENT FIELD OFFICE

1.0 OVERVIEW

1.1. GENERAL REQUIREMENTS

1.1.1. Site Plan

Prepare a site plan indicating the proposed location and dimensions of any area to be fenced and used by the Contractor, the number of trailers to be used, avenues of ingress/egress to the fenced area and details of the fence installation. Identify any areas which may have to be graveled to prevent the tracking of mud. Also indicate if the use of a supplemental or other staging area is desired.

1.2. AVAILABILITY AND USE OF UTILITY SERVICES

1.2.1. See Section 00 72 00, Contract Clauses and Section 00 73 00, Special Contract Requirements, for Utility Availability requirements.

1.2.2. Sanitation

Provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer. Government toilet facilities will not be available to Contractor's personnel.

1.2.3. Telephone

Make arrangements and pay all costs for desired telephone facilities.

1.3. BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

1.3.1. Bulletin Board

Immediately upon beginning of onsite work, provide a weatherproof glass-covered bulletin board not less than 36 by 48 inches in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer. Locate the bulletin board at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer. Display legible copies of the aforementioned data until work is completed. Remove the bulletin board from the site upon completion of the project.

1.3.2. Project and Safety Signs

Erect a project sign and a site safety sign with informational details as provided by the Government at the Post award conference, within 15 days prior to any work activity on project site. Update the safety sign data daily, with light colored metallic or non-metallic numerals. Remove the signs from the site upon completion of the project. Engineer Pamphlet EP 310-1-6a contains the standardized layout and construction details for the signs. It can be found through a GOOGLE Search or try http://www.usace.army.mil/publications/eng_pamphlets/ep310-1-6a/s-16.pdf. the US Army Corps of Engineers Techinfo Website at <http://www.hnd.usace.army.mil/techinfo/>. Click on Publications then go to Engineer Pamphlets and select EP 310-1-6a.

1.4. PROTECTION AND MAINTENANCE OF TRAFFIC

Provide access and temporary relocated roads as necessary to maintain traffic. Maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Take measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, as required by

the State and local authorities having jurisdiction. Protect the traveling public from damage to person and property.

The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. Investigate the adequacy of existing roads and the allowable load limit on these roads. Repair any damage to roads caused by construction operations.

1.4.1. Haul Roads

The Contractor shall, at its own expense, construct access and haul roads necessary for proper prosecution of the work under this contract. Construct haul roads with suitable grades and widths. Avoid sharp curves, blind corners, and dangerous cross traffic. Provide necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic. The method of dust control, although optional, shall be adequate to ensure safe operation at all times. Location, grade, width, and alignment of construction and hauling roads shall be subject to approval by the Contracting Officer. Provide adequate lighting to assure full and clear visibility for full width of haul road and work areas during any night work operations. Remove haul roads designated by the Contracting Officer upon completion of the work and restore those areas.

1.4.2. Barricades

Erect and maintain temporary barricades to limit public access to hazardous areas. Barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Securely place barricades clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

1.5. MAINTENANCE OF CONSTRUCTION SITE

Mow grass and vegetation located within the boundaries of the construction site for the duration of the project, from NTP to contract completion. Edge or neatly trim grass and vegetation along fences, buildings, under trailers, and in areas not accessible to mowers from NTP to contract completion.

1.6. GOVERNMENT FIELD OFFICE

1.6.1. Resident Engineer's Office

Provide the Government Resident Engineer with an office, approximately 560 square feet in floor area, co-located on the project site with the Contractor's office and providing space heat, air conditioning, electric light and power, power and communications outlets and toilet facilities consisting of at least one lavatory and at least one water closet complete with connections to water and sewer mains. Provide a mail slot in the door or a lockable mail box mounted on the surface of the door. Provide outlets for 4 government phones and same number of LAN connections for Government computers. Coordinate with the Resident Engineer for locations. Provide a conference room with space large enough for 8 personnel to hold meetings. Provide a minimum of two outlets per government work station and at least one outlet per 10 feet of wall space for other government equipment. Provide at least twice weekly janitorial service. Remove the office facilities upon completion of the work and restore those areas. Connect and disconnect utilities in accordance with local codes and to the satisfaction of the Contracting Officer.

1.6.2. Trailer-Type Mobile Office

The Contractor may, at its option, furnish and maintain a trailer-type mobile office acceptable to the Contracting Officer and providing as a minimum the facilities specified above. Securely anchor the trailer to the ground at all four corners to guard against movement during high winds, per EM 385-1-1.

End of Section 01 50 02

SECTION 01 57 20.00 10
REV 3.2 – 30 JUN 2010
ENVIRONMENTAL PROTECTION

1.0 GENERAL REQUIREMENTS

- 1.1. SUBCONTRACTORS
- 1.2. ENVIRONMENTAL PROTECTION PLAN
- 1.3. PROTECTION FEATURES
- 1.4. ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS
- 1.5. NOTIFICATION

2.0 PRODUCTS (NOT USED)

3.0 EXECUTION

- 3.1. LAND RESOURCES
- 3.2. WATER RESOURCES
- 3.3. AIR RESOURCES
- 3.4. CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL
- 3.5. RECYCLING AND WASTE MINIMIZATION
- 3.6. HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES
- 3.7. BIOLOGICAL RESOURCES
- 3.8. INTEGRATED PEST MANAGEMENT
- 3.9. PREVIOUSLY USED EQUIPMENT
- 3.10. MILITARY MUNITIONS
- 3.11. TRAINING OF CONTRACTOR PERSONNEL
- 3.12. POST CONSTRUCTION CLEANUP

1.0 GENERAL REQUIREMENTS

Minimize environmental pollution and damage that may occur as the result of construction operations. Protect the environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire duration of this contract. Comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations

1.1. SUBCONTRACTORS

Ensure compliance with this section by subcontractors.

1.2. ENVIRONMENTAL PROTECTION PLAN

1.2.1. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Define issues of concern within the Environmental Protection Plan as outlined in this section. Address each topic in the plan at a level of detail commensurate with the environmental issue and required construction task(s). Identify and discuss topics or issues which are not identified in this section, but which the Contractor considers necessary, after those items formally identified in this section. Prior to commencing construction activities or delivery of materials to the site, submit the Plan for review and Government approval. The Contractor shall meet with the Government prior to implementation of the Environmental Protection Plan, for the purpose of discussing the implementation of the initial plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. Maintain and keep the Environmental Protection Plan current onsite.

1.2.2. Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.2.3. Contents

The plan shall include, but shall not be limited to, the following:

1.2.3.1. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.

1.2.3.2. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable

1.2.3.3. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel

1.2.3.4. Description of the Contractor's environmental protection personnel training program

1.2.3.5. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. Include monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations. A Storm Water Pollution Prevention Plan (SWPPP) may be substituted for this plan.

1.2.3.6. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on the site

1.2.3.7. Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Include measures to minimize the amount of mud transported onto paved public roads by vehicles or runoff.

1.2.3.8. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.

1.2.3.9. Drawing showing the location of on-installation borrow areas.

1.2.3.10. A spill control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The spill control plan supplements the requirements of EM 385-1-1. This plan shall include as a minimum:

(a) The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Government and the local Fire Department in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers.

(b) The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup

(c) Training requirements for Contractor's personnel and methods of accomplishing the training

(d) A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

(e) The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency

(f) The methods and procedures to be used for expeditious contaminant cleanup

1.2.3.11. A solid waste management plan identifying waste minimization, collection, and disposal methods, waste streams (type and quantity), and locations for solid waste diversion/disposal including clearing debris and C&D waste that is diverted (salvaged, reused, or recycled). Detail the contractor's actions to comply with, and to participate in, Federal, state, regional, local government, and installation sponsored recycling programs to reduce the volume of solid waste at the source. Identify any subcontractors responsible for the transportation, salvage and disposal of solid waste. Submit licenses or permits for solid waste disposal sites that are not a commercial operating facility. Attach evidence of the facility's ability to accept the solid waste to this plan. A construction and demolition waste management plan, similar to the plan specified in the UFGS 01 74 19 (formerly 01572) may be used as the non-hazardous solid waste management plan. Provide a Non-Hazardous Solid Waste Diversion Report. Submit the report on the first working day after the first quarter that non-hazardous solid waste has been disposed and/or diverted and each quarter thereafter (e.g. the first working day of January, April, July, and October) until the end of the project. Additionally, a summary report, with all data fields, is required at the end of the project. The report shall indicate the total type and amount of waste generated, total type and amount of waste diverted, type and amount of waste sent to waste-to-energy facility and alternative daily cover, in tons along with the percent that was diverted. Maintain, track and report construction and demolition waste data in a manner such that the installation can enter the data into the Army SWAR database, which separates data by type of material. A cumulative report in LEED Letter Template format may be used but must be modified to include the date disposed of/diverted and include

the above stated diversion data. NOTE: The Solid Waste Diversion Reports are separate documentation than the LEED documentation.

1.2.3.12. DELETED.

1.2.3.13. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.

1.2.3.14. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, include a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time in the contaminant prevention plan. Update the plan as new hazardous materials are brought on site or removed from the site. Reference this plan in the storm water pollution prevention plan, as applicable.

1.2.3.15. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines. If a settling/retention pond is required, include the design of the pond including drawings, removal plan, and testing requirements for possible pollutants. If land application will be the method of disposal for the waste water, include a sketch showing the location for land application along with a description of the pretreatment methods to be implemented and any required permits. If surface discharge will be the method of disposal, include a copy of the permit and associated documents as an attachment prior to discharging the waste water. If disposal is to a sanitary sewer, include documentation that the waste water treatment plant Operator has approved the flow rate, volume, and type of discharge.

1.2.3.16. A historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on the project site: and/or identifies procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onsite or in the area are discovered during construction. Include methods to assure the protection of known or discovered resources and shall identify lines of communication between Contractor personnel and the Government.

1.2.3.17. A pesticide treatment plan, updated, as information becomes available. Include: sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition, formulation, original and applied concentration, application rates of active ingredient (i.e. pounds of active ingredient applied), equipment used for application and calibration of equipment. The Contractor is responsible for Federal, State, Regional and Local pest management record keeping and reporting requirements as well as any additional Installation specific requirements. Follow AR 200-1, Chapter 5, Pest Management, 5-Pest Management, Chapter 2, Section-III "Pest Management Records and Reports" Section 5-4, "Program Requirements" -for data required to be reported to the Installation.

1.3. PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the Government shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's

assigned storage area and access route(s), as applicable. Both the Contractor and the Government will sign this survey, upon mutual agreement as to its accuracy and completeness. The Contractor develop a plan that depicts how it will protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.4. ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings, plans and specifications which may have an environmental impact will be subject to approval by the Government and may require an extended review, processing, and approval time. The Government reserves the right to disapprove alternate methods, even if they are more cost effective, if the Government determines that the proposed alternate method will have an adverse environmental impact.

1.5. NOTIFICATION

The Government will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Government of the proposed corrective action and take such action when approved by the Government. The Government may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Government may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

2.0 PRODUCTS (NOT USED)

3.0 EXECUTION

3.1. LAND RESOURCES

Confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, identify any land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, do not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. Do not attach or fasten any ropes, cables, or guys to any trees for anchorage unless specifically authorized. Provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Remove all stone, soil, or other materials displaced into uncleared areas..

3.1.1. Work Area Limits

Prior to commencing construction activities, mark the areas that need not be disturbed under this contract. Mark or fence isolated areas within the general work area which are not to be disturbed. Protect monuments and markers before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. Personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.1.2. Landscape

Clearly identify trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved by marking, fencing, or wrapping with boards, or any other approved techniques. Restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

3.1.3. Erosion and Sediment Controls

Provide erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. Coordinate with approving authorities (federal, state, etc.) for specific requirements to be included in the plan. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. Keep the area of bare soil exposed at any one time by construction operations to a minimum necessary. Construct or install temporary and permanent erosion and sediment control best management practices (BMPs). BMPs may include, but not be limited to, vegetation cover, stream bank stabilization, slope stabilization, silt fences, construction of terraces, interceptor channels, sediment traps, inlet and outfall protection, diversion channels, and sedimentation basins. Remove any temporary measures after the area has been stabilized.

3.1.4. Contractor Facilities and Work Areas

Place field offices, staging areas, stockpile storage, and temporary buildings in areas designated on the drawings or as directed by the Government. Make only approved temporary movement or relocation of Contractor facilities. Provide erosion and sediment controls for on-site borrow and spoil areas to prevent sediment from entering nearby waters. Control temporary excavation and embankments for plant and/or work areas to protect adjacent areas.

3.2. WATER RESOURCES

Monitor construction activities to prevent pollution of surface and ground waters. Do not apply toxic or hazardous chemicals to soil or vegetation unless otherwise indicated. Monitor all water areas affected by construction activities. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by state or federally issued Clean Water Act permits.

3.2.1. Stream Crossings

Stream crossings shall allow movement of materials or equipment without violating water pollution control standards of the Federal, State, and local governments or impede state-designated flows.

3.2.2. Wetlands

Do not enter, disturb, destroy, or allow discharge of contaminants into any wetlands.

3.3. AIR RESOURCES

Comply with all Federal and State air emission and performance laws and standards for equipment operation, activities, or processes.

3.3.1. Particulates

Control dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants, including weekends, holidays and hours when work is not in progress. Maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods are permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. Provide sufficient, competent equipment available to accomplish these tasks. Perform particulate control as the work proceeds and whenever a particulate nuisance or hazard occurs. Comply with all State and local visibility regulations.

3.3.2. Odors

Control odors from construction activities at all times. Odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

3.3.3. Sound Intrusions

Keep construction activities under surveillance and control to minimize environment damage by noise. Comply with the provisions of the state and Installation rules.

3.3.4. Burning

Burning is not allowed on the project site unless specified in other sections of the specifications or by written authorization. Specific times, locations, and manners of burning shall be subject to approval.

3.4. CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

3.4.1. Solid Wastes

Place solid wastes (excluding clearing debris) in containers which are emptied on a regular schedule. Conduct handling, storage, and disposal to prevent contamination. Employ segregation measures so that no hazardous or toxic waste will become co-mingled with solid waste. Transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. The minimum acceptable off-site solid waste disposal option is a Subtitle D RCRA permitted landfill. Verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate. Comply with Federal, State, and local laws and regulations pertaining to the use of landfill areas.

3.4.2. Chemicals and Chemical Wastes

Dispense chemicals, ensuring no spillage to the ground or water. Perform and document periodic inspections of dispensing areas to identify leakage and initiate corrective action. The Government may periodically review this documentation. Collect chemical waste in corrosion resistant, compatible containers. Monitor and remove collection drums to a staging or storage area when contents are within 6 inches of the top. Classify, manage, store, and dispose of wastes in accordance with Federal, State, and local laws and regulations.

3.4.3. Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable state and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. At a minimum, manage and store hazardous waste in compliance with 40 CFR 262. Take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. Segregate hazardous waste from other materials and wastes; protect it from the weather by placing it in a safe covered location and take precautionary measures, such as berming or other appropriate measures, against accidental spillage. Store, describe, package, label, mark, and placard hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, state, and local laws and regulations. Transport Contractor generated hazardous waste off Government property in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. Dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Immediately report spills of hazardous or toxic materials to the Government and the Facility Environmental Office. Contractor will be responsible for cleanup and cleanup costs due to spills.

Contractor is responsible for the disposition of Contractor generated hazardous waste and excess hazardous materials.

3.4.4. Fuel and Lubricants

Conduct storage, fueling and lubrication of equipment and motor vehicles in a manner that affords the maximum protection against spill and evaporation. Manage and store fuel, lubricants and oil in accordance with all Federal, State, Regional, and local laws and regulations.

3.5. RECYCLING AND WASTE MINIMIZATION

Participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project. Line and berm fueling areas and establish storm water control structures at discharge points for site run-off. Keep a liquid containment clean-up kit available at the fueling area.

3.6. HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Existing historical, archaeological, and cultural resources within the Contractor's work area are shown on the drawings. Protect and preserve these resources during the life of the Contract. Temporarily suspend all activities that may damage or alter such resources, if any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found during excavation or other construction activities. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, notify the Government so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. Cease all activities that may result in impact to or the destruction of these resources. Secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.7. BIOLOGICAL RESOURCES

Minimize interference with, disturbance to, and damage to fish, wildlife, and plants, including their habitat. Protect threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

3.8. INTEGRATED PEST MANAGEMENT

Coordinate, through the Government, with the Installation Pest Management Coordinator (IPMC) at the earliest possible time prior to pesticide application, in order to minimize impacts to existing fauna and flora. Discuss integrated pest management strategies with the IPMC and receive concurrence from the IPMC, through the COR, prior to the application of any pesticide associated with these specifications. Give IPMC personnel the opportunity to be present at all meetings concerning treatment measures for pest or disease control and during application of the pesticide. The use and management of pesticides are regulated under 40 CFR 152 - 186.

3.8.1. Pesticide Delivery and Storage

Deliver pesticides, approved for use on the Installation, to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses.

3.8.2. Qualifications

Use the services of a subcontractor for pesticide application whose principal business is pest control. The subcontractor shall be licensed and certified in the state where the work is to be performed.

3.8.3. Pesticide Handling Requirements

Formulate, treat with, and dispose of pesticides and associated containers in accordance with label directions.

3.8.4. Application

A state certified pesticide applicator shall apply pesticides in accordance with EPA label restrictions and recommendations.

3.9. PREVIOUSLY USED EQUIPMENT

Clean all previously used construction equipment prior to bringing it onto the project site. Ensure that the equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. Consult with the USDA jurisdictional office for additional cleaning requirements.

3.10. MILITARY MUNITIONS

Immediately stop work in that area and immediately inform the Government, in the event military munitions, as defined in 40 CFR 260, are discovered or uncovered.

3.11. TRAINING OF CONTRACTOR PERSONNEL

Train personnel in all phases of environmental protection and pollution control. Conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Conduct additional meetings for new personnel and when site conditions change. The training and meeting agenda shall include methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.12. POST CONSTRUCTION CLEANUP

Clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". Unless otherwise instructed in writing, obliterate all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. Grade, fill and seed the entire disturbed area, unless otherwise indicated.

SECTION 01 62 35
REV 2.0 - 15 AUG 2007

RECYCLED/RECOVERED MATERIAL

1.0 GENERAL

1.1. REFERENCES

1.2. OBJECTIVES

1.3. EPA DESIGNATED ITEMS INCORPORATED IN THE WORK

1.4. EPA PROPOSED ITEMS INCORPORATED IN THE WORK

1.5. EPA LISTED ITEMS USED IN CONDUCT OF THE WORK BUT NOT INCORPORATED IN THE WORK

1.0 GENERAL

1.1. REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

- U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
- 40 CFR 247 Comprehensive Procurement Guideline for Products Containing Recovered Materials

1.2. OBJECTIVES

Government procurement policy is to acquire, in a cost effective manner, items containing the highest percentage of recycled and recovered materials practicable consistent with maintaining a satisfactory level of competition without adversely affecting performance requirements or exposing suppliers' employees to undue hazards from the recovered materials. The Environmental Protection Agency (EPA) has designated certain items which must contain a specified percent range of recovered or recycled materials. The Contractor shall make all reasonable efforts to use recycled and recovered materials in providing the EPA designated products and in otherwise utilizing recycled and recovered materials in the execution of the work.

1.3. EPA DESIGNATED ITEMS INCORPORATED IN THE WORK

Materials that have been designated by EPA as being products which are or can be made with recovered or recycled materials, when incorporated into the work under this contract, shall contain at least the minimum percentage of recycled or recovered materials indicated by EPA unless adequate justification (non-availability) for non-use is provided. When a designated item is specified as an option to a non-designated item, the designated item requirements apply only if the designated item is used in the work.

1.4. EPA PROPOSED ITEMS INCORPORATED IN THE WORK

Products other than those designated by EPA are still being researched and are being considered for future Comprehensive Procurement Guideline (CPG) designation. It is recommended that these items, when incorporated in the work under this contract, contain the highest practicable percentage of recycled or recovered materials, provided specified requirements are also met.

1.5. EPA LISTED ITEMS USED IN CONDUCT OF THE WORK BUT NOT INCORPORATED IN THE WORK

There are many products listed in 40 CFR 247 which have been designated or proposed by EPA to include recycled or recovered materials that may be use by the Contractor in performing the work but will not be incorporated into the work. These products include office products, temporary traffic control products, and pallets. It is recommended that these non-construction products, when used in the conduct of the work, contain the highest practicable percentage of recycled or recovered materials and that these products be recycled when no longer needed.

End of Section 01 62 35

SECTION 01 78 02.00 10
REV 2.33 – 31 JUL 2011
CLOSEOUT SUBMITTALS

1.0 OVERVIEW

- 1.1. SUBMITTALS
- 1.2. PROJECT RECORD DOCUMENTS
- 1.3. EQUIPMENT DATA
- 1.4. CONSTRUCTION WARRANTY MANAGEMENT
- 1.5. MECHANICAL TESTING, ADJUSTING, BALANCING, AND COMMISSIONING
- 1.6. OPERATION AND MAINTENANCE MANUALS
- 1.7. FIELD TRAINING
- 1.8. PRICING OF CONTRACTOR-FURNISHED AND INSTALLED PROPERTY AND GOVERNMENT-FURNISHED CONTRACTOR-INSTALLED PROPERTY
- 1.9. LEED REVIEW MEETINGS
- 1.10. RED ZONE MEETING
- 1.11. FINAL CLEANING
- 1.12. INTERIM FORM DD1354 "TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY"

EXHIBIT 1 SAMPLE RED ZONE MEETING CHECKLIST

1.0 OVERVIEW

1.1. SUBMITTALS

Government approval is required for any submittals with a "G" designation; submittals not having a "G" designation are for Designer of Record approval or for information only. Submit the following in accordance with Section 01 33 00 submittals:

SD-02 Shop Drawings

- As-Built Drawings - G
 - Drawings showing final as-built conditions of the project. Provide electronic drawing files as specified in Section 01 33 16, 3 sets of blue-line prints and one set of the approved working as-built drawings.

SD-03 Product Data

- As-Built Record of Equipment and Materials
 - Two copies of the record listing the as-built materials and equipment incorporated into the construction of the project.
- Construction Warranty Management Plan
 - Three sets of the construction warranty management plan containing information relevant to the warranty of materials and equipment incorporated into the construction project, including the starting date of warranty of construction. Furnish with each warranty the name, address, and telephone number of each of the guarantor's representatives nearest to the project location.
- Warranty Tags
 - Two record copies of the warranty tags showing the layout and design.
- Final Cleaning
 - Two copies of the listing of completed final clean-up items.

1.2. PROJECT RECORD DOCUMENTS

1.2.1. As-Built Drawings – G

An as-built drawing is a construction drawing revised to reflect the final as-built conditions of the project as a result of modifications and corrections to the project design required during construction. The final as-built drawings shall not have the appearance of marked up drawings, but that of professionally prepared drawings as if they were the "as designed" drawings.

1.2.2. Maintenance of As-Built Drawings

1.2.2.1. The Configuration Management Plan shall describe how the Contractor will maintain up-to-date drawings, how it will control and designate revisions to the drawings and specifications (In accordance with Special Contract Requirement: ***Deviating from the Accepted Design*** and Section 01 33 16: ***Design after Award***, the Designer of Record's approval is necessary for any revisions to the accepted design).

1.2.2.2. Make timely updates, carefully maintaining a record set of working as-built drawings at the job site, marked in red, of all changes and corrections from the construction drawings. Enter changes and corrections on drawings promptly to reflect "Current Construction". Perform this update no less frequently

than weekly for the blue line drawings and update no less frequently than quarterly for the CADD/CAD and BIM files, which were prepared previously in accordance with Section 01 33 16. Include a confirmation that the as-builts are up to date with the submission of the monthly project schedule.

1.2.2.3. If the DB Contractor fails to maintain the as-built drawings as required herein, the Government will retain from the monthly progress payment, an amount representing the estimated monthly cost of maintaining the as-built drawings. Final payment with respect to separately priced facilities or the contract as a whole will be withheld until the Contractor submits acceptable as-built drawings and the Government approves them.

1.2.2.4. The marked-up set of drawings shall reflect any changes, alterations, adjustments or modifications. Changes must be reflected on all sheets affected by the change. Changes shall include marking the drawings to reflect structural details, foundation layouts, equipment sizes, and other extensions of design.

1.2.2.5. Typically, room numbers shown on the drawings are selected for design convenience and do not represent the actual numbers intended for use by the end user. Final as-built drawings shall reflect actual room numbers adopted by the end user.

1.2.2.6. If there is no separate contract line item (CLIN) for as-built drawings, the Government will withhold the amount of \$35,000, or 1% of the present construction value, whichever is the greater, until the final as-built drawing submittal has been approved by the Government.

1.2.3. Underground Utilities

The drawings shall indicate, in addition to all changes and corrections, the actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, the as-built drawings shall show, by offset dimensions to two permanently fixed surface features, the end of each run including each change in direction. Locate Valves, splice boxes and similar appurtenances by dimensioning along the utility run from a reference point. Record average elevation of the top of each run or underground structure..

1.2.4. Partial Occupancy

For projects where portions of construction are to be occupied or activated before overall project completion, including portions of utility systems, supply as-built drawings for those portions of the facility being occupied or activated at the time the facility is occupied or activated. Show this same as-built information previously furnished on the final set of as-built drawings.

1.2.5. As-Built Conditions That are Different From the construction Drawings

Accurately reflect all as-built conditions that are different, such as dimensions, road alignments and grades, and drainage and elevations, from the construction drawings on each drawing. If the as-built condition is accurately reflected on a shop drawing, then furnish that shop drawing in CADD format. Reference the final as-built construction drawing the shop drawing file that includes the as-built information. In turn, the shop drawing shall reference the applicable construction as-built drawing. Delete any options shown on drawings and not selected clearly reflect options selected on final as-built drawings.

1.2.6. Additional As-Built Information that Exceeds the Detail Shown on the construction Drawings:

These as-built conditions include those that reflect structural details, foundation layouts, equipment, sizes, mechanical and electrical room layouts and other extensions of design, that were not shown in the project design documents because the exact details were not known until after the time of approved shop

drawings. It is recognized that these shop drawing submittals (revised showing as-built conditions) will serve as the as-built record without actual incorporation into the construction drawings, piping, and equipment drawings. Include locations of all explorations, logs of all explorations, and results of all laboratory testing, including those provided by the Government. Furnish all such shop drawings in CADD /CADformat. Include fire protection details, such as wiring, performed for the design of the project.

1.2.7. Final As-Built Drawings

Submit final as-built CADD/CAD and BIM Model(s) and Facility Data files at the time of Beneficial Occupancy of the project or at a designated phase of the project. In the event the Contractor accomplishes additional work after this submittal, which changes the as-built conditions, submit a new DVD with all drawing sheets and three blue-line copies of affected sheets which depict additional changes.

1.2.8. Title Blocks

In accordance with the configuration management plan, clearly mark title blocks to indicate final as-built drawings.

1.2.9. Other As-Built Documents

Provide scans of all other documents such as design analysis, catalog cuts, certification documents that are not available in native electronic format in an organized manner in Adobe.pdf format.

1.2.9.1. LEED Documentation

Update LEED documentation on at least a monthly basis and have it available for review by the Government on the jobsite at all times during construction. Submit the final LEED Project Checklist(s), final LEED submittals checklist and complete project documentation, verifying the final LEED score and establishing the final rating. Provide full support to the validation review process, including credit audits. See also the LEED documentation requirements in Section 01 33 16, DESIGN AFTER AWARD.

1.2.9.2. GIS Documentation

Provide final geo-referenced GIS database of the new building footprint along with any changes made to exterior of the building. The intent of capturing the final building footprint and exterior modifications in a GIS database is to provide the installation with a data set of the comprehensive changes made to the landscape as a result of the construction project. The Government will incorporate this data set into the installations existing GIS MasterPlan or Enterprise GIS system. The GIS database deliverable shall follow a standard template provided to the Contractor by the Government, adhere to detailed specifications outlined in ECB No 2006-15, and be documented using the Federal Geographic Data Committee (FGDC) metadata standard.

1.3. EQUIPMENT DATA

1.3.1. Real Property Equipment

Provide an Equipment-in-Place list of all installed equipment furnished under this contract. Include all information usually listed on manufacturer's name plate. Include the cost of each piece of installed property F.O.B. construction site. For each of the items which is specified herein to be guaranteed for a specified period from the date of acceptance thereof, provide the following information: The name, serial and model number address of equipment supplier, or manufacturer originating the guaranteed item. The Contractor's guarantee to the Government of these items will not be limited by the terms of any manufacturer's guarantee to the Contractor. Furnish the list as one (1) reproducible and three (3) copies

thirty (30) calendar days before completion of any segment of the contract work which has an incremental completion date.

1.3.2. Maintenance and Parts Data

Furnish a brochure, catalog cut, parts list, manufacturer's data sheet or other publication showing detailed parts data on all other equipment subject to repair and maintenance procedures not otherwise required in Operations and Maintenance Manuals specified elsewhere in this contract. Distribution of directives shall follow the same requirements as listed in paragraph above.

1.3.3. Construction Specifications

Furnish permanent electronic files of final as-built construction specifications, including modifications thereto, with the as-built drawings.

1.4. CONSTRUCTION WARRANTY MANAGEMENT

1.4.1. Prior to the end of the one year warranty, the Government may conduct an infrared roof survey on any project involving a membrane roofing system. This survey will be conducted in accordance with ASTM C1153-90, "Standard Practice for Location of Wet Insulation in Roofing Systems Using Infrared Imaging". The Contractor shall replace all damaged materials and locate and repair sources of moisture penetration.

1.4.2. Management

1.4.2.1. Warranty Management Plan

Develop a warranty management plan containing information relevant to the clause **Warranty of Construction** in FAR 52.246-21. Submit the warranty management plan for Government approval at least 30 days before the planned pre-warranty conference. In the event of phased turn-over of the contract, update the Warranty Management Plan as necessary to include latest information required. Include all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan shall be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below shall include due date and whether item has been submitted or was accomplished. Submit warranty information made available during the construction phase prior to each monthly pay estimate. Assemble information in a binder and turn over to the Government upon acceptance of the work. The construction warranty period shall begin on the date of project acceptance and shall continue for the full product warranty period. The Contractor, Government, including the Customer Representative shall jointly conduct warranty inspections, 4 months and 9 months, after acceptance. The warranty management plan shall include, but shall not be limited to, the following information:

- (1) Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the contractors, subcontractors, manufacturers or suppliers involved.
- (2) Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.
- (3) A list for each warranted equipment, item, feature of construction or system indicating:
 - (i) Name of item.
 - (ii) Model and serial numbers.
 - (iii) Location where installed.

- (iv) Name and phone numbers of manufacturers or suppliers.
- (v) Names, addresses and telephone numbers of sources of spare parts.
- (vi) Warranties and terms of warranty. Include one-year overall warranty of construction. Indicate those items, which have extended warranties with separate warranty expiration dates.
- (vii) Cross-reference to warranty certificates as applicable.
- (viii) Starting point and duration of warranty period.
- (ix) Summary of maintenance procedures required to continue the warranty in force.
- (x) Cross-reference to specific pertinent Operation and Maintenance manuals.
- (xi) Organization, names and phone numbers of persons to call for warranty service.
- (xii) Typical response time and repair time expected for various warranted equipment.
- (4) The Contractor's plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.
- (5) Procedure and status of tagging of all equipment covered by extended warranties.
- (6) Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

1.4.3. Performance Bond

1.4.3.1. The Contractor's Performance Bond will remain effective throughout the construction warranty period.

1.4.3.2. In the event the Contractor or his designated representative(s) fails to commence and diligently pursue any work required under this clause, and in a manner pursuant to the requirements thereof, the Government shall have a right to demand that said work be performed under the Performance Bond by making written notice on the surety. If the surety fails or refuses to perform the obligation it assumed under the Performance Bond, the Government shall have the work performed by others, and after completion of the work, may make demand for reimbursement of any or all expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

1.4.3.3. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Government will have the right to recoup expenses from the bonding company.

1.4.3.4. Following oral or written notification of required warranty repair work, the Contractor will respond as dictated by para. 1.4.5. Written verification will follow oral instructions. Failure of the Contractor to respond will be cause for the Government to proceed against the Contractor as outlined in the paragraph 1.4.5.5 and/or above.

1.4.4. Pre-Warranty Conference

Prior to contract completion, or completion of any phase or portion of contract to be turned over, and at a time designated by the Contracting Officer, the Contractor shall meet with the Government to develop a mutual understanding with respect to the requirements of this clause. Communication procedures for Contractor notification of warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Government for the execution of the construction warranty shall be established/reviewed at this meeting. In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor will furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue warranty work action on behalf of the Contractor. This point of contact will be located within the local service area of the warranted construction, will be continuously

available, and will be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of his responsibilities in connection with other portions of this provision.

1.4.5. Contractor's Response to Warranty Service Requirements.

Following Government oral or written notification, which may include authorized installation maintenance personnel, the Contractor shall respond to warranty service requirements in accordance with the "Warranty Service Priority List" and the three categories of priorities listed below. Submit a report on any warranty item that has been repaired during the warranty period. The report shall include the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the timeframe specified, the Government will perform the work and backcharge the construction warranty payment item established.

1.4.5.1. First Priority Code 1 Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.

1.4.5.2. Second Priority Code 2 Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.

1.4.5.3. Third Priority Code 3 All other work to be initiated within 3 work days and work continuously to completion or relief.

1.4.5.4. The "Warranty Service Priority List" is as follows:

- Code 1 - Air Conditioning System
 - (a) Buildings with computer equipment.
 - (b) Barracks, mess halls (entire building down).
- Code 2 - Air Conditioning Systems
 - (a) Recreational support.
 - (b) Air conditioning leak in part of building, if causing damage.
 - (c) Air conditioning system not cooling properly
 - (d) Admin buildings with Automated Data Processing (ADP) equipment not on priority list.
- Code 1 - Doors
 - (a) Overhead doors not operational.
- Code 1 - Electrical
 - (a) Power failure (entire area or any building operational after 1600 hours).
 - (b) Traffic control devices.
 - (c) Security lights.
 - (d) Smoke detectors and fire alarm systems
 - (e) Power or lighting failure to an area, facility, portion of a facility, which may adversely impact health, safety, security, or the installation's mission requirement, or which may result in damage to property.
- Code 2 - Electrical
 - (a) Power failure (no power) for unoccupied buildings or portions thereof or branch circuits within occupied buildings, not listed as Code 1.
 - (a) Receptacle and lights, not listed as code 1.

- Code 3 - Electrical
 - (a) Street, parking area lights
- Code 1 - Gas
 - (a) Leaks and breaks.
 - (b) No gas to cantonment area.
- Code 1 - Heat
 - (a) Area power failure affecting heat.
 - (b) Heater in unit not working.
- Code 2 Heat
 - (a) All heating system failures not listed as Code 1.
- Code 3 - Interior
 - (a) Floor damage
 - (b) Paint chipping or peeling
- Code 1 - Intrusion Detection Systems - N/A.
- Code 2 - Intrusion Detection Systems other than those listed under Code 1
- Code 1 - Kitchen Equipment
 - (a) Dishwasher.
 - (b) All other equipment hampering preparation of a meal.
- Code 2 - Kitchen Equipment
 - (a) All other equipment not listed under Code 1.
- Code 2 - Plumbing
 - (a) Flush valves not operating properly
 - (b) Fixture drain, supply line commode, or water pipe leaking.
 - (c) Commode leaking at base.
- Code 3 - Plumbing
 - (a) Leaking faucets
- Code 1 - Refrigeration
 - (a) Mess Hall.
 - (b) Medical storage.
- Code 2 - Refrigeration
 - (a) Mess hall - other than walk-in refrigerators and freezers.
- Code 1 - Roof Leaks
 - (a) Temporary repairs will be made where major damage to property is occurring.
- Code 2 - Roof Leaks
 - (a) Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.
- Code 1 - Sprinkler System

- (a) All sprinkler systems, valves, manholes, deluge systems, and air systems to sprinklers.
 - Code 1 - Tank Wash Racks (Bird Baths)
- (a) All systems which prevent tank wash.
 - Code 1 - Water (Exterior)
- (a) Normal operation of water pump station.
 - Code 2 - Water (Exterior)
- (a) No water to facility.
 - Code 1 - Water, Hot (and Steam)
- (a) Barracks (entire building).
 - Code 2 - Water, Hot
- (a) No hot water in portion of building listed under Code 1

1.4.5.5. Should parts be required to complete the work and the parts are not immediately available, the Contractor shall have a maximum of 12 hours after arrival at the job site to provide the Government, with firm written proposals for emergency alternatives and temporary repairs for Government participation with the Contractor to provide emergency relief until the required parts are available on site for the Contractor to perform permanent warranty repair. The Contractor's proposals shall include a firm date and time that the required parts shall be available on site to complete the permanent warranty repair. The Government will evaluate the proposed alternatives and negotiate the alternative considered to be in the best interest of the Government to reduce the impact of the emergency condition. Alternatives considered by the Government will include the alternative for the Contractor to "Do Nothing" while waiting until the required parts are available to perform permanent warranty repair. Negotiating a proposal which will require Government participation and the expenditure of Government funds shall constitute a separate procurement action by the using service.

1.4.6. Equipment Warranty Identification Tags

1.4.6.1. Provide warranty identification tags at the time of installation and prior to substantial completion shall provide warranty identification tags on all Contractor and Government furnished equipment which the Contractor has installed.

- (a) The tags shall be suitable for interior and exterior locations, resistant to solvents, abrasion, and to fading caused by sunlight, precipitation, etc. These tags shall have a permanent pressure-sensitive adhesive back, and they shall be installed in a position that is easily (or most easily) noticeable. Tag each component of contractor furnished equipment that has differing warranties on its components.
- (b) Submit sample tags, representing how the other tags will look, for Government review and approval.
- (c) Tags for Warranted Equipment: The tag for this equipment shall be similar to the following: Exact format and size will be as approved.

EQUIPMENT WARRANTY - CONTRACTOR FURNISHED EQUIPMENT

MFG NAME

MODEL NO.

SERIAL NO.

CONTRACT NO.

CONTRACTOR NAME

CONTRACTOR WARRANTY EXPIRES

MFG WARRANTY(IES) EXPIRE

EQUIPMENT WARRANTY - GOVERNMENT FURNISHED EQUIPMENT

MFG NAME

MODEL NO.

SERIAL NO.

CONTRACT NO.

DATE EQUIP PLACED IN SERVICE

MFG WARRANTY(IES) EXPIRE

(d) If the manufacturer's name (MFG), model number and serial number are on the manufacturer's equipment data plate and this data plate is easily found and fully legible, this information need not be duplicated on the equipment warranty tag

1.4.6.2. Execution: Complete the required information on each tag and install these tags on the equipment by the time of and as a condition of final acceptance of the equipment.

1.5. MECHANICAL TESTING, ADJUSTING, BALANCING, AND COMMISSIONING

Submit; all reports, statements, certificates, and completed checklists for testing, adjusting, balancing, and commissioning of mechanical systems prior to final inspection and transfer of the completed facility for approval, as specified in applicable technical specification sections.

1.6. OPERATION AND MAINTENANCE MANUALS

1.6.1. General Requirements

1.6.1.1. Inasmuch as the operations and maintenance manuals are required to operate and maintain the facility, the operations and maintenance (O&M) manuals will be considered a requirement prior to substantial completion of any facility to be turned over to the Government. Beneficial occupancy of all or portions of a facility prior to substantial completion will not relieve the Contractor of liquidated damages, if substantial completion exceeds the required completion date.

1.6.1.2. Provide one permanent electronic copy on CD-ROM and 2 hard copies of the Equipment Operating, Maintenance, and Repair Manuals. Provide separate manuals for each utility system as defined hereinafter. Submit Operations and Maintenance manuals for approval before field training or 90 days before substantial completion (whichever occurs earlier). If there is no separate CLIN for O&M Manuals, the Government will withhold an amount representing \$20,000, as non-progressed work, until submittal and approval of all O&M manuals are complete.

1.6.2. Definitions

1.6.2.1. Equipment

A single piece of equipment operating alone or in conjunction with other equipment to accomplish a system function.

1.6.2.2. System

A combination of one or more pieces of equipment which function together to accomplish an intended purpose (i.e. HVAC system is composed of many individual pieces of equipment such as fans, motors, compressors, valves, sensors, relays, etc.)

1.6.3. Hard Cover Binders

The manuals shall be hard cover with posts, or 3-ring binders, so sheets may be easily substituted. Print the following identification on the cover: the words "EQUIPMENT OPERATING, MAINTENANCE, AND REPAIR MANUALS," the project name, building number, and an indication of utility or systems covered, the name of the Contractor, and the Contract number. Manuals shall be approximately 8-1/2 by 11-inches with large sheets folded in and capable of being easily pulled out for reference. All manuals for the project must be similar in appearance, and be of professional quality.

1.6.4. Warning Page

Provide a warning page to warn of potential dangers (if they exist, such as high voltage, toxic chemicals, flammable liquids, explosive materials, carcinogens, high pressures, etc.). Place the warning page inside the front cover and in front of the title page. Include any necessary Material Safety Data Sheets (MSDS) here.

1.6.5. Title Page

The title page shall include the same information shown on the cover and show the name of the preparing firm and the date of publication.

1.6.6. Table of Contents

Each volume of the set of manuals for this project shall include a table of contents, for the entire set, broken down by volume.

1.6.7. GENERAL

Organize manuals according to the following format, and include information for each item of equipment. Submit a draft outline and table of contents for approval at 50% contract completion.

TABLE OF CONTENTS

PART I: Introduction

- Equipment Description
- Functional Description
- Installation Description

PART II: Operating Principles

PART III: Safety

PART IV: Preventive Maintenance

- Preventive Maintenance Checklist, Lubrication
- Charts and Diagrams

PART V: Spare Parts Lists

- Troubleshooting Guide
- Adjustments
- Common Repairs and Parts Replacement

PART VI: Illustrations

1.6.7.1. Part I-Introduction

Part I shall provide an introduction, equipment or system description, functional description and theory of operation, and installation instructions for each piece of equipment. Include complete instructions for uncrating, assembly, connection to the power source and pre-operating lubrication in the installation instructions as applicable. Illustrations, including wiring and cabling diagrams, are required as appropriate in this section. Include halftone pictures of the equipment in the introduction and equipment description, as well as system layout drawings with each item of equipment located and marked. Do not use copies of previously submitted shop drawings in these manuals.

1.6.7.2. Part II-Operating Principles

Part II shall provide complete instructions for operating the system, and each piece of equipment. Illustrations, halftone pictures, tables, charts, procedures, and diagrams are required when applicable. This will include step-by-step procedures for start-up and shutdown of both the system and each component piece of equipments, as well as adjustments required to obtain optimum equipment performance, and corrective actions for malfunctions. Show performance sheets and graphs showing capacity data, efficiencies, electrical characteristics, pressure drops, and flow rates here, also. Marked-up catalogs or catalog pages do not satisfy this requirement. Present performance information as concisely as possible with only data pertaining to equipment actually installed. Include actual test data collected for Contractor performance here.

1.6.7.3. Part III-Safety

Part III shall contain the general and specific safety requirements peculiar to each item of equipment. Repeat safety information as notes cautions and warnings in other sections where appropriate to operations described.

1.6.7.4. Part IV-Preventive Maintenance

Part IV shall contain a troubleshooting guide, including detailed instructions for all common adjustments and alignment procedures, including a detailed maintenance schedule. Also include a diagnostic chart showing symptoms and solutions to problems. Include test hookups to determine the cause, special tools and test equipment, and methods for returning the equipment to operating conditions. Information may be in chart form or in tabular format with appropriate headings. Include instructions for the removal, disassembly, repair, reassembly, and replacement of parts and assemblies where applicable and the task is not obvious.

1.6.7.5. Part V-Spare Parts List

Part V shall contain a tabulation of description data and parts location illustrations for all mechanical and electrical parts. The heading of the parts list shall clearly identify the supplier, purchase order number, and equipment. Include the unit price for each part. List parts by major assemblies, and arrange the listing in columnar form. Include names and addresses of the nearest manufacturer's representatives, as well as any special warranty information. Provide a list of spare parts that are recommended to be kept in stock by the Government installation.

1.6.7.6. Part VI-Illustrations

Part VI shall contain assembly drawings for the complete equipment or system and for all major components. Include complete wiring diagrams and schematics. Other illustrations, such as exploded views, block diagrams, and cutaway drawings, are required as appropriate.

1.6.8. Framed Instructions

Post framed instructions are required for substantial completion. Post framed instructions under glass or in laminated plastic, including wiring and control diagrams showing the complete layout of the entire system, including equipment, ductwork, piping valves, dampers, and control sequence at a location near the equipment described. Prepare condensed operating instructions explaining preventive maintenance procedures methods of checking the system for normal safe operation, valve schedule and procedures for safely starting and stopping the system in type form, framed as specified above for the wiring and control diagrams and posted beside the diagrams. Submit proposed diagrams, instructions, and other sheets prior to posting. Post the framed instructions before field training.

1.6.9. (Reserved. See 1.7 for Field Training)

1.6.10. System/Equipment Requirements

1.6.10.1. Facility Heating System

Provide information on the following equipment: boilers, water treatment, chemical feed pumps and tanks, converters, heat exchangers, pumps, unit heaters, fin-tube radiation, air handling units (both heating only and heating and cooling), and valves (associated with heating systems).

1.6.10.2. Air-Conditioning Systems

Provide information in chillers, packaged air-conditioning equipment, towers, water treatment, chemical feed pumps and tanks, air-cooled condensers, pumps, compressors, air handling units, and valves (associated with air-conditioning systems).

1.6.10.3. Temperature Control and HVAC Distribution Systems

Provide all information described for the following equipment: valves, fans, air handling units, pumps, boilers, converters and heat exchangers, chillers, water cooled condensers, cooling towers, and fin-tube radiation, control air compressors, control components (sensors, controllers, adapters and actuators), and flow measuring equipment.

1.6.10.4. Central Heating Plants

Provide the information described for the following equipment: boilers, converters, heat exchangers, pumps, fans, steam traps, pollution control equipment, chemical feed equipment, control systems, fuel handling equipment, de-aerators, tanks (flash, expansion, return waters, etc.), water softeners, and valves.

1.6.10.5. Heating Distribution Systems

Provide the information described for the following equipment: valves, fans, pumps, converters and heat exchangers, steam traps, tanks (expansion, flash, etc.), and piping systems.

1.6.10.6. Exterior Electrical Systems

Provide information on the following equipment: power transformers, relays, reclosers, breakers, and capacitor bank controls.

1.6.10.7. Interior Electrical Systems

Provide information on the following equipment: relays, motor control centers, switchgear, solid state circuit breakers, motor controller, EPS lighting systems, wiring diagrams and troubleshooting flow chart on control systems, and special grounding systems.

1.6.10.8. Energy Monitoring and Control Systems

The maintenance manual shall include descriptions of maintenance for all equipment, including inspection, periodic preventative maintenance, fault diagnosis, and repair or replacement of defective components.

1.6.10.9. Domestic Water Systems

Provide the identified information on the following equipment: tanks, unit process equipment, pumps, motors, control and monitoring instrumentation, laboratory test equipment, chemical feeders, valves, switching gear, and automatic controls.

1.6.10.10. Wastewater Treatment Systems

Provide the identified information on the following equipment: tanks, unit process equipment, pumps, motors, control and monitoring instrumentations, laboratory test equipment chemical feeders, valves, scrapers, skimmers, comminutors, blowers, switching gear, and automatic controls.

1.6.10.11. Fire Protection Systems

Provide information on the following equipment: alarm valves, manual valves, regulators, foam and gas storage tanks, piping materials, sprinkler heads, nozzles, pumps, and pump drivers.

1.6.10.12. Fire Alarm and Detection Systems

(1) The maintenance manual shall include description of maintenance for all equipment, including inspection, periodic preventive maintenance, fault diagnosis, and repair or replacement of defective components.

(2) Provide all software; database with complete identification of programmable portions of system equipment and devices, and all other system programming data on all modes of the system; connecting cables; and proprietary equipment necessary for the operation, maintenance, testing, repair and programming, etc. of the system and that may be required for implementation of future changes to the fire system (additional and/or relocated initiating devices, notification devices, etc.

(3) Provide all system and equipment technical data and computer software with the requisite rights to Government use, in accordance with the applicable contract clauses.

(4) Training shall include software and programming required for the effective operation, maintenance, testing, diagnostics and expansion of the system.

1.6.10.13. Plumbing Systems

Provide information on the following equipment: water heaters, valves, pressure regulators backflow preventors, piping materials, and plumbing fixtures.

1.6.10.14. Liquid Fuels Systems

Provide information on the following equipment: tanks, automatic valves manual valves, filter separators, pumps, mechanical loading arms, nozzles, meters, electronic controls, electrical switch gear, and fluidic controls.

1.6.10.15. Cathodic Protection Systems

Provide information on the following material and equipment: rectifiers, meters, anodes, anode backfill, anode lead wire, insulation material and wire size, automatic controls (if any), rheostats, switches, fuses and circuit breakers, type and size of rectifying elements, type of oil in oil-immersed rectifiers, and rating of shunts.

1.6.10.16. Generator Installations

Provide information on the following equipment: generator sets, automatic transfer panels, governors, exciters, regulators starting systems, switchgear, and protective devices.

1.6.10.17. Miscellaneous Systems

Provide information on the following: communication and ADP systems, security and intrusion alarm, elevators, material handling, active solar, photovoltaic, nurse call, paging, intercom, closed circuit TV, irrigation, sound and material delivery systems, kitchen, refrigeration, disposal, ice making equipment, and other similar type special systems not otherwise specified.

1.6.10.18. Laboratory, Environmental and Pollution Control Systems

Provide information on the following equipment: wet scrubbers, quench chambers, scrub tanks, liquid oil separators, and fume hoods.

1.7. FIELD TRAINING

Field Training is a requirement for substantial completion. Conduct a training course for the operating staff for each particular system. Conduct the training is to be conducted during hours of normal working time after the system is functionally complete. The field instructions shall cover all of the items contained in the Equipment Operating, Maintenance and Repair Manuals. The training will include both classroom and "hands-on" training. Submit a lesson plan outlining the information to be discussed during training periods. Submit this lesson plan for approval 90 days before contract completion before the field training occurs. Record training on DVD and furnish to the Government within ten (10) days following training. Document all training and furnish a list of all attendees.

1.8. PRICING OF CONTRACTOR-FURNISHED AND INSTALLED PROPERTY AND GOVERNMENT-FURNISHED CONTRACTOR-INSTALLED PROPERTY

Promptly furnish and require any sub-contractor or supplier to furnish, in like manner, unit prices and descriptive data required by the Government for Property Record purposes of fixtures and equipment furnished and/or installed by the Contractor or sub-contractor, except prices do not need to be provided for Government-Furnished Property.

1.9. LEED REVIEW MEETINGS

1.9.1. Pre-Closeout Meeting. Approximately 30 days before submittal of LEED closeout documentation, the Contractor and the Government's project delivery team (including Installation representative) will meet to review the documentation, determine which, if any, credits will be audited and identify any corrections/missing items prior to the closeout LEED documentation submittal.

1.9.2. Approximately 14 days after submittal of LEED closeout documentation, the Contractor and the Government's project delivery team (including Installation representative) will meet to review the LEED closeout documentation. The review conference will include discussion of and resolution of all review comments to ensure consensus on achievement of credits and satisfactory documentation. At the review conference a final score will be determined and endorsed in writing by all parties.

1.10. RED ZONE MEETING

At approximately 80% of contract completion or 60 days before the anticipated Beneficial Occupancy Date (BOD), whichever occurs first, the Contractor and the Government's project delivery team will conduct what is known as the Red Zone Meeting to discuss the close-out process, to schedule the events and review responsibilities for actions necessary to produce a timely physical, as well as fiscal, project close-out. The Red Zone meeting derives its name from the football term used to describe the team effort to move the ball the last 20 yards into the end zone. The close-out of a construction project sometimes can be equally as hard and most definitely requires the whole team's efforts. The ACO will chair the meeting. If not already provided, shortly before the meeting, the Contractor shall provide an electronic copy or access to the CADD as-built drawings, completed commensurate with the amount of work completed at the time of the Red Zone Meeting, as an indicator of the Contractors' understanding of and ability to meet the USACE CADD Standards and to ensure that the Contractor is making progress with CADD As-Built requirements. EXHIBIT 1 is a generic meeting checklist.

1.11. FINAL CLEANING

Clean the premises in accordance with FAR clause 52.236-12 and additional requirements stated here. Remove stains, foreign substances, and temporary labels from surfaces. Vacuum carpet and soft surfaces. Clean equipment and fixtures to a sanitary condition. Clean or replace filters of operating equipment if cleaning isn't possible or practicable. Remove debris from roofs, drainage systems, gutters, and downspouts. Sweep paved areas and rake clean landscaped areas. Remove waste, surplus materials, and rubbish from the site. Remove all temporary structures, barricades, project signs, fences and construction facilities. Submit a list of completed clean-up items on the day of final inspection.

1.12. INTERIM FORM DD1354 "TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY

Near the completion of Project, but a minimum of 60 days prior to final acceptance of the work, complete, update draft provided with the final design package(s) (see Section 01 33 16, paragraph 3.7.5) and submit an accounting of all installed property on Interim Form DD1354 "Transfer and Acceptance of Military Real Property." Include any additional assets/improvements/alterations and cost updates from the Draft DD Form 1354. Contact the COR for any project specific information necessary to complete the DD Form 1354. This form will be a topic for the Red Zone Meeting discussed above. For information purposes, a blank DD Form 1354 (fill-able) in ADOBE (PDF) may be obtained at the following web site: <http://www.dtic.mil/whs/directives/infomgt/forms/eforms/dd1354.pdf> Submit the completed Checklist for Form DD1354 of Government-Furnished and Contractor-Furnished/Contractor Installed items. Attach this list to the updated DD Form 1354. Instructions for completing the form ~~and a blank checklist (fill-able) in ADOBE (PDF)~~ may be obtained ~~at the following web site:~~through the US Army Corps of Engineers TECHINFO Website at <http://www.hnd.usace.army.mil/techinfo/> under publications, in Unified Facilities Criteria UFC 1-300-08. http://www.wbdg.org/ccb/DOD/UFC/ufc_1_300_08.pdf

EXHIBIT 1

SAMPLE

Red Zone Meeting Checklist

Date: _____

Contract No.		
Description / Location		
Contractor		
Contracting Officer		
Action	Completion Milestone	√
Inspections		
Fire		
Safety		
Pre-final		
Mechanical Test & Balance		
Commissioning		
Landscaping Complete		
Erosion Control		
Beneficial Occupancy Date (BOD)		
Furniture Installation		
Comm Installation		
As-Built Drawings		
Provide all O&M manuals, tools, shop drawings, spare parts, etc. to customer		
Training of O&M Personnel		
Provide Warranty documents to Customer		
Contract completion		
Final Inspection		

User move-in		
DD Form 1354, Transfer of Real Property completed & signed		
Ribbon cutting		
Payroll Clearances		
DD Form 2626 - Construction Contractor Performance Evaluation		
DD Form 2631 – A-E Performance Rated after Construction		
Status of Pending Mods and REA's/Claims		
Final Payment Completed		
Release of Claims		
Return of Unobligated Funds		
Move Project from CIP to General Ledger		
Financial completion		

End of Section 01 78 02.00 10

APPENDIX A
Geotechnical Information

Not Used

APPENDIX B
List of Drawings

Not Used

APPENDIX C
Utility Connections

Not Used

APPENDIX D
Results of Fire Flow Tests

Not Used

APPENDIX E
Environmental Information

Not Used

APPENDIX F
Conceptual Aesthetic Considerations

Not Used

APPENDIX G
GIS Data

Not Used

APPENDIX H
Exterior Signage

Not Used

APPENDIX I
Acceptable Plants List

Not Used

APPENDIX J
Drawings

Not Used

APPENDIX K Fuel Cost Information

The following utility rates for this installation are provided for design

Electrical:

Demand Charge - \$xx.xx per kilowatt

Energy Charge - \$ x.xx per kilowatt-hour Blended Rate - \$ x.xx per kilowatt-hour (blended annual energy and demand cost)

Natural Gas:

Commodity Charge Rate - \$ x.xx per thousand cubic feet

Water:

Commodity Charge Rate - \$x.xx per [volume]

Sewer:

Commodity Charge Rate - \$x.xx per [volume]

Purchased/Central Steam:

Commodity Charge Rate - \$x.xx per [unit of measure]

Purchased High Temperature Water:

Commodity Charge Rate - \$x.xx per [unit of measure]

Purchased Chilled Water:

Commodity Charge Rate - \$x.xx per [unit of measure]

APPENDIX L

LEED Project Credit Guidance

This spreadsheet indicates Army required credits, Army preferred credits, project-specific ranking of individual point preferences, assumptions guidance for individual credits, and references to related language in the RFP for individual credits.

LEED Credit Paragraph	LEED Project Credit Guidance	Army Guidance: Required - Preferred - Avoid		Project Preference Ranking: (1=most preferred, blank=no preference, X=preference not applicable to this credit; Rqd=required)	REMARKS
PAR	FEATURE				
<u>SUSTAINABLE SITES</u>					
SSPR1	Construction Activity Pollution Prevention (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met.	
SS1	Site Selection		X	See paragraph LEED CREDITS COORDINATION.	

SS2	Development Density & Community Connectivity - OPTION 1 DENSITY		X	See paragraph LEED CREDITS COORDINATION.
	Development Density & Community Connectivity - OPTION 2 CONNECTIVITY		X	See paragraph LEED CREDITS COORDINATION.
SS3	Brownfield Redevelopment		X	See paragraph LEED CREDITS COORDINATION.
SS4.1	Alternative Transportation: Public Transportation Access		X	See paragraph LEED CREDITS COORDINATION.
SS4.2	Alternative Transportation: Bicycle Storage & Changing Rooms	Pref		Bike racks are prohibited at certain facilities, as indicated in Statement of Work. Assume that non-transient building occupants are NOT housed on Post unless indicated otherwise.
SS4.3	Alternative Transportation: Low Emitting & Fuel Efficient Vehicles - OPTION 1			Requires provision of vehicles, which cannot be purchased with construction funds. Assume Government will not provide vehicles unless indicated otherwise. Assume that 50% of GOV fleet is NOT alternative fuel vehicles unless indicated otherwise.
SS4.3	Alternative Transportation: Low Emitting & Fuel Efficient Vehicles - OPTION 2	Pref		
SS4.3	Alternative Transportation: Low Emitting & Fuel Efficient Vehicles - OPTION 3			Requires provision of vehicle refueling stations. Installation must support type of fuel and commit to maintaining/supporting refueling stations.

SS4.4	Alternative Transportation: Parking Capacity	Pref		
SS5.1	Site Development: Protect or Restore Habitat			
SS5.2	Site Development: Maximize Open Space	Pref		Assume AGMBC option for aggregated open space at another location on the installation is not available to the project unless indicated otherwise.
SS6.1	Stormwater Design: Quantity Control	Pref		See paragraph STORMWATER MANAGEMENT AND LOW IMPACT DESIGN.
SS6.2	Stormwater Design: Quality Control	Rqd		See paragraph STORMWATER MANAGEMENT AND LOW IMPACT DESIGN.
SS7.1	Heat Island Effect: Non-Roof			
SS7.2	Heat Island Effect: Roof	Pref		See paragraph SITE SELECTION
SS8	Light Pollution Reduction	Pref		
<u>WATER EFFICIENCY</u>				
WEPR1	Water Use Reduction (Version 3 only)	Rqd	Rqd	All LEED prerequisites are required to be met.
WE1	Water Efficient Landscaping:	Rqd		See paragraph IRRIGATION. Project must include landscaping to be eligible for this credit.
WE2	Innovative Wastewater Technologies - OPTION 1			
WE2	Innovative Wastewater Technologies - OPTION 2			
WE3	Water Use Reduction	Rqd		See paragraph PLUMBING AND WATER CONSUMING

				EQUIPMENT.
<u>ENERGY AND ATMOSPHERE</u>				
EAPR1	Fundamental Commissioning of the Building Energy Systems (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met.
EAPR2	Minimum Energy Performance (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met.
EAPR3	Fundamental Refrigerant Management (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met.
EA1	Optimize Energy Performance	Rqd	1	Earning of LEED EA1 points as indicated in paragraph ENERGY CONSERVATION, as a minimum, is required.
EA2	On-Site Renewable Energy	Pref		See paragraph ENERGY CONSERVATION.
EA3	Enhanced Commissioning			See paragraph COMMISSIONING.
EA4	Enhanced Refrigerant Management			See paragraph MATERIALS AND RESOURCES.
EA5	Measurement & Verification	Rqd		Assume Government will not provide post-occupancy activities unless indicated otherwise.
EA6	Green Power		X	See paragraph LEED CREDITS COORDINATION.
<u>MATERIALS AND RESOURCES</u>				

MRPR1	Storage & Collection of Recyclables (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met. Coordinate with Installation during design development on collection service and receptacles.
MR1	Building Reuse			
MR2	Construction Waste Management:	Rqd		See paragraph CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT.
MR3	Materials Reuse			
MR4	Recycled Content:	Pref		See paragraph MATERIALS AND RESOURCES.
MR5	Regional Materials			See paragraph MATERIALS AND RESOURCES.
MR6	Rapidly Renewable Materials	Pref		See paragraph MATERIALS AND RESOURCES.
MR7	Certified Wood	Pref		See paragraph MATERIALS AND RESOURCES.
INDOOR ENVIRONMENTAL QUALITY				
EQPR1	Minimum IAQ Performance (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met.
EQPR2	Environmental Tobacco Smoke (ETS) Control (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met. Assume all buildings are smoke free unless indicated otherwise (family housing, barracks and other lodging are facility types where smoking may be

				permitted in some cases).
EQ1	Outdoor Air Delivery Monitoring			See paragraph BUILDING INTERIOR.
EQ2	Increased Ventilation			
EQ3.1	Construction IAQ Management Plan: During Construction	Pref		See paragraph BUILDING ENVELOPE SEALING PERFORMANCE REQUIREMENT.
EQ3.2	Construction IAQ Management Plan: Before Occupancy	Pref		See paragraph BUILDING ENVELOPE SEALING PERFORMANCE REQUIREMENT.
EQ4.1	Low Emitting Materials: Adhesives & Sealants	Pref		See paragraph DAYLIGHTING AND LOW EMITTING MATERIALS
EQ4.2	Low Emitting Materials: Paints & Coatings	Pref		See paragraph DAYLIGHTING AND LOW EMITTING MATERIALS
EQ4.3	Low Emitting Materials: Carpet/Flooring Systems	Pref		See paragraph DAYLIGHTING AND LOW EMITTING MATERIALS
EQ4.4	Low Emitting Materials: Composite Wood & Agrifiber Products	Pref		See paragraph DAYLIGHTING AND LOW EMITTING MATERIALS
EQ5	Indoor Chemical & Pollutant Source Control	Pref		System requiring weekly cleaning to earn this credit is not a permitted option unless indicated otherwise.
EQ6.1	Controllability of Systems: Lighting			
EQ6.2	Controllability of Systems: Thermal Comfort			
EQ7.1	Thermal Comfort: Design	Rqd		See paragraph DAYLIGHTING AND LOW EMITTING MATERIALS.
EQ7.2	Thermal Comfort: Verification			Project must earn credit EQ7.1 to be eligible for this credit. Assume

				Government will not provide post-occupancy activities unless indicated otherwise..
EQ8.1	Daylight & Views: Daylight 75% of Spaces	Pref		See paragraph DAYLIGHTING AND LOW EMITTING MATERIALS.
EQ8.2	Daylight & Views	Pref		
INNOVATION & DESIGN PROCESS				
IDc1.1	Innovation in Design			See paragraph INNOVATION AND DESIGN CREDITS AND REGIONAL PRIORITY CREDITS. Assume Government will not provide any activities associated with ID credits.
IDc1.2	Innovation in Design			
IDc1.3	Innovation in Design			
IDc1.4	Innovation in Design			
IDc2	LEED Accredited Professional	Rqd	Rqd	LEED AP during design and construction is required.
REGIONAL PRIORITY CREDITS (Version 3 only)				See paragraph LEED CREDITS COORDINATION.

APPENDIX M
LEED Owner's Project Requirements

Not Used

APPENDIX N
LEED Requirements for Multiple Contractor Combined Projects

Not Used

APPENDIX O
LEED Strategy Tables

Not Used

APPENDIX P

LEED Registration of Army Projects

15 April 2010

Number of Registrations

Each building must be registered separately, except multiple instances of a standard building on a shared site may be registered as a single project. If a single registration for multiple buildings is chosen, all buildings under the single registration must earn exactly the same points. Do not register buildings that are exempt from a specific LEED achievement requirement.

Typical Registration Procedure

1. Login, complete the online registration form (see guidance below) at the GBCI LEED Online website <http://www.gbci.org/DisplayPage.aspx?CMSPageID=174> and submit it online.
2. Pay the registration fee via credit card (USACE staff: credit card PR&C is funded by project design or S&A funds).
3. GBCI will follow up with a final invoice, the LEED-online passwords and template information.
4. The individual who registers the project online is, by default, the Project Administrator.

Completing the Registration Form

BEFORE YOU BEGIN:

Create a personal account with USGBC if you do not have one.

You will need the following information:

Project name as it appears in P2 (obtain from USACE Project Manager)

Building number/physical address of project

Zip code for Installation/project location

Anticipated construction start and end dates

Total gross area all non-exempt buildings in registration

Total construction cost all non-exempt buildings only (see Project Details Section instructions below)

ACCOUNT/LOGIN INFORMATION

1. The person registering the project **must have an account with USGBC** (login and password) to complete the form. Go to <http://www.gbci.org/>, click on "register a project" at the drop-down menu for project certification (at the top of the page) and select "register now for LEED 2009" to start the project registration process. If you have an account, login with your email address and password and select "register new project" to proceed. If you do not have an account, you may select "register a new account" and follow the instructions. It is recommended that you create an account separately on the USGBC website before you start the form. **IMPORTANT: USACE team members are members of USGBC and are eligible for Member prices. USACE team members registering projects should be sure to include the USACE Corporate Access ID in their personal account profile (if you do not have it contact richard.l.schneider@usace.army.mil or judith.f.milton@usace.army.mil for the number).**
2. The Account/Login Information section is filled out by the person registering the project. It may be a Contractor or a USACE staff member.

ELIGIBILITY SECTION

Follow directions (accepting the terms and conditions)

Review your profile information and make corrections if needed

RATING SYSTEM SELECTION SECTION

Select single project registration and I know which rating system.

Select the rating system - currently only LEED-NC and LEED for Homes are approved for Army use without special approval.

LEED Minimum Program Requirements: select YES

RATING SYSTEM RESULTS SECTION

Confirm selected rating system.

PROJECT INFORMATION SECTION

Project Title: Begin the project title with a one-word identifier for the Installation. Do not include the word "Fort". After this match the project name used in P2 (contact the USACE Project Manager for this information) and identify the building being registered. Example: "Stewart 4th IBC - DFAC".

Project Address 1 and 2: This is the physical location of the project. Provide building number, street address, block number or whatever is known to best describe the location of the project on the Installation.

Project City: Installation Name

State, Country, Zip Code: Self-explanatory

Anticipated Construction Start and End Dates: Self-explanatory – give your best guess if unknown. Note that required data entry format is: 1 or 2 digit month/1 or 2 digit date/4 digit year (example 3/23/2010)

Gross Square Footage: Provide total area all buildings in LEED project. Exclude the area of any buildings that are exempt from the LEED achievement requirement (for example, exclude an unconditioned storage shed to be constructed with a barracks complex).

Is Project Confidential: Indicate NO except, if project has security sensitivity (elements that are FOUO or higher security), indicate YES.

Notification of Local Chapter: Indicate NO unless Government/USACE Project Manager requests you to indicate YES.

Anticipated Project Type: Select the most appropriate option from the drop-down menu.

Anticipated Certification Level: Select the applicable option from the drop-down menu (Silver is the usual level).

PROJECT OWNER INFORMATION SECTION

Project Owner First Name, Last Name, email, phone, address: The Project Owner is the USACE Project Manager. Obtain this info from the USACE Project Manager.

Organization: U.S. Army Corps of Engineers. This field MUST be completed this way because it will be used as a search field by higher HQ to find all USACE registered projects. You may supplement it with district name at the end but DO NOT revise or use an acronym.

May we publish Owner information: Indicate NO

Owner Type: Pick Federal Government from drop-down menu.

Project Owner Assertion: Check the box

PAYMENT INFORMATION

Self-explanatory

APPENDIX Q
REV 2.1 – 30 SEP 2010
AREA COMPUTATIONS

Computation of Areas: Compute the “gross area” and “net area” of facilities (excluding family housing) in accordance with the following subparagraphs:

(1) Enclosed Spaces: The “gross area” is the sum of all floor spaces with an average clear height $\geq 6'-11"$ (as measured to the underside of the structural system) and having perimeter walls which are $\geq 4'-11"$. The area is calculated by measuring to the exterior dimensions of surfaces and walls.

(2) Half-Scope Spaces: Areas of the following spaces shall count as one-half scope when calculating “gross area”:

- Balconies
- Porches
- Covered exterior loading platforms or facilities
- **Covered but not enclosed spaces, canopies, training, and assembly areas**
- Covered but not enclosed passageways and walks
- Open stairways (both covered and uncovered)
- Covered ramps
- Interior corridors (Unaccompanied Enlisted Personnel Housing Only)

(3) Excluded Spaces: The following spaces shall be excluded from the “gross area” calculation:

- Crawl spaces
- Uncovered exterior loading platforms or facilities
- Exterior insulation applied to existing buildings
- Open courtyards
- Open paved terraces
- Uncovered ramps
- Uncovered stoops
- Utility tunnels and raceways
- Roof overhangs and soffits measuring less than 3'-0" from the exterior face of the building to the fascia

(4) Net Floor Area: Where required, “net area” is calculated by measuring the inside clear dimensions from the finish surfaces of walls. If required, overall “assignable net area” is determined by subtracting the following spaces from the “gross area”:

- Basements not suited as office, special mechanical, or storage space
- Elevator shafts and machinery space
- Exterior walls
- Interior partitions
- Mechanical equipment and water supply equipment space
- Permanent corridors and hallways
- Stairs and stair towers
- Janitor closets
- Electrical equipment space
- Electronic/communications equipment space

APPENDIX R

Preliminary Submittal Register

NOTE TO SPECIFIER:

1. Appendix R" will be a Adobe Acrobat pdf version of the Specifier completed "Sample Preliminary Submittal Register." The Sample Register is Excel Spreadsheet format of the RMS Input Form 4288A, which serves two purposes.
2. First, The Register allows the both Government and the Proposers to see and estimate the cost of the Division 00 and Division 01 submittals required by the contract in addition to the Contractor generated submittal register items developed during Design After Award.
3. Secondly, after award, the Government will provide the Contractor the actual Excel Spreadsheet for the Contractor to input the data into RMS to create the Submittal Register used during contract performance. See Section 01 33 00 (Submittal Procedures), paragraph 1.8 (Submittal Register) for the contract requirements.
4. For the contract or task order Solicitation, the Specifier must complete APPENDIX R, found at the following link:
<http://mrsi.usace.army.mil/rfp/Shared%20Documents/Sample%20Preliminary%20Submittal%20Register.xls> , save it as a PDF file and then upload it into the Wizard as Appendix R.
5. The RMS Input Form initially includes submittals required by the standardized Model RFP Division 00 and Division 01 Sections, except Section 01 10 00, paragraph 3. Examine the Special Contract Requirements, paragraphs 3 and 6 and any other locally developed portions of the RFP for required submittals and add them to the Input Form. Do not duplicate submittals already listed in the standardized RMS Input Form, because the Contractor needs to submit this information only once.
6. After award, the Government provides the Excel spreadsheet to the selected contractor to develop and input the RMS Input form for the submittal register required by paragraph 1.8 of Section 01 33 00, Submittals.