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UNIFIED FACILITIES CRITERIA (UFC)

ARMY TACTICAL EQUIPMENT MAINTENANCE FACILITIES (TEMF)

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U.S. ARMY CORPS OF ENGINEERS (Preparing Activity)

NAVAL FACILITIES ENGINEERING COMMAND

AIR FORCE CIVIL ENGINEER SUPPORT AGENCY

Record of Changes (changes are indicated by **1**\ ... /**1**/)

Change No.	Date	Location

FOREWORD

The Unified Facilities Criteria (UFC) system is prescribed by MIL-STD 3007 and provides planning, design, construction, sustainment, restoration, and modernization criteria, and applies to the Military Departments, the Defense Agencies, and the DoD Field Activities in accordance with USD(AT&L) Memorandum dated 29 May 2002. UFC will be used for all DoD projects and work for other customers where appropriate.

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- Unified Facilities Criteria (UFC) Index http://65.204.17.188//report/doc_ufc.html.
- USACE TECHINFO Internet site http://www.hnd.usace.army.mil/techinfo/index.htm.
- NAVFAC Engineering Innovation and Criteria Office Internet site http://criteria.navfac.navy.mil.
- Construction Criteria Base (CCB) system maintained by the National Institute of Building Sciences at Internet site http://www.nibs.org/ccb.

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ARMY TACTICAL EQUIPMENT MAINTENANCE FACILITIES (TEMF)

24 July 2003

Volume 1: PROJECT MANAGEMENT MANUAL

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CHAPTER 1
INTRODUCTION TO THE DESIGN-BUILD PROCESS AND IT'S APPLICATION TO THE ARMY TACTICAL EQUIPMENT MAINTENANCE FACILITY PROGRAM EXECUTION

1-1 PURPOSE AND ORGANIZATION.

1-1.1 Purpose. This document consolidates into one source the uniform criteria for the planning, design, solicitation, proposal evaluation, and construction of Tactical Equipment Maintenance Facilities. and associated support requirements. It also contains guidance on the use of negotiated, two-phase, design-build procedures for procurement of new and/or renovated facilities. It provides U.S. Army Corps of Engineers (USACE) Project Architects/Project Engineers (PA/PE), Project Managers (PM) and Major Army Command (MACOM) planners with a single source to guide the process of planning, developing, and executing projects utilizing competitively negotiated source selection processes.

1-1.2 Organization. This document is organized in two volumes. The first volume, this document, is the Project Management Manual which describes the process of planning, developing, and executing a two phase design-build project. Reference materials supporting the source selection process are provided in the appendices. The second volume is a generic model Request for Proposals (RFP) to be used in developing solicitations. The generic model follows the USACE Standard Contract Format for construction prescribed by EFARS 14.201-1(a)(1), (reference 1-1). The generic model STATEMENT OF WORK (SOW) in Volume II, contains the design criteria to be implemented for Army projects. This model, when edited for a specific site and project composition, will form the basis for an RFP. Detailed instructions for using the Project Management Manual, for editing the Project Management Manual appendices, and for editing the model solicitation are provided in Chapter 2 of this volume. Please note that contracting guidance contained in this document is provided as an outline and should not be used as a substitute for thorough knowledge of current acquisition regulations. If a conflict arises between this guidance and the acquisition regulations, the acquisition regulations shall govern.

1-2 THE DESIGN-BUILD APPROACH IN FACILITY CONSTRUCTION.

1-2.1 Background. Since the early 1980s, the Congress has urged the military services to explore alternative construction methods which have the potential to reduce costs and increase competition. An area of particular interest is procurement by nontraditional approaches such as design-build, which includes both design and construction in a single contract. In most cases, this procurement process can provide significant advantages over the traditional, two contract, design-bid-build methodology. Some of the advantages of the design-build process include the following:

1-2.1.1 Offerors are allowed freedom to optimize design and construction methods in meeting design program requirements.

1-2.1.2 The Government can achieve results (completed facilities) faster than with conventional design-bid-build techniques.

1-2.1.3 Having a single Contractor responsible for design and construction reduces disputes over the meaning of contract documents.

1-2.1.4 Negotiated procurement encourages the Government and Contractor to work together to optimize design objectives, construction cost, and construction time period.
1-2.1.5 Integration of construction professionals into the facility design process.

1-2.1.6 Can provide the Government with multiple design solutions to consider in response to the described need.

1-2.2 Definition. Design-build contracting results in a construction contract combining both the design and construction of a facility into a single contract. By comparison, in traditional design-bid-build contracting, design and construction are sequential and contracted for separately. There are a variety of design-build contracting methods; a two-phase selection procedure under FAR 36.3 (reference 1-2) is one of the types and is the methodology recommended.

1-2.3 General Procedures. In general, the design-build process uses an RFP to solicit for design and construction of a project by a single contractual entity. This entity may be a design-build firm, a joint venture between an architect-engineer (A-E) and a construction firm, a construction management firm joint venture with an A-E and a construction firm, a construction contractor prime with an A-E firm subcontractor, an A-E firm prime with a construction subcontractor, a construction management firm at risk, etc. A design-build RFP states the project minimum functional requirements, necessary design and engineering criteria, technical performance requirements, proposal submission requirements, and proposal evaluation factors. Potential contractors develop their proposals for the Government to evaluate competitively, with the contract award based on a combination of technical merit and price. Therefore, the contract is not awarded on the basis of initial construction cost alone, but also considers technical quality, offeror qualification and management expertise, proposed materials and systems life-cycle costs, aesthetics, and any other factors important to a specific project as identified in the RFP. This process is referred to as a “Best Value” procurement.

1-2.4 The Two-Phase Process (reference 1-2). This document will highlight the process for using the two-phase design build methodology. The Two-Phase Process, in summary, proceeds according to the following steps; a solicitation is issued which includes the general scope of work for the project, the project budget, the Phase One and Phase Two proposal submission requirements, all evaluation criteria to be used, and identifies the maximum number of proposals which will participate in the second phase of the solicitation. Offerors are requested to submit their narrative technical approach, their relevant experience and technical competence, their capability to perform, proposed key personnel, their past performance examples and some other general information. No cost or pricing information is requested or received in the Phase One process. Following completion of the Phase One proposal evaluations, the most highly qualified offerors (not more than five) will proceed to Phase Two and receive detailed technical requirements from which they will prepare their technical and cost proposal. Completion of the evaluation of Phase Two proposals will result in an award to the most highly qualified contractor whose proposal (offer) represents the best value solution to the solicitation. The two phase methodology is best utilized when several conditions of the solicitation are anticipated, most significant of these conditions are as follows:

1-2.4.1 Three or more offers are anticipated
1-2.4.2 Substantial expense to prepare technical proposals is expected
1-2.4.3 The following criteria must also be considered:
- 1-2.4.3.1 The extent to which the project requirements can be adequately defined
- 1-2.4.3.2 The time constraints for project delivery are known
- 1-2.4.3.3 The capability and experience of potential contractors
- 1-2.4.3.4 The capability of the design agent to manage a two-phase selection process
- 1-2.4.3.5 Any other specific criteria issued by the head of the Contracting Activity

1-2.5 Best Value and the Tradeoff Process. The tradeoff process is used when it is in the best interest of the Government to consider award to other than the lowest price offeror or the highest technically rated offeror. Under this process, both the cost and the non-cost factors are compared and analyzed and award is made to the proposal which provides the Government the best value based on the published evaluation criteria. Inherent in this process is the necessity to make tradeoffs considering the non-cost strengths and weaknesses, risks, and the cost (or price) offered in each proposal. The Source Selection

Authority will select the successful offeror by considering these tradeoffs and applying judgment to determine the proposal which represents the best value.

1-3 THE TACTICAL EQUIPMENT MAINTENANCE FACILITY (TEMF) PROGRAM.

This document addresses requirements for the MCA TEMF program.

1-3.1 Military Construction Program. Construction may be accomplished either by design-build methods or by conventional design-bid-build methods. Either methodology should result in a firm-fixed-price contract for the construction of the new facilities. Design-Build methodology is considered the preferred methodology for this program, however, if the Design-Construct Agent can provide ample supporting documentation that the design-build methodology is not suitable for a particular project, that information shall be forwarded through the appropriate Division Office for concurrence and consideration by HQ USACE.

1-3.2 Host Nation. Various host nations provide facilities to support the United States military presence in that country. When the host nation provides facilities, they will be constructed to the standards expressed in the SOW to the maximum extent practical.

1-3.2.1 Adjustments may be made to accommodate local conditions (i.e., vehicle parking, utility systems requirements) so long as they do not exceed the standards for normal United States military construction. To the extent practical, program management and design reviews will be accomplished at the local level in order to avoid delays to the host country's schedules. Architectural design will be sensitive to local aesthetic tastes.

1-3.2.2 Local building codes and standards may be used, except that United States life safety and fire protection standards will not be waived or otherwise compromised. Security fencing and lighting standards will be commensurate with the need. When the lawful or "normal construction practice" of the host country will not allow provision of certain amenities, such as air conditioning, supplemental funds may be programmed for timely completion of the additional work. Particular attention should be given to the local practice of long-term facility maintenance, which may differ from United States standards. Provisions will be made for the selection of materials and finishes that can be easily maintained.

1-3.2.3 Force Protection Measures. Force protection measures cannot be waived or reduced in any manner. Force protection requirements are mandatory.

1-4 LEGAL BASIS

1.4.1 FAR 36.3 (Reference 1-2) authorizes the use of the two-phase design-build process for military construction projects. Procedures for developing design-build projects are contained in ER 1180-1-9 (reference 1-4); CEMP-EA Memorandum, 25 August 1995, Delegation of Design Build Approval Authority; Design-Build Instructions (DBI) For Military Construction (reference 1-5), and Technical Requirements for Design-Build TI 800-03 (reference 1-6).

REFERENCES

1-1 FAR 15, "Contracting by Negotiation”
1-2 FAR 36.3, “Two-Phase Design-Build Selection Procedures”
1-3 Not Used
1-4 ER 1180-1-9, "Design-Build Contracting", 31 July 1999
1-5 "Design Build Instructions (DBI) For Military Construction", 29 October 1994
1-6 TI 800-03, "Technical Requirements for Design-Build," 1 July 1998

GENERAL ABBREVIATIONS

DB	Design-Build
PM	Project Manager
PA/PE	Project Architect/Project Engineer (Technical Point)
CS	Contract Specialist
TM	Army Technical Manual
ER	Army Engineer Regulation
PDT	Project Delivery Team
TEMF	Tactical Equipment Maintenance Facility
OSD	Office of the Secretary of Defense
USACE	U.S. Army Corps of Engineers
ACSIM	Assistant Army Chief of Staff for Installation Management and the Environment
SSEB	Source Selection Evaluation Board
SSA	Source Selection Authority
UFC	Unified Facilities Critieria
TOE	Table of Organization and Equipment
TDA	Table of Distribution and Allowances
IFTE	Integrated Forward Test Equipment
DOL	Directorate of Logistics
DPW	Directorate of Public Works

CHAPTER 2
UTILIZING THIS DOCUMENT FOR TEMF DESIGN-BUILD SOLICITATIONS

2-1 VOLUME I, USING THE PROJECT MANAGEMENT MANUAL.

2-1.1 The Project Management Manual provides a step by step discussion of the process of procuring facilities and associated supporting site improvements utilizing the two-phase design-build process. Each chapter describes a specific phase of the process, and the chapters are placed in project execution sequence. Checklists of activities are included at the end of most chapters. Project design teams are encouraged to review and modify these checklists to reflect the specific work assignments and methodologies of their specific Districts, the Activity Lead identification is only an example of a possible process. The appendices which follow the Project Management Manual are provided to facilitate the evaluation and source selection process. This chapter discusses the ways of using the Project Management Manual, its appendices, and the Model Request for Proposals (Volume 2).

2-2 VOLUME I, APPENDIX A, PHASE 1 EVALUATION MANUAL.

2-2.1 Appendix A will form the basis of the Phase 1 Evaluation Manual which establishes standards of acceptability and desirability with regard to recent relevant experience, past performance information, and key personnel. Specific requirements for demonstration of the offeror's capability and past performance are provided in Volume 2, Section 00110. Section 00120, PROPOSAL EVALUATION CRITERIA outlines the evaluation process for Phase 1 proposals. This appendix shall be reviewed and edited to suit project specific requirements and must be fully coordinated with RFP Sections 00110 and 00120.

2-3 VOLUME I, APPENDIX B, PHASE 2 EVALUATION MANUAL.

2-3.1 Appendix B will form the basis of the Phase 2 Evaluation Manual which is designed to be used by the team that evaluates the quality of offerors' proposals and assigns quality ratings to reflect the relative value to the Government. The Phase II Evaluation Manual must be coordinated with Volume 2 of this TI, Section 00120, PROPOSAL EVALUATION CRITERIA; Volume 2 Section 00110, PROPOSAL SUBMISSION REQUIREMENTS; and Volume 2, STATEMENT OF WORK. Although minor modification of these areas is acceptable to reflect unusual user requirements and site conditions, extensive modifications to format and content, in general, are discouraged.

2-4 VOLUME 2, MODEL REQUEST FOR PROPOSALS (RFP), EDITING NUMBERED SECTIONS.

2-4.1 Volume 2 has been compiled in the required contracting format for a Design-Build RFP, the USACE Contract Format. Contract clauses cited are for informational purposes and must be updated each time an RFP is prepared. Contracting guidance in this document is not to be used as a substitute for thorough knowledge of the current acquisition regulations. If a conflict arises between this guidance and the acquisition regulations, the acquisition regulations govern. A sample listing of the contract sections and their titles is shown below:

SECTION	TITLE
00010	SOLICITATION, OFFER AND AWARD (STANDARD FORM 1442) AND PRICING SCHEDULE
00100	INSTRUCTIONS, CONDITIONS AND NOTICES TO BIDDERS/OFFERORS, AND EVALUATION CRITERIA FOR AWARD
00110	PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS
00120	PROPOSAL EVALUATION CRITERIA
00600	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF BIDDERS/OFFERORS
00700	CONTRACT CLAUSES
00800	SPECIAL CONTRACT REQUIREMENTS

2-5 VOLUME 2, STATEMENT OF WORK, EDITING INSTRUCTIONS FOR NEW, REPLACEMENT, AND RENOVATED CONSTRUCTION.

2-5.1 Applicability. The STATEMENT OF WORK (SOW) is a narrative description of the project requirements and the associated site development requirements. In addition, the SOW contains some prescriptive requirements set forth by Federal Law or mandate and below which the proposed facilities would NOT be acceptable. The SOW should be used as a criteria document to develop projects for procurement by Design-Build or Design-Bid-Build methodologies. The SOW is organized in the following order and the subparagraphs which follow contain information for use when modifying the SOW.

SOW PARA. NO.	TITLE
1	DESIGN OBJECTIVES
2	FUNCTIONAL AND AREA REQUIREMENTS
3	SITE PLANNING AND DESIGN
4	SITE ENGINEERING
5	ARCHITECTURAL DESIGN
6	STRUCTURAL DESIGN
7	THERMAL PERFORMANCE

SOW PARA. NO.	TITLE
8	PLUMBING
9	ELECTRICAL SYSTEMS
10	HEATING, VENTILATING AND AIR CONDITIONING
11	ENERGY CONSERVATION
12	FIRE PROTECTION
13	SUSTAINABLE DESIGN

2-5.2 New and Replacement Construction. The model STATEMENT OF WORK is the standard for development of new and replacement TEMF and associated facilities. Local options for editing are shown in brackets where applicable. USACE design activities should edit the STATEMENT OF WORK to reflect site specific conditions. Upgrades of the stated criteria in response to installation requests must have been itemized and the required funding identified on the programming documents.

2-5.2.1 Where an installation expresses a particular desire for a finish or material, that information can be included in the Statement of Work and identified as a possible material quality increase (betterment) for additional consideration during the Phase 2 evaluation. Following that identification, a statement must be included that this identification is not authorization to exceed the maximum construction funds available for this project as indicated in Section 00010 of the solicitation.

2-5.2.2 Force Protection and Anti-Terrorism Considerations. All new construction and major renovation projects will require construction in accordance with applicable DoD standards. The current criteria is "DoD Antiterrorism Construction Standards". The standard is continually being updated and revised and the Design District shall ensure that the latest information is utilized in the packages prepared for solicitation.

2-5.2.3 Additions of prescriptive requirements to the statement of work is strongly discouraged as prescriptive requirements decrease the flexibility and innovation possible with the design build procurement methodology.

2-5.3 Using the STATEMENT OF WORK for Renovation.

2-5.3.1 Design Objectives and Criteria References. The intent of this document is to provide the Army with facilities which closely approximate similar facilities in the other DoD Armed Forces and which are comparable with those available in the commercial market in the United States. The technical criteria contained in the STATEMENT OF WORK rely on industry standards as references whenever possible to provide facilities comparable to private (commercial) construction. Objectives and criteria references are the same for new, replacement, and renovated construction.

2-5.3.2 Site Planning. The objectives of site planning are the same for new, replacement, and renovated construction. The goal is to provide tactical equipment maintenance facilities which are cost effective, integrate commercial standards, and provide a suitable environment in which to maintain the equipment. These facilities include administrative space, storage space, workshops, parking areas, and all other associated requirements. The site planning must consider the access to and from the facility and the constraints imposed by the tactical equipment being serviced. The internal relationships within the

facility must provide for an orderly transition from maintenance to active service as well as provide suitable access to areas for training and/or operations of the equipment.

2-5.3.3 Site Engineering. When site utilities are replaced or upgraded as part of a major renovation project, they should comply with the criteria as stated. New construction performed in connection with renovation will follow the criteria stated. Renovated construction should also consider requirements for soil treatment, decay treatment, contaminated solids, asbestos, lead based paint, and radon mitigation.

2-5.3.4 Architecture. The goal of the STATEMENT OF WORK as it applies to renovation is to provide a facility of equal usability to a newly constructed facility. Critical elements of the plan to be considered are the traffic patterns within and immediately outside the facility, fire protection/life safety considerations, the interior finishes, exterior modifications compatibility with the Installation Design Guide (IDG) recommendations, parking areas, and the ancillary support facilities necessary.

2-5.3.4.1 Functionality, Dimensions and Areas. In renovation, functionality goals are of primary importance. Minor deviations in minimum dimensions are acceptable to accommodate existing walls.

2-5.3.4.2 Life Safety, Fire Protection, and Sound Attenuation. Upgrading facilities to comply with construction standards for fire protection and sound attenuation is required.

2-5.3.4.3 Finishes. When upgrading facilities, comply with the SOW. Preserve existing good quality finishes, repairing whenever possible. Give careful consideration to retaining good quality finishes such as brick facing, roofing, ceramic tile, doors, windows, built-in equipment, and other reusable features.

2-5.3.5 Design - Structural. Comply with the criteria as stated.

2-5.3.6 Design - Thermal Performance. Base thermal performance decisions on life cycle cost analysis using the information contained in the Statement of Work as a starting point.

2-5.3.7 Design - Plumbing. Comply with the SOW., however, consider retaining existing plumbing fixtures which can be refinished or are suitable for reuse.

2-5.3.8 Design - Electrical. Comply with the SOW., however, consider retaining good quality or distinctive lighting fixtures.

2-5.3.9 Design - Heating, Ventilating and Air Conditioning (HVAC). Comply with the SOW. In renovation, pay special attention to energy conservation features. Equivalent and innovative approaches to meeting these criteria are encouraged.

2-5.4 Using the STATEMENT OF WORK for Historic Facilities. Historic facilities should be maintained in a way which preserves their historic significance, integrity, and military history. Significant materials, spaces, and features are as follows:

2-5.4.1 Planning and Programming. To preserve historic character, significant interior and exterior features must be identified and documented prior to programming a project for renovation of historic facilities. Concerned parties including the State Historic Preservation Officer (SHPO), installation planning and maintenance staff, design architects and engineers, and facility users should agree on the scope, intent, and preservation objectives of a proposed project. When agreement cannot be achieved with the SHPO, the Advisory Council on Historic Preservation may be called upon to achieve resolution. Preserving historic character takes precedence over full compliance with the criteria in the STATEMENT OF WORK.

2-5.4.2 Life Safety and Fire Protection. Life safety and fire protection requirements will be met to provide protection to the occupants, the building, and its historic features. Protection will by accomplished by means which are unobtrusive and do not degrade the historic features of the building.

2-5.4.3 Features and Finishes. Preservation of historic features, finishes, and spaces is of primary importance. Repair using matching materials is the best approach. Historic features may include landscaping, site features, building materials, and features of the building plumbing, mechanical and electrical systems (e.g., plumbing fixtures, fireplaces, grilles, radiators, stoves, lighting fixtures).

2-5.4.4 Historic Structures. The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings is the primary source of information on the treatment of historic structures. Chapter 16 of Technical Instructions, Design Criteria, (TI 800-01) provides sources and additional information on historic preservation laws, regulations, definitions, design issues, and available treatment resources.

2-6 VOLUME 2, EDITING THE ATTACHMENTS TO THE STATEMENT OF WORK.

2-6.1 The ATTACHMENTS reflect project specific requirements and should be edited to suit the project. See the following table for a summary of ATTACHMENTS and notes:

ATTACHMENTS		
NO.	**TITLE**	**NOTES**
1	TECHNICAL SPECIFICATIONS	USACE Design activity to provide
2	RESERVED	
3	RESERVED	
4	NOT USED	
5	PROPOSAL DRAWING FORMAT	USACE Design Activity title block, format, symbols, etc.
6	SITE AND LOCALITY MAPS	USACE Design Activity to provide.
7	PROJECT AND SAFETY SIGNS	USACE Design Activity to provide, samples included with in Volume 2.
8	GEOTECHNICAL REPORT	USACE Design Activity to provide.
9	EXCERPTS FROM THE INSTALLATION DESIGN GUIDE.	USACE Design Activity to provide.
10	FIRE FLOW DATA	USACE Design Activity to provide.

ATTACHMENTS		
NO.	**TITLE**	**NOTES**
11	LIST OF DRAWINGS	USACE Design Activity to provide.
12	ASBESTOS AND LEAD PAINT SURVEY RESULTS	USACE Design Activity to provide. This attachment will only be used for projects which include demolition requirements.

2-6.2 Technical Specifications. The technical specifications included in the solicitation as Attachment #1 to the statement of work represent the project administration type specifications. Inclusion of USACE guide technical specifications into the design build package is discouraged.

CHAPTER 3
PROJECT DEVELOPMENT AND SITE SELECTION

3-1 PROJECT DEVELOPMENT.

3-1.1 Programming is the responsibility of the military installation, Army Major Command (MACOM), and the Assistant Chief of Staff for Installation Management (ACSIM). The U.S. Army Corps of Engineers (USACE) is responsible for execution. This chapter addresses the process of project development from the perspective of USACE validation of the project developed by the installation, and validated by the MACOM and ACSIM. USACE activities may provide programming assistance on a reimbursable basis and are encouraged to offer this service to the Installations they support. Programming should conform to the requirements of AR 210-50 (reference 3-1), and AR 415-15 (reference 3-2).

3-2 PROJECT PROGRAMMING.

3-2.1 The Department of the Army shall provide suitable facilities for military personnel to service and maintain, service, and repair tactical equipment. In planning, the following should be considered:

3-2.1.1 Project Scope and Cost Limits. The scope of each construction project will provide for land planning, site preparation, design, construction, equipment, and support facilities such as roads, streets, walks, utility systems, parking, and hardstands. The maximum project cost, including supervision and administration costs, are fixed when Congress approves the programming documents.

3-2.1.2 Programming. Close attention must be given to preliminary planning actions. The Department of Defense (DoD) relies on the programming documents which result from preliminary planning accomplished by the military installations to support the program presented to Congress. After legislative enactment, project scope revisions due to inadequate preliminary planning can result in project cancellation.

3-3 PROJECT DOCUMENTATION, REVIEW, AND CERTIFICATION.

3-3.1 The programming document, DD Form 1391, is the product of the investigations described in this chapter. The DD Form 1391 should accurately reflect the project scope in terms of the facility (building) type, facility size limitations, facility development criteria, site development requirements, supporting utility upgrades, sustainability issues, demolition (as applicable), estimated design costs for design build projects and all other anticipated costs to accomplish the project.

3-3.1.1 In accordance with AR 415-15, Paragraph 3-5, (reference 3-2), the USACE Major Subordinate Command (MSC) will review the project documentation submitted by the MACOM for compliance with technical standards, criteria, and cost engineering requirements and realism. This chapter outlines specific requirements which must be checked. This programming documentation review will include a site visit.

3-3.1.2 Once the review has been completed and revisions made, the MSC will forward to the MACOM a statement that the project scope and anticipated costs comply with Army standards, criteria, and cost engineering considerations, that deviations indicated are justified, and that sufficient information is available to commence the RFP process. In addition, this statement will list those outstanding issues that must be resolved before budget submission to prevent project delay or loss.

3-4 ENVIRONMENTAL EFFECTS.

3-4.1 In accordance with the requirements of the National Environmental Policy Act (NEPA) 42 USC 4321-4361 (reference 3-3) environmental effects will be considered in the planning of projects. A

preliminary environmental assessment should be made, by the installation, at the earliest stages of project development. A written environmental assessment will be prepared for all projects and made a part of the planning record. For those projects having a significant impact on the environment, or anticipated to be controversial, an environmental impact statement will be prepared and processed in accordance with DoD Directive 6050.1 (reference 3-4) and AR 200-2 (reference 3-5).

3-5 SITE SELECTION.

3-5.1 Site Selection. Selection of candidate sites must be based on a thorough site analysis. The site analysis consolidates and documents the potential site opportunities and constraints that will ensure the site meets the program requirements. The site analysis should be used to develop a TEMF area development plan that will reflect a compatible and functional area development that emphasizes optimal use of the site elements with the least disruption to the existing natural environment.

3-5.1.1 Installation Real Property Master Plan Documents. The recommendations of the installation Real Property Master Plan which concern the candidate site and/or TEMF in general should be documented.

3-5.1.1.1 Installation Real Property Master Plan. Installation Real Property Master Plans may include TEMF area requirements. Master plans provide comprehensive documentation of existing conditions of the natural, man-made and human resources of the installation as a whole. It guides the future land use development and provides for the orderly growth of the installation. Master planning is accomplished in accordance with AR 210-20 (reference 3-7) and TM 5-803-1 (reference 3-8).

3-5.1.1.2 Installation Design Guide. The Installation Design Guide provides guidelines for creating a visually consistent, harmonious, and attractive installation. The recommendations of the design guide must be considered in the facilities layout and design. The Installation Design Guide is developed in accordance with TM 5-803-5 (reference 3-9).

3-5.1.2 Site Analysis. Provide a documented analysis of on-site and adjacent off-site existing conditions and evaluate the impacts these conditions have on the program requirements. Complete documentation of the analysis and evaluation are important as a thorough site analysis is fundamental to a responsible area development plan and site design. The site survey map is the base map for the site analysis. The analysis and evaluation include the following in accordance with guidance discussed in TM 5-803-14 (reference 3-6):

3-5.1.2.1 Off-Site Conditions.

3-5.1.2.2 Land Use.

3-5.1.2.3 Transportation Systems. A site traffic impact analysis should determine the proper location and design of site access. The analysis should consider the trip generation and design-hour volumes, trip distribution and traffic assignment, existing and projected volumes, capacity analysis, traffic accident analysis, and traffic improvement plan.

3-5.1.2.4 Utilities. Because of the high cost of constructing utility mains, proximity to existing utilities such as water, electricity, gas, storm and sanitary sewer, and provision for gravity flow in storm and sanitary sewers should be discussed. The impact of the proposed project on the existing utility systems and the proximity to existing utilities should be evaluated. The cost of providing appropriate utility support for the proposed project will be addressed.

3-5.1.2.5 Environmental Conditions and Hazards. Clearance from sewage treatment plant. Minimum - conservation safety distances from ordnance activities. Special storm drainage or storm water management requirements.

3-5.1.2.6 Historical or archaeological resources.

3-5.1.2.7 Safety Hazards. Proximity to airfields, ordnance, and other sources of hazards.

3-5.1.2.8 Physical Security. Force Protection Considerations (See specific guidance)

3-5.1.2.9 Sources of Air, Noise, or Light Pollution. Proximity to airfields, highways, and other sources of noise.

3-5.1.2.10 Visual Conditions.

3-5.1.2.11 On-Site Conditions.

3-5.1.2.12 Subsurface Conditions. A geotechnical investigation must be conducted for each project. A site requiring extensive excavation of bedrock should be avoided. Soils should be suitable to support construction project requirements.

3-5.1.2.13 Topography. Sites requiring excessive cut and fill should be avoided.

3-5.1.2.14 Hydrology. Site requiring an elaborate drainage system should be avoided.

3-5.1.2.15 Not Used.

3-5.1.2.16 Climate.

3-5.1.2.17 Microclimate. Potential for passive solar orientation.

3-5.1.2.18 Vegetation.

3-5.1.2.19 Wildlife Habitat.

3-5.1.2.20 Environmental Conditions and Hazards. An investigation should be conducted to determine if the site contains radon or other substances that will impact on the safe use of the site for facilities. Determine that the site is free of Hazardous and Toxic Waste (HTW) to include the following:

3-5.1.2.20.1 Soil contamination.

3-5.1.2.20.2 Underground storage tanks (UST).

3-5.1.2.20.3 Solid waste disposal.

3-5.1.2.20.4 Leaking fuel lines.

3-5.1.2.20.5 Ground water contamination.

3-5.1.2.20.6 Ordnance impact waste.

3-5.1.2.20.7 Former oil and hazardous spill sites, gas leakage, etc.

3-5.1.2.21 Historic or archaeological resources. An archeological investigation should be conducted for sites being considered to ensure that the sites do not include anything that will prohibit their use.

3-5.1.2.22 Visual Conditions.

3-5.1.2.23 Wetlands Protection.

3-5.1.3 Site Opportunities and Constraints. Provide the evaluation as a written and graphic summary of site opportunities and constraints for TEMF. The documentation should show the boundaries and acreage, the number and types of facilities to be situated on the land, any waivers, conditions or restrictions, and the points of connection to the required utility systems. Footprints of the facilities within the site boundaries are not required.

3-6 SITE VERIFICATION.

3-6.1 Based upon the site opportunities and constraints and comparison to the program requirements, verify that the site meets the project requirements. The validation of a site will be in accordance with specific guidance issued for each project in the Code 1 Design Directive. The USACE activity (design agency) should verify, as a minimum, the following planning areas of the selected site:

3-6.1.1 Suitability of the existing utility infrastructure to support the new development.

3-6.1.2 Consideration of the mitigation of negative effects on the environment from the proposed development.

3-6.1.3 Adequacy of the selected site to suit the proposed development

3-7 COST ESTIMATES.

3-7.1 Cost estimates for the site procurement and/or required improvements to the site to support the new development will reflect the impact of the findings from the above investigations. This information must also be forwarded to the MACOM for input into the programming documents.

REFERENCES

3-1 AR 415-50,
3-2 AR 415-15, "Army Military Construction Program Development and Execution," 4 Sept 1998
3-3 National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190), January 1, 1970, 42 USC 4321-4361
3-4 DoD Directive 6050.1, "Environmental Effects in the United States of DoD Actions," July 30, 1979
3-5 AR 200-2, "Environmental Effects of Army Actions," 23 December 1988
3-6 TM-5-803-14, "Site Planning and Design," 14 October 1994
3-7 AR 210-20, "Master Planning of Army Installations," 30 July 1993
3-8 TM-5-803-1, "Installations Master Planning," 13 June 1986
3-9 TM-5-803-5, "Installation Design," 1 March 1981

CHAPTER 4
CODE 1 ACTIVITIES

4-1 PROJECT INITIATION - CODE 1 DIRECTIVE.

4-1.1 Directive. All MILCON project designs are initiated by directive from HQUSACE (CEMP-MA). The Design Code 1 shown on the directive is normally the initial design authorization and allows for selection of a support architect-engineer (A-E), accomplishment of site investigation work including topographic surveys, subsurface and utilities investigations, and other work identified in AR 415-15 (reference 4-3) or, to the extent defined by special instructions of individual directives.

4-1.2 Project Management. The USACE Project Manager (PM), in consultation with the PDT, should establish an overall project schedule as soon as possible after receipt of the Code 1 Directive. Normally, this should be completed within the first 30 days and entered into Project Reporting and Management Information System (PROMIS). Financial management data should be entered in the Corps of Engineers Financial Management System (CEFMS) as well as in PROMIS. The PM is responsible for complying with the requirements of ER 5-1-11 (reference 4-1). The duties and responsibilities described in the following chapters belong collectively to the PM and the members of the project delivery team.

4-1.3 In-house Versus A-E Solicitation Development. The Phase 1 portions of the solicitation should be prepared by the in-house staff whenever possible. The decision whether the technical requirements of Phase 1 of the solicitation are to be developed using in-house staff or by contract A-E is critical to scheduling. All technical criteria, (the statement of work (SOW), and any attachments to the SOW, drawings, Section 00110, PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS and Section 00120, PROPOSAL EVALUATION CRITERIA, and any other technical information) are developed by the respective technical specialists from the USACE Design District or the contract A-E firm in close coordination with the customer and user. The preparation of the RFP sections normally referred to as the 'contract' (Section 00010-00800) are prepared by the PDT Contract Specialist with the exception of Section 00110, PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS and Section 00120, PROPOSAL EVALUATION CRITERIA. Section 00010 is developed by the CS with input from the PM and the Cost Engineer. The decision on whether to use In-house personnel or an A-E for development of Phase 2 requirements depends on the availability and expertise of in-house technical staff as well as the District expected workload. In-house preparation is the preferred method. Advantages of preparing the RFP documents in-house include:

4-1.3.1 The level of knowledge and understanding of the competitive negotiations and the proper preparation for the source selection process is directly related to staff involvement in the development of the RFP documents.

4-1.3.2 Technical personnel become involved and familiar with the project from the start.

4-1.3.3 Expertise in design-build procurement is developed and maintained.

4-1.3.4 Considerably more cost and staff time may be required for the use of an A/E contractor, providing direction, information, and review of an A-E developed RFP document package.

4-1.3.5 In-house staff should have the needed familiarity with standards, criteria, and installation requirements. Consultant A/E firms are not generally familiar with RFP preparation and performance oriented criteria.

4-1.3.6 The team that prepared the RFP stays with the project, participates in the proposal technical reviews, may participate in the evaluation of proposals, reviews of design submissions after contract award, and provides technical support to the construction field office.

4-1.4 Combination In-House – A-E Solicitation Development. In many instances it may not be possible to completely staff the project team with in-house technical specialists either due to workload or availability of the required expertise. The integration of a team of technical specialists, some from a consultant firm, working with the available in-house technical specialists can provide a suitable solution. In this teaming arrangement it is imperative that the PM focus the team members and orchestrate a responsibility matrix to ensure that all tasks are being addressed by in-house staff or the consultant staff. Of particular concern would be the final assembly of the document and the Quality Assurance Checking to assure completeness and lack of internal conflicts.

4-1.5 Project Delivery Team. The project delivery team is lead by the PM. The team members include the technical disciplines and interested parties needed to successfully execute the project. Composition of the team will change as the project progresses through the two phases of the solicitation. At this initial stage of the project, the project delivery team should include at least the following members:

4-1.5.1 Customer Representative or Customer Project Manager
4-1.5.2 MACOM Representative
4-1.5.3 USACE Project Manager
4-1.5.4 Contracting.
4-1.5.5 Legal.
4-1.5.6 PA/PE supplemented by technical specialists as necessary.
4-1.5.7 Environmental specialist.
4-1.5.8 Construction representatives.
4-1.5.9 Cost Engineer

4-2 SCOPE VERIFICATION.

4-2.1 Scope of Work. The PM should ensure that a complete scope of work is available to the project team developing the RFP document. The first opportunity to accomplish this is through a thorough review of the project DD Form 1391, including the back-up data.

4-2.2 Programming. A comparison of the project DD Form 1391 to the topics addressed in Chapter 3 will provide an outline of things that should have been addressed in the programming of the project.

4-2.3 Clarification. Clarification should be requested from the installation, Army Major Command (MACOM), USACE Major Subordinate Command (MSC), and HQUSACE if conflicts exist or if data are omitted from the documentation.

4-3 PROJECT DEFINITION CONFERENCE.

4-3.1 This initial pre-solicitation development conference is normally held at the installation, and is a directed activity by HQUSACE. The PM schedules the conference with representatives of the user, MACOM, and USACE. This conference is very important because it establishes the procedures and responsibilities for all subsequent activities and identifies the roles of the entire project team. The conference is also the PM's opportunity to ask questions and to satisfy him/herself that the project scope and constraints are accurately reflected in the project DD Form 1391.

4-3.2 The PM is responsible for explaining to the user the Two Phase Design-Build process and his or her role as the leader of the PDT. Unless the user has recently participated in a two phase design build project, he/she may be unaware of the possibilities and restraints imposed by process and the applicable regulations. This lack of knowledge will cause confusion and frustration, and is best addressed at the start of the project. If the PM is not sufficiently knowledgeable about the two phase design-build process he or she shall request support from a local expert from Engineering or Contracting or shall request, fund, and coordinate support from a sister District or from HQ USACE. It is imperative to the success of the project that the customer become familiar with the process and the responsibilities they will have during the entire process.

4-3.3 This initial conference sets the stage for the coming Data Gathering Conferences and Charettes.

4-4 SITE INVESTIGATION.

4-4.1 Drawings. Site Survey drawing(s) at 1:500 [approximately 1" = 40'] showing site boundaries; existing utilities with their sizes; access roads; topographic survey with contours at a maximum spacing of 500 mm [or 2-foot] intervals (Design Districts are encouraged to utilize contours at 250 mm [or 1 foot] intervals where appropriate for the selected site); existing structures; endangered wildlife; wetlands boundaries; specific trees or groups of trees to be retained; areas set aside for future facilities; and the locations of the preliminary soil borings. Installation Real Property Master Plan drawing(s) showing the immediate area of the master plan, project site, surrounding area, primary circulation patterns through the site, mandatory streets (when required), and any other data necessary for site development should be at a smaller scale.

4-4.1 The technical portions of each solicitation should include a Site Analysis and Development Plan. The preliminary identification of these material requirements and their availability should be addressed at the Project Definition Conference.

4-4.3 Site Analysis.

4-4.3.1 Fixed-site boundaries should be indicated that provide the acreage of buildable land that will result in a well developed TEMF. The acreage of buildable land should include provisions for building setback lines, force protection considerations, and construction limits as well as any anticipated expansion requirements.

4-4.3.2 Topography and the preliminary Geotechnical Report will be of such quality and quantity as to permit proposers to prepare their proposals without the need for additional extensive site investigations. Investigations shall be performed to a level which assures adequate information to determine the general type of structure best suited to the site conditions and sufficient to ascertain the costs of the project.

4-4.3.3 Mandatory site planning considerations, such as access to future project sites and any required utility stub-outs and sizing should be determined and indicated as requirements in the STATEMENT OF WORK.

4-4.3.4 Utilities and Energy Studies. Utilities, fuel selection, and energy conservation studies should also be completed under the Code 1 Design Directive.

4-4.3.5 Documented site opportunities and constraints.

4-5 CODE 1 ACTIVITIES MATRIX.

4-5.1 AR 415-15 (reference 4-3) code 1 allows “site investigation work, preparation of pre-design cost estimate, and other pre-design work to the extent defined by special instructions of individual directives. Selection and negotiation (not award) of an architect-engineer (A-E) contract for design is also authorized. The AR has a complete section (para 5-6) that lists what is expected. The PM will ensure that the following activities are accomplished:

CODE 1 ACTIVITIES	Activity Lead			
	Customer	PM	PA /PE	CS
a. Verify design start-up funds were provided with the Code 1 Directive. (If not, request funds as soon as possible)		X		

CODE 1 ACTIVITIES	Activity Lead			
	Customer	PM	PA /PE	CS
b. Verify the selected site is on the approved Real Property Master Plan. (If not, ask Installation if a request for a Real Property Master Plan revision has been initiated.)	X	X		
c. Provide Real Property Master Plans of the Installation indicating the locations of the existing utilities and roads on and adjacent to the proposed project site.	X			
d. Check to see if a topographic survey and Geotechnical investigation have recently been performed.		X	X	
e. Determine if a topographic survey and/or Geotechnical investigation will be completed by in-house staff or contract A/E. Initiate necessary A/E actions.		X	X	
f. Determine if energy conservation, passive/active solar studies have been completed by the Installation or need to be accomplished.		X	X	
g. Provide any existing fuel and utilities studies applicable to the project site.	X			
h. Obtain confirmation that an Environmental Assessment (EA) or Environmental Impact Statement (EIS), as applicable, has been prepared and approved.		X		
i. Request site category code from the Installation to determine if hazardous materials are present and need to be abated in accordance with AR 200-1 (Reference 4-2)	X	X		
j. Review the project scope and the Programmed Amount (PA). Site development costs can normally be expected to be 25 to 40% of the project cost.	X	X	X	
k. Establish the initial project delivery team.	X	X	X	
l. Develop the project schedule and enter in PROMIS		X		
m. Schedule Project Definition Conference. Notify participants in writing of the meeting date, time, and place.		X		
n. Prepare and Staff Acquisition Plan		X	X	X

REFERENCES

4-1 ER 5-1-11, "Programs and Project Management", 27 Feb 1998
4-2 AR 200-1, "Environmental Protection and Enhancement," 21 Feb 1997
4-3 AR 415-15, “Army Military Construction Program Development and Execution”, 04 Sep 98

CHAPTER 5
DEVELOPING A REQUEST FOR PROPOSALS (RFP)

5-1 DESIGN INITIATION.

5-1.1 Code 3 Directive. The Code 3 Design Directive authorizes the Parametric Effort/Design and the development of budget cost estimate (ENG Form 3086). The Project Manager (PM) is responsible for initiating the request for a Code 3 Design Directive after completion of Code 1 activities. The Code 3 Directive contains special instructions which must be carefully read. These instructions may include requirements of significant impact on the project.

5-1.2 Cost Adjustments. Although the facility cost may be dictated by budget guidance, USACE design activities have the opportunity to revise the cost estimate based on the increased knowledge of the scope and the attributes of the site selected. USACE design activities are required to submit a revised cost estimate, indicating revisions to scope, unique requirements, and/or special site requirements. This submittal shall be made on ENGR Form 3086, and shall be submitted to HQUSACE, not later than 1 August of the program year, and must be submitted prior to the request for Code 7 Design Directive. AR 415-15 (reference 5-1) provides additional information.

5-1.3 Code 7 Directive. The Code 7 Design Directive is the authorization to prepare the RFP documents. No specific RFP development activities shall take place prior to receipt of the Code 7 Design Directive.

5-2 DATA GATHERING CONFERENCES.

5-2.1 Prior to developing the draft RFP the PDT shall hold at least one data gathering conference at the installation. This conference must include all the members of the project team as well as installation local staff familiar with utilities and specific information about the installation and the project site specifically. The PM shall generate an attendance list and agenda for each conference.

5-2.2 The data gathering conference may also be completed as a design charette in which the initial development of the project siting and design requirements are categorized. This charette must include staff from the installation, the MACOM, the USACE design District, the USACE construction Division, as well as any A-E who will be participating in the development of the RFP. The charette is typically held at the installation to allow as many customer participants as possible. The PM shall be responsible for documenting all results and decisions reached at the design charette.

5-2.3 It is imperative that at the completion of the data gathering conference that a list of information still required to complete the draft RFP be identified and the following information identified for each item:

5-2.3.1 Person responsible for obtaining the information
5-2.3.2 Person who requires the information
5-2.3.3 The date the information is required without project schedule slippage

5-3 PREPARING THE DRAFT RFP.

5-3.1 General. Although the solicitation will be issued to industry in two distinct phases, the development of draft RFP should include both phase 1 and phase 2 requirements. Every effort should be made for this draft submission to be complete as possible so that it may be effectively reviewed and that all missing information is clearly identified. See Chapters 6 and 8 for the requirements of each phase of the solicitation.

5-3.2 Project Criteria. The technical portions of the RFP provide criteria for design and construction of the new facilities, site improvements, and utilities. They also set forth the requirements for submitting

proposals, evaluating proposals, stipulates design development requirements, and submission requirements after contract award. The RFP also includes contract clauses, wage rates, special contract requirements, and Contractor Quality Control (CQC) requirements. Drawings are also a part of the RFP showing the project site, boundaries and topography, existing utilities and roadways, and the desired connection points for utilities.

5-3.3 Model RFP. Volume 2 of this document contains a model RFP. The USACE Design District must edit the STATEMENT OF WORK to ensure that the project scope and site specific data are accurately reflected in the RFP. Project requirements and restrictions should be incorporated into the draft document prior to submission for review. Other RFP sections should be reviewed and updated to reflect current contracting requirements. Particular attention should be paid to Section 00110 and Section 00120. Legal and contractual aspects of the procurement require close coordination with the technical requirements of the RFP.

5-3.4 Proposal Submission Requirements. With the development of the RFP, the proposal submission requirements for each phase of the solicitation must begin development in this same period. The development of the proposal submission requirements must be aligned with the evaluation factors and sub-factors chosen for the proposal evaluation. The samples shown in Sections 00110 and Section 00120 (Volume 2) are coordinated. Special care and emphasis shall be placed on maintaining the proposal submission requirements at the lowest level possible which will allow the Government sufficient confidence that the proposal addresses the needs of the Government. Excessive proposal submission criteria discourages participation by potential offerors in the project. Once completed, the proposal submission requirements become part of the source selection plan.

5-3.5 Evaluation Criteria. With the development of the RFP, the proposal evaluation criteria for each phase of the solicitation must begin development in this same period. This evaluation criteria shall be based on the acceptable model contained in Section 00120 in Volume 2. Using that information as a basis, the PM should facilitate a 'brainstorming' session with the entire PDT to validate the importance of the various evaluation factors, sub-factors, and elements included. Rated evaluation criteria utilized must be true discriminators between proposals. Once completed, the evaluation criteria becomes part of the source selection plan and determines the relative importance and rankings of the various technical and offeror capability aspects of the proposals. This evaluation criteria must reflect the requirements of Phases 1 and 2 of the solicitation.

5-3.6 Cost Estimate. With the receipt of the Code 7 Design Directive and the preparation of the draft RFP, the Cost Engineering Activity of the Design District should begin work on preparing and completing the construction cost estimate. This cost estimate must include provisions for the design costs which will be included in the proposals from contractors. Additionally, the Current Working Estimate (CWE) must also include the Government review costs to support the review of the designs provided by the contractor after award. The final cost estimate should be completed and forwarded to Contracting Division, with a copy to the PM, prior to receipt of proposals.

5-4 DRAFT RFP REVIEW AND COORDINATION.

5-4.1 Distribution. Upon completion of the draft RFP, copies should be distributed for review to the Major Army Command (MACOM), installation, and USACE in-house staff including design, counsel, construction, and contracting. This process should ensure that project requirements have been accommodated and that the RFP is current and complete in all aspects. Comment submission requirements for reviewing agencies will be established by the PA/PE. Twenty-one calendar days should be adequate for review of the draft RFP and receipt of comments.

5-4.2 The USACE design activity will finalize and submit a concept design level cost estimate (ENG Form 3086) based on the draft RFP, including site specific support costs, to HQUSACE by 1 July of the design year. The USACE design activity will assure compliance with the approved project DD Form 1391 and highlight any scope or cost changes on the ENG Form 3086

5-5 DRAFT (PRE-FINAL) RFP COORDINATION MEETING.

5-5.1 Review Comments and Meeting. The PA/PE is responsible for assembling the review comments. Following receipt of comments, an RFP coordination meeting should be held at the installation where the project is to be constructed. Each reviewing agency should be provided advance notification of the meeting place, time, and date to afford maximum participation and involvement.

5-5.2 Procedure. The PA/PE should have available, at the meeting, sufficient copies of the review comments for distribution to the attendees. The PA/PE will act as chairman of the meeting and will prepare and distribute minutes of the meeting indicating the agreed upon disposition of each review comment. All comments must be answered. Particular attention shall be paid to customer comments and concerns to ensure that customer input is maintained at all times during the RFP development.

5-6 FINAL RFP REVIEW AND COORDINATION.

5-6.1 Upon completion of the draft RFP review and coordination, the RFP document shall be finalized to include all revisions required in response to review comments as well as any information which was not available during the development of the draft. A final RFP package shall be developed and copies should again be distributed for review to the Major Army Command (MACOM), installation, and USACE in-house staff including design, counsel, construction, and contracting. Comment submission requirements for reviewing agencies will be established by the PA/PE. Fourteen calendar days should be adequate for review of the final RFP and receipt of comments.

5-6.2 A Value Engineering study of the final RFP document shall be completed prior to advertisement. This Value Engineering study is mandatory for all projects over $2 million in construction cost.

5-6.3 COE Review. The final RFP document shall be provided to Construction for review and preparation of the BCOE Certification prior to the advertisement of the project.

5-6.4 Electronic Bid Set (EBS) Requirements. The PA/PE shall review the format of all materials which will be incorporated into the advertised solicitation with respect to EBS considerations. Coordination with the PDT Contract Specialist is required to ensure timely development of the electronic representation of all the RFP requirements.

5-6.5 Quality Assurance. It is imperative that the solicitations developed receive a quality assurance check prior to their issuance. The project management plan shall include provisions for a quality assurance check. The PDT should consider utilizing a sister District with Design-Build expertise or some other independent reviewer for this check.

5-6.6 Final RFP Review and Coordination Meeting. Any comments generated during the review of the final RFP shall be resolved at the Final RFP Review meeting. This is the last opportunity for the PDT to include or remove requirements from the RFP prior to advertisement.

5-7 SOURCE SELECTION PLAN DEVELOPMENT.

5-7.1 A source selection plan shall be developed for each project. The source selection plan shall review and include all proposal evaluation information as well as the following information.

5-7.1.1 A description of what you are buying
5-7.1.2 A description of the source selection evaluation process
5-7.1.3 Planned presolicitation activities
5-7.1.4 The proposed evaluation factors and their relative importance
5-7.1.5 The source selection milestones
5-7.1.6 The proposal submission requirements
5-7.1.7 Evaluation/rating information – worksheets
5-7.1.8 The basis for award

5-7.2 Sample Source Selection Staffing and Responsibilities. Each of the members of the SSEB shall receive a Notice of Appointment Memorandum from the Contracting Officer. This notification shall require their signature and return to the CS. The memorandum will outline the responsibilities of the position as well as include the requirements for Nondisclosure, Procurement Integrity, and the specific operating rules of the SSEB. Signed copies of this memorandum shall be kept in the Contract File.

5-7.3 Upon completion of the source selection plan it shall be staffed through District Council and the Contracting Officer for review, approval, and signature. This source selection plan must be approved and signed prior to issuance of the solicitation. Where the Contracting Officer has appointed a separate Source Selection Authority, the review, approval, and signature on the source selection plan shall be accomplished by that individual.

5-7.4 If required, the Source Selection Authority shall designate in writing the individuals who will serve on the Source Selection Evaluation Board. These board members must sign the appointment memorandum which explains the duties and responsibilities of the board members. These signed appointment memorandums shall become part of the contract file.

5-8 ACQUISITION REGULATIONS AND SOURCE SELECTION.

5-8.1 Those involved in the preparation of any portion of the RFP must be familiar with the process of contracting by negotiation as detailed in FAR 15 (reference 5-2). When preparing the RFP, the goal should be to negotiate a successful source selection with a minimum of administrative complexity. A clearly developed RFP and source selection plan will minimize protests associated with competitively negotiated contracts. Protests result from both errors and omissions in the RFP package, as well as from flaws in the Government's source selection process. The following issues must be considered when preparing the RFP:

5-8.2 FAR 15.209 (reference 5-3) requires the Contracting Officer to state whether the Government intends to award with or without discussions. Serious consideration must be given to the proper alternate selected for use in FAR 15.504 (reference 5-4). Use of the basic clause is encouraged.

5-8.2.1 Alternate I states that proposals will be evaluated with, and award made after discussions with the offerors. Alternate I encourages discussions. This alternative describes the situation which occurs most frequently, and may occur even when the basic clause is specified. Since the basic clause would allow discussions if they became necessary, the selection of Alternate I is discouraged.

5-8.2.2 The basic clause states that proposals will be evaluated and award made, without discussions with offerors. This alternate also reserves the right of the Government to conduct discussions if it is later determined to be necessary by the Contracting Officer. Experience with previous solicitations indicates that award based on initial offer, without discussions, is rarely possible.

5-8.3 Evaluation Factors. The RFP must state the evaluation factors and any significant sub-factors for each phase, that will be considered in making the source selection and their relative importance. FAR 15.304 (reference 5-5) states that all evaluation factors, which will have a significant impact on the source selection decision, must be included in the solicitation. Offerors must be told of the minimum requirements that apply to a particular evaluation factor or sub-factor, and their relative importance in the evaluation process. FAR 15.304 (reference 5-5) states that the solicitation must clearly state the relative order of importance of all evaluation factors and any significant sub-factors. Evaluation factors and sub-factors may not be described using numerical weights (reference 5-6). A descriptive phrase shall be included, such as, "sub-factors listed in descending order of importance" or "sub-factors are of equal importance" or “this factor is the most important”. See Volume 2, Section 00120, for an acceptable model.

5-8.4 Importance of Price. Each negotiated solicitation must describe the relative order of importance of price to the technical evaluation criteria. Offerors must be told whether price is more, less, or of equal

importance to the technical evaluation factors. If the relative order of importance is not stated, price and technical factors must be treated equally. See Volume 2, Section 00100, for an acceptable model.

5-9 CODE 7 ACTIVITIES MATRIX.

5-9.1 The PM will ensure that the following activities are accomplished:

CODE 7 ACTIVITIES	Activity Lead			
	Customer	PM	PA/ PE	CS
a. Distribute copies of the model RFP to In-House USACE personnel or support A-E firm for initial review and editing.			X	
b. Distribute copies of the project DD Form 1391 to In-House USACE personnel or support A-E defining the scope of work.		X		
c. Schedule the initial Data Gathering Conference or Charette to begin RFP development.		X		
d. After initial editing of the draft RFP, distribute to appropriate reviewing agencies including the MSC, MACOM, the Installation, and the USACE construction activity (when design and construction are split)			X	
e. Request comments from all reviewing agencies for incorporation into the final RFP.			X	
f. Schedule a draft RFP coordination meeting to discuss incorporation of review comments into the RFP.			X	
g. Distribute draft review comments to In-House USACE personnel for incorporation into the final RFP.			X	
h. After editing of the draft RFP, distribute the final RFP to appropriate reviewing agencies including the MSC, MACOM, the Installation, and the USACE construction activity (when design and construction are split)			X	
i. Request comments from all reviewing agencies for incorporation into the RFP.			X	
j. Schedule a final RFP coordination meeting to discuss incorporation of review comments into the RFP.			X	
k. Distribute final review comments to In-House USACE personnel or support A-E for incorporation into the final RFP.			X	
l. Submit ENGR Form 3086 to HQUSACE, not later than 1 August of the design year.		X	X	
m. Start Source Selection Plan.		X	X	
n. Not Used				
o. Complete cost estimate and forward to Contracting Division			X	
p. Begin development of the Source Selection Plan		X	X	X

REFERENCES

5-1 AR 415-15, "Army Military Construction Program Development and Execution," 9/4/1998
5-2 FAR Part 15, "Contracting By Negotiation"
5-3 FAR 15.209, "Solicitation Provisions and Contract Clauses"
5-4 FAR 15.504, "Award to Successful Offeror"
5-5 FAR 15.304, "Evaluation Factors and Significant Subfactors"
5-6 PARC Memorandum dated March 5, 2001

CHAPTER 6
ADVERTISING PHASE 1 OF THE RFP

6-1 DIRECTIVES.

6-1.1 The Code 7 Design Directive is the authorization to complete the RFP. Once the RFP document has been completed, the next directive issued will provide the authority to advertise the project. Normally this is done in response to a request from the Design District indicating that they are ready and requesting the authority to advertise. A CWE for the project should be included with the request to issue advertisement authority.

6-2 OVERVIEW OF THE TWO PHASE DESIGN-BUILD PROCESS

6-2.1 Projects shall be solicited using the two-phase design-build process (FAR 36.3 reference 6-2) since technical proposal costs are expected to require a substantial expense and more than three offerors are expected for each project.

6-2.2 Phase I of the solicitation requires offerors to submit a “Qualifications” proposal only. FAR 36.3 (reference 6-2) lists the following evaluation factors to be considered in evaluating Phase I proposals. They include:

6-2.2.1 Specialized experience and technical competence
6-2.2.2 Capability to perform
6-2.2.3 Past performance of offeror’s team
6-2.2.4 Technical approach to the RFP project design criteria

Following receipt and evaluation of the Phase 1 proposals, up to five of the highest rated offerors will be selected and forwarded to participate in Phase 2 of the solicitation.

6-2.3 The Phase 1 portions of the solicitation shall include, as a minimum, the information shown below. While it is permissible and a benefit to the potential proposers, the inclusion of the complete technical requirements package during Phase 1 of the solicitation is not mandatory.

6-2.3.1 The scope of work;
6-2.3.2 The basis of award;
6-2.3.3 The phase-one evaluation factors, including--
6-2.3.3.1 Technical approach (but not detailed design or technical information);
6-2.3.3.2 Technical qualifications, such as--
6-2.3.3.2.1 Specialized experience and technical competence;
6-2.3.3.2.2 Capability to perform;
6-2.3.3.2.2 Past performance of the offeror's team (including the architect-engineer and construction members); and
6-2.3.3.3 Other appropriate factors (excluding cost or price related factors, which are not permitted in Phase One);
6-2.3.4 Phase-two evaluation factors;
6-2.3.5 Proposal submission requirements for Phase 1 and Phase 2;
6-2.3.6 A statement of the maximum number of offerors that will be selected to submit phase-two proposals. The maximum number specified shall not exceed five unless the contracting officer determines, for that particular solicitation, that a number greater than five is in the Government's interest and is consistent with the purposes and objectives of two-phase design-build contracting.

6-2.4 Phase Two of the solicitation shall be prepared in accordance with FAR Part 15, and shall include phase-two evaluation factors. Examples of potential phase-two technical evaluation factors include design

concepts, management approach, key personnel, and proposed technical solutions. Phase Two of the solicitation shall require submission of technical and price proposals, which shall be evaluated separately, in accordance with FAR Part 15.

6-3 ADVERTISING.

6-3.1 After all required information is obtained and approvals received synopsize in the Federal Business Opportunities (FedBizOps) utilizing the Army Single Face to Industry (ASFI) website (www.acquisition.army.mil) and through the Contracting Divisions internet Electronic Bid Set (EBS) site. With large projects, competition can be expected on a nationwide basis.

6-3.2 The synopsis must be in the FedBizOps 15 days prior to issuance of the solicitation. Allow approximately 21 days from the transmittal of the synopsis to FedBizOps to issuance of the solicitation to allow FedBizOps to publish the synopsis. The FedBizOps posting must also include target ceiling or ceiling cost for award.

6-3.3 Issue the solicitation package to prospective offerors through the EBS system in place at the respective Design District.

6-3.4 Normally, an 8-week proposal period is adequate for preparation of proposal information.

6-4 QUESTIONS DURING PHASE ONE PROPOSAL PERIOD.

6-4.1 Point of Contact. The RFP will designate the Contract Specialist as the single point of contact for offerors who have questions regarding the RFP. The solicitation shall include the name, address, phone number, FAX number, and e-mail address of the CS. The CS will, insofar as possible, answer questions by reference to the RFP itself, and will carefully avoid making any statement that could be construed as interpreting or modifying the terms of the RFP. A written record of all questions and answers must be maintained and kept in the official contract file.

6-4.2 Errors and Misunderstandings. If questions arising during the proposal period indicate an error in the RFP, or any point upon which serious misunderstanding by offerors could occur, a formal amendment should be issued to all holders of proposal packages, clarifying the points in question.

6-4.3 Amendments. Every effort should be made to prepare the RFP in such a manner to minimize the number of amendments necessary, particularly in the Phase 1 process. The content of each amendment should be reviewed to ensure clarity of intent.

6-4.4 Responses to Written Questions. All written questions submitted to the USACE Design activity should be cataloged and responded to in writing and those questions and answers furnished to all plan holders. It is imperative that all potential proposers receive the same information, at the same time.

6-4.5 Phase 1 Pre-Proposal Conference. If the subject project includes complex Phase 1 submittal requirements or the overall project is considered complex, a pre-proposal conference may be beneficial to the potential offerors. The decision to have a pre-proposal conference shall be made by the PM prior to the issuance of the Phase 1 solicitation.

6-5 SOURCE SELECTION.

6-5.1 The selection process can be complex, and if not followed precisely, can lead to re-procurement or cancellation of the contract due to incorrect procedures or protests. Familiarization with FAR 15 (reference 6-1) will assist those involved in the selection process in avoiding potential problem areas. A source selection plan must have been prepared and be approved by the Source Selection Authority prior to issuance of the solicitation.

6-6 AUTHORITY TO ADVERTISE ACTIVITIES MATRIX.

6-6.1 The PM will ensure that the following activities are accomplished:

AUTHORITY TO ADVERTISE ACTIVITIES	Activity Lead			
	Customer	PM	PA /PE	CS
a. Verify that the date, time, and location for proposal receipt is included in the RFP.			X	X
b. Verify that all RFP review comments have been incorporated or otherwise resolved to the reviewer's satisfaction.			X	X
c. Review basis of award stated in the RFP to ensure it is clear.		X	X	X
d. Review the explanation of the evaluation process in the RFP to ensure that it is clearly defined.		X	X	X
e. Verify that the RFP had a final Contracting and Legal review		X		X
f. Prepare Source Selection Guidelines for review and approval.			X	X
g. Verify that Source Selection Plan is completed.		X		X

REFERENCES

6-1 FAR Part 15, "Contracting By Negotiation"
6-2 FAR Part 36.3 "Two-Phase Design-Build Selection Procedures"

CHAPTER 7
RECEIVING, EVALUATING AND SELECTING PHASE 1 PROPOSALS

7-1 PLANNING FOR THE RECEIPT OF PHASE ONE PROPOSALS AND EVALUATION.

7-1.1 Receipt of Proposals. The date and time for receipt of phase one proposals will be established in the RFP. The PDT should use this date as a milestone from which to set the tentative dates for the evaluation.

7-1.2 Contracting Officer Approval. The source selection guidelines must have been written, reviewed by counsel, and approved by the Contracting Officer prior to issuance of the final RFP.

7-1.3 Proposal Review. When the date for receipt of proposals is finalized, the PM should identify and begin selecting the phase I review team, and block out time for reviews. Prompt handling of proposals is necessary to assure that the review is complete and written comments prepared in an expedient manner.

7-1.4 Logistics For Evaluation of Proposals

7-1.4.1 Location. Evaluation of proposals may be held at the USACE activity or at the project Installation. Use of the USACE activity meeting space is difficult due to possible interruptions and demands on the evaluation staff from their normal positions, however, the use of District conference space will likely provide the most suitable Internet access capability. The PM must ensure that all evaluation team members understand the importance of the evaluation procedures and agree to dedicate 100% of their time to the project during the evaluation process.

7-1.4.2 Hotel. The evaluators may be in temporary duty status and will need hotel reservations. The PA/PE is encouraged to make inquires with local hotels to obtain the best accommodation package to serve the evaluation team.

7-1.4.3 Conference Room. The conference room should be comfortable and well lighted, but foremost it must provide a secure location for evaluating and storing proposals. Adequate workspace shall be provided for each evaluator allowing for review of submitted materials and the generation of evaluation comments. The evaluation team may wish to work longer than an eight hour day, and the conference room should be available on a twenty-four hour basis. Coordination with the Contracting Division is required to obtain the conference room.

7-1.4.4 Telephone and Internet Access. Meeting space chosen for this evaluation must have at least a single dedicated telephone (voice) line to allow for telephonic interviews and a dedicated internet access port for each member of the evaluation team. The PM shall coordinate with each evaluator, well prior to the evaluation period, as to the required computer and internet support. If the evaluators bring their own laptop or personal computers, the PM shall coordinate with the appropriate District staff to ensure compatibility with the internal District LAN/WAN requirements. If the evaluators are not able to bring personal computers, the PM shall ensure that suitable computer resources are available in the evaluation room to enable the evaluators to independently complete the review process. The provision of Internet access and computer support is critical to the success of the Phase I evaluation process.

7-1.5 Source Selection Requirements. The Source Selection Authority shall formally establish an evaluation group structure appropriate to the requirements of the particular solicitation. Working with the Contracting Division, the PM should develop a list of recommended personnel to participate in the evaluation. Each participating agency will be contacted and asked to provide the names of individuals designated to represent their agency. Composition of the evaluation team shall ideally consist of

individuals with experience in design build construction. The evaluation team shall consist of at least four, and not more than six individuals with appropriate experience in design and construction projects.

7-1.5.1 Composition of the Evaluation Team. The evaluation team shall be composed of not less than four and not more than six members representing the USACE design activity, the USACE construction activity, the Installation DPW, the ACSIM, and one or more technical experts from another District with design build experience. As soon as the names of the evaluation team members are finalized, the PA/PE will have their names added to the list of RFP package holders, and will provide a copy of the RFP and amendments to them prior to the evaluation.

7-1.5.2 Travel, per diem, and salary costs for evaluation team member's participation are funded from project design costs. Military Interdepartmental Purchase Requests (MIPR) should be forwarded to the participating evaluation team members in sufficient time to permit processing of travel orders.

7-2 LEGAL AND CONTRACTING REVIEW.

7-2.1 General Conformity. Proposals must be opened by the Contracting Division. Proposals must not be opened publicly. The Contracting Division will also review proposals to ensure that the required personnel and performance data for each proposal are provided in accordance with Section 00110, PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS.

7-2.2 Cost Information. No cost information shall be included with the Phase 1 proposal.

7-2.3 Non-Disclosure. All evaluators are required to sign a certificate which includes procurement integrity, nondisclosure, standards of conduct, and conflict of interest provisions before they receive proposals for review. In addition to reviewers, any and all personnel who see the proposals must sign the required certificates.

7-3 EVALUATING OFFEROR PERFORMANCE CAPABILITY.

7-3.1 An offeror's performance capability may be determined by evaluating design, construction and management personnel qualifications, relevant corporate experience, past performance information, financial capability, and organizational structure proposed for the project. FAR 15.304 (reference 8-3) specifically permits evaluating such relevant factors. The management review should involve Government representatives experienced in construction management and design. Complete documentation of strengths and weaknesses of each proposal for each factor and subfactor is extremely important. A performance capability evaluation format is provided at Appendix A. It is extremely important to set up and follow a prescribed evaluation process to avoid possible potential conflicts later and avoid time consuming protests.

7-3.2 Past Performance. As a part of the Phase 1 evaluation process the Government representatives shall review the offeror reference questionnaires which have been provided to the Contract Specialist. Each proposal must have at least three reference questionnaires received. Where less than three are received, the offeror will receive a lesser rating for this factor. It is the offeror’s responsibility to ensure that his or her references return the required information. If a particular offeror does not have past performance information to provide, this offeror should so indicate in his/her proposal and shall be provided a neutral rating. The lack of past performance information is not the same as the failure of an identified reference to complete and provide the reference questionnaire required.

7-3.3 Recent Relevant Experience. The offeror shall provide a list of past projects on which they were involved within the last three to five years which the offeror feels are relevant to the project under consideration. Design Districts may lengthen the amount of time permissible for inclusion of recent relevant experience projects.

7-3.4 Key Personnel. This information provided at Phase 1 will only address the key individuals for construction and design. For Construction, these individuals typically include the prospective

superintendent and Quality Control Officer or other individuals associated with the management of the contract. For design areas, only the designers of record will be included.

7-3.5 Narrative Approach Information. The offerors will provide narrative information which addresses the project, the home office support, the resources available to this project, and an organizational chart. This information should also demonstrate the proposers knowledge and capability in the design build arena and his knowledge and capability to utilize fast track design-build procedures.

7-3.6 Other Sources. Section 00120 shall include language to make the contractor aware that the Government will use other sources of performance/capability information. Typically those sources could include ACCASS, CCASS, owner references, owner interviews, and direct knowledge. ACCASS and CCASS ratings will be assembled by the Contract Specialist and provided to the Phase I evaluation team at the initial meeting. The evaluation team shall review the materials available for evaluation and determine the need and extent for owner interviews and contacts with previous clients identified by the proposers. If the evaluation team decides to perform telephonic interviews, the same individuals shall make all reference calls and provide feedback on each to the entire group. It is important that this function not be delegated to multiple individuals since each individual will inherently have a different evaluation experience in this highly subjective area.

7-3.6.1 Telephonic Interviews: Where possible, it is recommended that the entire evaluation team participate in the in the interviews through a speaker phone. A single “spokesperson” would be identified but all team members would hear the same information and be given an opportunity to ask any questions of the interviewees.

7-3.7 This evaluation process must include complete documentation on all ratings which are defendable and represent a significant or important aspect of the proposal or package. Since offerors face potential elimination from further competition at the completion of this stage, the CS and the PA/PE shall make certain that sufficient information is contained in the selection memorandum to support the selection of the contractors (up to five) who go forward and the elimination of those who will not continue to Phase 2.

7-3.8 Evaluation factor weights shall be described in terms of adjectives. In no case shall numerical or percentage scores be used in this process.

7-4 PROPOSAL EVALUATION PROCESS

7-4.1 The proposal evaluation process includes several key elements which are necessary to ensure success of the project and conformance with the Source Selection Plan. These same steps shall be accomplished in both Phase 1 and Phase 2 evaluations. These basic steps are as follows:

7-4.2 Conduct Training. Training should be provided for all staff who will participate in the evaluation of the proposals. This training shall center on the definition of the design build process and familiarity with the specific solicitation. The training will explain the overall evaluation process and stress to the participants the importance of comments and documentation of each proposal’s strengths, weaknesses, and risks.

7-4.3 Perform Initial Screening of Proposals. Upon receipt of proposals, the Contract Specialist shall conduct an initial screening of the proposals to ascertain if the proposal includes all the information and material required. Proposals which do not include the necessary information or provide the correct number of copies may be excluded from consideration.

7-4.4 Identify and Document Proposal Ambiguities and Inadequate Substantiation. Evaluators shall review the proposals to identify ambiguous language or areas where the Offeror has not provided sufficient information to allow a quality evaluation and rating to be accomplished. Instances shall immediately be discussed with the PDT Contract Specialist for instructions on procedures.

7-4.5 Identify and Document Deficiencies, Strengths, Weaknesses, and Uncertainties. All members of the evaluation team shall each review each proposal. Any strengths, weaknesses, deficiencies, or uncertainties shall be identified and documented to allow discussions during the consensus evaluation meeting to take place at the end of the evaluation period.

7-4.5.1 Definitions:

Proposal 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. Examples of deficiencies include statements by the offeror that it cannot or will not meet a requirement; an approach that clearly does not met a requirement, or an omission of data required to assess compliance with a Government requirement.

Proposal Strength: An aspect of a proposal that appreciably decreases the risk of unsuccessful contract performance or that represents a significant benefit to the Government.

Proposal Weakness: A flaw in the proposal that increases the risk of unsuccessful contract performance. A "significant weakness" in the proposal is a flaw that appreciably increases the risk of unsuccessful performance.

Uncertainty: Any aspect of the proposal for which the intent of the offeror is unclear because there may be more than one way to interpret the offer or because inconsistencies in the offer indicate that there may be an error, omission, or mistake. Examples include a mistake in calculation or measurement and contradictory statements.

7-4.6 Evaluation of all Non-Cost Factors. Following completion of the individual evaluators review, all quality evaluators shall meet to discuss results and select appropriate adjectival evaluations to each of the proposals in each of the factors. Final adjectival selections must be done by consensus unless the evaluators cannot agree, at which time, the evaluators shall prepare a majority and minority opinion on the particular proposal and evaluation factor. This information will be forwarded to the Source Selection Authority.

7-4.7 Prepare a Summary Evaluation Report. The final step of the evaluation process is the development of a summary report which lists all factor ratings for all proposals as well as providing a detailed listing of strengths and weaknesses of each proposal.

7-5 PROPOSAL EVALUATION STANDARDS.

7-5.1 Evaluation standards are guides for evaluators to measure how well each offeror has addressed the requirements set forth in the solicitation. Using standards facilitates evaluation against a common basis, thereby minimizing bias that can result from an initial direct comparison of proposals. The following rating scale will be used for the phase 1 proposals:

RATING	EXPLANATION
Unknown Performance Risk	Past performance information provided does not provide sufficient depth and breadth of experience to allow a definitive rating.
Outstanding/Very Low Performance Risk	Based on the offeror's performance record, no doubt exists that the offeror will successfully perform the required effort.

Above Average/Low Performance Risk	Based on the offeror's performance record, little doubt exists that the offeror will successfully perform the required effort.
Satisfactory/Moderate Performance Risk	Based on the offeror's performance record, some doubt exists that the offeror will successfully perform the required effort. Normal contractor emphasis should preclude any problems.
Marginal/High Performance Risk	Based on the offeror's performance record, substantial doubt exists that the offeror will successfully perform the required effort.
Unsatisfactory/Very High Performance Risk	Based on the offeror's performance record, extreme doubt exists that the offeror will successfully perform the required effort.

7-6 PHASE 1 SELECTION MEMORANDUM

7-6.1 Compilations of proposal strong/weak points, evaluation ratings, and any items requiring additional information or clarification will be used by the PM or the Contract Specialist to prepare the Phase 1 Selection Memorandum. The selection memorandum will address all offerors, considering the results of the Phase 1 evaluation team. Review and approval of the Phase 1 selection memorandum is required before the potential offerors are notified of the outcome of the Phase 1 evaluations.

7-6.2 Evaluation Ratings. After evaluation of proposals has been completed, the PA/PE will compile the final consensus ratings developed for each proposal including all documentation of the strengths and weaknesses and forward them to the Contracting Division. Items identified by the evaluators which may require clarification by the offerors should be directed to the Contracting Division for resolution. The Contracting Division will also open, close, and document all clarifications with the offerors. All these items become part of the report of the Source Selection Evaluation Board and the Phase 1 Selection Memorandum.

7-6.3 Up to five (5) offerors may proceed into Phase 2 of the process and be requested to provide a technical and cost proposal, as well as additional capability information for the project.

7-7 PHASE 1 CONTRACTOR NOTIFICATIONS

7-7.1 Following completion and approval of the Phase 1 Selection Memorandum, the CS shall prepare notification letters for all the offerors who provided proposals in Phase 1 of the process. The notification letters shall indicate the result of the Phase 1 evaluation with respect to competing in Phase 2 of the process.

7-7.2 Proposals which are determined to represent the most qualified (up to 5) candidates of those proposals received shall be notified in writing of their selection and provided with the Phase 2 technical requirements, the additional capability information requirements, a price proposal schedule and any changes to the original solicitation. If Phase 2 information is not immediately available, the written notification shall include the date the materials shall be provided. In any case, the delay between the notification of participation in Phase 2 and the offeror's receipt of the technical requirements should be minimal.

7-7.3 Proposals which have been evaluated and which are not being included in Phase 2 of the project shall receive written notification of their elimination from further competition. The notification letter shall include the contractor's options with respect to debriefings (post vs. pre-award) and shall not disclose

any further information concerning the solicitation or other offerors. See Chapter 12 for further information regarding debriefing of offerors.

7-8 DRAFT PHASE 2 ISSUANCE

7-8.1 Following the completion of Phase 1 activities and the selection of the offerors to proceed into Phase 2, the Government may issue a "draft" Phase 2 to the potential offerors to allow them to comment on content, ambiguities, difficult site and geotechnical conditions, or excessive proposal requirements. This step may help avert problems later in the process by identifying major questions and concerns of the offerors prior to the contractual issuance of the Phase 2 amendment when there is still time to make corrections or adjustments. The decision to utilize a "draft" Phase 2 process rests with the PM, with consultation from the PDT, and only with the consultation and complete endorsement by the customer.

7-9 PHASE 1 ACTIVITIES MATRIX

7-9.1 The PM will ensure that the following activities are accomplished:

PHASE 1 PROPOSAL RECEIPT AND EVALUATION ACTIVITIES	Activity Lead			
	Customer	PM	PA /PE	CS
a. Prepare review worksheets for evaluations.			X	
b. Meet with In-House USACE staff to set time frame for evaluation and operating procedures.			X	
c. Assure sufficient copies of the solicitation are available for the evaluators.			X	
d. Track the schedule, receipt, and review of proposals by Contracting Division		X		
e. Receive proposals from Contracting Division and make available to the evaluators.			X	
f. Physically set up the evaluation space including adequate administrative supplies.			X	
g. Discuss the project with the evaluation team. Review the operating rules. Outline the necessity for the written identification of strengths and weaknesses of each proposal.		X	X	X
h. Convene the Phase I evaluation team.		X		X
i. Ensure proposals are returned and accounted for following the evaluation procedures.			X	X
j. Obtain written comments from each evaluator before they are dismissed.			X	X
k. Assemble all comments for each proposal, from each evaluator, regarding strengths and weaknesses, For any items to be determined to be 'non-conforming' particular comments must address the proposal and the specific solicitation requirement which has not been met.			X	X
l. Forward initial report to Contracting Division for it's use in preparing the Phase 1 Selection Memorandum. Include the following: consensus worksheets, recommended ratings, narrative comments, a list of potential discussion items and questions, and a list of any items requiring clarification.			X	X
m. Return proposal materials to Contracting Division for access control.			X	X
n. Complete and forward for review and concurrence the Phase 1 Selection Memorandum.				X
o. Provide written notification for each of the offerors indicating the				

PHASE 1 PROPOSAL RECEIPT AND EVALUATION ACTIVITIES	Activity Lead			
	Customer	PM	PA /PE	CS
results of Phase 1 evaluations.				X

REFERENCES

8-1 FAR 3.104, "Procurement Integrity"
8-2 FAR 15.306, "Exchanges with Offerors after Receipt of Proposals"
8-3 FAR 15.304, "Evaluation Factors and Significant Subfactors"

CHAPTER 8
ISSUING THE PHASE 2 AMENDMENT

8-1 PHASE 2 AMENDMENT CONTENTS.

8-1.1 An amendment shall be issued to the original solicitation after the completion of all Phase 1 activities. This amendment shall include all technical requirements of the project, any additional capability information required, the cost/price proposal schedule, and any other information necessary for the contractors to prepare their proposal.

8-1.2 The technical information provided to the contractors shall include the narrative scope of work, site utility and topographic information, Geotechnical Report, any drawings, HTRW surveys (where applicable), the Phase 2 submission content requirements (if not included with the original solicitation), and other project specific data or requirements deemed necessary to prepare a complete proposal.

8-1.3 The price proposal schedule shall include all items for which a separate cost is desired. This schedule can also include optional items, however, the list of optional items should be kept to an absolute minimum to minimize the impact on the offerors. If a detailed cost breakdown is required to be submitted consideration should be given to allowing the offerors an additional three (3) to five (5) calendar days to formulate and document their price proposal.

8-1.4 Normally, an 8-week proposal period is adequate for preparation of technical proposals using a predominately functional (nominal) development of the statement of work and requirements. The complexity of the project and the degree of information developed by the Government and issued to the contractors shall also be considered in determining an acceptable proposal preparation period.

8-2 PRE-PROPOSAL CONFERENCE.

8-2.1 Purpose. Offerors normally engaged in the construction industry may not be knowledgeable about competitive negotiation procedures, especially the two phase source selection acquisition method used by the Government. As a result, the pre-proposal conference is very important. The conference, however, must be conducted with skill and caution. The purpose of the conference is to explain and clarify the technical requirements of the solicitation and the contracting procedures. Conference agenda and recommended activities are described in Chapter 9 of Volume 1 of this document.

8-2.2 Time, Place, and Preparation. The conference should be held within the first quarter of the proposed time for preparation of phase two proposals and the date, time, and location must be included in the Phase 2 amendment. The conference should be held at the installation where the project is to be built, if possible. Representatives from the installation should be invited to the pre-proposal conference. A tour of the site must always be made available to the offerors prior to the proposal submission date. Government provided transportation, such as a bus, is needed to transport the attendees to and from the project site from the conference site.

8-3 ACTIVITIES MATRIX.

8-3.1 The PM will ensure that the following activities are accomplished:

PHASE 2 AMENDMENT ACTIVITIES	Activity Lead			
	Customer	PM	PA /PE	CS
a. Finalized Pre-proposal Conference details including transportation to the project site.		X		
b. Review basis of award stated in the RFP to ensure it is clear.		X	X	X
c. Review the explanation of the evaluation process in the RFP to ensure that it is clearly defined.		X	X	
d. Verify that all drawings are complete and ready to publish.			X	
e. Check that the special requirements from the Installation are incorporated into the final Statement of Work.			X	
f. Verify that the RFP had a final Contracting, Legal, and BCOE review		X		
g. Verify that the wage rates are current and appropriate.			X	X
h. Verify that the amount of funds available for construction are identified in the amendment price proposal schedule.			X	
i. Verify that Source Selection Plan is being followed.		X		

CHAPTER 9
PHASE 2
PROPOSAL PREPARATION PERIOD

9-1 PRE-PROPOSAL CONFERENCE.

9-1.1 Conference Minutes and Transcript. Accurate minutes of the conference proceedings are essential. Some USACE activities obtain the services of a court recorder who will prepare a transcript of the proceedings. It is important that the pre-proposal conference attendees be told at the beginning of the conference that the transcript of the conference will be distributed, to all potential offerors. Verbal answers may not be totally accurate or may be misleading and USACE staff are cautioned to avoid providing verbal responses to questions posed during the pre-proposal conference. The recommended method is to state to all participants that the transcript of the meeting is intended to provide the Government with a complete record of all questions and issues raised such that specific answers can be provided in writing. The amendment issued following the conference should include any changes to the RFP, all proposer questions and answers to date, and shall constitute the official position of the Government. Attendees should understand that oral comments do not amend the solicitation, and only a written amendment alters the solicitation. If verbal responses are provided at the Pre-Proposal Conference, questions should be answered by directing the attention of the attendees to a specific paragraph of the RFP that answers the question and reading the pertinent points from that paragraph. Questions from attendees should be recorded with the name of the person and the company represented included.

9-1.2 Major Points. Most of the pre-proposal conference time should be devoted to an explanation of the provisions of the RFP. The technical, contractual, and administrative portions of the RFP should each be explained in detail. Special attention should be directed to the following points:

9-1.2.1 The technical proposal and the cost proposal must be submitted on the same date, and must be kept separate.

9-1.2.2 The Government reserves the right to negotiate with the offerors, or to make an award without negotiation. If negotiations are entered into with one offeror, then negotiations (written or oral) will be conducted with all offerors in the competitive range.

9-1.2.3 Award to the low dollar proposal is not mandatory. Offerors must be told in the RFP whether cost is more or less important than the technical evaluation factors.

9-1.2.4 A review of the proposal submission requirements should be conducted, so that potential offerors understand what material is required to be submitted in response to the RFP.

9-1.2.5 The Government will review all portions of the proposal package to determine compliance with the RFP criteria and to evaluate technical quality.

9-1.3 Questions. Most questions asked by attendees at a pre-proposal conference originate from the lack of understanding of the RFP. Offerors should be encouraged to submit written questions prior to the pre-proposal conference. Questions submitted in writing during the conference should also be accepted.

9-1.4 Government Attendance at the Pre-Proposal Conference. As a minimum, the CUSTOMER, the Contract Specialist, the Project Manager, and the PA/PE should attend the pre-proposal conference. Prior to the meeting, the PDT shall determine who will be Government spokesperson(s) and what areas of the solicitation/project they will cover. Typically the PM briefs the overall project and takes technical questions and the CS covers the contractual aspects of the solicitation. If available, the technical

specialists who prepared the various technical portions of the statement of work may add value to the conference and should be encouraged to attend if funding permits.

9-1.5 Attendance Roster and Minutes. A roster of attendees should be compiled for the conference. Minutes of the conference should be taken and distributed to all RFP holders. If an amendment is required to address or resolve questions asked, the attendee list and conference minutes may be issued as an attachment to that amendment.

9-1.6 The minutes of the conference, responses to questions, and attendee list shall not be issued as an amendment to the original solicitation but attached to an amendment, if required, or sent directly to the Offerors in Phase 2 for information.

9-2 QUESTIONS DURING PHASE TWO PROPOSAL PERIOD.

9-2.1 Point of Contact. The RFP will designate the Contract Specialist as the single point of contact for offerors who have questions regarding the RFP. The solicitation shall include the name, address, phone number, FAX number, and e-mail address of the CS. The CS will, insofar as possible, answer questions by reference to the RFP itself, and will carefully avoid making any statement that could be construed as interpreting or modifying the terms of the RFP. A written record of all questions and answers must be maintained and kept in the official contract file.

9-2.2 Errors and Misunderstandings. If questions arising during the proposal period indicate an error or omission in the RFP, or any point upon which serious misunderstanding by offerors could occur, a formal amendment should be issued to all Phase 2 participants, clarifying the points in question.

9-2.3 Amendments. Every effort should be made to prepare the RFP in such a manner to minimize the number of amendments necessary. The content of each amendment should be reviewed to ensure clarity of intent.

9-2.4 Performance Criteria. Offerors are each designing, at their own expense, a proposal which satisfies their interpretation of the RFP. Guidance should be oriented toward performance criteria as contrasted with specific criteria used in conventional procurements.

9-2.5 Responses to Written Questions. All written questions submitted to the USACE Design activity should be cataloged and responded to in writing and those questions and answers furnished to all Phase 2 participants. It is imperative that all potential proposers receive the same information, at the same time.

9-2.6 Timing of Additional Amendments. Given the short proposal periods and the potential impacts of late or substantial amendments, the issuance of amendments to the solicitation should be done as quickly as possible to avoid potential delays to the proposal receipt date. As a general rule, the amendment following the pre-proposal conference should be issued within 7 calendar days following the pre-proposal conference and should address all known issues and corrections at that point. Amendments issued after this point must be carefully considered with respect to potential schedule and cost impacts.

9-3 PLANNING FOR THE RECEIPT OF PHASE TWO PROPOSALS AND EVALUATION.

9-3.1 Receipt of Proposals. The date and time for receipt of phase two proposals will be established in the amendment to the solicitation issued to provide the Phase 2 technical and other requirements. The PDT should use this date as a milestone from which to set the tentative dates for the evaluation.

9-3.2 Contracting Officer Approval. The source selection guidelines must have been written, reviewed by counsel, and approved by the Contracting Officer prior to issuance of Phase 1 of the solicitation, no changes are permitted at this point.

9-3.3 Technical Review. When the date for receipt of proposals is finalized, the PDT should identify and begin coordinating with the review teams, and block out time for contracting, capability, and technical

reviews. Prompt handling of proposals is necessary to assure that the review is complete and written technical comments are prepared for use by the evaluation team in an expedient manner.

9-3.4 Evaluation of Proposals. Chapter 10 addresses the specifics of the phase 2 evaluation process; however, planning for the evaluation should start at this time.

9-3.4.1 Location. Evaluation of proposals may be held in proximity to the USACE activity or to the project site. If the USACE activity has appropriate facilities, the evaluation can be held on its premises. The PM should also explore the possibility of using other Government facilities which may be available for the evaluation. The use of a non-appropriated fund (NAF) club, which charges for its use, may be an alternative when the project site is selected for the evaluation.

9-3.4.2 Hotel. The majority of evaluators will be in temporary duty status and will need hotel reservations. Leasing a conference room in the hotel where the evaluators stay is often the best situation. Depending on the number of people staying at the hotel, the hotel may be asked to provide the conference room at no additional cost to the Government. The PA/PE is encouraged to make inquires with local hotels to obtain the best accommodation package to serve the evaluation team.

9-3.4.3 Conference Room. The conference room should be comfortable and well lighted, but foremost it must provide a secure location for evaluating and storing proposals. Adequate layout tables, approximately 900 mm by 1500 mm [3-ft by 5-ft] should be provided for each evaluator. Tables should also be provided for the PA/PE and CS, and for the distribution and storage of evaluation materials. The evaluation activity requires a minimum of 4.5 m^2 [48 ft^2] for each person attending the evaluation. The evaluation team may wish to work longer than an eight hour day, and the conference room should be available on a twenty-four hour basis. Coordination with the Contracting Division is required to obtain the conference room.

9-3.5 Source Selection Requirements. The Source Selection Authority formally established an evaluation group structure appropriate to the requirements of the particular solicitation prior to the Phase 1 evaluation procedure. Working with the Contracting Division, the PM should develop a list of recommended personnel to participate in the Phase 2 evaluation. Each participating agency will be contacted and asked to provide the names of individuals designated to represent their agency. Composition of the evaluation team shall consist of individuals with experience in design build construction. The evaluation team shall consist of at least four, and not more than six individuals and shall include one or more technical experts from another District with design build experience.

9-3.5.1 Composition of Technical Quality Evaluation Team. The evaluators who served on the Phase I evaluation may be used in the Phase II evaluation process. If at all possible, alternate individuals from the same organizations represented on the Phase I evaluation team should be used for the technical evaluation process. However, where additional “Phase I” type information is evaluated, the same evaluators from Phase I of the process must be used. An advantage of using different staff for the technical evaluation process in Phase II is the evaluators will not be “swayed” by the information presented in, nor the results of, the Phase I evaluation process.

9-3.5.2 Travel, per diem, and salary costs for evaluation team member's participation are funded from project design costs. Military Interdepartmental Purchase Requests (MIPR) should be forwarded to the participating evaluation team members in sufficient time to permit processing of travel orders.

9-4 ACTIVITIES MATRIX

9-4.1 The PM will ensure that the following activities are accomplished:

PHASE TWO PROPOSAL PERIOD ACTIVITIES	Activity Lead			
	Customer	PM	PA / PE	CS
a. Prepare written responses to potential offeror's letters and questions. Contracting should ensure that this information is distributed to all potential offerors.			X	X
b. Follow-up on coordination for the pre-proposal conference including time, place, date, and transportation for site visit.	X		X	X
c. Prepare attendance sheet for the pre-proposal conference.			X	
d. Identify Government personnel who will be attending the pre-proposal conference.		X	X	
e. Define the roles of all individuals attending the pre-proposal conference.		X		X
f. Prepare pre-proposal minutes and responses to questions.			X	X
g. Prepare amendment to RFP to incorporate any required changes and corrections to the solicitation documents.			X	X
h. Issue Phase II amendment to prospective offerors				X
i. Alert Contracting, Construction, and Engineering with respect to proposal receipt date and expected support required.			X	X
j. Contact evaluation team members and establish commitments for participation. Include meeting dates, time, and place. Provide information concerning local hotels to out of town evaluators.			X	
k. Provide MIPR to fund evaluation team member support.		X		
l. Reserve hotel space and meeting space to support the evaluation efforts.			X	X
m. Provide evaluators with RFP and amendments.			X	
n. Issue copies of the RFP and amendments to In-House USACE personnel who will support the proposal review effort.			X	

CHAPTER 10
RECEIVING AND EVALUATING PHASE TWO PROPOSALS

10-1 LEGAL AND CONTRACTING REVIEW.

10-1.1 General Conformity. Phase 2 proposals shall be opened by the Contracting Division. They must not be opened publicly. The Contracting Division will also review proposals to ensure that the required cost, technical, and capability data for each proposal are provided in accordance with Section 00110, PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS and Section 00010 PRICE PROPOSAL SCHEDULE.

10-1.2 Technical Review. Technical proposals can be forwarded to the Engineering for a minimum technical review. This review is provided to screen proposals for overall technical compliance and to provide comments for the Technical Quality Evaluation Team with respect to the technical aspects of the proposals.

10-1.3 Non-Disclosure. All reviewers are required to sign a certificate which includes procurement integrity, nondisclosure, standards of conduct, and conflict of interest provisions before they receive proposals for review. In addition to reviewers, any and all personnel who see the proposals must sign the required certificates.

10-2 ENGINEERING TECHNICAL REVIEW.

10-2.1 Upon receipt of proposals, from the Contract Specialist, the PA/PE is responsible for ensuring that a complete proposal package is available for each technical reviewer. The technical review team of the USACE activity will consist of personnel with appropriate experience and an understanding of the constraints of the TEMF program. Technical reviewers will develop comments indicating how each offer meets, exceeds, or falls short of the requirements for each requirement of the STATEMENT OF WORK. The PA/PE will assemble written comments generated by the technical reviewers and make copies available to the evaluation team members.

10-3 TECHNICAL EVALUATION STANDARDS

10-3.1 General. The proposals from the Offerors who reach Phase 2 will be evaluated by a Government team to determine compliance with this solicitation (as a minimum), and to evaluate the quality of the proposed materials, methods, and procedures. The proposal information which addresses each of the evaluation Factors for Phase 2 will be analyzed by the Government and a final overall "Adjective" for the proposal shall be determined by consensus of the Government evaluation team. The adjectival scheme for Phase 2 of the process is as shown below:

<u>EXCELLENT:</u> The offeror greatly exceeds the scope of the solicitation requirements in all aspects of the particular factor or sub-factor. The offeror also provides significant advantage(s) and exceeds the solicitation requirements in performance or capability in an advantageous way and has no apparent or significant weaknesses or omissions.

<u>ABOVE AVERAGE:</u> The offeror exceeds the scope of the solicitation in most aspects of the particular factor or sub-factor. The offeror provides an advantage in key areas or exceeds performance or capability requirements, but has some areas of improvement remaining.

<u>AVERAGE:</u> The offeror matches the scope of the solicitation in most aspects of the particular factor or sub-factor. The offeror meets the performance or capability requirements of the element but not in a way advantageous to the Government. There is room for improvement in this element.

POOR: The offeror does not meet the minimum scope of the solicitation for the particular factor or sub-factor. The offeror does not include any advantages and does not meet the minimal performance or capability requirements for this element. The offeror contains many apparent weakness and requires improvement.

UNACCEPTABLE: The offeror fails to meet the scope of the solicitation in all aspects of the factor or sub-factor or has not submitted any information to address this evaluated item. The offeror does not include any advantages in any areas of the element and does not meet the minimum performance or capability requirements of this factor or sub-factor. The proposal includes large apparent weaknesses and the proposal will require extensive modifications to come into compliance with the minimum requirements of the solicitation.

10-4 PERFORMANCE CAPABILITY EVALUATION

10-4.1 An offeror's management and performance capability may be determined by evaluating design, construction and management personnel qualifications, experience, financial capability, and organizational structure for the project. FAR 15.304 (reference 10-4) specifically permits evaluating such relevant factors. The management review should involve Government representatives experienced in construction management and design. Complete documentation of strengths and weaknesses of each proposal for each factor and subfactor is extremely important. A performance capability evaluation format is provided at Appendix B for information to be provided with the Phase 2 proposals. It is extremely important to set up and follow a prescribed evaluation process to avoid possible potential conflicts later and minimize time consuming protests.

10-5 PRICE EVALUATION

10-5.1 Price Proposal. The Contracting Officer may empower a proposal price evaluation team who will perform a price analysis, and a complete review of the Price Proposal. It is imperative that the PDT cost engineer be included on this team. The review of the Price Proposal will normally lead to negotiations with offerors in the competitive range. Questions resulting from a price analysis and from the technical analysis will both be addressed in the discussions.

10-5.1.1 Pricing data will be submitted with proposals. This information is administratively "for official use only" and will be delivered only to the Contracting Officer.

10-5.1.2 The Contract Specialist will also review representations and certifications, sub-contracting plans, proposal guarantees, SF 1442, the schedule of prices, etc. Proposals will be reviewed to ensure that proposal guarantees are adequate and valid for the full period for which proposals are to be effective, in accordance with the RFP.

10-6 TECHNICAL QUALITY EVALUATION PROCEDURES.

10-6.1 Confidentiality and Security. In a competitive negotiations, matters pertaining to the proposals must be treated with confidentiality prior to award. Security of all proposal material must be maintained at all times to avoid the possibility of compromising the competitive negotiation process. The number of proposals received, the names of the offerors, and all other information are source selection information in accordance with FAR 3.104. (reference 10-1).

10-6.2 Evaluation Room. The PA/PE should schedule access to the evaluation room and ensure complete setup prior to the arrival of the technical quality evaluation team members. A properly prepared evaluation room reflects the USACE activity's professionalism and establishes an efficient working environment for the team. The PA/PE should ensure that the following are available to evaluators:

10-6.2.1 Copies of the technical review comments from Engineering.

10-6.2.2 Copies of the RFP with all amendments.

10-6.2.3 Supplies including: pencils, pens, highlighters, erasers, writing pads, file folders, simple calculators, staplers and staples, architectural and engineering scales, paper clips, masking and transparent tape, and a pencil sharpener

10-6.3 Technical Transfusions. The Contracting Officer and other Government personnel involved in proposal evaluations must not take an offeror's good ideas or technical information and transfer that information to competing proposers. FAR 15.306 (reference 10-2) explicitly prohibits this type of technical transfusion in the source selection process.

10-6.4 Conduct. Each quality evaluation team member will independently rate each proposal in accordance with the approval evaluation plan. See Appendix B for a model. Evaluation will be based strictly on the requirements stated in the STATEMENT OF WORK and Section 00120 PROPOSAL EVALUATION CRITERIA. Decisions and recommendations of the quality evaluation team will be by consensus of the members.

10-6.5 Consensus. Individual evaluator ratings will not be averaged or otherwise manipulated mathematically to produce a single rating for any technical evaluation factors or sub-factors. Ratings will be established as the result of a consensus of the evaluators. Where divergent evaluations exist, and none of the evaluators have misinterpreted or misunderstood any aspects of the proposal(s), consideration should be given to providing the Source Selection Authority (SSA) with written majority and minority opinions. The SSA is not bound by the recommendations of the quality evaluation team.

10-6.6 Contract Specialist (CS) Responsibilities. The CS can act as quality evaluation team chairman and discussion moderator, but will be impartial toward all proposals. (The PM or PA/PE could also act as the evaluation team chairman based on the processes within the Design District.) The CS will brief the team on the evaluation procedures. The following procedures should be presented each time the team is convened:

10-6.6.1 Security and integrity. Each member of the evaluation team is responsible for maintaining security of proposals and all Government evaluation documents. As such, no material is permitted to be removed from the evaluation room during the evaluation or after completion of the evaluation. The evaluation room will be locked when not in use. Proposals should not be discussed outside the evaluation room.

10-6.6.2 Procurement integrity and non-disclosure. Members of the evaluation team must sign a non-disclosure statement as required by the procurement integrity regulations. This also applies to anyone who looks at the proposals, even if not actually involved in the evaluation process.

10-6.6.3 Attendance sheets. Attendance sign-in sheets should be maintained to provide accountability, ensure consistency in member participation, and reinforce the creditability to the evaluation process.

10-6.6.4 Access to the evaluation room. Evaluation team members may work beyond a normal 8-hour day. Since material is not permitted to be removed from the evaluation room, the team should be able to obtain access to the evaluation room in the evening and early in the morning.

10-6.6.5 “Unacceptable” Ratings. An “Unacceptable” rating on the consensus evaluation worksheet is an indication that the item or feature being evaluated does not meet a stated minimum requirement of the RFP. A rating of “Unacceptable” can only be made by consensus of the evaluating members and must be supported by written documentation, with reference to specific RFP requirements.

10-6.6.6 Individual Evaluations. Each evaluation team member will review the information provided on their worksheets and prepare for the consensus evaluation at the completion of the quality evaluation period.

10-6.6.7 Written comments. Written comments are required of each evaluation team member identifying the advantages and disadvantages of each proposal. These comments are essential to the PA/PE and CS in preparing the brief for the Source Selection Authority, completing negotiations, and in the debriefing of offerors. Comments are to be objective and should not transfer ideas and design concepts from one proposal to another. Full documentation is vital for the support of the Government's technical evaluation and rating. It may be beneficial to include an administrative assistant to take notes during the consensus discussions so that all of the key comments identified can be cataloged. Consensus evaluation team comments are also necessary for defending the Government's selection in the event that a protest is filed.

10-6.6.7.1 Identify and Document Deficiencies, Strengths, Weaknesses, and Uncertainties. All members of the evaluation team shall each review each proposal. Any strengths, weaknesses, deficiencies, or uncertainties shall be identified and documented to allow discussions during the consensus evaluation meeting to take place at the end of the evaluation period.

10-6.6.7.2 Definitions:

Proposal 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. Examples of deficiencies include statements by the offeror that it cannot or will not meet a requirement; an approach that clearly does not met a requirement, or an omission of data required to assess compliance with a Government requirement.

Proposal Strength: An aspect of a proposal that appreciably decreases the risk of unsuccessful contract performance or that represents a significant benefit to the Government.

Proposal Weakness: A flaw in the proposal that increases the risk of unsuccessful contract performance. A “significant weakness” in the proposal is a flaw that appreciably increases the risk of unsuccessful performance. Examples include offer features which meet the absolute minimum requirements of the Government but contain aspects which are not considered desirable by the Government.

Uncertainty: Any aspect of the proposal for which the intent of the offeror is unclear because there may be more than one way to interpret the offer or because inconsistencies in the offer indicate that there may be an error, omission, or mistake. Examples include a mistake in calculation or measurement and contradictory statements.

10-6.7 Additional Information. Additional information may not be provided by an offeror during the technical evaluation. If additional information is necessary to complete the evaluation process, then the requirements should be communicated to the Contract Specialist. If allowed, the Contract Specialist will request needed information in writing from the offeror during discussions. At the descretion of the CS, a telephonic conference with the proposer may be used to clear up small deficiencies or inconsistencies. If a telephone conference is used, it shall be verified in writing as soon thereafter as possible. Verbal clarifications have no contractual value.

10-7 DRAFT SOURCE SELECTION MEMORANDUM

10-7.1 Evaluation Ratings. After the technical quality evaluation of proposals has been completed, the PA/PE will compile the final consensus ratings for each proposal including all documentation of the strengths and weaknesses and forward them to the Contract Specialist. Items identified by the evaluators which require clarification by the offerors should be directed to the Contract Specialist for resolution. The Contract Specialist will also open, close, and document all negotiations/discussions with the offerors. All these items become part of the report to the SSEB and the DSSM.

10-7.2 Evaluation ratings, evaluation comments on particular proposals strengths and weaknesses, the independent Government estimate, the proposal prices, and any other significant items will be used by the Contract Specialist to prepare the draft Source Selection Memorandum (DSSM). The DSSM will address all offers in the competitive range, considering technical ratings, capability ratings, and price. Review and approval of the DSSM by the Contracting Officer is required before negotiations with the offerors can begin.

10-7.3 Government Estimate. The independent Government estimate as well as the results of the price/cost evaluation team will also be used by the Contract Specialist in preparing the DSSM.

10-7.4 Capability Information. The results of the evaluation of the offeror capability shall also be utilized by the CS in preparing the DSSM.

10-7.5 Competitive Range. Per FAR 15.306 (reference 10-2), the competitive range will be determined on the basis of cost or price and other factors that were stated in the solicitation, and based on the ratings of each proposal against all evaluation criteria, the Contracting Officer shall establish a competitive range composed of the most highly rated proposals.

10-8 ACTIVITIES MATRIX

10-8.1 The PM will ensure that the following activities are accomplished:

PHASE TWO PROPOSAL RECEIPT AND EVALUATION ACTIVITIES	Activity Lead			
	Customer	PM	PA /PE	CS
a. Prepare technical review worksheets for minimum technical check.			X	
b. Meet with In-House USACE technical staff to set time frame for review and operating procedures.			X	
c. Assure sufficient copies of the solicitation are available for the technical reviewers.			X	
d. Track the schedule, receipt, and review of proposals by Contracting Division		X		
e. Receive proposals from Contracting Division and make available to the technical reviewers.			X	
f. Receive, compile, and reproduce copies of the Minimum Technical Evaluation Comments for use by the quality evaluators.			X	
g. Physically set up the quality evaluation space including adequate administrative supplies.			X	
h. Discuss the project with the quality evaluation team. Review the operating rules. Outline the necessity for the written identification of strengths and weaknesses of each proposal.			X	X
i. Secure the total technical and offeror capability ratings from the evaluations.			X	X
j. Ensure proposals are returned and accounted for.			X	X
k. Obtain written comments from each evaluator before they are dismissed.			X	X
l. Assemble all comments for each proposal, from each evaluator, regarding strengths and weaknesses, For any items to be determined to be 'Unacceptable' particular comments must address the proposal and the specific solicitation requirement which has not been met.			X	X
m. Forward initial report to Contracting Division for it's use in preparing the DSSM. Include the following: consensus worksheets, ratings, classification items, narrative comments, a list of potential discussion items and questions, and a list of any items requiring clarification.			X	X
n. Return proposal materials to Contracting Division for access control.			X	X

REFERENCES

10-1 FAR 3.104, "Procurement Integrity"
10-2 FAR 15.306, "Exchanges with Offerors after Receipt of Proposals"

CHAPTER 11
DISCUSSIONS AND AWARD

11-1 AWARD BASED ON INITIAL OFFER.

11-1.1 Chapter 5, of this document indicates that award based on discussion with offerors is likely, however, the use of the basic clause is encouraged since it in fact allows the award of the project without discussions should an exceptional proposal be received, see FAR 15.209 (reference 11-1). If award based on initial offer is possible, the Contracting Division should proceed immediately with the preparation of the Source Selection Memorandum for immediate award after approval. Award based on an initial offer may be advantageous to the Government if:

11-1.1.1 It represents the best value to the Government under the Request for Proposals (RFP) evaluation criteria.

11-1.1.2 It does not differ from the RFP requirements in any material way, that is, no substantive flaws exist in the technical or cost proposals.

11-1.1.3 The price is reasonable.

11-1.1.4 The proposal contains no deficiencies or non-conforming items.

11-1.1.5 FAR clause 52.215-1 (reference 11-2) in it's basic form (no alternatives) was included in the solicitation.

11-2 AWARD BASED ON DISCUSSIONS.

11-2.1 Even when the basic clause is selected, award is not always possible based on initial offers. Questions and clarification items normally surface during the evaluation process which require discussions (negotiations) with the offerors in the competitive range.

11-2.2 Discussions. Discussions with offerors should be conducted by the Contracting Division in a timely and orderly manner so that a contract award can be made in the minimum time. The Government has the ability to request revised proposals from offerors and continue discussions. Multiple rounds of discussions should be avoided whenever possible. Some USACE activities use face-to-face or telephonic discussions, while others require all discussions be conducted in writing. The recommended method is to delineate the discussion items to each offeror in writing. Responses must be in writing, response is required for all discussion items, and should replace or expand upon elements in the initial proposal. Discussion items normally fall into the following five categories:

11-2.2.1 Those items in which the proposal appears to fail to meet RFP criteria.

11-2.2.2 Those items which require clarification due to contradictions, errors, or omissions in the proposal.

11-2.2.3 Those items which, due to physical or material conditions, may cause an unsafe or hazardous condition.

11-2.2.4 Those items which may meet the minimum RFP requirements, but are too expensive, unwanted, undesirable, or which could otherwise be revised to better meet the Governments needs.

11-2.2.5 Prices or cost breakdown information which appears to be too high, too low, mistaken, or unrealistic for the corresponding technical proposal.

11-2.3 Corrected Documents. The corrected documents may be the basis for re-evaluating the ratings developed during the phase 2 evaluation.

11-2.3.1 In-house technical reviewers and in-house members of the evaluation team will determine the need for adjustments to the ratings for the corrected items.

11-2.3.2 Re-adjust the rating of each proposal based on the results of discussions. For minor changes, telephone coordination with participating members of the evaluation team may be adequate. Brief them on the changes made by offerors and the recommendations of the in-house technical reviewers and evaluation team members. Revise rating sheets to achieve consensus of all evaluation team members.

11-2.4 Competitive Range. See FAR 15.306 (reference 11-3) for a definition of the competitive range. When discussions are initiated with any offeror, they must be conducted with all offerors in the competitive range. If requirements are revised for one offeror, they must be revised for all offerors. This is done by amending the solicitation which may be done throughout the negotiation phase, see FAR 15.206 (reference 11-4).

11-2.5 Wage Rates. If applicable wage rates will expire prior to contract award, new wage rates should be obtained. Offerors should be advised so that these new wage rates must be considered. See FAR 22.404-6 (reference 11-5) for additional guidance.

11-2.6 At the conclusion of discussions, each offeror will be requested to submit a final Proposal Revision which shall document any changes to the proposal prices or technical information. The offerors will be given a reasonable period of time to respond to any remaining issues needing clarification. No indication will be made to any offeror of a price, which must be met to obtain further consideration except that the Government may emphasize the available funding limit or cost ceiling for award.

11-3 SOURCE SELECTION.

11-3.1 Formal source selection in accordance with FAR 15.302 (reference 11-6) is permitted but not required. After discussions are completed, proposals are re-evaluated and the proposal most advantageous to the Government, based on technical and price factors identified in the RFP, is selected. The USACE activity, Installation, and Major Army Command (MACOM) should all have a voice in source selection, but the final selection shall be made by the Source Selection Authority.

11-3.2 Criteria. The following information should be considered in source selection:

11-3.2.1 Offeror's original proposal

11-3.2.2 Original proposals as modified by discussions.

11-3.2.3 Maximum price allowed under the RFP.

11-3.2.4 Basic proposal price.

11-3.2.5 Prices of options.

11-3.2.6 Overall proposal rating.

11-3.2.6.1 If basic only is exercised.

11-3.2.6.2 If basic and options are exercised.

11-3.2.7 Priority recommendation or ranking.

11-3.2.8 Summary chart comparing features of each proposal.

11-3.2.9 Tradeoff Process Documentation.

11-3.2.9.1 Identify the proposal differences that surfaced during the evaluations

11-3.2.9.2 Analyze their impact on the acquisition objectives in light of the relative importance of the evaluation factors.

11-3.2.9.3 Compare each proposal to each of the other proposals.

11-3.2.9.4 Assess the best mix of cost (price) and non-cost benefits and determine whether the strengths of higher rated proposals are worth the extra costs.

11-3.2.10 Site plan.

11-3.2.11 Typical facility layouts.

11-3.2.12 Typical elevations.

11-3.2.13 Proposed construction materials.

11-3.2.14 Biographies of the evaluators. (This information should be a short, one paragraph narrative of the evaluators experience and capabilities. The information is provided to give the SSA some idea of the qualifications of the evaluators.)

11-3.3 Errors and/or Omissions. Should errors and/or omissions in the evaluation process be noted, the proposals will be referred back to the Contracting Division for appropriate action.

11-3.4 Final Selection. The final selection must be defendable, reasonable, and well documented. FAR 15.305 (reference 11-7) provides guidance on what should be documented in the contract file, including the following:

11-3.4.1 Introduction. Include information including data about the Source Selection Process, the basis for award, evaluation factors and sub-factors, summary of the solicitation requirements, the number of offerors solicited, responded, and maintained within the competitive range.

11-3.4.2 Evaluation Results. Summarize the evaluation results of each offeror's proposal. A matrix to display this data is desirable.

11-3.4.3 Comparative Analysis of Proposals. Compare both the cost and non-cost factors of the proposals, a matrix of the data is acceptable. Discuss the evaluation factors and subfactors first individually and then comparatively. Include each proposals major strengths, weaknesses, and risks, as well as the details and results of the technical tradeoff analysis and justification for payment of a premium, if applicable.

11-3.4.4 Risk Assessment. Discuss the overall impact of significant risks associated with each proposal within the competitive range, including production and performance risks and the degree of confidence in the offeror's price proposal.

11-3.4.5 Summary and Award Recommendations. Summarize the comparative analyses, expressed in brief statements, and the issues considered significant to the Source Selection Authority's decision. Include a selection recommendation.

11-3.5 Documentation. Complete and thorough documentation of the evaluation and selection process is critical when protests are filed, since the General Accounting Office carefully scrutinizes the records

prepared by both the Contracting Division and the evaluation teams in evaluating the legitimacy of the protest.

11-4 COORDINATING THE FINAL SOURCE SELECTION MEMORANDUM

11-4.1 The Contracting Division will normally prepare the Final Source Selection Memorandum with the recommendation for contract award to the selected offeror in accordance with the findings and recommendations of the Source Selection Authority. The PM should monitor the progress of the Source Selection Memorandum preparation and be available to provide support if needed. When completed the Source Selection Memorandum must be signed by all members of the Source Selection Board or Authority. The requirements of contracting regulations regarding subcontracting to small and disadvantaged businesses should be addressed at this time by including that information from the Offeror's proposal as applicable.

11-5 PREPARING FOR AWARD.

11-5.1 Request for Funds. As soon as the Source Selection Memorandum is approved, HQUSACE (CEMP-MA) should be advised in writing of the contract award cost data with a request for funding and authority to award. HQUSACE (CEMP-MA) will review the request for funding and authority to award, and will issue a Code 9 construction directive with a breakdown of the funds provided. When different USACE activities will be designing and constructing the project, the construction funds will be forwarded to the USACE construction activity in lieu of the USACE design activity. The receiving USACE construction activity will in turn provide a certification of funds available for contract award to the USACE design activity.

11-5.2 Congressional Notification (Projects over five (5) million dollars only). Congressional liaison must be notified 48 working hours prior to the date of intended award. This time may be critical for award on a tight schedule. Normally, notification will be accomplished by the USACE design activity's Contracting Division.

11-5.3 Public Affairs Announcement. The PM will provide the necessary information to the USACE Design Activity's Public Affairs Officer to announce the award of the project. The notice will not be released until after the actual award.

11-6 AWARD.

11-6.1 Following the receipt of funds and authority from HQ USACE an award to the successful proposer can be made. The formal contract between the Government and the successful offeror is comprised of the following items:

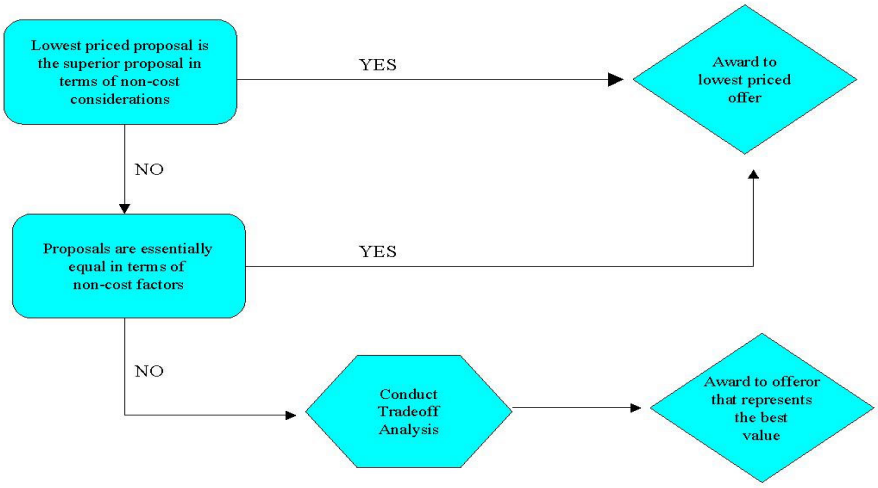
11-6.1.1 Request For Proposal (RFP). The RFP becomes part of the contract, including all provisions, amendments, and drawings.

11-6.1.2 Proposal. The offeror's proposal in its entirety, which shall include all drawings, cuts and illustrations, and modifications to the proposal made during evaluation or selection.

11-6.1.3 Any betterments or enhancements included in the proposal.

11-6.2 This material constitutes a formal contract and defines the entire agreement between the offeror and the Government. No documentation should be omitted which in any way bears upon the terms of that agreement. When discrepancies may arise the Government and the successful offeror shall review the Order of Precedence Special Contract Requirement which specifically delineates the order of precedence in conflict or omissions situations.

Decision Model for Determining the Successful Offeror



11-7 ACTIVITIES MATRIX.

11-7.1 The PM will ensure that the following activities are accomplished:

DISCUSSION AND AWARD ACTIVITIES	Activity Lead			
	Customer	PM	PA /PE	CS
a. Coordinate with Contracting Division to set up the Source Selection Board		X		
b. Ensure that Contracting Division has sufficient information to begin and execute discussions with offerors.		X	X	
c. Coordinate and lead efforts for evaluations of the proposer's clarifications and corrections.			X	X
d. Determine if clarifications and corrections require a re-convene of the evaluation team. If so, prepare requests for reconvene and funding to support.		X	X	X
e. Compile summary of evaluation ratings and comments.			X	X
f. Assemble documents required for Source Selection Board Brief and reproduce.			X	X
g. Hold Source Selection Board Meeting and prepare final Source Selection Memorandum.			X	X
h. Request Authority from HQUSACE for funds to award project.		X		
i. Coordinate award package		X		X
j. Request Contracting Division prepare Congressional notification		X		
k. Prepare Public Affairs Announcement and forward to PAO		X		
m. Award				X
n. Coordinate with Contracting Division for identification and empowerment of the ACO for the contract.		X		X

REFERENCES

11-1 FAR 15.209, "Solicitation Provisions and Contract Clauses"
11-2 FAR 52.215-1, "Instructions to Offerors – Competitive Acquisitions"
11-3 FAR 15.306, "Exchanges with Offerors after Receipt of Proposals"
11-4 FAR 15.206, "Amending the Solicitation"
11-5 FAR 22.404-6, "Modifications of Wage Determinations"
11-6 FAR 15.302, "Source Selection Objectives"
11-7 FAR 15.305, "Proposal Evaluation"

CHAPTER 12
POST AWARD ACTIVITIES

12-1 DEBRIEFING UNSUCCESSFUL OFFERORS.

12-1.1 Requests for Debriefing. Requests for debriefing should be made in writing to the Contracting Division. When an offeror requests a debriefing, he or she should be offered an opportunity to visit the USACE design activity for a face-to-face critique of his or her proposal. This meeting should be held in the spirit of being helpful and cooperative, with the goal of improving future submittals. The debriefing can also be done in writing or by telephone if the offeror prefers. Debriefings may be accomplished pre-Award (reference 12-4) for proposals which were eliminated from competition as a result of Phase 1 of the process or conducted in a post-Award (reference 12-5) timeframe. An official summary of all debriefings shall be included in the contract file

12-1.2 Debriefings should be conducted by the CS in coordination the PA/PE or other technical representative knowledge enough about the proposal to discuss the identified technical strengths and weaknesses of that proposal. Discussions should be limited to the individual offeror's own proposal. Technical comparisons with the other proposals must be avoided. Concentrate on important advantages and weaknesses of the proposal and avoid discussion of minor points. The Government may reveal the comparative rating between the debriefed offeror and the winning proposal.

12-1.3 At a minimum, a pre-Award debriefings shall include the following considerations: (1) The agency's evaluation of significant elements in the offeror's proposal; (2) A summary of the rationale for eliminating the offeror from the competition; and (3) Reasonable responses to relevant questions about whether source selection procedures contained in the solicitation, applicable regulations, and other applicable authorities were followed in the process of eliminating the offeror from the competition. Pre-Award debriefings shall not disclose: (1) The number of offerors; (2) The identity of other offerors; (3) The content of other offerors' proposals; (4) The ranking of other offerors; (5) The evaluation of other offerors; or (6) Any of the information prohibited in FAR 15.506(e) (reference 12-5).

12-1.4 As a minimum, post-Award debriefings shall include the following information: (1) The Government's evaluation of the significant weaknesses or deficiencies in the offeror's proposal; (2) The overall evaluated cost or price (including unit prices) and technical rating, if applicable, of the successful offeror and the debriefed offeror, and past performance information on the debriefed offeror; (3) The overall ranking of all offerors, when any ranking was developed by the agency during the source selection; (4) A summary of the rationale for award; (5) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror; (6) Reasonable responses to relevant questions about whether source selection procedures contained in the solicitation, applicable regulations, and other applicable authorities were followed. Post-Award debriefings shall not include: (1) point-by-point comparisons of the debriefed offeror's proposal with those of other offerors. Moreover, the debriefing shall not reveal any information prohibited from disclosure by 24.202 or exempt from release under the Freedom of Information Act (5 U.S.C. 552) including, Trade secrets; Privileged or confidential manufacturing processes and techniques; Commercial and financial information that is privileged or confidential, including cost breakdowns, profit, indirect cost rates, and similar information; The names of individuals providing reference information about an offeror's past performance.

12-2 PRE-DESIGN / PRE-CONSTRUCTION CONFERENCE

12-2.1 The pre-design / pre-construction conference represents the passing of project focus from Engineering to Construction. The conference is normally held at the office of the Resident Engineer for the installation. The Resident Engineer is normally the Contracting Officer's Representative (COR) and may also be the Administrative Contracting Officer (ACO). See EP 415-1-260 (reference 12-1),

for additional definitions of these roles and responsibilities. The conference presents the best opportunity for the Resident Engineer, PM, PA/PE, Government reviewers, and the Contractor to establish working relationships and understandings necessary for the successful execution of the project.

12-2.2 Timing. As soon as possible after contract award the conference should be held to facilitate completion of design and establish the procedures for construction. Timing is important because it affects the Contractor's schedule as discussed in Volume 2 Section 01012.

12-2.3 Resident Engineer. The Resident Engineer should run the conference, and define the roles of the persons involved in the completion of design and construction. The Resident Engineer, who is normally the ACO, should define the appropriate points of contact, method of communication, transmission of materials, and the expected scheduling of submissions. In addition, the Resident Engineer should invite other military and, if affected, non-DoD utility agencies to the meeting to brief them on the expected process, the transmission of comments, and ground rules. Resident Engineer responsibilities with respect to the pre-design / pre-construction conference are as follows.

12-2.3.1 Prepare meeting agenda.

12-2.3.2 Establish roles for the Contractor, in relationship to the responsibilities assigned to the Contracting Officer (CO), Contracting Officer's Representative (COR), and Administrative Contracting Officer (ACO). Define the single point of contact for the design review process and delineate the activities of that individual. The role of the Government reviewers is to clarify design issues.

12-2.3.2 Review the design for construction procedures as they apply in the design-build process. Clearly define the roles and responsibilities of the design-build Contractor.

12-2.3.3 Review the design and construction schedules and the required design submission contents. Establish the due dates for design submissions, completion of review, and review conferences.

12-2.3.4 Follow-up with the Contractor to ensure responses to comments and minutes of the review conferences will be distributed to all conference attendees within 10 days of the review conferences.

12-2.3 Project Manager. The PM should clearly define his/her role (e.g., that all design issues should be coordinated through his or her office and formal directives will originate from his or her office and be transmitted to the Contractor in writing through the ACO.) The contractor shall be reminded that the only contractually binding directions can come from the Contracting Officer or the ACO, no other Government staff may direct the contractor’s activities. The PM should reiterate with all Government reviewers, that they are tied to the RFP requirements and the Contractor's proposal in that order. Design criteria and functional changes are to be avoided. The PM's support should include the following actions, most of which may be performed by the PA/PE:

12-2.3.1 Prepare a memorandum to remind reviewing activities when design submissions are scheduled to be submitted, reviewed, and completed.

12-2.3.2 Coordinate with the in-house USACE design review personnel and ensure that the necessary human resources will be available when needed.

12-2.3.3 Receive and consolidate comments from the reviewing activities. Forward copy of comments to the Contractor for review prior to the review conference.

12-2.3.4 Reproduce comments for distribution to review conference attendees.

12-3 COMPLETION OF DESIGN.

12-3.1 Government Reviews. Design reviews by the Government are primarily to verify that the final design conforms with the RFP and the Contractor's proposal. They are not for technical verification of the design. Where possible, obvious errors and omissions should be noted and brought to the Contractor's attention. However, the Government does not assume responsibility for the technical adequacy of the design. **THE GOVERNMENT NEVER "APPROVES" THE DESIGN.**

12-3.2 Stages of Review. A minimum of two formal reviews are required: the 100 percent site/utility design combined with the 50 percent building design, and the 100 percent building design. Volume 2, Section 01012, defines the submission requirements. The design review team should be composed of personnel from the USACE design and construction activities who participated in the development of the RFP and evaluation of the proposals whenever possible (including the Resident Engineer for the project). In the spirit of partnering, the contractor, the construction area office, and USACE design reviewers should work continuously to clarify issues, preclude lost design effort, and ensure the constructability of the project. If "fast tracking" was included in the project development the Government must execute the design reviews within the time frames indicated in Section 01012. Failure of the Government to comply with the review periods indicated will be justification for delay costs and impacts to the contractor.

12-3.3 Timeliness. Government reviewing activities should receive design review submissions from the Contractor approximately 14 days prior to review conferences. These documents should represent the current design status. Work by the Contractor should continue during the review process. The design shall be 100 percent complete prior to distribution for final review. The Government must complete the reviews in accordance with the schedule agreed upon at the predesign conference for construction. Unlike Invitation for Bid (IFB) contracts, the Government is working within the constraints of the Contractor's performance period. Government delays may form the basis for a Contractor claim for damages and/or time extensions.

12-3.4 Procedures. A review conference should be held at the Resident Engineer's office following the review period for each design submission. Government personnel should present review comments for discussion and resolution. Copies of comments, annotated with comment action agreed upon, should be made available to all parties by the Contractor within 10 days after the conference date. Unresolved comments should be resolved by immediate follow-up action. Upon receipt of the final corrected design documents, the USACE design activity should backcheck the design and ensure that follow-up actions are complete for all previously unresolved issues. Upon completion and Government acceptance of the design, the ACO should authorize construction in accordance with the RFP and the contractor's completed design.

12-4 CONSTRUCTION.

12-4.1 A primary advantage of the design-build process is the ability of the contractor to "fast track" his construction start without completion of all design information. In preparing the solicitation the Design District shall include the applicable special contract requirement with respect to "fast track" construction.

12-4.2 Authority to Initiate Site Construction. Authority to initiate site construction should be given to the Contractor upon the completion of a Government review for conformance of the 100 percent site design with the awarded proposal and the solicitation requirements. Following incorporation and/or resolution of all design related comments the Resident Engineer or ACO can release the contractor to begin construction on the phases of work which have been reviewed and found to be in conformance with the original proposal and the solicitation. The responsibility for a totally integrated design, in accordance with the solicitation and the accepted proposal, remains with the Contractor and the site construction authority should so state. A preconstruction conference should be held at the Resident Engineer's office when this authority is given.

12-4.3 Authority to Initiate Facility Construction. Authority to initiate facility construction should be given to the Contractor upon the completion of a Government review for conformance of the 100

percent design for conformance with the awarded proposal and the solicitation requirements. The Contractor's final design must be submitted, reviewed, comments incorporated, and accepted prior to the start of building construction.

12-5 RECORD KEEPING.

12-5.1 During the entire Design-Build procurement process it is important to keep accurate records of dates, timelines, schedules, correspondence and other important project data. In the post award phase it is particularly important to keep accurate records of proposed and actual design schedules, design submission dates, comment submission dates, review meeting dates, NTP date, comments at each review stage, and comment resolutions. This information should be kept readily available by the PA/PE and the ACO and must include all Installation interactions, as well as those with the contractor.

12-6 POST AWARD ACTIVITIES MATRIX.

12-6.1 The PM will ensure that the following activities are accomplished:

POST AWARD ACTIVITIES	Activity Lead			
	Customer	PM	PA /PE	CS
a. Notify proposers of results of evaluation and offer debriefings. This notification shall be in writing.				X
b. Receive requests for debriefing and schedule debriefings.				X
c. Prepare strengths and weakness in support of the debriefing of an unsuccessful contractor.			X	
d. Debrief the unsuccessful contractors.			X	X
e. Distribute copy of the successful proposal to each Government review agency.			X	X
f. Coordinate the date, time, and location of the pre-design conference.		X		
g. Receive, review, and coordinate the design review schedule with the Engineering Division and the customer in concert with the ACO.		X		
h. Determine and set locations and times for the design review meetings.		X		
i. Issue construction NTP when the site development plans are completed and all review comments have been satisfactorily addressed.				X

REFERENCES

12-1 EP 415-1-260, "Resident Engineer's Management Guide", 06 Dec 1990
12-2 FAR 15., "Contracting By Negotiation"
12-3 Not Used
12-4 FAR 15.505, Pre-Award Debriefing of Offerors
12-5 FAR 15.506, Post-Award Debriefing of Offerors

APPENDIX A
PHASE 1 EVALUATION MANUAL

1. GENERAL

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

2. EVALUATION PROCEDURES.

a. Security. Each evaluator is responsible for maintaining security of offerors' proposals and Government evaluation documents. No material is permitted to be removed from the evaluation room during the evaluation or after completion of the evaluation. The evaluation room will be locked when not in use. Proposals are not to be discussed outside of the evaluation room.

b. Procurement Integrity and Non-disclosure. Evaluators must sign a non-disclosure statement as required by the procurement integrity regulations. This also applies to anyone who looks at the proposals, even if not actually involved in the evaluation process.

c. Written Comments. Written comments are required of each evaluator identifying the strengths and weaknesses of each proposal on the rating worksheets. These comments are essential to the Contract Specialist (CS) in preparing the Phase 1 Selection Memorandum, and debriefing of unsuccessful offerors.

d. Additional Information. Additional information may be needed to complete the evaluation process, or to assure that all proposals in the competitive range are conforming to the Request for Proposals (RFP). The Contracting Division will request the information or clarification be provided by the offeror in writing.

e. Prior to beginning the review or evaluation of any of the Offeror's proposals, the evaluators must familiarize themselves with the solicitation statement of work, proposal submission requirements (Section 00110) and the proposal evaluation criteria (Section 00120).

f. Evaluators shall review and evaluate all proposals independently. No discussions of proposals between the evaluators shall take place prior to the final consensus discussions.

g. Substitutions for evaluators will not be allowed once the evaluation process has begun. No consensus sessions may be held unless all evaluators are present as well as the non-rating board Chairperson.

3. PROPOSAL REQUIREMENTS

a. Section 00110, Proposal Submission requirements identifies all the necessary submittal information to be included in the Contractor proposals. Proposals which reach the evaluation stage have passed an initial Contracting Division review to assure that they are complete and responsive. All proposals which are provided to the evaluation team must be evaluated and rated.

b. Past Performance Questionnaires. Each proposal shall include at least three completed questionnaires from previous offeror projects. If more than three questionnaires have been returned the evaluation team shall determine which three questionnaires are to be evaluated. If less than three questionnaires have been returned for a particular proposal, that proposal shall receive an "UNKNOWN" rating for each of the questionnaires not received.

4. INDIVIDUAL PROPOSAL RATING WORKSHEETS

a. On the following pages individual worksheets are provided for use by the evaluators to review and rate the individual proposals. During the consensus evaluation, a single "consensus rating" worksheet shall be completed for each proposal and signed by all the evaluators. It is imperative that all comments and supporting rational for the rating assigned be included on this consensus sheet. Comments are required to support all ratings above or below "Satisfactory".

5. RATING METHODOLOGY

a. Proposals will be evaluated in each evaluation Factor based on the following rating scheme:

RATING	EXPLANATION
Unknown Performance Risk	Past performance information provided does not provide sufficient depth and breadth of experience to allow a definitive rating.
Outstanding/Very Low Performance Risk	Based on the offeror's performance record, no doubt exists that the offeror will successfully perform the required effort.
Above Average/Low Performance Risk	Based on the offeror's performance record, little doubt exists that the offeror will successfully perform the required effort.
Satisfactory/Moderate Performance Risk	Based on the offeror's performance record, some doubt exists that the offeror will successfully perform the required effort. Normal contractor emphasis should preclude any problems.
Marginal/High Performance Risk	Based on the offeror's performance record, substantial doubt exists that the offeror will successfully perform the required effort.
Unsatisfactory/Very High Performance Risk	Based on the offeror's performance record, extreme doubt exists that the offeror will successfully perform the required effort.

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

6. EVALUATION FACTORS

a. As indicated in Section 00120, PROPOSAL EVALUATION AND CONTRACT AWARD, the following factors will be evaluated and rated for each proposal:

FACTOR 1-1: OFFEROR PAST PERFORMANCE: This factor is the most important factor in the evaluation or Phase 1 proposals.

FACTOR 1-2: OFFEROR PROJECT KEY PERSONNEL: This factor is slightly less important than Factor 1-1 but represents a significant level of importance in evaluating proposals.

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

FACTOR 1-4: OFFEROR RELEVANT EXPERIENCE: This factor is less important than Factor 1-2.

7. OVERALL PROPOSAL RATING

a. Following completion of the consensus rating, each proposal will be assigned a single overall adjectival rating. This final overall rating will be the determinant as to which offerors proceed into Phase 2 of the solicitation. In no case will more than five (5) proposals be included in the Phase 2 process.

b. It is the responsibility of the evaluation team to provide and document sufficient strengths, weaknesses, and omissions to suitably support the assigned rating in each Factor as well as the overall Phase 1 rating. Documentation/comments are required for all ratings other than “SATISFACTORY”.

c. Following the completion of the consensus discussions and rating assignments, the individual rating worksheets from each of the evaluators will be collected by the Chairperson and destroyed. Each evaluator shall sign the final rating assignment sheet.

PROPOSAL RATING WORKSHEET

FACTOR 1-1

OFFEROR PAST PERFORMANCE

Offeror: _____

Evaluator:_____

1. General: Evaluators will use this factor to evaluate the success of the offeror based on the satisfaction of previous customers and clients as illustrated on the completed questionnaires. These completed questionnaires shall be used as a basis to begin the evaluation of this factor.

Has Government Received Three Completed Questionnaires for this Offeror ____ YES ___ NO

Do All the Questionnaires Received Reflect Projects Completed Within the Last 3 Years ____ YES ____NO

2. ACASS – CCASS Ratings: Contract Specialist shall provide ACASS and CCASS Ratings for the offeror and the principal subcontractor (design firm or construction firm) if the offeror is not a single entity. Evaluators shall list below the names of the firms reported on the resultant ratings.

Construction Rating (CCASS)

Firm Name: _____

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

Design Rating (ACASS)

Firm Name: _____

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

Select an appropriate overall rating for the CCASS and ACASS evaluation information available:

/__/ Outstanding /__/ Above Average /__ / Satisfactory /__ / Marginal /__ / Unsatisfactory

/__ / Unknown

3. Relevant Evaluator Personal Knowledge: Has this evaluator had documented personal experiences with the offeror or the prime subcontractors? If so, describe below:

4. Quality of Products Produced: Evaluators shall carefully review the information provided in the completed questionnaires to ascertain a level of customer satisfaction with the quality of the past projects. Based on that review, provide a rating for the Quality of the Past Completed Projects below. Include a listing of any apparent weaknesses or strengths of the offeror and the proposed project team.

/__/ Outstanding /__/ Above Average /__ / Satisfactory /__ / Marginal /__ / Unsatisfactory

/__ / Unknown

4a. Strengths: Include a listing of any identified or obvious strengths of the offeror with respect to final product quality.

4b. Weaknesses: Include a listing of any identified or obvious weaknesses of the offeror with respect to final product quality.

4c. Other: Include any other comments/rationale to support the overall rating provided for this offeror.

5. Timeliness of Products Produced: Evaluators shall carefully review the information provided in the completed questionnaires to ascertain customer satisfaction with the timeliness of the past projects. Based on that review, provide a rating for the Timeliness of the Past Completed Projects below. Include a listing of any apparent weaknesses or strengths of the offeror and the proposed project team.

/__/ Outstanding /__/ Above Average /__ / Satisfactory /__ / Marginal /__ / Unsatisfactory

/__ / Unknown

5a. Strengths: Include a listing of any identified or obvious strengths of the offeror with respect to timeliness.

5b. Weaknesses: Include a listing of any identified or obvious weaknesses of the offeror with respect to timeliness.

5c. Other: Include any other comments/rational to support the overall rating provided for this offeror.

6. Offeror Management Processes. Offeror Management Processes will be evaluated in terms of the Offerors Documentation, Cooperation with the Customer/Client Personnel, and the Management of Subcontractors.

6a. Offeror Documentation: Evaluators shall carefully review the information provided in the completed questionnaires to ascertain a level of customer satisfaction with the documentation, reports, and other written materials completed by the offeror on the past projects. Based on that review, provide a rating for the Offeror Documentation Skills of the Past Completed Projects below. Include a listing of any apparent weaknesses or strengths of the offeror and the proposed project team.

/__/ Outstanding /__/ Above Average /__ / Satisfactory /__ / Marginal /__ / Unsatisfactory

/__ / Unknown

6a.1 Strengths: Include a listing of any identified or obvious strengths of the offeror with respect to Offeror Documentation and production of written materials.

6a.2 Weaknesses: Include a listing of any identified or obvious weaknesses of the offeror with respect to Offeror Documentation and production of written materials.

6a.3 Other: Include any other comments/rationale to support the overall rating provided for this offeror.

6b. Offeror Cooperation with Customer/Client Personnel: Evaluators shall carefully review the information provided in the completed questionnaires to ascertain a level of customer satisfaction with the offeror cooperation and interactions on the past projects. Based on that review, provide a rating for the Offeror Cooperation on the Past Completed Projects below. Include a listing of any apparent weaknesses or strengths of the offeror the and proposed project team.

/__/ Outstanding /__/ Above Average /__ / Satisfactory /__ / Marginal /__ / Unsatisfactory

/__ / Unknown

6b.1 Strengths: Include a listing of any identified or obvious strengths of the offeror with respect to Customer/Client Cooperation.

6b.2 Weaknesses: Include a listing of any identified or obvious weaknesses of the offeror with respect to Customer/Client Cooperation.

6b.3 Other: Include any other comments/rationale to support the overall rating provided for this offeror.

6c. Offeror Management of Subcontractors: Evaluators shall carefully review the information provided in the completed questionnaires to ascertain a level of customer satisfaction with the offeror Management of Subcontractors on the past projects. Based on that review, provide a rating for the Offeror Subcontractor Management Skills on the Past Completed Projects below. Include a listing of any apparent weaknesses or strengths of the offeror and the proposed project team.

/__/ Outstanding /__/ Above Average /__ / Satisfactory /__ / Marginal /__ / Unsatisfactory

/__ / Unknown

6c.1 Strengths: Include a listing of any identified or obvious strengths of the offeror with respect to Offeror Subcontractor Management.

6c.2 Weaknesses: Include a listing of any identified or obvious weaknesses of the offeror with respect to Offeror Subcontractor Management.

6c.3 Other: Include any other comments/rationale to support the overall rating provided for this offeror.

Factor 1-1 Summary and Overall Rating

FACTOR 1-1 SUMMARY RATING CHART			
Item No.	**Description**	**Rating***	**Comments**
1.	Questionnaire Receipt	YES NO	
2.	ACASS/CCASS Rating		
3.	Personal Experience	N/A	No rating permitted here
4.	Quality Products Produced		
5.	Timeliness of Execution		
6a.	Offeror Documentation		
6b.	Offeror Cooperation		
6c.	Offeror Subcontractor Management		
OVERALL FACTOR 1-1 RATING**			

* Ratings may be either:
Unknown – Outstanding – Above Average – Satisfactory – Marginal – Unsatisfactory

** Evaluators shall consider the ratings in the various items shown to determine a suitable overall rating.

PROPOSAL RATING WORKSHEET

FACTOR 1-2

OFFEROR PROJECT KEY PERSONNEL

Offeror: _____

Evaluator:_____

1. General: Evaluators will use this item to document receipt of Proposal Information with respect to Key Personnel.

Does the Proposal Include Identifications of the Key Personnel? ____ YES ___ NO

2. Key Personnel: Review and evaluate the proposed Offeror personnel to be included on this project team. Have these individuals worked Design/Build projects together previously? Do the key construction staff (superintendent, CQC, Project Manager) have experience with "fast-track" design/build projects? Are the designers of record registered professional engineers? Are the designers suitably experienced in their field to provide them a suitable level of design expertise? Based on that review, provide a rating for the Offeror proposed project team below. Include a listing of any apparent weaknesses or strengths of the offeror and the proposed project team.

/__/ Outstanding /__/ Above Average /__ / Satisfactory /__ / Marginal /__ / Unsatisfactory

/__ / Unknown

2a Strengths: Include a listing of any identified or obvious strengths of the offeror with respect to Offeror Subcontractor Management.

2b Weaknesses: Include a listing of any identified or obvious weaknesses of the offeror with respect to Offeror Subcontractor Management.

2c Other: Include any other comments/rationale to support the overall rating provided for this offeror.

PROPOSAL RATING WORKSHEET

FACTOR 1-3

OFFEROR TECHNICAL APPROACH NARRATIVE

Offeror: _____

Evaluator:_____

1. General: Evaluators will use this item to document receipt of a technical approach narrative with the Proposal Information.

Does the Proposal Include a Technical Approach Narrative? ____ YES ___ NO

2. Evaluate the Offerors described understanding the two phase Design/Build process being used in this solicitation. Does the Offeror demonstrate a suitable understanding of the process to enable him/her to adequately address and anticipate the risks associated with Design/Build processes?

/__/ Outstanding /__/ Above Average /__ / Satisfactory /__ / Marginal /__ / Unsatisfactory

/__ / Unknown

3. Evaluate the Offerors described understanding of “fast track” design construction procedures.

/__/ Outstanding /__/ Above Average /__ / Satisfactory /__ / Marginal /__ / Unsatisfactory

/__ / Unknown

4. Evaluate the Offerors described understanding of the integration of key subcontractors into the Design/Build process. Does the Offeror illustrate a clearly defined role and responsibility for each of his/her key subcontractors?

/__/ Outstanding /__/ Above Average /__ / Satisfactory /__ / Marginal /__ / Unsatisfactory

/__ / Unknown

5. Strengths: Include a listing of any identified or obvious strengths the offeror demonstrated in the Technical Approach Narrative.

6. Weaknesses: Include a listing of any identified or obvious weaknesses the offeror demonstrated in the Technical Approach Narrative.

7. Other: Include any other comments with respect to the Technical Approach Narrative.

Factor 1-3 Summary and Overall Rating

FACTOR 1-3 SUMMARY RATING CHART			
Item No.	**Description**	**Rating***	**Comments**
1.	Technical Approach Narrative Included in Proposal?	YES NO	
2.	Understanding of the Design/Build Process		
3.	Use of "Fast Track" Design/Build Process		
4.	Integration of Key Subcontractors		
5.	Strengths	N/A	No rating permitted
6.	Weaknesses	N/A	No rating permitted
7.	Other	N/A	No rating permitted
OVERALL FACTOR 1-3 RATING**			

* Ratings may be either:
Unknown – Outstanding – Above Average – Satisfactory – Marginal – Unsatisfactory

** Evaluators shall consider the ratings in the various items shown to determine a suitable overall rating.

PROPOSAL RATING WORKSHEET

FACTOR 1-4

OFFEROR RELATIVE EXPERIENCE

Offeror: _____

Evaluator:_____

1. General: Evaluators will use this item to document receipt of example project listings with the Proposal Information.

Does the Proposal Include an Example Project Listing with Suitable Explanation? ____ YES ___ NO

2. Evaluate the Offerors provided example projects. Are these projects similar in size (cost) and complexity with this solicitation requirements? Was the Offeror in responsible charge of the example projects? Was he/she a key subcontractor?

/__/ Outstanding /__/ Above Average /__ / Satisfactory /__ / Marginal /__ / Unsatisfactory

/__ / Unknown

NOTE: IF THE OFFEROR HAS NO RELEVANT EXPERIENCE LISTED OR THE EVALUATION PANEL DETERMINES THE EXAMPLE PROJECTS PROVIDED TO NOT REPRESENT RELEVANT EXPERIENCE, THE OFFEROR MUST BE RATED AS “SATISFACTORY”.

3. Strengths: Include a listing of any identified or obvious strengths the offeror demonstrated in the example projects included in the proposal.

4. Weaknesses: Include a listing of any identified or obvious weaknesses the offeror demonstrated in the example projects included in the proposal.

Offeror:_____

Phase 1 Summary and Overall Rating

PHASE 1 SUMMARY RATING CHART			
Item No.	**Description**	**Rating***	**Comments**
1.	Factor 1-1 Offeror Past Performance		The most important Factor.
2.	Factor 1-2 Offeror Project Key Personnel		This Factor is slightly less important than Factor 1-1
3.	Factor 1-3 Technical Approach Narrative		This Factor is slightly less important than Factor 1-1
4.	Factor 1-4 Offeror Relevant Experience		This Factor is less important than Factor 1-1
OVERALL PROPOSAL RATING**			

* Ratings may be either:
Unknown – Outstanding – Above Average – Satisfactory – Marginal – Unsatisfactory

** Evaluators shall consider the ratings in the various items shown to determine a suitable overall rating. The overall rating cannot be an average, mode, or median of the ratings of the four factors. A final rating must be reached based on discussions and a consensus among the evaluators

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

_____
Board Member 1

_____
Board Member 2

_____
Board Member 3

_____
Board Member 4

_____
Board Chairperson

APPENDIX B
PHASE 2 EVALUATION MANUAL

1. GENERAL

The purpose of this document is to establish a uniform evaluation procedure for Phase 2 of the solicitation based on contractually defined criteria. This process will be an extension of the Phase 1 evaluation process. The Evaluation Team will evaluate each proposal individually using the qualitative/quantitative procedures that follow. Each proposal will be reviewed and rated by each of the evaluators. During this process, discrepancies between evaluations will be discussed and resolved within the team. Following the completion of the individual evaluations, a consensus evaluation will be derived. The results of this consensus evaluation will determine the final overall Phase 2 rating.

2. EVALUATION PROCEDURES.

a. Security. Each evaluator is responsible for maintaining security of offerors' proposals and Government evaluation documents. No material is permitted to be removed from the evaluation room during the evaluation or after completion of the evaluation by the evaluators. The evaluation room will be locked when not in use. Proposals are not to be discussed outside of the evaluation room.

b. Procurement Integrity and Non-disclosure. Evaluators must sign a non-disclosure statement as required by the procurement integrity regulations. This also applies to anyone who looks at the proposals, even if not actually involved in the evaluation process.

c. Written Comments. Written comments are required of each evaluator identifying the strengths and weaknesses of each proposal on the rating worksheets. These comments are essential to the Contract Specialist (CS) in preparing the Phase 2 documentation and the debriefing of unsuccessful offerors.

d. Additional Information. Additional information may be needed to complete the evaluation process, or to assure that all proposals in the competitive range are conforming to the Request for Proposals (RFP). The Contracting Division will request the information or clarification be provided by the offeror in writing. If the information necessary is minor or simple to explain, the CS may contact the proposer by telephone to discuss the questions and receive clarification in a teleconference with all the members of the evaluation team present. If a telephone conference is utilized, the CS must immediately document all discussions and validate the information received by a follow on written communication.

e. Prior to beginning the review or evaluation of any of the Offeror's proposals, the evaluators must familiarize themselves with the solicitation statement of work, proposal submission requirements (Section 00110) and the proposal evaluation criteria (Section 00120).

f. Evaluators shall review and evaluate all proposals independently. No discussion of proposals between the evaluators shall take place prior to the final consensus discussions.

g. Substitutions for evaluators will not be allowed once the evaluation process has begun. No consensus sessions may be held unless all evaluators are present as well as the non-evaluating board Chairperson.

h. Identify and Document Proposal Ambiguities and Inadequate Substantiation. Evaluators shall review the proposals to identify ambiguous language or areas where the Offeror has not provided sufficient information to allow a quality evaluation and rating to be accomplished. Instances shall immediately be discussed with the Chairperson for instructions on procedures.

i. Prior to beginning any review and evaluation, each evaluator shall ensure that he/she has a complete copy of the Engineering Minimum Technical check results as applicable. In many instances these engineering review comments can save time and effort and provide validation for the identified strengths and weaknesses.

3. PROPOSAL REQUIREMENTS

a. Section 00110, Proposal Submission requirements identifies all the necessary submittal information to be included in the Contractor proposals. Proposals that reach this evaluation stage have passed an initial Contracting Division review to assure that they are complete and responsive and were selected as a result of the Phase 1 evaluation process. All proposals that are provided to the evaluation team must be evaluated and rated.

4. INDIVIDUAL PROPOSAL RATING WORKSHEETS

a. On the following pages individual worksheets are provided for use by the evaluators to review and rate the individual proposals. During the consensus evaluation, a single "consensus rating" worksheet shall be completed for each proposal and signed by all the evaluators. It is imperative that all comments and supporting rational for the rating assigned be included on this consensus sheet. Comments are required to support all ratings above or below "Average".

5. RATING METHODOLOGY

a. General. The proposals from the Offerors who reach Phase 2 will be evaluated to determine the quality of the proposed materials, methods, and procedures proposed. The acceptable Phase 2 ratings are as follows:

<u>EXCELLENT:</u> The offeror greatly exceeds the scope of the solicitation requirements in all aspects of the particular factor or sub-factor. The offeror also provides significant advantage(s) and exceeds the solicitation requirements in performance or capability in an advantageous way and has no apparent or significant weaknesses or omissions.

<u>ABOVE AVERAGE:</u> The offeror exceeds the scope of the solicitation in most aspects of the particular factor or sub-factor. The offeror provides an advantage in key areas or exceeds performance or capability requirements, but has some areas of improvement remaining.

<u>AVERAGE:</u> The offeror matches the scope of the solicitation in most aspects of the particular factor or sub-factor. The offeror meets the performance or capability requirements of the element but not in a way advantageous to the Government. There is room for improvement in this element.

<u>POOR:</u> The offeror does not meet the minimum scope of the solicitation for the particular factor or sub-factor. The offeror does not include any advantages and does not meet the minimal performance or capability requirements for this element. The offeror contains many apparent weaknesses and requires improvement.

<u>UNACCEPTABLE:</u> The offeror fails to meet the scope of the solicitation in all aspects of the factor or sub-factor or has not submitted any information to address this evaluated item. The offeror does not include any advantages in any areas of the element and does not meet the minimum performance or capability requirements of this factor or sub-factor. The proposal includes large apparent weaknesses and the proposal will require extensive modifications to come into compliance with the minimum requirements of the solicitation.

b. YES - NO Items. Where the specific evaluation sheets indicate a YES – NO Rating these items shall be treated as informational items. They are included in the evaluation worksheets to assure a similar focus among the evaluators and to ensure that individual evaluators do not overlook proposal information required.

c. GO NO-GO Items. Where specific evaluation items indicate a GO NO-GO Rating, these items shall be treated as basically a pass-fail item. No partial "GO" is acceptable – proposals must be complete and clear

enough to receive a “GO” Rating or they shall receive a “NO GO” rating. Any factor which includes a ”NO GO” evaluation item rating shall be rated as “UNACCEPTABLE”.

6. EVALUATION FACTORS

a. As indicated in Section 00120, PROPOSAL EVALUATION AND CONTRACT AWARD, the following factors will be evaluated and rated for each proposal:

FACTOR 2-1: BUILDING FUNCTION: This factor is the most important factor in the evaluation of Phase 2 proposals.

FACTOR 2-2: BUILDING SYSTEMS: This factor is slightly less important than Factor 2-1.

FACTOR 2-3: SITE DESIGN: This factor is slightly less important than Factor 2-2.

FACTOR 2-4: SITE ENGINEERING: This factor is significantly less important than Factor 2-3.

FACTOR 2-5: SUSTAINABLE DESIGN CONSIDERATIONS: This factor is approximately equal in importance to Factor 2-4.

FACTOR 2-6: OFFEROR MANAGEMENT PLANS AND SCHEDULES: This factor is equal in weight to Factor 2-5.

7. OVERALL PROPOSAL RATING

a. It is the intent of the evaluation worksheets that follow to focus the evaluators on the key issues and concerns with respect to construction, operation, and function of the facilities. These worksheets are meant to stimulate thought and analysis and provide a framework in which to document concerns, strengths, weaknesses, and omissions. Evaluators are encouraged to document all observations and analyses during the individual rating times and to share that analysis with the team during the consensus discussions.

b. It is the responsibility of the evaluation team to provide and document sufficient strengths, weaknesses, and omissions to suitably support the assigned rating in each Factor as well as the overall Phase 2 rating. Documentation/comments are required for all ratings other than “AVERAGE”.

c. The Chairperson shall distribute a copy of the Phase 1 ratings for each Offeror. The evaluation team, at this point, shall weigh the assigned ratings from Phase 1 and Phase 2, take into account the assembled strengths and weaknesses, and provide an overall proposal rating for each Offeror. This final combined rating shall be used for comparison and in the trade off process as applicable. For the purposes of this final proposal adjectival rating, the Phase 2 rating shall be significantly more important than the Phase 1 rating.

d. Following the completion of the consensus discussions and rating assignments, the individual rating worksheets from each of the evaluators will be collected by the Chairperson and destroyed. Each evaluator shall sign the final consensus rating assignment sheet.

PROPOSAL RATING WORKSHEET

FACTOR 2-1

BUILDING FUNCTION

Offeror: _____

Evaluator:_____

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

2. Each individual subfactor will be rated separately with a combined rating made for all of Factor 2-1 at the completion of the rating for each subfactor. The relative subfactor importance is as follows:

Subfactor a. GO/NO GO – Pass Fail
Subfactor b. GO/NO GO – Pass Fail
Subfactor c. This is the most important sub-factor.

3. Subfactor Evaluations. *[Design District to edit subfactors as appropriate.]*

a. Appropriate Facilities. Has the contractor provided the facilities as required by the Statement of Work? This subfactor is to be evaluated on the "gross scale" of buildings and types of building provided. The actual evaluation of the technical quality of those facilities will be done in other factors and subfactors.

/__ / GO /__ / NO GO

b. Minimum Space and Facility Size. Does the proposal include all the spaces required by the statement of work and do those spaces comply with the minimum size or dimension requirements of the statement of work? Insufficient or incomplete information in the proposal for any of the facility types will be scored as a "NO GO".

/__ / GO /__ / NO GO Tactical Equipment Maintenance Facility (TEMF)

c. Functional Arrangement – TEMF. Consider the proposed layout of the facilities with respect to maintenance crew circulation space, adjacencies, life safety concerns, and flexibility considerations. Do the floor plans and arrangements offered comply with the minimum stated requirements from the statement of work? Has the offeror demonstrated knowledge of the expected facility operations in the offered plans?

Other Considerations: Overhead Crane Layouts, Built-In Worktables, Paint Booth, Specialized Exhaust System Layouts, Location of Maintenance Pits, Systems Furniture and Other Interior "Equipment" Layouts, Use/Adaptation of typical plans.

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Functional Arrangement. Comments are required for all ratings above "AVERAGE".

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Functional Arrangement. Comments are required for all ratings above "AVERAGE".

- Other Comments. Include any other comments with respect to Functional Arrangement here.

d. Building Aesthetics. Evaluators shall review and assess the appeal the proposed facilities. This assessment shall include interior and exterior considerations which enhance the interior spaces and improve the exterior presence of the facility. Attention shall be paid to compliance with the Installation Design Guide and in particular with the overall architectural themes desired for the new facilities.

For exteriors consider: facades, roof lines, colors, entrance delineation, fenestration in relation to elevations, textures, proportion and scale

For interiors consider: durability of interior finishes, ceiling heights and hallway widths, color schemes, cleaning requirements, natural lighting, acoustics considerations, signage

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Building Aesthetics. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Building Aesthetics. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to Aesthetics here.

FACTOR 2-1 Summary Rating

FACTOR 2-1 SUMMARY RATING CHART			
Item No.	**Description**	**Rating***	**Comments**
1.	Subfactor a Appropriate Facilities		GO/NO GO
2.	subfactor b Minimum Space and Facility Size		GO/NO GO
3.	Subfactor c Functional Arrangement		This subfactor is equal in importance to subfactor d. The ratings of these factors shall determine the rating for Factor 2-1.
4.	Building Aesthetics		This subfactor is equal in importance to subfactor c. The ratings of these factors shall determine the rating for Factor 2-1.
FACTOR 2-1 RATING**			

* Ratings may be either:
Excellent – Above Average – Average – Poor - Unacceptable

** Evaluators shall consider the ratings in the various items shown to determine a suitable overall rating. The overall rating cannot be an average, mode, or median of the ratings of the subfactors. A final rating must be reached based on discussions and a consensus among the evaluators

PROPOSAL RATING WORKSHEET

FACTOR 2-2

BUILDING SYSTEMS

Offeror: _____

Evaluator:_____

1. General: This factor is slightly less important in the technical analysis of the proposed solution proposed by the Offeror than Factor 2-1. In analyzing the various subfactors the evaluators must rate these items with respect to material quality, durability, life cycle cost considerations, and on-going maintenance required. Proposals which exceed the minimum requirements of the solicitation in these areas should be rated above "AVERAGE". Particular attention should be paid to energy conservation, maintenance considerations, and durability.

Subfactor a, b and c. These are the most important subfactors and are equal in weight.
Subfactor d, e, f, g, h, i, j, & k are equal and each slightly less important than subfactor a.
Subfactor l. This subfactor is a GO NO GO subfactor.

2. Subfactor Evaluations.

a. Building Interior Electrical Systems. This subfactor evaluates the electrical power and lighting systems within the facility. There are a significant number of methods available to reduce the electrical usage, and associated costs, of the new facilities. Proposals which comply with the minimum requirements of the statement of work shall be rated as "AVERAGE". Proposals which include energy saving materials and methods or propose innovative cost saving materials or designs should receive a higher evaluation. In addressing the potential energy savings from energy conservation systems the evaluators must also consider the possible impacts to maintenance and replacement costs for highly specialized or unusual systems proposed. Consideration of future maintenance and replacement costs must be included in evaluating this subfactor.

Other Considerations:
1. Placement of panels, receptacles, etc; capacity for future loads, logic and simplicity of power feeds and systems, quality of materials proposed
2. Lighting Design Considerations – Design methodology, fixture quality
3. Special Use Receptacles, Dedicated Circuits (Communications and Computer Equipment), Special Equipment Power Requirements

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Electrical Interior Power and Lighting Systems. Comments are required for all ratings above "AVERAGE".

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Electrical Interior Power and Lighting Systems. Comments are required for all ratings above "AVERAGE".

- Other Comments. Include any other comments with respect to Electrical Interior Power and Lighting Systems here.

b. Building Heating, Ventilating, and Air Conditioning Systems (HVAC). Building HVAC systems are prime consumer of energy and represent a key possibility to reducing the overall energy usage of the facilities. Through a careful review of the proposal information the evaluators must keep energy conservation considerations forefront in their analysis. Closely associated with the costs of operating the HVAC equipment, the costs for maintenance of the equipment are a significant concern for the Installation staff. Evaluators shall also consider the maintainability of the HVAC equipment as proposed and consider this feature during the evaluation and the preparation of proposal strength and weakness summaries. Proposed systems which meet the minimum requirements of the statement of work should not be rated above "AVERAGE". Proposed materials and systems should be evaluated to determine their compliance with the solicitation requirements. Proposal narrative and information provided concerning the HVAC systems should address energy conservation as well as control of the various components.

Other Considerations:

1. Access to equipment for maintenance, noise considerations from central equipment, provision of individual space control, durability of materials proposed, suitability of materials exposed to heavy usage, integration into the facility wide control system where applicable, outside air (ventilation) considerations, outside equipment locations, quality of equipment proposed

2. Provision of special ventilation systems (welding exhaust, vehicle exhaust, pit exhaust, explosion proof considerations), specialized heating systems, paint spray booth exhaust system, heat recovery systems

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of HVAC Systems. Comments are required for all ratings above "AVERAGE".

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of HVAC Systems. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to HVAC Systems here.

c. Building Construction Materials (Other than HVAC, Structural, Electrical Systems). This subfactor considers the quality level of materials proposed for inclusion in the structure. These materials range from concealed supporting materials to exposed finish materials. In this subfactor the considerations of troop use and durability need to be considered for each finish or material exposed to troop use. Maintenance, maintainability, cleaning requirements, and replacement costs for materials proposed should also be considered.

Other Considerations: Floor materials, wall finishes, ceiling materials, toilet partitions, fixtures, signage, door hardware, furniture

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Building Construction Materials. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Building Construction Materials. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to Building Construction Materials here.

d. Facility Equipment and Built-In Items. This subfactor evaluates the built-in equipment and facility equipment proposed for installation. Consideration should be given to operating and maintenance requirements, durability, and serviceability of the proposed equipment. Are the materials and equipment proposed suitable for long term heavy usage.

Other Considerations: Placement of equipment, coverage of cranes, work table designs, built-in storage bins, maintenance pit equipment, compressed air system (non-breathable), lockers, benches, vault door, window/reception area

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Facility Equipment and Built-Ins. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Facility Equipment and Built-Ins. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to Facility Equipment and Built-Ins here.

e. Integration of Interior Support Systems. This subfactor evaluates the anticipated integration of the various interior building support systems. Since all proposal information will likely be narrative in nature, the evaluators must concentrate on expertise and experience to ascertain anticipated problems with the interaction of interior support systems. Interior support systems are all those interior systems which support the occupants within the facility. They include, HVAC, electrical power and lighting, plumbing, communications, compressed air (breathable and non-breathable), vehicle exhaust systems, overhead cranes, vehicle maintenance pits, building structural systems, and any other special support systems.

Other Considerations: None

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Integration of Interior Support Systems. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Integration of Interior Support Systems. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to the Integration of Interior Support Systems here.

f. Force Protection Considerations. This subfactor evaluates the inclusion of Force Protection Requirements within the facilities proposed. Evaluators must be familiar with the Force Protection Requirements to adequately evaluate this category. Proposals which do not completely address Force Protection Requirements will be rated as “UNACCEPTABLE” if the omissions are serious. If the omissions are minor and could easily be addressed, the evaluator shall use professional judgement in assigning the rating.

Other Considerations: Placement of parking and drives, landscaping, window materials, stand off distances, wall construction, door construction

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Force Protection. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Force Protection. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to Force Protection here.

g. Fire Protection Systems. This subfactor evaluates the fire protection systems proposed for installation. Consideration should be given to the system schematic strategy as well as to the actual materials proposed for installation. Proposal narratives must include information to demonstrate the proposers understanding of the fire protection and detection systems. The fire protection and detection subcontractors are considered key subcontractors and the proposal must demonstrate adequate qualifications and experience for these subcontractors.

Other Considerations: Placement of panels, placement of devices, simplicity of system, ease of repair, quality of materials, location of wiring, connection to base-wide system

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Fire Protection and Detection Systems. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Fire Protection and Detection Systems. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to Fire Protection and Detection Systems here.

h. Building Thermal Performance. This subfactor considers the adequacy of the building envelope in respect to energy conservation. The statement of work sets a minimum level of prescriptive criteria. Evaluators shall ensure that the proposals meet this minimum level of compliance. Proposals which include enhanced energy conservation strategies through the use of higher insulation levels, infiltration blocks, heat recovery, or material selections should receive a rating above "AVERAGE".

Other Considerations: Windows, doors, wall construction, perimeter insulation, roof insulation, wall and roof color, exhaust heat recovery

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Building Thermal Performance. Comments are required for all ratings above "AVERAGE".

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Building Thermal Performance. Comments are required for all ratings above "AVERAGE".

- Other Comments. Include any other comments with respect to Building Thermal Performance here.

i. Communication and Telephone Systems. This subfactor evaluates the communications and telephone systems proposed for installation. Consideration should be given to the system schematic strategy as well as to the actual materials proposed for installation.

Other Considerations: Placement of panels, placement of outlets, simplicity of system, ease of repair, quality of materials, location of wiring, paging system

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Telephone and Communication Systems. Comments are required for all ratings above "AVERAGE".

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Telephone and Communications Systems. Comments are required for all ratings above "AVERAGE".

- Other Comments. Include any other comments with respect to Telephone and Communications Systems here.

j. Intrusion Detection and Security Systems. This subfactor evaluates the security systems proposed for installation. Consideration should be given to the system schematic strategy as well as to the actual materials proposed for installation.

Other Considerations: Placement of panels, placement of devices, simplicity of system, ease of repair, quality of materials, location of wiring, connection to base-wide system

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Security Systems. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Security Systems. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to Security here.

k. Plumbing Systems. This subfactor evaluates the plumbing systems proposed for installation. Evaluators shall consider piping placement, material quality, and ease of repair/replacement. The plumbing fixtures will be exposed to troop use and the proposal should include narrative information which outlines how the proposed systems and materials will stand up to troop use. Durability of the plumbing fixtures is a prime concern in this subfactor.

Other Considerations: Placement of fixtures, simplicity of system, ease of repair, pipe chases, quality of materials, location of piping, durability

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Plumbing Systems. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Plumbing Systems. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to Plumbing Systems here.

I. Building Structural Systems. This subfactor is considered a GO – NO GO element. Evaluators are still encouraged to provide comments to document significant strengths or weaknesses.

/__/ GO /__/ NO GO

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Building Structural Systems.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Building Structural Systems.

FACTOR 2-2 Summary Rating

FACTOR 2-2 SUMMARY RATING CHART			
Item No.	**Description**	**Rating***	**Comments**
1.	Subfactor a Building Interior Electrical Systems		This subfactor is the most important subfactor equal in weight to subfactor b and c.
2.	Subfactor b Building HVAC Systems		This subfactor is the most important subfactor equal in weight to subfactor a and c.
3.	Subfactor c Building Construction Materials		This subfactor is the most important subfactor equal in weight to subfactor a and b.
4.	Subfactor d Facility Equipment and Built-In Items		This subfactor is slightly less important than subfactor a.
5.	Subfactor e Integration of Interior Support Systems		This subfactor is slightly less important than subfactor a.
6.	Subfactor f Force Protection Considerations		This subfactor is slightly less important than subfactor a.
7.	Subfactor g Fire Protection Systems		This subfactor is slightly less important than subfactor f.
8.	Subfactor h Building Thermal Performance		This subfactor is slightly less important than subfactor f.
9.	Subfactor i Communications and Telephone Systems		This subfactor is slightly less important than subfactor f.
10.	Subfactor j Intrusion Detection & Security Systems		This subfactor is slightly less important than subfactor f.
11.	Subfactor k Plumbing Systems		This subfactor is slightly less important than subfactor f.
12.	Subfactor l Structural Systems		This is GO-NO GO Subfactor.***
FACTOR 2-2 RATING**			

* Ratings may be either:
Excellent – Above Average –Average – Poor - Unacceptable

** Evaluators shall consider the ratings in the various items shown to determine a suitable overall rating. The overall rating cannot be an average, mode, or median of the ratings of the subfactors. A final rating must be reached based on discussions and a consensus among the evaluators

*** A NO GO rating for the Structural Systems Subfactor will require an overall rating of “Unacceptable” for this factor.

PROPOSAL RATING WORKSHEET

FACTOR 2-3

SITE DESIGN CONSIDERATIONS

Offeror: _____

Evaluator:_____

1. General: This factor is slightly less important in the technical analysis of the proposed solution offered by the Offeror than Factor 2-2. In analyzing the various subfactors the evaluators must rate these items with respect to material quality, durability, life cycle cost considerations, and on-going maintenance required. Proposals which exceed the minimum requirements of the solicitation in these areas should be rated above "AVERAGE". Particular attention should be paid to the inclusion of Force Protection considerations.

Subfactor a. This is the most important subfactor
Subfactor b. This subfactor is slightly less important than sufactor a.
Subfactor c. This subfactor is slightly less important than sufactor b.
Subfactor d. This subfactor is slightly less important than sufactor c.
Subfactor e. This subfactor is slightly less important than sufactor d.

2. Subfactor Evaluations.

a. Area Development Plan. The overall site development must complement the requirements of the Installation Design Guide as well as provide for a safe, organized, well thought out solution to the siting of the facilities and parking and hardstand areas. Development plan must clearly identify equipment maintenance access routes and the extent of hardstands and other specialty paving areas. Original innovative site designs which capitalize on the existing site possibilities shall be evaluated highly.

Other Considerations: Placement of equipment parking areas, extent of hardstands, orientation of the facilities, site lighting, placement of POV parking, security fencing, hazardous waste storage building, POL storage building, deployment storage building, sentry booth

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Area Development. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Area Development. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to Area Development Plans here.

b. Force Protection Considerations. This subfactor evaluates the inclusion of force protection constraints on the site design. The requirements for this factor are prescriptive in nature. Proposals which have significant omissions or inconsistencies with respect to force protection issues will be rated "UNACCEPTABLE".

Other Considerations: Placement of parking areas, placement of pedestrian circulation, orientation of the facilities, landscaping, equipment placement and screening.

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of site Force Protection. Comments are required for all ratings above "AVERAGE".

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of site Force Protection. Comments are required for all ratings above "AVERAGE".

- Other Comments. Include any other comments with respect to site Force Protection here.

c. Grading. This subfactor considers the amount and type of grading required by the proposed site design. Also included are the impacts on storm drainage, retention ponds, cut and fill, and erosion control. Materials proposed for storm drainage systems are evaluated elsewhere.

Other Considerations: Placement of paved areas, placement of drainage structures

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of site Grading. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of site Grading. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to site Grading here.

d. Paved Areas. This subfactor considers the provision of paved areas within the site development. The actual design of the pavement surfaces proposed is evaluated elsewhere, this subfactor considers more the functional and organizational layout of the paved areas.

Other Considerations: Placement of parking areas, internal parking area circulation, parking entrances, exits, placement of drainage facilities, parking area lighting, hardstands, access paths to maintenance bays

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Paved Area Development. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Paved Area Development. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to Paved Area Development here.

e. Landscaping. This subfactor considers the design, material quality, quantity, and applicability of all plantings selected for this project in the proposal. Evaluators should review the restrictions and recommendations contained in the Installation Design Guide as they evaluate this subfactor.

Other Considerations: Screening of Facility, site appeal, maintenance and up-keep required, sustainable design considerations

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Landscape Design. Comments are required for all ratings above "AVERAGE".

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Landscape Design. Comments are required for all ratings above "AVERAGE".

- Other Comments. Include any other comments with respect to Landscape Design here.

FACTOR 2-3 Summary Rating

FACTOR 2-3 SUMMARY RATING CHART			
Item No.	**Description**	**Rating***	**Comments**
1.	Subfactor a Area Development Plan		This is the most important subfactor.
2.	subfactor b Force Protection Considerations		This subfactor is slightly less important than subfactor a.
3.	Subfactor c Grading		This subfactor is slightly less important than subfactor b.
4.	Subfactor d Paved Areas		This subfactor is slightly less important than subfactor c.
5.	Subfactor e Landscape Design		This subfactor is slightly less important than subfactor d.
FACTOR 2-3 RATING**			

* Ratings may be either:
Excellent – Above Average – Average – Poor - Unacceptable

** Evaluators shall consider the ratings in the various items shown to determine a suitable overall rating. The overall rating cannot be an average, mode, or median of the ratings of the subfactors. A final rating must be reached based on discussions and a consensus among the evaluators

PROPOSAL RATING WORKSHEET

FACTOR 2-4

SITE ENGINEERING

Offeror: _____

Evaluator:_____

1. General: This factor is significantly less important factor in the technical analysis of the proposed solution offered by the Offeror than Factor 2-3. In analyzing the various subfactors the evaluators must rate these items with respect to material quality, durability, life cycle cost considerations, and on-going maintenance required. Proposals which exceed the minimum requirements of the solicitation in these areas should be rated above "AVERAGE". Particular attention should be paid to the inclusion of Force Protection considerations.

Subfactor a. This is the most important subfactor, equal to subfactor b, and c.
Subfactor b. This is the most important subfactor, equal to subfactor a, and c.
Subfactor c. This is the most important subfactor, equal to subfactor b, and a.
Subfactor d. This subfactor is less important than sufactor a.
Subfactor e. This subfactor is less important than sufactor a.
Subfactor f. This subfactor is less important than sufactor a.
Subfactor g. This subfactor is less important than sufactor a.

2. Subfactor Evaluations.

a. Water System. This subfactor considers the design and materials proposed for use with the domestic water and fire protection systems. Careful consideration should be given to reviewing the proposed site main sizes and materials proposed. Fire protection service to the facility should be separate from the domestic water system service.

Other Considerations: None.

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Water System design. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Water System design. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to Water System design here.

b. Fuel Piping and Storage Systems. This subfactor considers the fuel piping systems proposed for the facility. These systems include natural gas, fuel oil, propane, or other fuel type systems. Evaluators shall consider the narrative information with respect to installation location and material selection. To the greatest extent possible, evaluate the provisions for containment of leaks and the accessibility of the piping for replacement and repair.

Other Considerations: If fuel oil or propane storage tanks are proposed for use they must comply explicitly with the statement of work requirements.

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Fuel Piping and Storage System design. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Fuel Piping and Storage System design. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to Fuel Piping and Storage System design here.

c. Electrical Distribution System. This subfactor considers the design of the site electrical distribution system. It covers the system from the point of connection to the existing base infrastructure to the main power panel inside the new facility. Evaluators shall review and consider proposed material quality, access for repair/replacement, sizing/loading of transformers and other electrical issues. Coordination with the base-wide power distribution system is a requirement.

Other Considerations: None.

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Electrical Distribution System design. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Electrical Distribution design. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to Electrical Distribution design here.

d. Communications Systems (Com, Telephone, etc). This subfactor evaluates the site design and material quality proposed for these communication systems. Proposal narrative should demonstrate the Offeror's understanding of the requirements for connection to and extension of the base-wide systems. Maintainability considerations are also a prime evaluation item with respect to communications systems. Evaluate capability and provisions for future alterations/additions to the installed systems.

Other Considerations: None.

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Communications Systems design. Comments are required for all ratings above "AVERAGE".

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Communications Systems design. Comments are required for all ratings above "AVERAGE".

- Other Comments. Include any other comments with respect to Communications Systems design here.

e. Sanitary Sewer System. This subfactor is considered important due to the desire to maintain a gravity sanitary sewer system. Consideration shall be given to the placement of sanitary sewer mains, provisions for cleaning, and to the inclusion of a pumping station/force main if required by the site development. Included in this subfactor is the evaluation of actual materials proposed for installation.

Other Considerations: Oil/Water Separator, Protection from Contamination

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Sanitary Sewer System design. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Sanitary Sewer design. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to Sanitary Sewer design here.

f. Storm Sewer System. This subfactor is considered important due to the desire to maintain a gravity storm sewer system. Consideration shall be given to the placement of storm sewer mains, provisions for cleaning, and to the inclusion of a retention pond if required by the site development. Included in this subfactor is the evaluation of actual materials proposed for installation.

Other Considerations: Prevention of Contamination, runoff control

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Storm Sewer System design. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Storm Sewer design. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to Storm Sewer design here.

g. Pavement Design. This subfactor considers the proposed design of the pavement surfaces for the parking areas and new roadways, as well as for maintenance access ways. Evaluators should consider the proposed materials with respect to the information provided in the geotechincal report and recommendations. Concentration should be on the provision of a durable pavement system to support the expected traffic. Unusual or innovative pavement designs shall be evaluated based on expertise and experience.

Other Considerations: Hardstands, special pavements

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the area of Pavement Design. Comments are required for all ratings above “AVERAGE”.

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses in the area of Pavement Design. Comments are required for all ratings above “AVERAGE”.

- Other Comments. Include any other comments with respect to Pavement Design here.

FACTOR 2-4 Summary Rating

FACTOR 2-4 SUMMARY RATING CHART			
Item No.	**Description**	**Rating***	**Comments**
1.	Subfactor a Water System		This is the most important subfactor.
2.	subfactor b Fuel Piping and Storage Systems		This subfactor is equal to subfactor a.
3.	Subfactor c Electrical Distribution System		This subfactor is equal to subfactor a.
4.	Subfactor d Communications System		This subfactor is less important than subfactor a.
5.	Subfactor e Sanitary Sewer System		This subfactor is less important than subfactor a.
6.	Subfactor f Storm Sewer System		This subfactor is less important than subfactor a.
7.	Subfactor g Pavement Design		This subfactor is less important than subfactor a.
FACTOR 2-4 RATING**			

* Ratings may be either:
Excellent – Above Average – Average – Poor - Unacceptable

** Evaluators shall consider the ratings in the various items shown to determine a suitable overall rating. The overall rating cannot be an average, mode, or median of the ratings of the subfactors. A final rating must be reached based on discussions and a consensus among the evaluators

PROPOSAL RATING WORKSHEET

FACTOR 2-5

SUSTAINABLE DESIGN CONSIDERATIONS

Offeror: _____

Evaluator:_____

1. General: This factor is approximately equal in importance to Factor 2-4. Evaluators shall utilize the Offeror provided analysis to enter the chart below to determine the rating for this factor.

SUSTAINABILITY RATINGS			
Offeror Prepared Sustainability Level		***Associated Factor Rating***	***Comments***
SpiRIT Level	**LEED Level**		
Platinum	Certified Platinum	Excellent	
Gold	Certified Gold	High Average	
Silver	Certified Silver	Above Average	
Bronze	Certified	Average	
< Bronze	< Certified	UNACCEPTABLE	

Factor Rating: _____

PROPOSAL RATING WORKSHEET

FACTOR 2-6

OFFEROR MANAGEMENT PLANS AND SCHEDULES

Offeror: _____

Evaluator:_____

1. General: This factor is equal in importance to Factor 2-5. The information provided in response to this factor completes the Offeror Performance Information which was received, reviewed, and evaluated in Phase 1 of this solicitation. Through this factor the evaluators will review and evaluate the Offeror's demonstrated understanding of the design/build process as required in this solicitation. Each of the four subfactors are approximately equal in importance.

2. Subfactor Evaluations.

a. Quality Control Plan. Evaluators shall review and evaluate the Offeror's quality control procedures planned for application to this project. The quality control plan and procedures must address design as well as construction phases of the project. The proposed quality control program must include and address the Corps three phase quality control system and acknowledge experience and familiarity with the Corps Quality Assurance program. If personnel identified by the Offeror have changed, the alternate personnel shall be reviewed to assure a similar level of quality.

Other Considerations: None.

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the Offeror's Quality Control Program. Comments are required for all ratings above "AVERAGE".

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses of the Offeror's Quality Control Program. Comments are required for all ratings above "AVERAGE".

b. Schedule Information. Evaluators shall review and evaluate the Offeror's proposed schedule information to determine the extent of "fast tracking" included. The schedule must reflect a single task oriented structure for both design and construction operations. Evaluators shall review and assess completeness, inclusion of required milestones, and realism. Proposed schedules which indicate project completion prior to the Government indicated maximum duration may receive favorable consideration.

Other Considerations: None.

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the Offeror's proposed Project Schedule. Comments are required for all ratings above "AVERAGE".

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses of the Offeror's proposed Project Schedule. Comments are required for all ratings above "AVERAGE".

c. Closeout Plan. Evaluators shall review and evaluate the Offeror's proposed closeout plan. Particular emphasis shall be placed on the preparation of Operations & Maintenance Manuals and the training of the base personnel on the installed systems and materials.

Other Considerations: None.

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the Offeror's proposed Closeout Plan. Comments are required for all ratings above "AVERAGE".

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses of the Offeror's proposed Closeout Plan. Comments are required for all ratings above "AVERAGE".

d. Sub-Contracting Plan. Evaluators shall review and evaluate the Offeror's proposed subcontracting plan in terms of achieving the required special emphasis group participations and the completeness and rationale for the plan proposed. Offerors who are not required to submit a subcontracting plan (i.e. Small Business concerns) will be assigned a rating equal to the highest evaluation of any subcontracting plan submitted in response to this solicitation.

Other Considerations: None.

/__ / Excellent /__ / Above Average /__ / Average /__ / Poor /__ / Unacceptable

- Proposal Strengths. Include narrative comments with respect to proposal strengths in the Offeror's proposed Sub-Contracting Plan. Comments are required for all ratings above "AVERAGE".

- Proposal Weaknesses. Include narrative comments with respect to proposal weaknesses of the Offeror's proposed Sub-Contracting Plan. Comments are required for all ratings above "AVERAGE".

FACTOR 2-6 Summary Rating

FACTOR 2-6 SUMMARY RATING CHART			
Item No.	**Description**	**Rating***	**Comments**
1.	Subfactor a Quality Control Plan		All subfactors are equal.
2.	subfactor b Schedule Information		All subfactors are equal.
3.	Subfactor c Closeout Plan		All subfactors are equal.
4.	Subfactor d Sub-Contracting Plan		All subfactors are equal.
FACTOR 2-6 RATING**			

* Ratings may be either:
Excellent – Above Average – Average – Poor - Unacceptable

** Evaluators shall consider the ratings in the various items shown to determine a suitable overall rating. The overall rating cannot be an average, mode, or median of the ratings of the subfactors. A final rating must be reached based on discussions and a consensus among the evaluators

Offeror:_____

Phase 2 Summary and Overall Rating

PHASE 2 SUMMARY RATING CHART			
Item No.	**Description**	**Rating***	**Comments**
1.	Factor 2-1 Building Function and Aesthetics		The most important Factor.
2.	Factor 2-2 Building Systems		This Factor is slightly less important than Factor 2-1
3.	Factor 2-3 Site Design		This Factor is slightly less important than Factor 2-2
4.	Factor 2-4 Site Engineering		This Factor is significantly less important than Factor 2-3
5.	Factor 2-5 Sustainable Design Considerations		This Factor is approximately equal in importance to Factor 2-4.
6.	Factor 2-6 Offeror Management Plans and Schedules		This Factor is approximately equal in importance to Factor 2-4.
OVERALL PHASE 2 RATING**			

* Ratings may be either:

Excellent – Above Average – Average – Poor - Unacceptable

** Evaluators shall consider the ratings in the various items shown to determine a suitable overall rating. The overall rating cannot be an average, mode, or median of the ratings of the six factors. A final rating must be reached based on discussions and a consensus among the evaluators

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

_____
Board Member 1

_____
Board Member 2

_____
Board Member 3

_____
Board Member 4

_____
Board Chairperson

APPENDIX C

SUMMARY EVALUATION MATRIX

PROPOSAL SUMMARY SCORING MATRIX

Offeror	Phase 1 Rating*	Phase 2 Rating**	Final Overall Rating**	Comments

* Ratings may be either:
Unknown – Outstanding – Above Average – Satisfactory – Marginal – Unsatisfactory

** Ratings may be either:
Excellent – Above Average – Average – Poor - Unacceptable

_____
Board Member 1

_____
Board Member 2

_____
Board Member 3

_____
Board Member 4

_____
Board Chairperson

UNIFIED FACILITIES CRITERIA (UFC)

ARMY TACTICAL EQUIPMENT MAINTENANCE FACILITIES (TEMF)

24 July 2003

Volume 2: Model Request For Proposals

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REQUEST FOR PROPOSALS
[PROJECT TITLE]
[PROJECT LOCATION]

SECTION/ ATTACHMENT NUMBER	DESCRIPTION
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00100	INSTRUCTIONS, CONDITIONS AND NOTICES TO BIDDERS/OFFERORS
00110	PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS
00120	PROPOSAL EVALUATION AND CONTRACT AWARD
00600	REPRESENTATIONS AND CERTIFICATIONS
00700	CONTRACT CLAUSES
00800	SPECIAL CONTRACT REQUIREMENTS
	STATEMENT OF WORK
	ATTACHMENTS TO THE STATEMENT OF WORK
1	TECHNICAL SPECIFICATIONS
2	RESERVED
3	RESERVED
4	PROPOSAL DATA SHEETS
5	PROPOSAL DRAWING FORMAT
6	SITE AND LOCALITY MAPS
7	PROJECT AND SAFETY SIGNS
8	GEOTECHNICAL REPORT
9	EXCERPTS FROM THE INSTALLATION DESIGN GUIDE

SECTION/ ATTACHMENT NUMBER	DESCRIPTION
10	FIRE FLOW DATA
11	LIST OF DRAWINGS
12	ASBESTOS AND LEAD PAINT SURVEY RESULTS
13	[Additional Attachments may be included if necessary]

NOTES

1. See additional tables of contents in each section for paragraph references. See the Technical Specifications table of contents for specification sections included in this solicitation/contract.

2. Drawings are provided as a separate package.

NOTES TO USACE ACTIVITY PREPARING SOLICITATION

1. Contracting guidance contained herein should not be used as a substitute for thorough knowledge of the current acquisition regulations. If a conflict arises between this guidance and the acquisition regulations, the acquisition regulations govern.

2. Local provisions and clauses may be substituted.

3. General Wage Decisions, although not specifically listed as an attachment to the Statement of Work must be included in the complete solicitation.

4. Editable WORD versions of all the information contained in Volume II of this UFC can be obtained from the Norfolk District Corps of Engineers. Point of contact for information is Mr. Peter G. Reilly, Peter.G.Reilly@usace.army.mil.

SECTION 00010
SOLICITATION, OFFER AND AWARD (STANDARD FORM 1442) AND PRICING SCHEDULE

SECTION 00010 Solicitation Contract Form

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001	For the complete design and construction of the Tactical Equipment Maintenance Facility [USACE Design District to complete number and type of facilities for project being advertised] and supporting constructions at [USACE Design District to indication Installation and location] with a 120 day acceptance period.				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001AA		1.00	Lump Sum		
	All construction work on the Tactical Equipment Maintenance Facility Buildings in Item 0001 within the 1524 [five (5) foot] line (includes all work inside of a line drawn at a perpendicular distance of five feet outside of the exterior face of foundation walls).				
				NET AMT	

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001AB		1.00	Lump Sum		
	Reserved.				
				NET AMT	

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001AC		1.00	Lump Sum		
	Design work for all items (construct new facilities, and all other features required by this solicitation)				
					_____
				NET AMT	

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001AD		1.00	Lump Sum		
	Demolition of existing structures and associated site improvements. [USACE Design District to include this bid item only when demolition is included in the project. If asbestos and lead paint abatement are expected in the demolition activities, Design District shall consider a separate pricing item to capture those costs specifically.]				
					_____
				NET AMT	

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001AE		1.00	Lump Sum		
	Construction of supplemental facilities complete and as shown on the plans and in the specifications, including all work incidental thereto as required by the statement of work. [USACE Design District shall clearly list and indicate what supplemental facilities/features are included in this item.]				
					_____
				NET AMT	

3. NOTES.

a. The Army will procure these new facilities through a technical/price competition in accordance with the provisions set forth in this Request for Proposals (RFP). When a contract is awarded, it will be a "Firm Fixed Price Contract."

b. The Congress, in authorizing and funding this contract, has established certain cost limitations for the project. The current authorization for the complete design and construction of this project is [Dollars]. [This dollar figure is provided by HQUSACE by directive when authority to advertise and Code 7 are authorized.] Proposals that exceed this funding limit after exercising any options may be rejected. Submission of desirable alternative features exceeding minimum requirements set forth in the Statement of Work may be considered as long as award can be made within the established funds.

c. Any proposal which is materially unbalanced as to prices for the Base Schedule may be rejected. An unbalanced proposal is one which is based on prices significantly less than the cost for some work and prices which are significantly overstated for other work and can also exist where only overpricing or underpricing exists. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.

d. Failure to insert prices for each item in the Base Schedule and each item in any Option Schedules may cause the proposal to be rejected.

e. The offeror agrees if he or she is awarded a contract under this RFP, which includes any option items, that the Government reserves the right to reinstate any option item(s) into the contract at any time up to 120 calendar days after notice to proceed, provided that such reinstatement would not alter the original determination of the successful offeror. If an option item is reinstated in the contract, it is also agreed that the reinstated price will be the same as the schedule price.

SECTION 00100
INSTRUCTIONS, CONDITIONS AND NOTICES TO BIDDERS/OFFERORS

SECTION 00100
Bidding Schedule/Instructions to Bidders

Note: SPS and titled paragraphs provide example text. FAR and DFAR paragraphs are shown only for reference. All contractual information and requirements must be coordinated and produced through the PDT Contract Specialist. This TI is not meant to serve as contracting authority or direction.

PARAGRAPH	DESCRIPTION
52.204-6	DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 99)
52.215-1	INSTRUCTIONS TO OFFERORS--COMPETITIVE ACQUISITION (NOV 1999)
52.222-23	NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)
52.225-12	NOTICE OF BUY AMERICAN ACT REQUIREMENT-- CONSTRUCTION MATERIALS (MAY 1997)
52.233-2	SERVICE OF PROTEST (AUG 1996)
52.225-13	NOTICE OF BUY AMERICAN ACT REQUIREMENT-- CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS ACT AND NORTH AMERICAN FREE TRADE AGREEMENT (MAY 1997) - ALTERNATE I (MAY 1997)
52.236-28	PREPARATION OF PROPOSALS--CONSTRUCTION (OCT 1997)
52.252-1	SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)
52.252-5	AUTHORIZED DEVIATIONS IN PROVISIONS (APR 1984)

BASIS OF AWARD

Below is sample wording, explaining the "Basis of Award" for a design-build contract. This sample describes the Best Value Trade-Off Approach. This information may also be included in Section 00120, "PROPOSAL EVALUATION CRITERIA."

If other than Best Value Trade-Off approach is utilized, the PDT contract specialist shall provide appropriate clauses to be included within the contract. PDT members shall closely coordinate the selection methodology utilized to be sure that all technical, proposal, and evaluation criteria are suitably formulated to suit the selected methodology. Two other possible methods for award are "Lowest Cost Technically Acceptable" or "Best Technical Solution". Design Districts are cautioned from using "Best Technical Solution" methodologies due to the extreme cost impact.

BASIS OF AWARD :

XX.1. The Government will award a firm fixed-price contract to that responsible Offeror whose proposal, conforming to the solicitation, is fair and reasonable, and has been determined to be most advantageous to the Government, quality (comprised of technical approach and performance capability factors), price and other factors considered. The rated technical evaluation criteria and price are considered approximately equal. As technical scores and relative advantages and disadvantages become less distinct, differences in price between proposals are of increased importance in determining the most advantageous proposal. Conversely, as differences in price become less distinct, differences in scoring and relative advantages and disadvantages between proposals are of increased importance to the determination.

XX.2. The Government reserves the right to accept other than the lowest priced offer. The right is also reserved to reject any and all offers. The basis of award will be a conforming offer, the price or cost of which may or may not be the lowest. If other than the lowest priced offer is accepted, that offer must be sufficiently more advantageous than the lowest priced offer to justify the payment of additional amounts.

XX.3. Offerors are reminded to include their best technical and price terms in their initial offer and not to automatically assume that they will have an opportunity to participate in discussions or be asked to submit a revised offer. The Government may make award of a conforming proposal without discussions, if deemed to be within the best interests of the Government."

SECTION 00110
PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS

SECTION 00110
PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS

1.00 GENERAL PROPOSAL INFORMATION.

a. General. Inasmuch as the proposal will describe the capability of the offeror to perform any resultant contract, as well as describe the understanding of the requirement of the Statement of Work, it should be specific and complete in every detail. The proposal should be prepared simply and economically, providing straight-forward, concise delineation of capabilities to perform satisfactorily the contract being sought. The proposal should therefore be practical, legible, clear and coherent.

b. Proposal Submissions and the Two (2) Phase Design-Build Process. This process requires potential contractors to submit their performance and capability information initially for review and consideration by the Government. Following the review, evaluation, and rating of these proposals, the Government will select up to five of the highest rated contractors to receive the technical requirements package and provide a technical and cost proposal for consideration by the Government. For these five (5) selected contractors, their technical and cost proposals will be reviewed by the Government. The technical information contained in this Phase 2 proposal will be review, evaluated, and scored by Government staff in direct response to the evaluation criteria set forth in Section 00120 – PROPOSAL EVALUATION CRITERIA. The final evaluation rating used for comparison, selection, and award will reflect both the rating received in Phase 1 and the evaluation rating received in Phase 2. Cost information will not be rated in either phase but will be evaluated in response to the funding limitations set forth in Section 00010 – PRICE PROPOSAL SCHEDULE. The proposal process for this two (2) phase procurement consists of the following individual pieces:

PHASE 1 PROPOSAL

- Pro Forma Information
- Offeror Relevant Experience (Example Projects)
- Offeror Past Performance Information (Completed Projects Customer Surveys)
- Offeror Project Key Personnel
- Technical Approach Narrative
- Other Information (Any additional information – background provided by the proposer)

PHASE 2 PROPOSAL

- Pro Forma Information
- Completed Price Proposal Information
- Technical Proposal Information
- Project Management Plans and Schedules
- Other Information (Any additional information – background provided by the proposer)

NOTE: FOR ALL THOSE CONTRACTORS WHO COMPETE IN BOTH PHASE 1 AND PHASE 2, THE CONTRACTOR'S PROPOSAL SHALL BE DEFINED AS: ALL INFORMATION WHICH WAS SUBMITTED IN RESPONSE TO THE REQUIREMENTS OF BOTH PHASES OF THE SOLICITATION.

2.00 PHASE 1 PROPOSAL SUBMISSION INSTRUCTIONS

a. Who May Submit.

(1) Proposals may be submitted by: firms formally organized as design/build entities, or by design firms and construction contractors that have associated specifically for this project. In the latter case, a single design firm or construction contractor may offer more than one proposal by entering into more than one such association. For the purpose of this solicitation, no distinction is made between formally organized

design/build entities and project-specific design/build associations. Both are referred to as the design/build offeror, (or simply "offeror"), or the design/build contractor, (or simply "Contractor"), after award of a contract.

(2) Any legally organized offeror may submit a proposal, provided that the offeror, or offeror's subcontractor, has on its permanent staff professional architects and engineers registered in the appropriate technical disciplines and provided that the requirements specified in the solicitation are met. All designs must be accomplished under the direct supervision of appropriately licensed professionals.

b. General Requirements.

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

(2) Proposals must be submitted with an original and four copies. Original proposal shall be identified. Specific requirements are described below.

c. Size of Printed Matter Submissions.

(1) Written materials: Size A4 [or 8-1/2" x 11"] format.

(2) The proposals shall contain a detailed table of contents. If more than one binder is used, the complete table of contents shall be included in each. Any materials submitted but not required by this solicitation, (such as company brochures), shall be relegated to appendices.

d. Where to Submit. Offerors shall submit their proposal packages to the [USACE Design District] at the address shown in Block 8 of Standard Form 1442.

e. Submission Deadline. Proposals shall be received by the [USACE Design District] no later than the time and date specified in Block 13 of Standard Form 1442.

f. Phase 1 Proposal Requirements and Submission Format. The proposals sought by this solicitation shall contain the categories of submittal information as follows:

(1) Offeror Relative Experience. Provide examples (at least three) of projects for which the offeror has been responsible. The examples should be as similar as possible to this solicitation in project type and scope. Example projects must have been completed not later than three years from the date of the solicitation.

(a) The list of projects shall include the following information:

a. Project name and location
b. Type of facility
c. Nature of firm's responsibility (design, construction or both)
d. Identify type of contract (design, design/build, or construction)
e. Project owner's name and address and project manager's (point of contact) name, telephone number, fax number, and email address (if known)
f. If a government contract, include the contracting agency and contracting officer's name, telephone number, fax number, and email address (if known)
g. Date started
h. Original scheduled completion date
i. Actual completion date
j. Overall size of facility (in square feet or square meters)
k. Construction cost (excluding design costs)
l. Duration of construction (excluding design time)
m. Problems encountered and corrective actions taken
n. Identify which proposed team members and/or firms were involved in the project; their specific roles and responsibilities on the project; and the extent of time they were involved with the project
o. Relevance of experience to the solicitation project

(b). Joint Ventures: If offeror represents the combining of two or more companies for the purpose of this RFP, the proposal shall indicate whether the firms have experience working together in design/build ventures and for how long and how many projects. In addition, each company of this joint venture shall list their Government contract experiences.

(2) Offeror Past Performance Information. At the end of this paragraph is included the sample Past Performance Evaluation Questionnaire. The offeror shall identify the three in-progress or completed projects to be used for reference and evaluation purposes. Provide a questionnaire to the Point of Contact for each project listed for completion. When completed, these forms shall be [mailed] [faxed] [e-mailed] to the [USACE Design District] Contract Specialist identified in the sample transmittal letter provided. Failure of a reference verification to arrive at the [USACE Design District] within the identified time period shall adversely affect the overall rating received in Phase 1 of this project. It is the contractor's responsibility to ensure that the reference documentation is provided, the Government WILL NOT make additional requests for past performance information or references. Copies of the evaluation form SHALL NOT be provided to the Offeror from the reference. Projects from which questionnaires are received shall have been completed within three years of the date of the solicitation.

(3) Project Key Personnel. Provide the names, resumes, and levels of responsibility of the principal managers and technical personnel who will be directly responsible for the day-to-day design and construction activities. Include, as a minimum, the project manager; the project architect; the engineers responsible for civil, fire protection, electrical, mechanical and structural design; the quality control manager; and the construction manager. Indicate whether each individual has had a significant part in any of the project examples cited. If reassignment of personnel is considered possible, provide the names and resumes of the alternative professionals in each assignment. Project key personnel shall include the key construction subcontractors and the extent of their role with respect to the design phases of this project. Key subcontractors shall include, but are not limited to: Structural Ironworkers, Masonry Works, Electrical, Mechanical, and Site Development subcontractors.

(a) Information to be provided includes:

Name
Project assignment
Name of firm with which associated
Years experience: with this firm, with other firms
Education: degrees(s)/year/specialization
Active registration: state and year first registered

Experience and qualifications relevant to proposed project: for each project listed, provide project description, project dates, the individual's project assignment to include specific roles and responsibilities, and its relevance to this solicitation.

(b) Identify the Designer(s)-of-Record for each discipline

(c) Provide letters of commitment for all key personnel on the project team and any proposed alternate personnel. By identifying these personnel, the offeror is making a commitment that, barring unforeseen circumstances, they are the personnel who will be assigned to the project. A letter of commitment from each firm committing specific individuals from the firm may be provided in lieu of separate letters for each individual.

(4) Technical Approach Narrative. Describe in general terms how the Offeror will approach the design and construction of these facilities. The narrative should include considerations of "Fast Track" construction whereby preliminary site construction activities can begin prior to 100% completion of the design documents. The roles and responsibilities of the various sub-contractors for both design and construction shall also be addressed. Include in the narrative the offeror's proposed processes for handling field problems and assuring Designer of Record involvement throughout the construction period. Technical Approach Narrative shall be limited to a maximum of five (15) typewritten pages.

(a). Provide an organizational chart and supporting narrative describing how the team will be structured. Include all key design and construction personnel and firms on the organizational chart. Discuss the specific roles and responsibilities of each key individual and firm.

(b). Describe the proposed management structure for the team. Discuss how the design and construction process will be managed, to include a discussion on delegation of authority within the team.

(c). Describe interactions within the team and with the Corps of Engineers during design. Discuss how design changes will be handled and the roles that various team members will play when dealing with design changes. Discuss the role of construction team members during design phase.

(d). Describe interactions within the team and with the Corps of Engineers during construction. Discuss how changes will be handled during construction and the roles that various team members will play when dealing with changes during construction. Discuss the role of design team members during construction. Specifically address design team's role in construction Quality Control program; RFI's; shop drawing/submittal review and approval; attending progress meetings; site visits; inspections; contract completion and closeout.

(e). Describe the time control systems to be utilized. Discuss the use of the project schedule for managing the design and construction. Describe internal procedures for handling delays to minimize time growth.

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

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

(5) No cost information shall be included in the Phase 1 proposal package.

SAMPLE TRANSMITTAL LETTER
AND
PAST PERFORMANCE EVALUATION QUESTIONNAIRE

Date: _____

To: _____
_____
_____

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

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

Please send your completed questionnaire to the following address not later than _____:

U.S. Army Engineer District, {_____]
ATTN:
ADDRESS

The questionnaires can also be faxed to [Design District Contract Specialist]
If you have questions regarding the attached questionnaire, or require assistance, please contact [Design District Contract Specialist] at [Phone Number]. Thank you for your assistance.

PAST PERFORMANCE EVALUATION QUESTIONNAIRE

Upon completion of this form, please send directly to the U.S. Army Corps of Engineers in the enclosed addressed envelope or fax [or e-mail] to [FAX NUMBER], ATTN: [Contract Specialist]. Do not return this form to our offices. Thank you.

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

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

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

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

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

6. Location of Work:_____

7. Date of Award: _____

8. Status: Active _____ (provide percent complete)
Complete _____ (provide completion date)

9. Name, address and telephone number of Contracting Officer's Technical Representative:

QUALITY OF PRODUCT/SERVICE:

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

Excellent Quality	
Above Average Quality	
Average Quality	
Below Average Quality	
Unsuccessful or Experienced Significant Quality Problems	

Remarks:
_____
_____
_____
_____

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

Excellent Quality	
Above Average Quality	
Average Quality	
Below Average Quality	
Unsuccessful or Experienced Significant Quality Problems	

Remarks: _____
_____
_____
_____

12. To what extent was the contractor able to solve contract performance problems without extensive guidance from government/owner counterparts?

Excellent	
Above Average	
Average	
Below Average	
Unsuccessful	

Remarks:

_____
_____
_____
_____

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

Excellent	
Above Average	
Average	
Below Average	
Unsuccessful	

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:
_____
_____
_____
_____

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

Yes _____ No _____ Not Sure _____

TIMELINESS OF PERFORMANCE:

16. To what extent did the contractor meet the task order 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: _____
_____
_____
_____

REUSE OF CONTRACTOR:

17. Would this contractor be considered favorably for additional work?

Without reservations – yes	
With reservations – yes	
Possibly	
Definitely Not	

Remarks: _____
_____
_____

OTHER REMARKS:

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

_____
_____
_____
_____
_____
_____
_____
_____

3.00 PHASE 2 PROPOSAL SUBMISSION INSTRUCTIONS

a. Who May Submit.

(1) Proposals may be submitted by the offerors who receive written notification from the [USACE Design District] Contracting Officer that their firm has been selected to participate in Phase 2 of this solicitation. No more than five offerors will compete in Phase 2 under typical circumstances. If more than five (5) offerors are involved in Phase 2 of this solicitation, each offeror will be informed of the total number of offerors invited to participate. No offeror identifications will be made without the written consent of all the offerors to release that information.

b. General Requirements.

(1) In order to effectively and equitably evaluate all proposals, the Contracting Officer must receive information sufficiently detailed to clearly indicate the materials, equipment, methods, functions, and schedules proposed.

(2) In addition to the design documents addressed below, proposals must contain financial terms, management information, schedules for design and construction, and the representations and certifications. Specific requirements are described below.

(3) Title Page, including the title of the solicitation, solicitation number, [offeror number (Where used) or name], and date of the submittal.

(4) The proposals shall contain a detailed table of contents. If more than one binder is used, the complete table of contents shall be included in each. Any materials submitted but not required by this solicitation, (such as company brochures), shall be relegated to appendices.

(5) Compliance Statement: The offeror is required to certify that all items submitted in the technical proposal comply with the RFP requirements and any differences, deviations or exceptions must be stated and explained. Offerors are required to complete the following statement and submit it with their technical proposal. Even if there are no differences, deviations or exceptions, the offeror must submit the Compliance Statement and state that none exist.

<u>Statement of Compliance:</u>

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

c. Exceptions to the contractual terms and conditions of the solicitation (e.g., standard company terms and conditions) must not be included in the proposal.

d. The technical proposal shall not include any cost information. The technical and cost proposals shall be submitted as two separate documents.

e. Size of Printed Matter Submissions.

(1) Written materials: Size A4 [or 8-1/2" x 11"] format.

(2) Drawing sheets: Use Size A1 [approximately 24" x 36"] for full size drawings which are not intended for reduction to half-size sets. Half size sheets size A2 [approximately 16" x 23"] are also acceptable.

f. Where to Submit. Offerors shall submit their proposal packages to the [USACE Design District] at the address indicated.

g. Submission Deadline. Proposals shall be received by the [USACE Design District] no later than the time and date specified.

h. Proposal Requirements and Submission Format. The proposals sought by this solicitation shall contain the categories of submittal information as follows:

(1) Pro Forma requirements. This information should be submitted in an envelope labeled "Pro Forma Requirements." This category consists of representations and certifications, subcontracting plan, proposal bonds, and completed Standard Form 1442. Provide original and one (1) copy.

(2) Price Proposal Information. Offeror shall complete all portions of the Price Proposal Schedule and furnish in a separate envelope in original and two copies.

(a). Subcontracting Plan. (Applies to Large Businesses only.) All large businesses shall submit a subcontracting plan with their technical and price/cost proposals. The plan should be prepared in accordance with FAR 52.219-9. Failure to submit an acceptable subcontracting plan may make the offeror ineligible for award of the contract. The submission of the subcontracting plan is in no way advantageous to large businesses over any small business in the evaluation process. See Section 00100, paragraph SMALL BUSINESS SUBCONTRACTING PLAN for additional information and [Design] District subcontracting floors.

(b). Small Disadvantaged Business (SDB) Utilization Plan. (Applies to all Offerors.) Offerors shall submit a SDB Utilization Plan, to include the following information:

a. Identification of each SDB concern proposed and the work each is to perform.

b. Targets expressed in dollars and percentages representing each SDB concern's participation of the total contract value.

c. Total target value of all SDB participation, expressed in dollars and percentages, of the total contract value.

The offeror is put on notice that any targets represented in submitted proposal will be incorporated into and become part of any resulting contract. All proposed SDB concerns must be certified by the Small Business Administration and listed in the online database PRO-Net. SDB concerns may register in PRO-Net at http://pronet.sba.gov.

(3) Design-Technical Information. This information shall be submitted in separate three-ring binders labeled "Design-Technical Information." This category consists of design documents, drawings, sketches, outline specifications, design analysis, catalog cuts, and other information. Provide four (4) copies of the drawings (size A1); or four (4) copies of half size drawings (size A2) with a minimum of one full size set; 1 set of color boards; and four (4) copies of catalog cuts and other technical data. The drawings shall be bound.

(a). Design analyses expected at the proposal stage should be narrative descriptions of the systems and methods chosen including rationale for those selections. Design calculations necessary to support a final design submission are not expected nor desired at this stage.

(4) Project Management Plans and Schedules. The offeror shall provide a Management Plan, four copies are required. This is an overall plan showing how the offeror will control the job. The term "management plan" is defined as a plan that includes the following subplans: Subcontracting Plan,

Quality Control Plan; integrated Design and Construction Schedule with all “Fast Tracking” areas clearly identified, and Contract Closeout Plan. The offeror shall also submit a rationale explaining how the schedules will be achieved. The schedule for design and construction shall be task oriented, indicating dates by which milestones are to be achieved. The offeror may use a critical path or other method of his/her choice; however, the schedules shall be graphically represented. A Closeout Plan shall be furnished in a brief structured time scale schedule reflecting the planned activities during the final 90 days of the contract activity. Items to be included are as follows:

CLOSEOUT PLAN

Testing of equipment and systems with schedules and reports.
Equipment instruction and training schedules.
O&M Manuals transfer.
As-built drawings transfer.
Transfer procedures and schedules.
Pre-final inspection procedures and correction of deficiencies.
Warranty data submission and planned implementation.
Cleanup of administrative deficiencies.
Move off site.

(a) Sample Quality Control Plan. The Quality Control Plan is part of the Management Plan. The alliance of the project designer and builder on a project such as this naturally removes one commonly used method of quality control; that is, the usual reliance on the owner or the design consultant for monitoring construction quality. Although the Government will provide an on-site representative during construction, offerors are expected to develop a formal program of monitoring to ensure a high level of construction quality. Offerors shall submit Quality Control Plans that respond to the minimum requirements of Technical Specifications Section 01451 (furnished with this RFP package) entitled "Contractor Quality Control Design/Build." The offeror's program shall include the following characteristics:

CONTRACTOR QUALITY CONTROL REQUIREMENTS

A clear identification of the personnel responsible for quality control and a clear policy establishing their authority. The quality control group shall be separate and apart from (not the same) the people that are doing the construction. This quality control group shall report to the Contractor's management at a level no lower than a vice president of the company.
A specific description of the tasks and functions of the quality control personnel.
A specific policy establishing schedules for the performance of quality control tasks.
A policy for reporting quality control findings to the Contracting Officer.
A procedure whereby the Contracting Officer may resolve disputes that have not received satisfactory responses from the first levels of quality control personnel.
The names of testing laboratories to be used and the procedures for test data reporting.

CONTRACTOR QUALITY CONTROL REQUIREMENTS

A plan for material storage and protection.
The plan for review, evaluation, and Offeror Quality Control of the Design Submittals prior to Government receipt.
The plan for review of submittals and extensions of design. Of particular interest is the role of the Designer of Record in all design and construction progress.
Procedures for involving Key Subcontractors in the design development.
Procedures for successful integration of the Offeror's Quality Control Program with the Government's Quality Assurance Program.

i. Technical Data Requirements for Proposals. The following technical data shall be submitted as part of the formal Design-Technical Information Phase 2 proposal. Proposals shall include graphic descriptions of the design included in the basic proposal clearly indicated as such. All alternate designs shall be graphically described on separate drawings from the basic proposal. Offerors are advised that the required data listed below will be utilized for technical review and evaluation and used for determination of a "Quality Rating" by a Technical Evaluation Team. Materials indicated in the design/construction criteria, but not indicated in the offeror's specifications, will be assumed to be included and a part of the proposal.

(1) Design drawings. Provide an index of drawings. If required drawings are common for more than one type of building, indicate so on the drawing. Do not provide foundation plans or structural, civil, plumbing, mechanical, or electrical details. The proposal design drawings shall provide the information as indicated in the following tables:

SITE DESIGN

Drawing Type / Scale	Show This Information
Area Site Development Plan 1:1000 Note[1]	Spatial and functional arrangement of all SOW requirements Adjacent land uses and historical or environmental conditions Project Boundaries Existing Contours Proposed contours at 1 m intervals [3']. Drainage and water retention ponds (if utilized) Vehicular and pedestrian circulation
Demolition Plan 1:500	All site amenities, structures, or features to be removed or retained.
Site Plan 1:500	Layout for all site requirements.

SITE DESIGN

Drawing Type / Scale	Show This Information
Utility Plan 1:500	All site utility requirements. Site lighting. Primary cable routing (new and existing). Pad-mounted transformers and service laterals. Cable television and telephone routing.
Off-Site Electrical Plan 1:500 Scale as required (If applicable)	Location of primary supply point of take-off. Existing electrical lines, both overhead and underground, properly identified. New construction tie-in to on-site electrical distribution system.

Note[1]: Drawings shall be dimensioned to show building separations, set back, etc.

BUILDING DESIGN

Drawing Type / Scale	Show This Information
Floor Plans 1:50 or 1:100 (For each building type)	Overall dimensions. Room description with dimensions and areas. Built-in features Plumbing fixtures Door swings. Patio (If Applicable). Service area (Delineate equipment service req. areas) Mechanical/Electrical/Service Spaces Calculated gross and net floor areas.
Floor Plan 1:50 or 1:100 (For each building type)	Life Safety Plan, include the following: - Exit Distances - Rated Assemblies - Building Classification - Space Classifications
Typical Exterior Elevations 1:100 (For each building type)	Show all sides.
Typical Interior Elevations 1:50 (For each building type)	Toilet Spaces.
Transverse and Longitudinal Sections 1:100 (For each building type)	Typical structural system. Building materials. Finishes. Vertical dimensions.
Typical Wall Sections 1:20 (For each building type)	Typical wall, foundation, floor, and roof section. Materials. Cavity wall. Wall fire and STC ratings
Details Scale as required.	Special Features
Finish Schedule	All rooms.

Note: Metric Scales are preferred, however, inch pound scales may continue to be used only if they enhance competition.

BUILDING ENGINEERING

Drawing Type / Scale	Show This Information
Mechanical Floor Plan 1:100 Note: This information may be shown on the unit electrical plans if it can be shown clearly.	HVAC system layout. Flues. Hot water heater. Equipment Efficiencies Ventilation and Exhaust Systems Other Energy Conservation Features Included in the Proposal Note: Duct Systems shown single line.
Electrical Floor Plan 1:100	Lighting fixture locations, properly labeled to show type of fixture. Fixture schedule which indicates general fixture description, number and type of lamps, type of mounting, and any special features. Location of motors or special mechanical equipment. Location of load center panelboards. Location of multi-builidng service equipment and building service. Multi-building electrical riser diagram. Electrical legend and notes. Room names.

(2) Specifications. Provide outline specifications indicating the quality of materials, construction, finishes, fixtures, and equipment for the applicable items. Special attention should be given to the identification and specification of energy conservation features included in the proposal, particularly those which exceed the minimum requirements of the Statement of Work. Submit as part of the Design-Technical Information.

(3) Equipment Schedule. Equipment schedule shall indicate proposed type of equipment, size or capacities, manufacturer, and model number. Furnish manufacturer's catalog data on equipment and fixtures for all features of the facilities, this shall include appliances, electrical equipment and lighting, mechanical heating and cooling equipment, domestic water system equipment, as well as catalog information on the finishes and architectural specialties and exterior finish materials. Originals of manufacturer's catalog should be submitted in lieu of reproducibles to ensure legible data. Submit as part of the Design-Technical Information.

(4) Interior Color Selections. Proposal shall include catalog information with available finish materials and colors. Following award, the successful contractor, through the design process with the Government, will make final selections of the colors to be used from the proposed list of acceptable materials and colors furnished with the proposal.

(5) Life Safety Analysis and Fire Protection Analysis. The proposal shall include a statement that clearly indicates that proposal meets or exceeds all the life safety and fire protection requirements of the Statement of Work, which includes special requirements, the National Fire Codes published by the National Fire Protection Association, and the International Building Code.

(6) The Offeror’s shall include in their proposal a preliminary ranking of the sustainable design considerations included in the proposal. This ranking shall be either a LEED (Leadership in Energy and Environmental Design, by the U.S. Green Building Council) or a SPiRiT (Sustainable Project Rating Tool, by the U.S. Army Corps of Engineers) ranking. The successful proposal shall be required to complete a

detailed analysis on the final design which meets or exceeds the preliminary ranking established at proposal level. Proposals must score at least a Bronze SPiRiT Level or a Certified LEED Level.

(7) Evaluation Factors/Proposal Contents Listing. A spreadsheet or table consisting of all the evaluation categories and sub-categories listed in Section 0120 for technical proposal evaluation and specific reference to where in the proposal documents those requirements are addressed or indicated. Submit as part of the Design-Technical Information.

4.0 RESTRICTIONS

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

SECTION 00120
PROPOSAL EVALUATION AND CONTRACT AWARD

SECTION 00120
PROPOSAL EVALUATION AND CONTRACT AWARD

[Design District must coordinate this section with the preparation and completion of the technical evaluation manual in accordance with the Attachments to Volume 1.]

1. TECHNICAL EVALUATION.

a. PHASE 1 Evaluation Factors:

FACTOR 1-1: OFFEROR PAST PERFORMANCE: This factor is the most important factor in the evaluation or Phase 1 proposals.

FACTOR 1-2: OFFEROR PROJECT KEY PERSONNEL: This factor is slightly less important than Factor 1-1 but represents a significant level of importance in evaluating proposals.

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

FACTOR 1-4: OFFEROR RELEVANT EXPERIENCE: This factor is less important than Factor 1-2.

b. PHASE 2 Evaluation Factors:

FACTOR 2-1: BUILDING FUNCTION: This factor is the most important factor in the evaluation of Phase 2 proposals.

FACTOR 2-2: BUILDING SYSTEMS: This factor is slightly less important than Factor 2-1.

FACTOR 2-3: SITE DESIGN: This factor is slightly less important than Factor 2-2.

FACTOR 2-4: SITE ENGINEERING: This factor is significantly less important than Factor 2-3.

FACTOR 2-5: SUSTAINABLE DESIGN CONSIDERATIONS: This factor is approximately equal in importance to Factor 2-4.

FACTOR 2-6: OFFEROR MANAGEMENT PLANS AND SCHEDULES: This factor is equal in weight to Factor 2-5.

c. Overall Proposal Evaluation Consideration

At the completion of both Phase 1 and Phase 2 evaluations the ratings from each of the phases will be tabulated. The Phase 2 evaluation is significantly more important in final selection than the results of the Phase 1 evaluation. At the completion of the evaluation process each proposal that completed both phases of the evaluation process will be assigned a single adjectival rating for comparison and best value analysis as applicable.

2. EVALUATION PROCESS

The proposal and evaluation process for this project will take place in two Phases. Each phase will inlcude unique requirements to the potential offerors. The offerors responses to these requirements will be evaluated with respect to the evaluation criteria set forth in this Section.

a. PHASE 1 will concern itself with Offeror's Past Performance, Proposed Project Key Personnel, and Offeror Relevant Experience. All proposals received in response to PHASE 1 will be evaluated and rated. At most, five (5) proposals will move forward into PHASE 2 which will define the technical requirements of the project and request the offeror's technical solutions to the project parameters.

b. PHASE 2: The five (at most) proposals which are determined to present the most advantages to the Government will receive the Phase 2 amendment to the solicitation which will include the Statement of Work, design considerations, and site constraints from the Government. These Offerors will review, evaluate, and propose a creative solution to the design problem presented. Offerors will also include cost information with this technical proposal. Only Offerors who reach PHASE 2 will be provided the opportunity to submit design solutions and cost information.

3. BASIS OF AWARD

a. The Government will award a firm fixed-price contract to that responsible Offeror whose complete (Phase 1 and 2 portions) proposal, which was evaluated to be at least conforming to the solicitation, determined to be fair and reasonable, and has been selected as the most advantageous to the Government, quality (comprised of technical approach and performance capability factors), price, and other factors considered. The rated evaluation criteria and price are considered approximately equal. As evaluation ratings and relative advantages and disadvantages become less distinct, differences in price between proposals are of increased importance in determining the most advantageous proposal. Conversely, as differences in price become less distinct, differences in ratings and relative advantages and disadvantages between proposals are of increased importance to the determination.

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

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

4. PHASE 1 EVALUATION PROCEDURES AND CRITERIA:

a. All proposal information received as a result of the Phase 1 solicitation shall be reviewed, evaluated, and rated with respect to the following rating scheme:

RATING	EXPLANATION
Unknown Performance Risk	Past performance information provided does not provide sufficient depth and breadth of experience to allow a definitive rating.
Outstanding/Very Low Performance Risk	Based on the offeror's performance record, no doubt exists that the offeror will successfully perform the required effort.
Above Average/Low Performance Risk	Based on the offeror's performance record, little doubt exists that the offeror will successfully perform the required effort.
Satisfactory/Moderate Performance Risk	Based on the offeror's performance record, some doubt exists that the offeror will successfully perform the

	required effort. Normal contractor emphasis should preclude any problems.
Marginal/High Performance Risk	Based on the offeror's performance record, substantial doubt exists that the offeror will successfully perform the required effort.
Unsatisfactory/Very High Performance Risk	Based on the offeror's performance record, extreme doubt exists that the offeror will successfully perform the required effort.

b. Offeror Past Performance: The Government will evaluate the satisfaction of the customers in the example projects identified by the Offeror and from which Past Performance Evaluation Questionnaires have been received. The Government may contact the points of contact indicated to assure validity of the received questionnaires. The Government may contact sources other than those provided by the Offeror for information with respect to past performance. These other sources may include ACASS (Architect-Engineer Contract Administration Support System), CCASS (Construction Contractor Appraisal Support System), telephone interviews, and Government personnel personal knowledge of contractor performance capability. Offerors will be provided with an opportunity to address any negative past performance information on which the offeror has not previously had such an opportunity. The following areas of major consideration will be determined from evaluation of all sources of past performance information and an overall rating provided:

(1) Quality of the Product Produced. Based on the information provided in the questionnaire and other information the Government will access the quality of the actual constructions produced and the standards of workmanship exhibited by the Offeror's team.

(2) Adherence to Project Schedule. The Government will evaluate all information available with respect to the Offerors completing past projects within the scheduled completion times.

(3) Management Processes. The Government will evaluate all information available with respect to the Offerors on-site management of construction activities, subcontractors, and any other project management consideration.

c. Offeror Project Key Personnel. The Government will evaluate and rate the Key Personnel identified in the Phase 1 proposal package. Additional consideration will be given to individuals who have past experience with Corps of Engineers construction project operations and who have completed the Corps sponsored Quality Control Class.

(1) The Government will evaluate the adequacy, strengths and weakness of key personnel assignments, to include compliance with registration and/or other specified minimum qualification requirements; qualifications and experience relevant to the proposed project; familiarity with local conditions; and familiarity with applicable building codes and standards.

(2) The Government will verify that the Designer of Record has been identified for each design discipline and that letters of commitment have been provided for all key personnel on the project team.

(3) The Government will evaluate the personnel resources assigned to the project and the ability to provide additional resources for the team if supplemental or replacement personnel are required. Consideration will be based on degree of coverage by discipline for all aspects of design and construction, depth of additional resources to supplement the planned resources, if necessary; whether same-discipline depth is from the same firm/office as the key personnel in that discipline or from a different firm or office.

d. Technical Approach Narrative. The Government will evaluate the overall understanding of the design-build process as well as the Offeror's implementation plans to utilize "fast track" procedures on this

project. Particular attention will be paid to the inclusion of the major construction subcontractors during the design process as well as the definition of the roles and responsibilities of the various subcontractors. Offerors are cautioned that this narrative shall not exceed fifteen (15) pages and that the Government review staff will review and evaluate only the information contained on the first fifteen pages in this section. Information beyond the fifteen (15) page limit will be ignored.

e. Relevant Experience. The Government will evaluate the example projects provided by the Offeror to evaluate and rate the recent experience of the Offeror in similar construction and/or design-build projects. The examples projects which most closely resemble the project identified in this solicitation will receive the highest consideration. If the Offeror cannot provide suitable relevant experience and the Government staff considers the provided information to basically indicate that the Offeror has no relevant experience, this Offeror shall be rated as satisfactory. Lack of relevant experience will not be rated favorably or unfavorably.

f. Evaluation Methodology. The Government evaluation team will consider all information provided in the Phase 1 proposal individually. Once these individual analyses are completed, the team will meet and determine a rating for each of the evaluation factors for Phase 1 by consensus decision. After each of the Factors for each of the proposals are rated, the team will develop, again by consensus, a final overall rating for the Phase 1 proposal. Up to five Offerors will continue into Phase 2 of the project. No proposals which receive an overall rating of Unsatisfactory or Marginal will be forwarded to Phase 2 regardless of the total number of proposals received.

g. Narrative Consensus Comments: The consensus evaluation will identify and document proposal Deficiencies, Strengths, Weaknesses, and Uncertainties.

Definitions:

Proposal 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. Examples of deficiencies include statements by the offeror that it cannot or will not meet a requirement; an approach that clearly does not met a requirement, or an omission of data required to assess compliance with a Government requirement.

Proposal Strength: An aspect of a proposal that appreciably decreases the risk of unsuccessful contract performance or that represents a significant benefit to the Government.

Proposal Weakness: A flaw in the proposal that increases the risk of unsuccessful contract performance. A “significant weakness” in the proposal is a flaw that appreciably increases the risk of unsuccessful performance.

Uncertainty: Any aspect of the proposal for which the intent of the offeror is unclear because there may be more than one way to interpret the offer or because inconsistencies in the offer indicate that there may be an error, omission, or mistake. Examples include a mistake in calculation or measurement and contradictory statements.

5. PHASE 2 EVALUATION PROCEDURES AND CRITERIA:

a. General. The proposals from the Offerors who reach Phase 2 will be evaluated by a team of Government staff to determine compliance with this solicitation (as a minimum), and to evaluate the quality of the proposed materials, methods, and procedures. Each of the evaluation Factors for Phase 2 will be evaluated by the Government and a final overall rating for the proposals shall be determined by consensus of the Government evaluation team. The rating scheme for Phase 2 of the process is as shown below:

EXCELLENT: The offeror greatly exceeds the scope of the solicitation requirements in all aspects of the particular factor or sub-factor. The offeror also provides significant advantage(s) and exceeds the solicitation requirements in performance or capability in an advantageous way and has no apparent or significant weaknesses or omissions.

ABOVE AVERAGE: The offeror exceeds the scope of the solicitation in most aspects of the particular factor or sub-factor. The offeror provides an advantage in key areas or exceeds performance or capability requirements, but has some areas of improvement remaining.

AVERAGE: The offeror matches the scope of the solicitation in most aspects of the particular factor or sub-factor. The offeror meets the performance or capability requirements of the element but not in a way advantageous to the Government. There is room for improvement in this element.

POOR: The offeror does not meet the minimum scope of the solicitation for the particular factor or sub-factor. The offeror does not include any advantages and does not meet the minimal performance or capability requirements for this element. The offeror contains many apparent weakness and requires improvement.

UNACCEPTABLE: The offeror fails to meet the scope of the solicitation in all aspects of the factor or sub-factor or has not submitted any information to address this evaluated item. The offeror does not include any advantages in any areas of the element and does not meet the minimum performance or capability requirements of this factor or sub-factor. The proposal includes large apparent weaknesses and the proposal will require extensive modifications to come into compliance with the minimum requirements of the solicitation.

b. Relative Importance of Factors. Refer to paragraph 1 in this section for delineation of factor relative importances.

c. Narrative Consensus Comments: The consensus evaluation will identify and document proposal Deficiencies, Strengths, Weaknesses, and Uncertainties.

Definitions:

Proposal 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. Examples of deficiencies include statements by the offeror that it cannot or will not meet a requirement; an approach that clearly does not met a requirement, or an omission of data required to assess compliance with a Government requirement.

Proposal Strength: An aspect of a proposal that appreciably decreases the risk of unsuccessful contract performance or that represents a significant benefit to the Government.

Proposal Weakness: A flaw in the proposal that increases the risk of unsuccessful contract performance. A “significant weakness” in the proposal is a flaw that appreciably increases the risk of unsuccessful performance.

Uncertainty: Any aspect of the proposal for which the intent of the offeror is unclear because there may be more than one way to interpret the offer or because inconsistencies in the offer indicate that there may be an error, omission, or mistake. Examples include a mistake in calculation or measurement and contradictory statements.

FACTOR 2-1: BUILDING FUNCTION.

This factor considers the overall functional layout and interaction of the spaces in the facilities as well as the "appeal" of the facility considering interior as well as exterior considerations. The subfactors to be considered deal with the planning and design of the spaces with respect to tactical vehicle maintenance operations as well as other normal vehicle maintenance type considerations. Closely associated with the functional layout of the spaces and facilities, this factor considers the asthetics of the interior areas as well as the exterior finishes and design of the facilities, up to and including the overall environment created by the design proposed. The subfactors described below will be evaluated in the following order of importance:

Subfactor a and b are "GO/NO GO" factors and will be rated as pass/fail without an adjectival component.
Subfactor c is considered the most important subfactor
Subfactor d is less important that subfactor c.

a. APPROPRIATE FACILITIES

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

b. MINIMUM SPACE AND FACILITY SIZE

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

c. FUNCTIONAL ARRANGEMENT The following items will be considered in the evaluation of the functional arrangement of the various facilities:

[Design District shall edit the following subfactor items to include only those items which are included in the project.]

(1) Tactical Equipment Maintenance Facilities

(a) Does the building floor plan provide space arrangement well suited to the mission of the facility?
(b) Does the building floor plan provide acceptable life safety and fire safety measures? Is the Life Safety Analysis for the facility acceptable and in conformance with the Statement of Work requirements?
(c) Evaluate the Offeror's floor plan with respect to adaptation of the standard facility modules.
(d) Does the Offeror's floor plan demonstrate suitable locations for built-in equipment and other operational support type items required in the SOW?
(e) Does the Offeror's plan for the small outside facilities compliment the operations of the entire facility.
(f) Does the Offeror's floor plan clearly identify the typical work patterns and vehicle movements expected within the facility?

d. Building Asthetics. The following items will be considered, materials will be evaluated in Factor 2-2.

(1) Exterior Considerations:

(a) Facades, roof lines, and delineation of entrances.
(b) Proportions of fenestration in relation to elevations.

(c) Visual Organization. Has the proposer coordinated the arrangement of stacks, grilles, vents, pipes, etc, in a visually acceptable manner.
(d) Compliance with Installation Design Guide Recommendations
(e) Conformance to adjacent structures architectural styles
(f) Exterior color schemes proposed.
(g) Visual identification of the access and control points for the facility.

(2) Interior Considerations:

(a) Are the proposed colors and details conducive to the mission of the facility?
(b) Do the proposed materials and finishes represent a positive working environment?
(c) Have the ceiling heights, vehicle circulation widths, and other space sizes and configurations provided develop a workable solution to the facility mission?
(e) Are the interior finishes proposed suitable for use in a facility where the primary occupants are soldiers? Are these systems suitable for a heavy usage environment and the expected environment of this facility?

FACTOR 2-2: BUILDING SYSTEMS.

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

Subfactor a, b, and c are the most important subfactors and are equal in weight.
Subfactor d, e, f, g, h, i, j, & k are of equal and each slightly less important than subfactor a.
Subfactor l is a “GO/NO GO” factor and will be rated as pass/fail without an adjectival component..

a. Building Interior Electrical Systems. This subfactor evaluates the electrical power and lighting systems proposed for installation. Evaluation will concentrate on the proposed schematic drawing information presented, the design approach narratives, and the equipment and material catalog information included in the proposals. The systems proposed must meet the minimum requirements set forth in the Statement of Work and shall represent systems which are fully integrated into the building structure. Additional consideration will be given to proposals which incorporate energy saving materials into the proposals or materials which represent a lower life cycle cost to the Installation. The following typical items will be evaluated:

Panel and Equipment Placement	Capability for Future Loads
Simplicity of Power Design	Lighting Design and Materials
Special Equipment Power Requirements	Dedicated Circuits/Special Usages

b. Building Heating, Ventilating, and Air Conditioning Systems. This subfactor evaluates the heating, air conditioning, and ventilating systems proposed for installation. Evaluation will concentrate on the proposed schematic drawing information presented, the design approach narratives, and the equipment and material catalog information included in the proposals. The systems proposed must meet the minimum requirements set forth in the Statement of Work and shall represent systems which are fully integrated into the building structure and are fully capable of environmental control of the spaces. Within this subfactor, the automatic temperature controls shall also be considered. Where addressed in the Statement of Work, the proposed automatic temperature controls systems proposed shall be 100% compatible and integratable into the existing Installation Wide UMCS without translators or third party interface devices. Additional considerations will be given to proposals which incorporate energy recovery systems, high efficiency systems, energy conservation considerations, thermal storage systems, and other systems and features designed to enhance the overall performance of the facility while reducing the operating and maintenance costs expected. The following typical items will be evaluated:

Maintenance Access Considerations	Noise Considerations
Quality of Materials Proposed	Special Ventilation Systems
Ventilation Air for Occupant Comfort	Durability of Proposed Equipment/Systems

c. Building Construction Materials (Other than Structural, HVAC, Electrical). This subfactor evaluates the quality of the materials proposed for installation in the facility. The facilities constructed under this solicitation will represent significant Army assets and as such are expected to have a long effective life span. Proposal materials will be evaluated on the basis of ease of maintenance, longevity of finishes and construction materials and other durability considerations. Offerors are encouraged to highlight the innovative and specific means proposed to address these considerations.

d. Facility Equipment and Built-Ins. This subfactor evaluates the built-in equipment and other facility equipment proposed for installation. Consideration will be given to operating and maintenance requirements, durability, and serviceability of the proposed equipment. The materials proposed must be suited for heavy long term usage. These systems include lifts, cranes, work tables, storage lockers, maintenance pits, compressed air systems, and other equipment included with the facility which directly supports the mission of the facility.

e. Integration of Interior Support Systems (HVAC, Electrical, Structural, Plumbing, etc). This subfactor evaluates the integration of the various supporting systems among themselves and within the proposed structural systems. Offeror's proposal shall include a narrative which illustrates the methods and processes whereby the various supporting systems are coordinated to assure a minimum of construction problems which relate the interface between the disciplines. Particular attention should be given to the overhead cranes, specialized exhaust systems, and operational support equipment.

f. Force Protection Considerations. This subfactor evaluates the implementation and considerations of the facility construction related Force Protection Requirements associated with these facilities. A proposal rated "Unacceptable" in this subfactor will be eliminated from consideration.

g. Fire Protection and Fire Alarm Systems. This subfactor evaluates the proposed fire protection and fire alarm system, including the connection of the proposed fire alarm system to the existing base-wide fire reporting system which is monitored by the fire department. Included in this subfactor is the design as well as the materials proposed for installation. Fire protection and fire alarm systems are key systems and must be adequately addressed in the proposal.

h. Building Thermal Performance. This subfactor evaluates the overall thermal performance of the building structure and includes walls, windows, doors, infiltration, perimeter insulation, and any heat transferring surface within the new constructions. The Statement of Work provides a minimum level of prescriptive requirements which must be included in the proposal. Offerors will receive additional consideration for thermal performance which exceeds the minimum requirements and which reduce the overall energy usage of the facilities.

i. Communications and Telephone Systems. This subfactor evaluates the provision of communications and telephone systems in the facilities as well as the materials proposed for installation.

j. Intrusion Detection and Security Systems. This subfactor evaluates the proposed security systems including design and materials.

k. Plumbing Systems. This subfactor evaluates the provision of plumbing systems in the facilities as well as the materials proposed for installation.

l. Cable Television Systems. This subfactor evaluates the provision of cable television systems in the facilities as well as the materials proposed for installation.

m. Building Structural Systems. This subfactor evaluates the structural systems and sub-systems proposed for installation in the facilities. While no detail drawings or calculations are required or desired, this subfactor will evaluate the narrative descriptions of the structural systems proposed. This is GO-NO GO subfactor.

FACTOR 2-3: SITE DESIGN CONSIDERATIONS.

This factor considers the layout and planning of the site and various specialties which comprise a good site development plan. The goal and direction of the TEMF program is to provide for an efficient, well organized facility and supporting paved area configuration which provide the necessary space and arrangement to allow military and civilian personnel to effectively service tactical equipment. All elements of site design will be considered in this factor, with the exception of the design and materials utilized for utility systems which will be evaluated under a different factor. The following subfactors shall be considered in evaluation this factor. The levels of importance are as follows:

Subfactor a is considered the most important subfactor.
Subfactor b is slightly less important than subfactor a.
Subfactor c is slightly less important than subfactor b.
Subfactor d is slightly less important than subfactor c.
Subfactor e is slightly less important than subfactor d.

a. Area Development Plan. This subfactor evaluates the overall development concept proposed in the Offeror's plan with respect to the placement and orientation of the facilities, parking areas, hardstands, efficient arrangement of facility access points for vehicles and vehicle circulation spaces, site lighting, and other aspects which comprise the overall site development. Area development plan should incorporate the module designs provided in the solicitation. Proposals which reflect the design intent and direction as outlined in the Statement of Work will receive the most consideration during the evaluation process.

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

c. Grading. This subfactor evaluates the proposed grading alterations to the existing site to suit the new development. The Offeror's proposal will be evaluated on the amount and type of site regarding required as well as the provision for positive storm drainage away from the new facilities and parking areas.

d. Paved Areas. This subfactor evaluates the provision of parking for the new facilities. In this subfactor the following items should be considered:

(1) Proximity to new facilities
(2) Layout of Parking Areas
(a) Internal Circulation considerations
(b) Clear exit and entrance pathways
(c) Facility access points and vehicle circulation paths
(d) Separation of parking areas entrances/exits from street intersections.

e. Landscaping. This subfactor evaluates the design, quality, quantity, and location of all planting materials in the proposal. Considerations should include the use of landscaping as screening for exterior equipment and for the facility operations as a whole. The following items shall be considered in evaluating this subfactor.

(1) Does the proposal include landscaping materials to provide screening for the facility from adjacent structures and uses?

(2) Does the proposal include decorative plantings to enhance the appearance and environment of the complex with respect to adjacent sites?
(3) Have the plant materials selected reflected those indicated in the Installation Design Guide?
(4) Has the landscaping plan been integrated into the Sustainable Design considerations addressed by the proposer? Does the landscaping provided offer any environmental benefit to the Installation?

FACTOR 2-4: SITE ENGINEERING.

This factor evaluates the technical performance of the proposed site utility and exterior utility distribution systems. The quality of the proposed design as well as the materials selected will be considered in this item. Emphasis will be placed on durability, corrosion resistance, ease of maintenance, and life cycle cost of materials selected. Consideration will be given to the suitability of the chosen materials for the site soil conditions present. Site engineering will consider all aspects of the proposal beyond the 1500-mm line from all new facilities. The subfactors listed below will be considered as follows:

Subfactor a, b, & c are the most important factors and are all considered equal in importance.
Subfactors d, e, f, & g are all considered of equal importance and each is less important than subfactor a

a. WATER SYSTEM Evaluates system design, material quality, and maintainability.

b. FUEL PIPING AND STORAGE Evaluates piping sizes, material quality, layout, accessibility, and cutoff isolation.

c. ELECTRICAL DISTRIBUTION Evaluates system design, material quality, and maintainability.

d. COMMUNICATIONS (Comm, Telephone, etc). Evaluates system design, material quality, and maintainability.

e. SANITARY SEWER Evaluates system design, material quality, and maintainability.

f. STORM SEWER SYSTEM Evaluates system design, material quality, and maintainability.

g. PAVEMENT DESIGN Evaluates pavement design, material quality, and maintainability.

FACTOR 2-5: SUSTAINABLE DESIGN CONSIDERATIONS.

The Offeror's shall include in their proposal a preliminary ranking of the sustainable design considerations included in the proposal. This ranking shall be either a LEED (Leadership in Energy and Environmental Design, by the U.S. Green Building Council) or a SPiRiT (Sustainable Project Rating Tool, by the U.S. Army Corps of Engineers) ranking. The successful proposal shall be required to complete a detailed analysis on the final design which meets or exceeds the preliminary ranking established at proposal level. Proposals must score at least a Bronze SPiRiT Level or a Certified LEED Level. The evaluation of this factor shall be as follows:

FACTOR RATING	SpiRiT Level	LEED Level
Average	Bronze	Certified
High Average	Silver	Certified Silver
Above Average	Gold	Certified Gold
Excellent	Platinum	Certified Platinum

FACTOR 2-6: OFFEROR MANAGEMENT PLANS AND SCHEDULES.

This factor evaluates the Offeror's Project Management Plans as well as the proposed schedule for completion of the entire design-build project. Through this factor the Government will evaluate the Offeror's understanding of the solicitation provisions with respect to an integrated design-build process and the associated quality control, scheduling, coordination, and contract close out provisions. Each of the subfactors below is approximately equal in importance in the evaluation.

a. Quality Control Plan. The sample quality control plan provided by the Offeror will be reviewed and evaluated for inclusion of specific quality control practices and requirements necessary for the successful completion of all phases of this project. These phases include design stages as well as construction specialties. Offeror's plan must show the inclusion of the Corps Three Phase Inspection process and address the implications and operations of the Quality Control Plan and it's integration with the Quality Assurance Operations performed by the Government. The personnel and qualifications of the individuals performing in the Quality Control organization will be evaluated under the Phase 1 submission, however, if personnel changes have occurred since the Phase 1 submittal, these individuals must be evaluated as part of the Phase 2 evaluation process.

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

c. Closeout Plan. The Offeror's closeout plan will be reviewed and evaluated to determine the Offeror's understanding the close out requirements of the solicitation. Particular emphasis will be placed on O&M Manual production and Installation Staff training methods and processes.

d. Sub-Contracting Plan. The Government will evaluate the Offeror's proposed subcontracting plan will be evaluated in terms of achieving the required special emphasis group participations and the completeness and rational for the plan proposed. Offerors who are not required to submit a subcontracting plan (ie Small Business concerns) will be assigned a rating equal to the highest evaluation of any subcontracting plan submitted in response to this solicitation.

SECTION 00600

Representations & Certifications

SECTION 00600
Representations & Certifications

Note: FAR and DFAR paragraphs are shown only for reference. All contractual information and requirements must be coordinated and produced through the PDT Contract Specialist. This TI is not meant to serve as contracting authority or direction.

PARAGRAPH	DESCRIPTION
52.203-11	CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)
52.204-5	WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS) (MAY 1999)
52.204-3	TAXPAYER IDENTIFICATION (OCT 1998)
52.209-5	CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (MAR 1996)
52.215-6	PLACE OF PERFORMANCE (OCT 1997)
52.222-22	PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)
52.223-1	CLEAN AIR AND WATER CERTIFICATION (APR 1984)
52.223-13	CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (OCT 1996)
52.226-2	HISTORICALLY BLACK COLLEGE OR UNIVERSITY AND MINORITY INSTITUTION REPRESENTATION (MAY 1997)
252.227-7028	TECHNICAL DATA OR COMPUTER SOFTWARE PREVIOUSLY DELIVERED TO THE GOVERNMENT (JUN 1995)
252.247-7022	REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992)

SECTION 00700

Contract Clauses

SECTION 00700
Contract Clauses

Note: FAR and DFAR paragraphs are shown only for reference. All contractual information and requirements must be coordinated and produced through the PDT Contract Specialist. This TI is not meant to serve as contracting authority or direction.

PARAGRAPH	DESCRIPTION
52.232-33	PAYMENT BY ELECTRONIC FUNDS TRANSFER—CENTRAL CONTRACTORb REGISTRATION (MAY 1999)
52.202-1	DEFINITIONS (OCT 1995) --ALTERNATE I (APR 1984)
52.203-3	GRATUITIES (APR 1984)
52.203-4	COVENANT AGAINST CONTINGENT FEES (APR 1984)
52.203-7	ANTI-KICKBACK PROCEDURES. (JUL 1995)
52.203-8	CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)
52.203-9	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)
52.203-12	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUN 1997)
52.204-3	PRINTING/COPYING DOUBLE-SIDED ON RECYCLED PAPER (JUN 1996)
52.209-5	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT. (JUL 1995)
52.215-2	AUDIT AND RECORDS--NEGOTIATION (JUN 1999)
52.215-11	PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA--MODIFICATIONS (OCT 1997)
52.215-12	SUBCONTRACTOR COST OR PRICING DATA--MODIFICATIONS (OCT 1997)
52.215-19	NOTIFICATION OF OWNERSHIP CHANGES (OCT 1997)
52.215-20	REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA--MODIFICATIONS (OCT 1997)
52.215-21	REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA--MODIFICATIONS (OCT 1997)
52.219-8	UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 1999)
52.219-9	SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED SMALL BUSINESS SUBCONTRACTING PLAN (OCT 1999)--ALTERNATE I (JAN 1999)
52.222-3	CONVICT LABOR (AUG 1996)
52.222-4	CONTRACT WORK HOURS AND SAFETY STANDARDS ACT - OVERTIME COMPENSATION. (JUL 1995)
52.222-6	DAVIS-BACON ACT (FEB 1995)
52.222-7	WITHHOLDING OF FUNDS (FEB 1988)
52.222-8	PAYROLLS AND BASIC RECORDS (FEB 1988)
52.222-9	APPRENTICES AND TRAINEES (FEB 1988)
52.222-10	COMPLIANCE WITH COPELAND ACT REQUIREMENTS (FEB 1988)
52.222-11	SUBCONTRACTS (LABOR STANDARDS (FEB 1988)
52.222-12	CONTRACT TERMINATION--DEBARMENT (FEB 1988)
52.222-13	COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988)
52.222-14	DISPUTES CONCERNING LABOR STANDARDS (FEB 1988)
52.222-15	CERTIFICATION OF ELIGIBILITY (FEB 1988)
52.222-26	EQUAL OPPORTUNITY (FEB 1999)
52.222-27	AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (FEB 1999)
52.222-35	AFFIRMATIVE ACTION FOR DISABLED VETERANS AND VETERANS OF THE

PARAGRAPH	DESCRIPTION
	VIETNAM ERA (APR 1998)
52.222-36	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998)
52.222-37	EMPLOYMENT REPORTS ON DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (JAN 1999)
52.233-2	CLEAN AIR AND WATER (APR 1984)
52.233-3	PROTEST AFTER AWARD (AUG. 1996)
52.223-6	DRUG-FREE WORKPLACE (JAN 1997)
52.223-14	TOXIC CHEMICAL RELEASE REPORTING (OCT 1996)
52.225-5	BUY AMERICAN ACT--CONSTRUCTION MATERIALS (JUNE 1997)
52.225-11	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (AUG 1998)
52.226-1	UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES (SEP 1996)
52.227-1	AUTHORIZATION AND CONSENT (JUL 1995)
52.227-2	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (AUG 1996)
52.227-4	PATENT INDEMNITY--CONSTRUCTION CONTRACTS (APR 1984)
52.228-1	BID GUARANTEE (SEP 1996)
52.228-5	INSURANCE--WORK ON A GOVERNMENT INSTALLATION (JAN 1997)
52.228-2	ADDITIONAL BOND SECURITY (OCT 1997)
52.228-11	PLEDGES OF ASSETS (FEB 1992)
52.228-15	PERFORMANCE AND PAYMENT BONDS--CONSTRUCTION (SEP 1996)
52.228-12	PROSPECTIVE SUBCONTRACTOR REQUESTS FOR BONDS. (OCT 1995)
52.228-13	ALTERNATIVE PAYMENT PROTECTIONS (OCT 1997)
52.228-14	IRREVOCABLE LETTER OF CREDIT (DEC 1999)
52.229-3	FEDERAL, STATE, AND LOCAL TAXES (JAN 1991)
52.232-5	PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (MAY 1997)
52.232-17	INTEREST (JUNE 1996)
52.232-23	ASSIGNMENT OF CLAIMS (JAN 1986) - ALTERNATE I (APR 1984)
52.232-27	PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (JUN 1997)
52.233-1	DISPUTES. (DEC 1998)
52.236-2	DIFFERING SITE CONDITIONS (APR 1984)
52.236-3	SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)
52.236-5	MATERIAL AND WORKMANSHIP (APR 1984)
52.326-6	SUPERINTENDENCE BY THE CONTRACTOR (APR 1984)
52.236-7	PERMITS AND RESPONSIBILITIES (NOV 1991)
52.236-8	OTHER CONTRACTS (APR 1984)
52.236-9	PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)
52.236-10	OPERATIONS AND STORAGE AREAS (APR 1984)
52.236-11	USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)
52.236-12	CLEANING UP (APR 1984)
52.236-13	ACCIDENT PREVENTION (NOV 1991) – ALTERNATE I (NOV 1991)
52.236-15	SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)
52.236-17	LAYOUT OF WORK (APR 1984)
52.236-21	SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)
52.236-23	RESPONSIBILITY OF THE ARCHITECT-ENGINEER CONTRACTOR (APR 1984)
52.236-24	WORK OVERSIGHT IN ARCHITECT-ENGINEER CONTRACTS (APR 1984)
52.236-25	REQUIREMENTS FOR REGISTRATION OF DESIGNERS (APR 1984)
52.236-26	PRECONSTRUCTION CONFERENCE (FEB 1995)
52.242-13	BANKRUPTCY. (JUL 1995)
52.242-14	SUSPENSION OF WORK (APR 1984)
52.243-4	CHANGES (AUG 1987)
52.244-6	SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (OCT 1998)
52.246-12	INSPECTION OF CONSTRUCTION (AUG 1996)

PARAGRAPH	DESCRIPTION
52.248-3	VALUE ENGINEERING--CONSTRUCTION (MAR 1989)
52.249-2	TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SEP 1996) – ALTERNATE I (SEP 1996)
52.249-10	DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)
52.253-1	COMPUTER GENERATED FORMS (JAN 1991)
252.203-7001	PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE-CONTRACT- RELATED FELONIES (MAR 1999)
252.203-7002	DISPLAY OF DOD HOTLINE POSTER (DEC 1991)
252.204-7003	CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (APR 1992)
252.204-7004	REQUIRED CENTRAL CONTRACTOR REGISTRATION.(MAR 1998)
252.205-7000	PROVISION OF INFORMATION TO COOPERATIVE AGREEMENT HOLDERS (DEC 1991)
252.209-7000	ACQUISITION FROM SUBCONTRACTORS SUBJECT TO ONSITE INSPECTION UNDER THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY (NOV 1995)
252.209-7003	COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (MAR 1998)
252.209-7004	SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)
252.215-7000	PRICING ADJUSTMENTS (DEC 1991)
252.219-7003	SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED SMALL BUSINESS SUBCONTRACTING PLAN (DOD CONTRACTS) (APR. 1996)
252.225-7002	QUALIFYING COUNTRY SOURCES AS SUBCONTRACTORS (DEC 1991)
252.225-7012	PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES. (MAY 1999)
252.225-7031	SECONDARY ARAB BOYCOTT OF ISRAEL (JUN 1992)
252.225-7036	BUY AMERICAN ACT NORTH AMERICAN FREE TRADE AGREEMENT IMPLEMENTATION ACT - BALANCE OF PAYMENTS PROGRAM (MAR 1998)
252.227-7015	TECHNICAL DATA--COMMERCIAL ITEMS. (NOV 1995)
252.227-7022	GOVERNMENT RIGHTS (UNLIMITED) (MAR 1979)
252.227-7027	DEFERRED ORDERING OF TECHNICAL DATA OR COMPUTER SOFTWARE (APR 1988)
252.227-7033	RIGHTS IN SHOP DRAWINGS (APR 1966)
252.227-7037	VALIDATION OF RESTRICTIVE MARKINGS ON TECHNICAL DATA. (SEP 199)
252.236-7000	MODIFICATION PROPOSALS - PRICE BREAKDOWN. (DEC 1991)
252.236-7001	CONTRACT DRAWINGS, MAPS, AND SPECIFICATIONS. (DEC 1991)
252.236-7006	COST LIMITATION (JAN 1997)
252.243-7001	PRICING OF CONTRACT MODIFICATIONS (DEC 1991)
252.243-7002	REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)
252.246-7000	MATERIAL INSPECTION AND RECEIVING REPORT (DEC 1991)
252.247-7023	TRANSPORTATION OF SUPPLIES BY SEA (NOV 1995)
252.247-7024	NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (NOV 1995)
252.248-7000	PREPARATION OF VALUE ENGINEERING CHANGE PROPOSALS (MAY 1994)

CONTRACT CLAUSES FOR DESIGN-BUILD CONSTRUCTION CONTRACTS: NOTES TO THE DESIGN DISTRICT

The applicable contract clauses (Section 00700) for a D-B RFP are generally the same as for a design/bid/build construction RFP solicitation. There are some special considerations to keep in mind for a D-B RFP. Clauses that allow the Government to tailor wording to fit the situation are discussed herein. We have also included some discussion on some standard clauses.

Suggested Clauses and Associated DFARS Clauses to be Included in a D/B Contract:

Requirements for Registration of Designers
Performance of Work by the Contractor
Limitations on Subcontracting
Commencement, Prosecution, and Completion of the Work
Governments Rights (Unlimited)
Drawings and Other Data to Become Property of the Government
Rights in Shop Drawings
Nondomestic Construction Materials

REQUIREMENTS FOR REGISTRATION OF DESIGNERS

It is extremely important to include this standard A-E contract clause in design-build construction contracts. Section 01012, "Design After Award", should specify requirements for the D-B contractor to designate "designers of record" for each design discipline. Section 01330, "Submittals", must specify the role of the DOR(s) to review and approve all submittals for extensions to design and other submittals, requiring coordination with the design. Section 00110, "Proposal Submission Requirements", requires offerors to identify and submit qualifications for the DOR(s). The below Contract Clause establishes minimum standards for registration.

52.236-0025 REQUIREMENTS FOR REGISTRATION OF DESIGNERS (Apr 1984)

The design of architectural, structural, mechanical, electrical, civil, or other engineering features of the work shall be accomplished or reviewed and approved by architects or engineers registered to practice in the particular professional field involved in a State or possession of the United States, in Puerto Rico, or in the District of Colombia.

(End of Clause)

PERFORMANCE OF WORK BY THE CONTRACTOR.

The following clause is mandatory for construction RFPs, not set-aside for small business or 8(a). The purpose of the clause is to prevent "brokering" of the work (that is where the winning contractor subs out the work to another firm or firms) and to require personal participation and management of the work by the prime contractor.

52.236-1 PERFORMANCE OF WORK BY THE CONTRACTOR (APR 1984)

The Contractor shall perform on the site, and with its own organization, work equivalent to at least _____ (**) percent of the total amount of work to be performed under the contract, not including design

work. This percentage may be reduced by a supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government.

(End of Clause)

***** NOTE:*** *The FAR allows us to edit the required percentage of required self-performed work. Analyze each project on its own merits. Success in design-build construction requires a firm with strong management skills in design and construction. It is recommended specifying a figure within the range of 12-15% of the construction amount, rather than the commonly used figure of "20%" for standard construction contracts. The design fee is normally excluded from the total amount of work. See FAR 36.501 for prescription for use. See also the discussion following this clause for suggested wording to include in Section 00110, "PROPOSAL SUBMISSION REQUIREMENTS", explaining to the offerors what is and what isn't defined as "self performed work." We have also included a standard form for offerors to calculate the amount of work proposed to be self performed and to submit for proposal evaluation.*

SECTION 0110, "PROPOSAL SUBMISSION REQUIREMENTS", SELF-PERFORMED WORK

Below is suggested wording, explaining the requirements of the Contract Clause "Self-Performance of Work." Include this information in Section 01010 "PROPOSAL SUBMISSION REQUIREMENTS. Note that contracts for 8(a) or SDB Set-Aside use a different clause and distinctly different method of calculation of self-performed work.

"XX. Self-Performed Work: Identify what construction parts of the project will be "self-performed" by in-house forces and the related cost for each part, as defined below. If sufficient information is available at the time your offer is prepared, state (within this Organization factor narrative) the percentage of work you will self-perform. If sufficient information is not available during preparation of this narrative, state that the information is in the Pro-Forma requirements (see the following paragraph). The prime contractor must perform [___] percent of the contract work with its own organization in accordance with Section 00800, "PERFORMANCE OF WORK BY THE CONTRACTOR (APR 1984)."

XX.1 Computation Sheet. Provide and illustrate the calculation for "percent of self-performed work", in accordance with the definitions below. Use the form attached hereinafter.

XX.2 The following are definitions concerning self-performance of work by the Prime Contractor, in accordance with Section 00800, "PERFORMANCE OF WORK BY THE CONTRACTOR."

XX.2.1 "Self-performance of work" generally includes mobilization and utilization of owned or rented plant and equipment to be operated by the prime contractor's own employees; only those materials which will be both purchased and installed by the prime's own forces; labor associated with those aforementioned materials or equipment; only those supplies to directly support work performed by the contractor's own employees; and the contractor's own job overhead costs.

XX.2.2 The following is NOT self-performed work for purposes of the clause: Prime contractor markups for profit, general and administrative overhead, bonds, or other indirect costs on self-performed or subcontracted work; "Owner-operated equipment", rental of plant or equipment for operation by subcontractors; purchase of materials for installation by subcontractors.

XX.2.3 "On the site" includes the construction site(s) as well as off-site fabrication plant or other facilities necessary to manufacture assemblies or provide materials to be incorporated into the construction project.

XX.2.4 "Total amount of work to be performed under the contract" is comprised of all direct (variable, fixed, one-time and semi-variable) costs to the contractor, including jobsite overhead costs, to construct the project. It generally includes all self-performed work, as defined above, and cost of all supplies,

materials and subcontracts. It does not include design costs, home or branch office overhead costs or prime contractor markups for bond, profit, etc."

Shown below is a suggested standard form to include in section 00110, "Proposal Submission Requirements." Use this information to evaluate proposed self-performed work.

FORMAT FOR CALCULATION OF SELF-PERFORMED WORK
DESIGN/BUILD CONTRACTS
For all Contracts, except 8(a)

Use a format similar to the following to identify and calculate cost of the work to be self-performed. Refer to the definitions pertaining to "Self-performance of work", "On the site" and "Total amount of work to be performed under the contract". Include this information in the envelope for Pro Forma Requirements) if undetermined until the specified deadline for proposal submission. Otherwise include it in the Performance Capability information:

A. Clearly describe the work to be self-performed:

_____

_____

_____

B. Show Calculation of Self-Performed Work:

B.1 Total Bid Price: $_____

B.2 Subtract Design Cost: ($_____)

B.3 Subtract G&A, home office overhead, prime contractor's markups for profit, bond, state use tax, etc. ($_____)

B.4 Remainder is "Total amount of work to be performed under the Contract" = $_____

B.5 "Work to be self-performed": = $_____
(Includes mobilization and utilization of owned or rented plant and equipment to be operated by the prime contractor's own employees; only those materials which will be both purchased and installed by the prime's own forces; labor associated with those aforementioned materials or equipment; only those supplies to directly support work performed by the contractor's own employees; and the contractor's own job overhead costs.)

B.6 % Self-performed Work = Line B.5/ Line B.4 X 100% = _____%

LIMITATIONS ON SUBCONTRACTING.

Note that 8(a) or SDB set-aside contracts do not use the standard FAR Clause "PERFORMANCE OF WORK BY THE CONTRACTOR". Instead, use a Statutorily prescribed clause, entitled "LIMITATIONS ON SUBCONTRACTING." The purpose of the clause is to require personal supervision and control of the contract work by the SDB firm and to require substantial personal work performance (to avoid "brokering the work to non-minority firms). The definitions of self-performed work are substantially different than for non- 8(a) contracts. The clause is shown below, along with information and a form for use in Section 00110 "PROPOSAL SUBMISSION REQUIREMENTS" of the RFP for a competitive 8(a) or competitive SDB set-aside contract.

52.219-14 LIMITATIONS ON SUBCONTRACTING (Jan 1991)

(a) This clause does not apply to the unrestricted portion of a partial set-aside.

(b) By submission of an offer and execution of a contract, the Offeror/Contractor agrees that in performance of the contract in the case of a contract for:

(1) Services (except construction). At least 50 percent of the cost of contract performance incurred for personnel shall be expended for employees of the concern.

(2) Supplies (other than procurement from a regular dealer in such supplies). The concern shall perform work for at least 50 percent of the cost of manufacturing the supplies, not including the cost of materials.

(3) General construction **. The concern will perform at least 15 percent of the cost of the contract, not including the cost of materials, with its own employees.

(4) Construction by special trade contractors **. The concern will perform at least 25 percent of the cost of the contract, not including the cost of materials, with its own employees.

(End of Clause)

**Specify, in Section 0110, "PROPOSAL SUBMISSION REQUIREMENTS", whether the contract is for general construction or a single trade. This will clarify which sub-paragraph, (b)(3) or (b)(4), applies to the specific project).

SECTION 0110, "PROPOSAL SUBMISSION REQUIREMENTS", SELF-PERFORMED WORK FOR Competitive 8(a) or SDB Set-aside.

The following is suggested wording for inclusion in Section 00110 of the RFP:

"XX. Identify what parts of the project will be "self-performed" by in-house forces and the related cost for each part, as defined below. Provide and illustrate the calculation for "percent of self-performed work", in accordance with the definitions below.

XX.1 Definitions regarding self-performance of work by the Prime Contractor, in accordance with Contract Clause: "Limitations on Subcontracting" (FAR 52.219-14):

XX1.1 The work in this contract is "general construction" for purposes of Contract Clause "Limitations on Subcontracting."

XX.1.2 "Self-performed work" generally includes costs for: mobilization and utilization of owned or rented plant and equipment to be operated by the contractor's own employees and labor associated with the aforementioned equipment; contractor's own labor to fabricate or to install materials into the finished

construction; performance by the contractor's own employees of design work, land surveys and other engineering or technical specialist services required by the contract; supplies to directly support the aforementioned work to be accomplished by the contractor's own employees; and the contractor's own job overhead costs. Contractor markups for profit, general and administrative overhead, bonds, or other indirect costs on "self-performed" or subcontracted work are not "self-performed work" and are to be excluded from "total cost of the contract" for calculation purposes. Rental of plant or equipment for operation by subcontractors is not "self-performed work" but shall be included in the "total cost of the contract" for calculation purposes . Cost of materials to be incorporated into the work and supplies to support other than construction by the contractor's own employees are excluded from the above definition. Do not include these costs in the calculation.

XX.1.3 "Total cost of the contract" means the total direct (variable, fixed, one-time and semi-variable) costs to the contractor, including jobsite overhead costs but excluding the cost of any materials to be incorporated into the work, to construct the project. It generally includes the cost of all self-performed work, as defined above, and all supplies and subcontract costs. The cost of subcontractor furnished materials will be excluded only to the extent that they can be segregated and identified in the subcontractors' proposals.

XX.1.4 "Percent of self-performed work" is calculated by dividing the above defined cost of "self-performed work" by the "total cost of the contract" and multiplying the result by 100%."

COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK

Adapt this clause and Specification Section 01320, Project Schedule, as necessary to meet your requirements. You may state separate completion times for the design and the construction; however, this is discouraged. The recommendation is to state one completion time inclusive of both design and construction. If you allow the offerors to propose the contract duration period, add wording to cover acceptance of the selected offeror's proposed performance period – not to exceed a prescribed maximum period.

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (Apr 1984)

(a) The Contractor shall be required to (1) commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed, (2) prosecute the work diligently, and (3) design and construct the entire work.....**<--If the performance period is to be proposed by the offerors, use wording to this effect: "....ready for use not later than the proposed performance period after receipt of the contract notice to proceed. The maximum proposed performance period cannot exceed _____calendar days after receipt of the notice to proceed.">** The times stated for completion shall include final cleanup of the premises.

(b) Provisions stipulated for conducting test on heating and air conditioning systems and planting and maintenance of grass are excluded from the completion time stated above.

(End of Clause)

GOVERNMENT RIGHTS (UNLIMITED).

Use this DFARS clause in all design-build contracts, except those using the DFARS clause: DRAWINGS AND OTHER DATA TO BECOME PROPERTY OF THE GOVERNMENT**.** *The clause grants the Government non-exclusive rights to use the design on other projects.*

52.227-7022 GOVERNMENT RIGHTS (UNLIMITED)(DFARS, Mar 1979)

The Government shall have unlimited rights in all drawings, designs, specifications, notes and all other works developed in the performance of this contract, including the right to use same on any other Government design or construction without additional compensation to the Contractor. The Contractor hereby grants to the Government a paid-up license throughout the world to all such works to which he may assert or establish any claim under design patent or copyright laws. The Contractor for a period of three (3) years after completion of the project agrees to furnish the original or copies of all such works on the request of the Contracting Officer.

(End of Clause)

DRAWINGS AND OTHER DATA TO BECOME PROPERTY OF THE GOVERNMENT.

When the purpose of the Design-Build contract is to obtain a unique architectural design and construction of a building or monument, which for artistic, aesthetic or other special reasons the Government does not want duplicated, use the following DFARS clause to obtain exclusive control of the data pertaining to the design (ref: DFARS 227.7107(b)). In that case, do not use the DFARS clause: 52.227-7022 GOVERNMENT RIGHTS (UNLIMITED)

52.227-023 DRAWINGS AND OTHER DATA TO BECOME PROPERTY OF THE GOVERNMENT (DFARS, Mar 1979)

All designs, drawings, specifications, notes, and other works developed in the performance of this contract shall become the sole property of the Government and may be used on any other design without additional compensation to the Contractor. The Government shall be considered the "person for whom the work was prepared" for the purpose of authorship in a copyrightable work under 17 U.S.C. 201(b). With respect thereto, the Contractor agrees not to assert or authorize others to assert any rights or to establish any claim under the design patent or copyright laws. The Contractor for a period of three (3) years after completion of the project agrees to furnish all retained works on the request of the Contracting Officer. Unless otherwise provided in the contract, the Contractor shall have the right to retain copies of all works beyond such period.

(End of Clause)

NONDOMESTIC CONSTRUCTION MATERIALS

List all known allowable exceptions to the Buy America Act – Construction in the following clause.

NONDOMESTIC CONSTRUCTION MATERIALS (Oct 1966) DFARS 52.225-7003

(a) The requirements of the clause of this contract entitled "Buy American Act" do not apply to the items set forth below:

(LIST)

(End of Clause)

SECTION 00800

Special Contract Requirements

SECTION 00800
Special Contract Requirements

Note: FAR and DFAR paragraphs are shown only for reference. All contractual information and requirements must be coordinated and produced through the PDT Contract Specialist. This TI is not meant to serve as contracting authority or direction.

PARAGRAPH	DESCRIPTION
52.211-12	LIQUIDATED DAMAGES--CONSTRUCTION (APR 1984)
52.211-10	COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)
52.236-1	PERFORMANCE OF WORK BY THE CONTRACTOR (APR 1984)
52.236-14	AVAILABILITY AND USE OF UTILITY SERVICES (APR 1984)
52.236-4	PHYSICAL DATA (APR 1984)
252.201-7000	CONTRACTING OFFICER'S REPRESENTATIVE (DEC 1991)

SPECIAL CONTRACT REQUIREMENTS.
NOTES TO THE DESIGN DISTRICT

Special Contract Requirements are contained in Section 0800 of the RFP. Because the D-B RFP includes design services and because the resulting contract includes the selected proposal, additional Special Contract Requirements (SCR's) have been developed to add to the usual set of SCR's used in design/bid/build competitively bid (IFB) construction solicitations.

The SCR's, listed below, have been specifically developed to define the non-traditional roles and responsibilities of the various parties in the D-B contract.

Suggested SCR's to be Included in Section 0800 of the D/B Contract:

Design Build Contract-Order of Precedence
Proposed Betterments (Optional)
Key Personnel, Subcontractors, and Outside Associates or Consultants)
Responsibility of the Contractor for Design
Warranty of Construction Work
Warranty of Design
Sequence of Design/Construction (Can Alternately be Included in Section 01012)
Sequence of Design/Construction (Fast Track)- (Can Alternately be Included in Section 01012)
Constructor's Role During Design (Can alternately be included in Section 011012)
Recommended Insurance Coverage (Optional)
Training (Can be included in a Technical Section)
Design Conferences (Can Alternately be Included in Section 01012)
Value Engineering After Award
Partnering (Highly Recommended)
Deviating from the Accepted Design

DESIGN-BUILD CONTRACT-ORDER OF PRECEDENCE:

This SCR defines what constitutes the Contract, the order of precedence in the event of inconsistencies and further states that the design documents produced after award are "deliverables", not formally part of the contract, themselves.

It is essential that this SCR be included in the D-B contract. DO NOT USE the standard clause "ORDER OF PRECEDENCE-UNIFORM CONTRACT FORMAT" (FAR 52.215-8). This Clause is intended for use in service and supply contracts, using the Uniform Contract Format. The standard clause puts the order of precedence of the proposal above the Section "C", scope of work (SOW), in the event of inconsistencies or conflicts between the two. The SOW in the UCF format is usually more general in nature than the design and construction criteria in a D-B construction contract.

In design-build construction, we use the opposite philosophy. The RFP is the minimum standard, except where the Offeror's best value proposal exceeds the minimum RFP requirements. Then, the "betterment" in the proposal becomes the new minimum standard. In a case where the proposal deviates from the RFP minimum, the RFP governs.

This benefit to the Government comes at a price. The Government has an inherent legal duty to carefully read and evaluate the proposal for minimum RFP compliance prior to selection and award. Your RFP Section 00110, "PROPOSAL SUBMISSION REQUIREMENTS", should warn offerors not to deviate from the RFP requirements in their proposals. Your description of the basis of award in RFP Section 00120, "PROPOSAL EVALUATION CRITERIA" should state the requirement for successful proposal to be in conformance with the RFP requirements. Proposal deviations and deficiencies must be resolved prior to final proposal submission and award. If a proposal deviates from the RFP but is considered a good idea

or approach, the Government must amend the solicitation to allow the feature. This keeps all offerors on a level playing field.

The Government cannot simply rely on the language of the D-B Order of Precedence SCR to avoid careful proposal evaluation. The intent of this clause is to establish an order of precedence in cases of not so obvious conflict, discovered after award.

The SCR defines the design products as "deliverables" under the contract. With the Government's concurrence, the Contractor may correct design errors and otherwise modify the design, as long as the design still complies with the RFP and accepted proposal. Otherwise, every time a line on a drawing or specification detail changes, a modification would be necessary. The Government can otherwise use "configuration control procedures" in Section 01012 (Design After Award) for requests, approval and tracking of non-contractual changes to the design documents.

SCR___ DESIGN-BUILD CONTRACT-ORDER OF PRECEDENCE - AUG 1997

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

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

(1.) Betterments: Any portions of the Offeror's proposal which both meet and exceed the provisions of the solicitation

(2.) The provisions of the solicitation. (See also Contract Clause: SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION.)

(3.) All other provisions of the accepted proposal.

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

(End of Clause)

PROPOSED BETTERMENTS (OPTIONAL)

This is an optional clause for organizations that wish to use a process to formally list features of the proposal which are considered "betterments", as defined above. Some Districts feel that it is helpful in administering the contract to highlight all betterments in one list. Note that the proposal independently is part of the contract and that the list is merely administrative in nature. A Betterment, which may have been overlooked in the formal list, is nonetheless a contract requirement. A carefully prepared list helps bring betterments to the attention of contract administrators and design reviewers. However, it could also discourage a careful reading of the proposal during contract performance.

SCR___ PROPOSED BETTERMENTS – AUG 1997

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

(b) A "Betterment" is defined as any component or system, which exceeds the minimum requirements, stated in the Request for Proposal. This includes all proposed betterments listed in accordance with the "Proposal Submission Requirements" of the Solicitation, and all Government identified betterments.

(c) "Government identified betterments" include the betterments identified on the "List of Accepted Project Betterments" prepared by the Proposal Evaluation Board and made part of the contract by alteration, and all other betterments identified in the accepted Proposal after award.

(End of Clause)

KEY PERSONNEL, SUBCONTRACTORS AND OUTSIDE ASSOCIATES OR CONSULTANTS.

Contract Clause 52.244-4 "Subcontractors and Outside Associates and Consultants", has been modified by adding the term "Key Personnel".

The successful Offeror's proposal is part of the contract. This clause is intended to discourage "bid shopping" or "bait and switch" tactics by the Contractor after award of the contract. The Contractor must request permission to substitute those key personnel or key subcontractors it identified in its proposal. The accepted proposal establishes the new minimum standard (assuming that it was in full compliance with the RFP requirements). The Contractor will submit information in the same detail as the original proposal for the Government to evaluate. The Government should not approve any substitute that is not equal in all aspects to the originally proposed person or firm.

Since the contract was formulated by negotiation, prices were considered in the selection of the successful Offeror. It can be argued that the Government may demand a credit for a substitution, as consideration for the switch, where it appears that the substitution is the result of "bid shopping" or "bait and switch" tactics. There is no requirement for a price increase, because the Contractor established the minimum level of competency and the price the Government is expected to pay for that competency in its proposal. The proposal is the new required minimum standard, where identified performance surpassed the minimum RFP requirements. Anti-bid shopping clauses are common and enforceable in State, Local and commercial contracting.

SCR___ KEY PERSONNEL, SUBCONTRACTORS AND OUTSIDE ASSOCIATES OR CONSULTANTS - AUG 1997

In connection with the services covered by this contract, any in-house personnel, subcontractors, and outside associates or consultants will be limited to the individuals or firms that were specifically identified and agreed to during negotiations. The contractor shall obtain the Contracting Officer's written consent before making any substitution for these designated in-house personnel, subcontractors, associates, or consultants.

(End of Clause)

RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN

This SCR is based on FAR Clause 52.236-0023, "Responsibility of the Architect-Engineer Contractor (Apr 1984)". The clause has been re-named for design-build. The words "non-construction services" were added to distinguish design responsibilities from warranty of the construction, which is covered under the "Warranty of Construction Work" SCR. The SCR also requires the D-B to correct the construction resulting from the faulty design.

SCR___ RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN – MAY 2002

(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 contact 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.

(End of Clause)

WARRANTY OF CONSTRUCTION WORK

USACE modified the standard "Warranty of Construction" Clause by deleting various references to "design furnished". That wording limited the warranty for design services to one year.

SCR___ WARRANTY OF CONSTRUCTION WORK – AUG 1997

(a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (1) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements; or
(2) Any defect of equipment, material, or workmanship.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(e) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(1) Obtain all warranties that would be given in normal commercial practice:

(2) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(3) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(j) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

(End of Clause)

WARRANTY OF DESIGN

The following clause has been modified, as authorized by FAR and DFARS to remove the one year limitation on the warranty for design.

SCR____ WARRANTY OF DESIGN (FIRM-FIXED PRICE DESIGN-BUILD CONTRACT) - MAY 2002

(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 Statue 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.

(End of Clause)

SEQUENCE OF DESIGN/BUILD CONSTRUCTION

This SCR may also be referred to as "Sequence of Work". Two different Special Contract Requirements were developed to address this issue. Use the first SCR when all design or most of the design must be completed prior to allowing construction to begin. Use the second SCR when allowing "fast-track" design-build. Fast track is a term used to describe design and construction sequencing when the D-B incrementally completes and submits portions of the design, in "design packages", for Government review. Once the Government completes its review and all review comments are resolved, the ACO/COR will clear that design package for construction . Thus, in fast track design-build, design and construction can proceed concurrently.

The D-B RFP will include only one of the two SCR's. This information can also be alternately be addressed in Section 01012- "DESIGN AFTER AWARD".

SCR___ SEQUENCE OF DESIGN-CONSTRUCTION – AUG 1997

(a) After receipt of the Contract Notice to Proceed (NTP) the Contractor shall initiate design, comply with all design submission requirements as covered under Division 01 General Requirements, and obtain Government review of each submission. No construction may be started, <with the exception of....clearing, etc...> until the Government reviews the Final Design submission and determines it satisfactory for purposes of beginning construction. The ACO or COR will notify the Contractor when the design is cleared for construction. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the ACO or COR, the initial submission failed to meet the minimum quality requirements as set forth in the Contract.

(b) If the Government allows the Contractor to proceed with limited construction based on pending minor revisions to the reviewed Final Design submission, no payment will be made for any in-place construction related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government.

(c) No payment will be made for any in-place construction until all required submitttals have been made, reviewed and are satisfactory to the Government.

(End of Clause)

Use the following Special Contract Requirement for fast track design-build contracts, in lieu of the above clause. This material can alternately be included in Section 01012-Design After Award.

SCR___ SEQUENCE OF DESIGN-CONSTRUCTION (FAST TRACK)

(a) After receipt of the Contract Notice to Proceed (NTP) the Contractor shall initiate design, comply with all design submission requirements as covered under Division 01 General Requirements, and obtain Government review of each submission. The contractor may begin construction on portions of the work for which the Government has reviewed the final design submission and has determined satisfactory for purposes of beginning construction. The ACO or COR will notify the Contractor when the design is cleared for construction. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the ACO or COR, the initial submission failed to meet the minimum quality requirements as set forth in the Contract.

(b) If the Government allows the Contractor to proceed with limited construction based on pending minor revisions to the reviewed Final Design submission, no payment will be made for any in-place construction related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government.

(c) No payment will be made for any in-place construction until all required submitttals have been made, reviewed and are satisfactory to the Government.

(End of Clause)

CONSTRUCTOR'S ROLE DURING DESIGN

This SCR outlines the role of the Contractor's key construction management staff during the design process.

SCR___ CONSTRUCTOR'S ROLE DURING DESIGN – JUN 1998

The Contractor's construction management key personnel shall be actively involved during the design process to effectively integrate the design and construction requirements of this contract. In addition to the typical required construction activities, the constructor's involvement includes, but is not limited to actions such as: integrating the design schedule into the Master Schedule to maximize the effectiveness of fast-tracking design and construction (within the limits allowed in the contract), ensuring constructability and economy of the design, integrating the shop drawing and installation drawing process into the design, 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.

(End of Clause)

RECOMMENDED INSURANCE COVERAGE

This is an optional SCR to emphasize the D-B's liability for the adequacy of the design in the D-B contract.

SCR___ RECOMMENDED INSURANCE COVERAGE - MAR 2002

The Design-Build Contractor's attention is invited to the contract requirements concerning "RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN", "WARRANTY OF DESIGN" and "WARRANTY OF CONSTRUCTION WORK". These requirements vest in the Contractor complete responsibility for the professional quality, technical accuracy, and coordination of all design, drawings, specifications and other work or materials furnish by his in-house or consultant forces. The Design-Build Contractor must correct and revise any errors or deficiencies in his work, notwithstanding any review, approval, acceptance or payment by the Government. The Contractor must correct and change any work resulting from his defective design at no additional cost to the Government. The requirements further stipulate that the Design-Build Contractor shall be liable to
the Government for the damages to the Government caused by negligent performance. Though not a mandatory requirement, this is to recommend that the Design-Build Contractor investigate and obtain appropriate insurance coverage for such liability protection.

(End of Clause)

TRAINING

This is suggested wording for a training requirement. This requirement can alternately be included elsewhere in the contract, for example, in Section 01012, "DESIGN AFTER AWARD". It is highly recommended that training be video taped for use by future maintenance personnel.

SCR___ TRAINING – FEB 2000

The Contractor shall provide operational and maintenance training for all systems furnished under this contract for the operating and maintenance personnel. The system manufacturer shall conduct the training, where feasible. All operation and maintenance manuals shall be submitted and approved prior to conducting the training and shall be used during training. The Contractor shall video tape the training session on VHS tapes and provide the tapes to the Government.

(End of Clause)

DESIGN CONFERENCES.

This information can be included in the RFP as an SCR or it can be addressed in Section 01012, "Design After Award."

SCR____ DESIGN CONFERENCES – JUN 2000

(a) Pre-Work: As part of the Pre-Work Conference conducted after contract award, key representatives of the Government and the Contractor will review the proposal and the design review procedures specified herein, discuss the preliminary design schedule and provisions for phase completion of the D-B documents with construction activities (fast tracking), as appropriate, meet with key Corps of Engineers Design Review personnel and Using Agency points of contact and any other appropriate pre-design discussion items.

(b) Initial Design Coordination Meeting: After award of the contract, the Contractor shall visit the site and conduct extensive interviews, and problem solving discussions with the individual users, base personnel, Corps of Engineers personnel to acquire all necessary site information, review user options,

and discuss user needs. The Contractor shall document all discussions. The design shall be finalized as direct result of these meetings.

(c) Design Review Conferences: Review conferences will be held at <INSERT LOCATION> for each design submittal. The Contractor will bring the personnel that developed the design submittal to the review conference. The conferences will take place the week after the review is complete.

(End of Clause)

VALUE ENGINEERING AFTER AWARD

This SCR is intended to clarify what the Government will and won't consider after award under Contract Clause, 52.248-3, "VALUE ENGINEERING – CONSTRUCTION."

SCR____ VALUE ENGINEERING AFTER AWARD – JUNE 1999

(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.

(End of Clause)

"PARTNERING" (Optional SCR).

Encouraging the Contractor to participate in a partnering process is highly recommended in design-build construction contracts. Why? Because D-B involves non-traditional roles and responsibilities.

Design or construction issues affect each other in time and cost and the integrated design and construction schedule is very sensitive to delays – especially when fast tracking is involved. The Government must be more responsive to the information, review, and decision needs of the D-B Contractor.

The D-B Contractor should be responsive to the user's functional needs, often expressed in general terms of "design intent" in the RFP. The D-B Contractor may be flexible with design details, as long as they can be accommodated within the cost and time budgets. Therefore, it is essential that channels of communications and mutual understanding of the other party's needs be facilitated. Partnering can be very effective toward achieving those goals.

Depending upon the size of the job, partnering can be formal or informal. Larger projects can allow for the costs associated with a formal process. Note that there are various formats in use for Partnering, with various cost sharing schemes):

SCR___. PARTNERING – FEB 2000

In order to most effectively accomplish this contract, the Government proposes to form a partnership with the Contractor to develop a cohesive building team. It is anticipated that this partnership would involve the **<NAME THE USING ORGANIZATIONS AND OTHER CRITICAL PARTIES HERE>,** the Contractor, primary subcontractors and designers and the Corps of Engineers. This partnership would strive to develop a cooperative management team drawing on the strengths of each team member in an effort to achieve a quality project within budget and on schedule. This partnership would be bilateral in membership and participation will be totally voluntary. Any cost associated with effectuating this partnership, excluding travel and lodging cost of Government personnel, will be borne by **<<SELECT AN OPTION TO SPECIFY: the Contractor/ each party/ the Government >>**. The partnering meetings shall be held in .....

(End of Clause)

---

8. SCR_____ DEVIATING FROM THE ACCEPTED DESIGN (JUN 2002)

(a.) The Contractor must 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 RFP 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.

(End of Clause)

[PROJECT NAME]
ARMY TACTICAL EQUIPMENT MAINTENANCE FACILITY

STATEMENT OF WORK

[**NOTE:** The following Statement of Work includes bracketed information as follows:
a. *non-underlined* information that requires editing by the RFP preparation team.
b. Criteria that is *underlined and enclosed in brackets* is to be used by the RFP preparation team in preparing the complete statement of work. Text that is underlined and enclosed in brackets should be deleted from the SOW before it is issued as part of a solicitation.]

U.S. ARMY CORPS OF ENGINEERS (Norfolk District)

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Record of Changes (changes indicated by **1*\ ... /**1**/)

Change No.	Date	Location

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CHAPTER 1

DESIGN OBJECTIVES

1-1 **SCOPE OF WORK**. Design and construction shall comply with the specifications and requirements contained in this Request for Proposals (RFP). The design and technical criteria contained and cited in this RFP establish minimum standards for design and construction quality. The objective of this solicitation is to obtain a complex of buildings and associated site construction, complete and adequate for assignment as an Army Tactical Equipment Maintenance Facility (TEMF). This contract shall consist of the design and construction of [one] maintenance building[s], associated storage structures, and site work, on Government-owned land at [installation and location].

1-1.1 **Site Area**. The site is described on the RFP drawings included as part of this solicitation. Site area is approximately [insert] hectares [___ acres].

1-1.2 **Site Work**. Site work includes all design and construction of site features described in the RFP, including but not limited to, site planning, clearing, grading, erosion control, site drainage, utility systems, pavements, pedestrian and vehicular circulation systems, signage, site lighting, landscaping, physical security measures, fencing, and site furnishings.

1-1.3 **Special Utilities and Supplementary Construction**. [Insert special utility items, supplementary construction, on-site or off-site]

1-1.4 **Demolition Considerations and Requirements**. [Insert special items with respect to demolition requirements. Asbestos and lead paint surveys must be included as an attachment to the Statement of Work when applicable. It is also recommended to assign responsibility for preparing the asbestos and lead paint abatement guide specs to the industrial hygienist firm that completed the survey. If this is done, attach the edited guide spec to the SOW].

1-1.5 **Environmental Considerations and Mitigation Requirements**. [Insert requirements for remediation of site contamination, wetlands mitigation, etc. Environmental test data, reports and drawings should be included as an attachment to the RFP].

1-2 **APPLICABLE CRITERIA**. Applicable design and construction criteria references are listed in Appendix A to the Statement of Work. Criteria shall be taken from the most current references as of the date of issue of the RFP. Referenced codes and standards are minimum acceptable criteria. Administrative, contractual, and procedural features of the contract shall be as described in other sections of the RFP.

1-3 **DESIGN QUALITY.** The main objective of this solicitation is to obtain a tactical equipment maintenance facility within funds available, and to maximize design quality. Design quality is achieved through the optimization of interior planning, integration of buildings with the site, sustainability, selection of building systems for low-cost maintenance and operation, and an overall balance of aesthetics and functionality.

1-4 **DESIGN FREEDOM**. Requirements stated in this RFP are minimums. Innovative, creative, or cost-saving proposals, which meet or exceed these requirements are encouraged and will be considered more favorably. Designs may incorporate factory fabricated components

or modules.

1-5 **ENERGY AND RESOURCES CONSERVING FEATURES**. Public Law 102-486, Executive Order 12902, and Federal Regulations 10 CFR 435, require federal buildings to be designed and constructed to reduce energy consumption in a life-cycle, cost-effective manner using renewable energy sources when economical. Products designed to conserve energy and resources by controlling the amounts of consumed energy or by operating at increased efficiencies should be considered. Minimum requirements for this project are listed in the Statement of Work.

1-6 **INSTALLATION REAL PROPERTY MASTER PLAN**. [Edit as applicable.] The installation real property master plan provides comprehensive documentation of the existing conditions of natural, man-made, and human resources. It also guides future land-use development. Design of this project shall incorporate the design guidance and criteria contained in the [name of installation] Real Property Master Plan, excerpts of which are contained in an attachment to the Statement of Work.

1-7 **INSTALLATION DESIGN GUIDE**. [Edit as applicable.] Design of this project shall incorporate the design guidance and criteria contained in the [name of installation] Installation Design Guide, excerpts of which are contained in an attachment to the Statement of Work.

1-8 **ACCESSIBILITY REQUIREMENTS**. All areas and facilities required to be accessible to physically disabled persons shall conform to the Uniform Federal Accessibility Standards (UFAS) Federal Standard 795, and the Americans With Disabilities Act Accessibility Guidelines (ADAAG). Accessibility requirements of building spaces shall be as follows: [Although Tables of Organization and Equipment (TOE) facilities will be staffed by able-bodied personnel, the following criteria applies to both TOE and Tables of Distribution and Allowances (TDA) facilities to comply with Americans with Disabilities Act (ADA) requirements and to accommodate handicapped visitors to the facility.]

1-8.1 The following areas and building features shall be fully accessible in conformance with ADA/UFAS: Toilets, locker rooms, showers, administrative areas, corridors, stairs, and circulation spaces, [elevator], break/training/conference rooms, drinking fountains, building fire alarm system [add any other spaces or features that may be used by non-military employees or visitors].

1-8.2 The following areas, classified as “work areas” per ADA, shall be configured to allow disabled personnel to approach, enter, and exit the areas; provision of accessible work surfaces, shelving, and equipment, is not required in these areas: Repair bays; scheduled maintenance bays; warehouse bays; welding, painting, battery, and generator shops; general item repair; compact item repair; special environment repair; weapons vault; COMSEC vault; RX/TS; DX/TS; tool room; tool box storage; PLL storage [edit as applicable to the project].

1-8.3 [Provide a passenger elevator if administrative areas, or break/training/conference rooms are located on the second floor of the facility.] [Delete the previous sentence and retain the following sentence if *only* able-bodied military and able-bodied deployable civilian workers will occupy the facility]. [An elevator is not required, however, the facility shall be designed to accommodate the future addition of an elevator shaft, elevator machine room and elevator].

1-8.4 Provide handicapped accessible entrances to the building in compliance with ADA/UFAS. A handicapped accessible route in conformance with ADA/UFAS shall connect all

the building spaces on each floor, with the exception of the non-accessible spaces listed in paragraph 1-8.5.

1-8.5 The following areas are not required to be handicapped accessible: Mechanical, electrical, and communications equipment rooms; POL storage space; hazardous waste/materials storage space; docks; deployment storage building, exterior open storage [edit as required].

1-8.6 Handicap accessible parking spaces for visitors and non-military employee privately owned vehicles (POV) shall be provided. Required number of spaces is indicated in Chapter 3 of the Statement of Work. Handicapped accessible parking shall be located adjacent to other POV parking, outside the perimeter security fence.

1-8.7 Provide a minimum of one accessible pedestrian route linking handicap accessible parking areas with the main entrance to the building core area. The accessible route shall be arranged to minimize the crossing of vehicular circulation routes.

1-9 **FORCE PROTECTION & ANTI-TERRORISM CONSIDERATIONS**. Project design and construction shall comply with the latest edition of the Department of Defense Anti-Terrorism Standards for Buildings, excerpts of which are contained in an attachment to the Statement of Work. [Design District shall investigate additional applicable requirements and insert into the Statement of Work as needed. Consider including items such as IDG excerpts in separate folders on the RFP compact disk or website.]

1-10 **USER BACKGROUND INFORMATION**. [This paragraph may be used to provide a brief description of the mission of the user's organization.] The TEMF provided in response to this solicitation will be occupied by [Insert user organization] (also referred to in the RFP as 'the user', 'the using activity', or 'the user organization'). The occupants will use the facility to maintain [list major categories of equipment and other important aspects of the user's mission].

1-11 **[Programming Information**. This model Statement of Work (SOW) contains facility programming options based on type and size of organization, type of equipment maintained, number of occupants, regional location, etc. The SOW shall be edited to eliminate the need for offerors to make programming decisions. The number of assigned personnel, quantity and type of bays, type of repair shops and storage spaces, quantity of parking spaces, etc. will be established by the facility programming team based on user input and TOE/TDA information. The RFP preparation team will input the activity TOE/TDA information into the Facilities Planning Support System (FPS) to obtain area requirements. The FPS requirements should be used in conjunction with the information contained in the TEMF Standard Design and this document to generate a SOW for the specific design-build TEMF project (where conflicts exist, the UFC shall take precedence). The SOW issued for this project should clearly establish all programmatic requirements, while allowing offerors a wide range of design and construction options to provide an innovative, economical solution.**]**

CHAPTER 2

FUNCTIONAL AND AREA REQUIREMENTS

2-1 GENERAL REQUIREMENTS

2-1.1 **Gross building area definition**. Gross building area is measured to the outside face of exterior enclosure walls. Gross area includes floor areas, penthouses, mezzanines, and other spaces as follows:

2-1.1.1 **Areas calculated as half space**. Gross area includes one-half the area of exterior covered areas such as balconies, entries, loading platforms, covered portion of Integrated Facility for Testing and Evaluation (IFTE) dock, breezeways, exterior corridors, and porches. Exterior covered areas are measured from the face of the enclosure wall to the edge of the covered area served. Stairs (enclosed or open) and elevator shafts count as half space for each floor they serve.

2-1.1.2 **Excluded space**. The following spaces are excluded from gross area calculations: Attic areas where average clear height does not exceed 2.13m; crawl spaces; exterior uncovered loading platforms; open courtyards; normal roof overhangs and soffits for weather protection; uncovered ramps and steps; utility tunnels; raceways; mechanical equipment platforms and catwalks.

2-1.2 **Gross area limitations**. Maximum authorized gross building areas for the facility are included in this paragraph. Proposals that exceed authorized gross area limitations may be considered non-conforming.

2-1.3 **Net area definition**. Net area is measured to the inside face of the room or space walls.

2-1.4 **Net Area Requirements**. Net area requirements for programmed spaces are included in this chapter. If net area requirements are not specified in the Statement of Work, the space shall be sized to: accommodate the required function, comply with code requirements, comply with overall gross area limitations and other requirements of the RFP (for example, area requirements for corridors, stairs, and mechanical rooms will typically be left to the discretion of the offeror).

2-1.5 **Functionality**. Rooms shall be sized and arranged for efficient use, circulation, and furniture placement.

2-1.6 **Life Safety and Means of Egress**. Exits and means of egress shall be provided in accordance with NFPA 101 Life Safety Code

2-1.7 **Finish Requirements**. Interior finish selections are not limited to those listed, however, the finishes provided shall meet or exceed the functionality, maintainability, and durability of the finishes listed in the SOW.

2-1.8 **Furniture Requirements**. [Coordinate with the user to define requirements for systems furniture, movable furniture, equipment, storage systems, etc. The SOW must give offerors information on every item in the building. It is imperative to define whether an item is to be provided by the offeror, furnished by the government and installed by the offeror, or provided

by the government. Include complete information on every item, even if it is government provided, so that the offeror can design the space and the building systems to accommodate all the user's requirements. In addition to listing the items of equipment in the Furnishings, Fixtures and Equipment subparagraphs below, it is advisable to include in the SOW a complete collateral equipment list.]

[Programming Information. The following functional and area requirements paragraphs include bracketed *non-underlined* information that requires editing by the RFP preparation team. Criteria that is *underlined and enclosed in brackets* is to be used by the RFP preparation team in conjunction with TOE/TDA info and the FPS system data to determine if the space is authorized for a particular echelon of maintenance, and to determine the quantity and area requirements for the space. Text that is underlined and enclosed in brackets should be deleted from the SOW.**]**

2-2 **TEMF FUNCTIONAL AND AREA REQUIREMENTS.** The TEMF shall consist of one or more buildings containing repair and scheduled maintenance bays, [and warehouse bays], located adjacent to a central core containing specialized repair areas, tool and parts storage, toilets, utility, and administration areas [delete 'and warehouse bays' if not included in project]. [If the proposed facility is large and multiple buildings are required (or desired) it is advisable to write the SOW so that the number of bays and core size for each building is given to the offeror; mandating the number and size of buildings will allow proposals to be evaluated on an equal basis]. [An Integrated Facility for Testing and Evaluation (IFTE) dock will provide grounding and power connections for mobile vans.] Outside hardstand buildings will provide storage for various materials. Total maximum gross building area is limited to [____] m^2. [Maximum gross area shall be as shown on form DD 1391.]. **The successful design scheme will maximize the area of the required spaces, and strictly comply with the overall gross building area limitation.** Building spaces and areas shall be as follows:

2-2.1 **Repair and Scheduled Maintenance Bay Areas**. Repair and scheduled maintenance bay areas are used for service and repair of wheeled vehicles, tracked vehicles, construction equipment, missile launchers, towed howitzers, self-propelled artillery, and power generation equipment [edit as required]. Bays shall be single story, ground floor spaces, without interior columns. One circulation bay per three repair/scheduled maintenance bays shall be provided to allow pedestrian egress from the bay areas. To limit walking distance to core facilities, linear groupings of bays are limited to a maximum of eight repair and scheduled maintenance bays and three circulation bays [A vehicle corridor, vehicle warm-up vestibule, and indoor storage area for petroleum oil and lubricants (POL) will be provided to increase cold weather functionality] [Delete previous sentence unless the project is located in weather region 1-4]. Provide a total of [insert number] repair and scheduled maintenance bays. [Calculate the total required number of repair and scheduled maintenance bays by using TOE/TDA information and Table 2.A below. Bay quantity is based on the number of mechanics per bay. Scheduled maintenance bays are included in the total number of bays; in most cases, one scheduled maintenance bay is provided per TEMF. The user may request a second scheduled maintenance bay if the organization will service more than 40 vehicles. Delete the table from the statement of work.

Table 2.A Mechanics Per Repair and Scheduled Maintenance Bay

NUMBER OF MECHANICS PER BAY	TYPE OF ORGANIZATION
4	TDA Organizations (DOL/DPW)
9	Organizational Maintenance - Non-Engineer
16	Organizational Maintenance - Light Engineer
12	Organizational Maintenance - All Other
12	Direct Support
9	General Support

]
Spaces are as follows:

2-2.1.1 **Repair Bays**. Provide [insert number]; net area shall be 192 m^2 each. Bay size shall be 9800 mm wide (column centerline to column centerline) x 19 600 mm deep (exterior face of column to exterior face of column). Refer to Figure 2.1 for diagram of Repair Bay floor plan. Bay height shall be as required to allow minimum bridge crane hook cradle height stated below. Provide 7400 mm wide x 4300 mm high overhead doors at front and rear exterior walls to allow drive-through capability [modify if cold weather variation (vehicle corridor and vehicle warm-up vestibule) is used]. Provide daylighting through use of metal windows or translucent wall panels at exterior wall area above vehicle doors. Partitions between adjacent repair bays are not required.

2-2.1.1.1 Function: repair of wheeled vehicles, tracked vehicles, tank turrets and chassis, infantry fighting vehicles, construction equipment, missile launchers, towed howitzers, self-propelled artillery, and large power generation equipment. Bays will also be used for metalworking, [welding, generator repair, front-end alignment, glass repair, and painting]. [Review TOE/TDA and FPS; edit previous sentence to reflect activities authorized for this project. Front-end alignment, glass repair and painting are usually authorized only for Directorates of Logistics (DOL) and Directorates of Public Works (DPW) organizations].

2-2.1.1.2 Adjacency requirements: Adjacent to other repair bays, and/or circulation bay(s) and/or scheduled maintenance bay(s). Adjacent to hardstand vehicle access aisles. A maximum of eight bays may be located on one side of the building core.

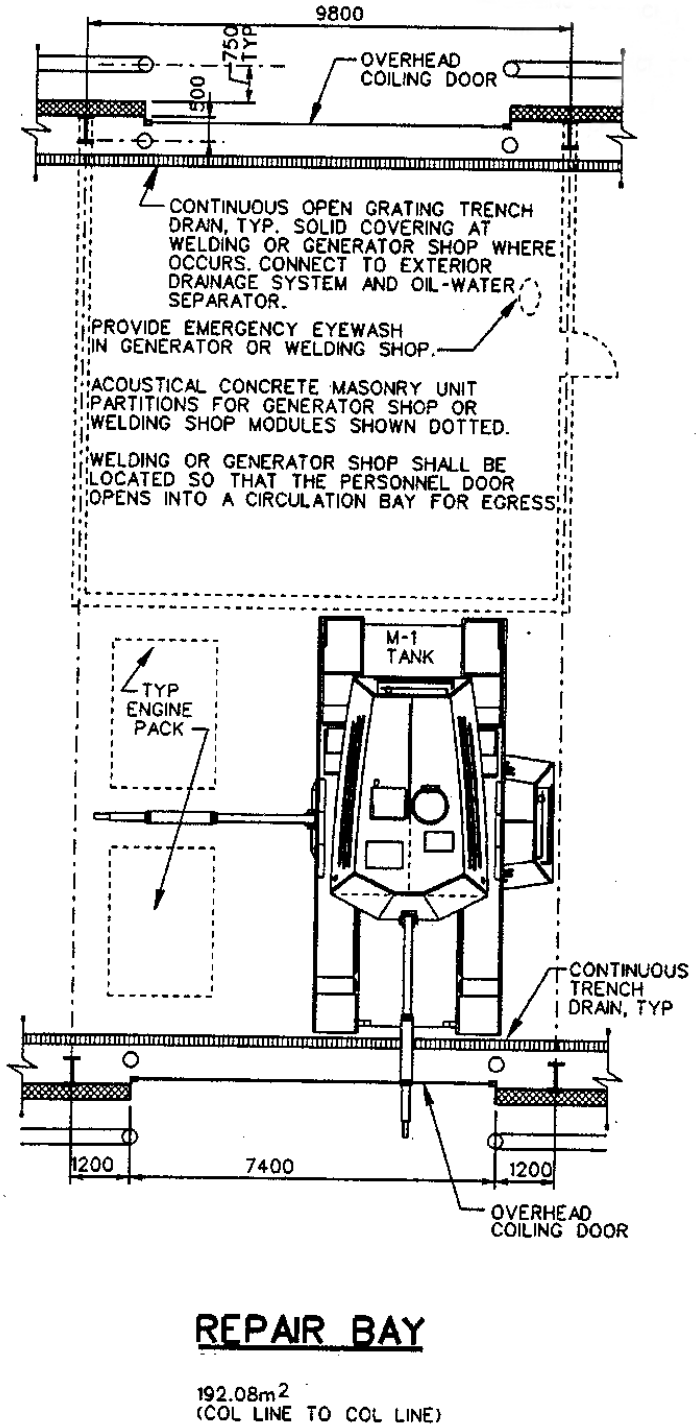
2-2.1.1.3 Furnishings/Fixtures/Equipment: All bays shall be provided with a traveling bridge crane with full bay coverage: [provide a 32 metric ton capacity, top running bridge crane, with separate crane support structure, for 50 percent (or one wing) of repair bays. 32metric ton hook cradle height shall be 7600 mm above highest point of bay floor.] [32 metric ton crane is authorized for 50 percent of repair bays in DOL, DPW, and general support level facilities] provide a 7 metric ton capacity, under-running bridge crane at all [other] repair and scheduled maintenance bays. 7 metric ton crane hook cradle height shall be 6000 mm above highest point of bay floor. Provide vehicle exhaust evacuation system at each bay. Provide minimum of 4 compressed air outlets per bay. [Provide bulk POL dispensing system.] [Coordinate with user. Dispensing systems are personal property fixed (PPF); they are not MCA funded, but can be provided as part of construction contract when funded by the user, and identified as a line item on form DD 1391]. Provide one hose bibb per bay, mounted on exterior wall between doors, 1000 mm above floor. [Design space for, and provide electrical power and compressed air

outlet for government provided tire changing machine with cage; locate machine on centerline between two adjacent repair bays, approximately [____ mm] from exterior column].

2-2.1.1.4 Finishes:
Floor: epoxy coating on concrete slab
Base: none
Interior side of exterior walls: painted concrete masonry units or painted concrete to vehicle door height; prefinished metal liner panels above. Exposed structure shall be painted.
Ceiling: prefinished metal liner panels on underside of roof purlins; exposed structure shall be painted. Ceiling/roof height shall allow bridge crane hook cradle height of [6000 mm] [for 7 metric ton crane] [7600 mm] [for 32 metric ton crane. [Edit as applicable; if the 32 metric ton crane is required on one wing of repair bays, and the 7 metric ton crane on the other wing of bays, the building height and heated volume may be reduced by allowing a lower roof height on the bays with the smaller crane. Visual effect of differing roof heights should also be considered].

2-2.1.1.5 Other requirements: Electrical receptacles shall be minimum 610 mm above floor (refer to Chapter 9). Provide continuous 150 mm wide trench drains with continuous grating along full width of bays at exterior doors; locate drains approximately 1000 mm from inside face of exterior walls. Provide 300 mm diameter x 1400 mm high, concrete-filled, schedule 80 galvanized steel, pipe bollards inside the bay at each vehicle door jamb (refer to Chapter 3 for exterior pipe bollards). Provide ground strap on walls, and minimum of [insert number] grounding points on each bay floor.

Figure 2.1 Repair Bay Floor Plan (Not to Scale)



2-2.1.2 **Scheduled Maintenance Bays**. Provide one; [user may request two if more than 40 vehicles are serviced; number of scheduled maintenance bays is included in the total authorized bays] net area shall be 192 m^2 each. Scheduled Maintenance Bay shall comply with criteria shown in Figure 2.2. Bay size shall be 9800 mm wide (column centerline to column centerline) x 19 600 mm deep (exterior face of column to exterior face of column). Provide 7400 mm wide x 4300 mm high overhead doors at front and rear exterior walls to allow drive-through capability [modify if cold weather variation (vehicle corridor and vehicle warm-up vestibule) is used]. Provide daylighting through use of metal windows or translucent wall panels at exterior wall area above vehicle doors. Scheduled maintenance bays are similar to repair bays but are equipped with a maintenance pit for undercarriage inspection, oil changing, and lubrication. [Provide 200 mm thick x 1600 mm high reinforced concrete masonry partition between scheduled maintenance bay and adjacent bays; terminate partition to provide 1829 mm clear dimension between end of partition and adjacent structure.] [Include previous sentence only if steam cleaning or washing of vehicle components will be done in bay, and only if requested by user].

2-2.1.2.1 Function: inspection, service, lubrication, oil change, and repair of wheeled vehicles, tracked vehicles, tank turrets and chassis, infantry fighting vehicles, construction equipment, missile launchers, towed howitzers, self-propelled artillery, and large power generation equipment. [verify function with user; if bay will be used for steam cleaning or washing of vehicle components, additional floor drains with oil-water separators will be required].

2-2.1.2.2 Adjacency requirements: Adjacent to repair bays, and/or circulation bay(s) [and/or scheduled maintenance bay]. Adjacent to hardstand vehicle access aisles. A maximum of eight bays may be located on one side of the building core. Optimal location for the scheduled maintenance bay (because of maintenance pit) is usually the bay farthest from the core, with the pit located on the exterior wall side of the bay.

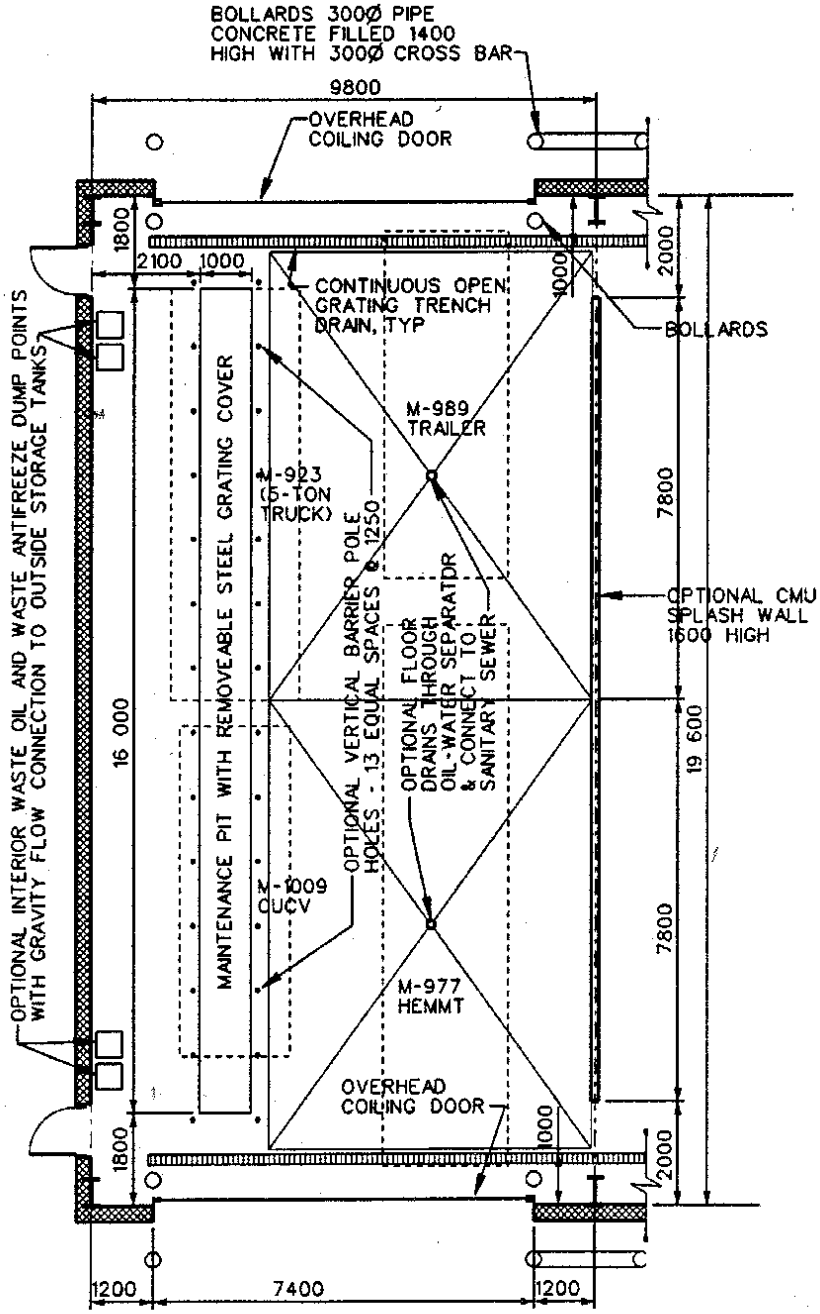
2-2.1.2.3 Furnishings/Fixtures/Equipment: Provide 16 000 mm long x 1000 mm wide cast-in-place concrete maintenance pit. Pit design shall comply with criteria shown in Figure 2.3. Pit shall have non-sparking, non-slip floor grating 1300 mm below finish floor elevation, with concrete pit floor below, sloping to concrete sump with explosion-proof sump pump. Sump design shall facilitate cleaning and maintenance of the sump pump. Provide cast-in-place concrete stairs at each end of pit. Pit cover shall be non-slip galvanized metal grating supported on galvanized steel angles 100 mm above finish floor. Provide explosion proof pit lighting and pit exhaust system. Provide removable steel pipe posts with continuous guard chain around pit perimeter. [Refer to Chapter 5 for additional maintenance pit criteria]. The traveling bridge crane provided for the adjacent repair bays shall extend to provide full coverage of the scheduled maintenance bay. Provide vehicle exhaust evacuation system at each bay. Provide minimum of 4 compressed air outlets per bay. Provide hose bibb and electrical receptacles for portable government provided steam cleaning equipment [Coordinate with user to define more specific requirements for steam cleaning equipment]. [Provide bulk POL dispensing system.] [Coordinate with user. Dispensing and disposal systems are personal property fixed (PPF); they are not MCA funded, but can be provided as part of construction contract when funded by the user, and identified as a line item on form DD 1391].

2-2.1.2.4 Finishes:
Bay floor, pit floor and pit walls: epoxy coating on concrete
Base: none
Interior side of exterior walls: painted concrete masonry units or painted concrete to vehicle door height; prefinished metal liner panels above. Exposed structure shall be painted.

Ceiling: prefinished metal liner panels on underside of roof purlins; exposed structure shall be painted. Ceiling/roof height shall allow bridge crane hook cradle height of [6000 mm] [for 7 metric ton crane] [7600 mm] [for 32 metric ton crane. [Edit as applicable; if the 32 metric ton crane is required on one wing of repair bays, and the 7 metric ton crane on the other wing of bays, the building height and heated volume may be reduced by allowing a lower roof height on the bays with the smaller crane. Visual effect of differing roof heights should also be considered].

2-2.1.2.5 Other requirements: Electrical receptacles in bay area shall be minimum 610 mm above floor (refer to Chapter 9). Provide continuous 150 mm wide trench drains with continuous grating along full width of bays at exterior doors; locate drains approximately 1000 mm from inside face of exterior walls. Provide 300 mm diameter x 1400 mm high, concrete-filled, schedule 80 galvanized steel, pipe bollards inside the bay at each vehicle door jamb (refer to Chapter 3 for exterior pipe bollards). Provide [insert number] grounding points on each bay floor.

Figure 2.2 Scheduled Maintenance Bay Floor Plan (Not to Scale)

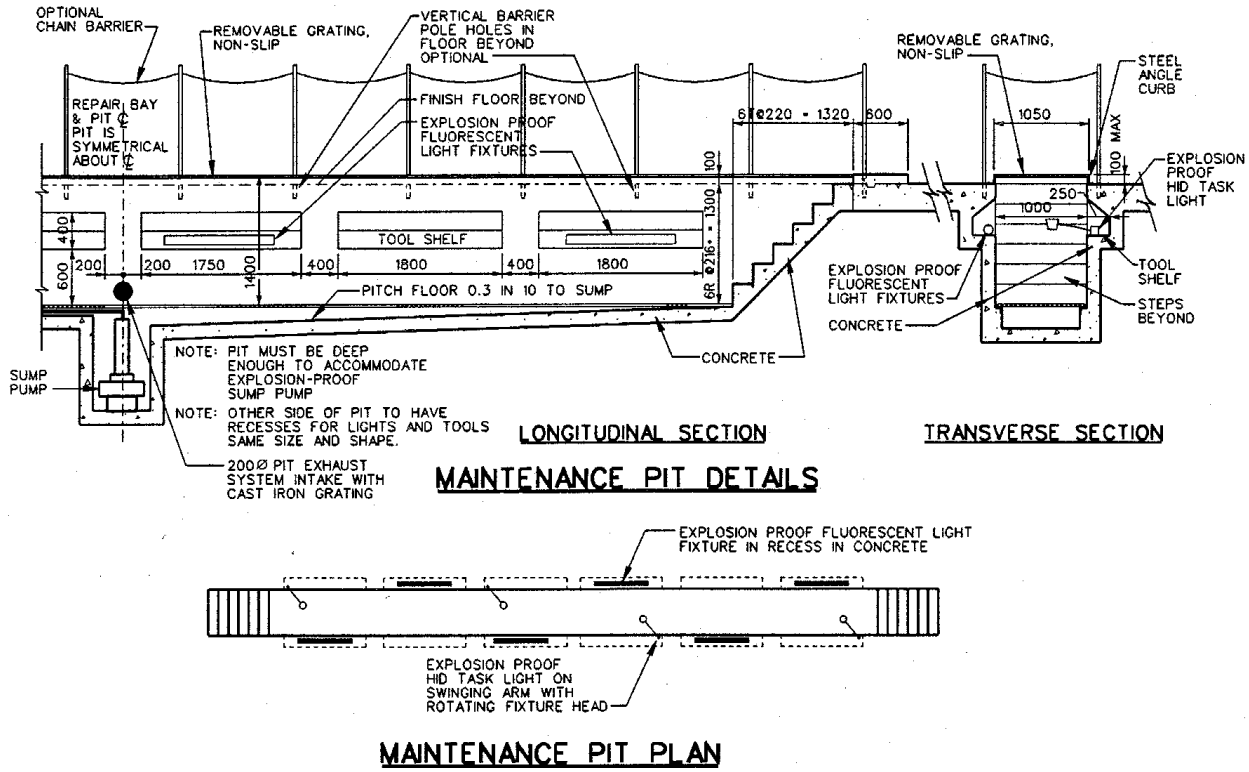


NOTE: OPTIONAL SPLASH WALL AND FLOOR DRAINS ARE FOR ENGINE COMPONENT WASHING. WATER AND POWER CONNECTIONS FOR HOOK-UP OF USER PROCURED PORTABLE STEAM CLEANERS MAY ALSO BE PROVIDED. AUTHORIZATION TO USE THE SCHEDULED MAINTENANCE BAY FOR ENGINE CLEANING ACTIVITIES MUST BE APPROVED BY THE MACOM HAVING JURISDICTION.

SCHEDULED MAINTENANCE BAY

192.08m^2
(COL LINE TO COL LINE)

Figure 2.3 Maintenance Pit Details (Not to Scale)



2-2.1.3 **Circulation Bays**. Provide one circulation bay per three repair and scheduled maintenance bays; net area shall be 47 m^2 each. Bay size shall be 2400 mm wide (column centerline to column centerline) x 19 600 mm deep (exterior face of column to exterior face of column). Provide minimum 915 mm [3'-0"] wide x 2134 mm [7'-0"] high personnel doors at front and rear exterior walls to allow egress from bay areas. Walls or partitions between circulation bay and adjacent core areas shall be concrete masonry or concrete.

2-2.1.3.1 Function: pedestrian circulation into and out of the bay areas

2-2.1.3.2 Adjacency requirements: Adjacent to repair bays, and/or scheduled maintenance bay(s). At each wing of repair bays, one circulation bay shall be adjacent to the tool room, tool box storage and PLL areas of the core. Adjacent to hardstand areas surrounding the building aisles.

2-2.1.3.3 Furnishings/Fixtures/Equipment: Provide 1219 mm high x 2438 mm wide tackboard for 'safety board') mounted on wall between tool room and circulation bay. Provide 400 mm diameter battery operated wall clock mounted above tackboard. Provide one emergency eye wash at each Circulation Bay that is adjacent to a core area; locate eye wash adjacent to the wall separating the Circulation Bay from the core. [Insert additional requirements].

2-2.1.3.4 Finishes:

Floor: epoxy coating on concrete
Base: none
Interior side of exterior walls: painted concrete masonry units or painted concrete to vehicle door height; prefinished metal liner panels above. Exposed structure shall be painted.
Interior walls and partitions: painted concrete masonry units or painted concrete.
Ceiling: prefinished metal liner panels on underside of roof purlins; exposed structure shall be painted. Ceiling/roof height shall allow bridge crane hook height of [6000 mm] [for 7 metric ton crane] [7600 mm] [for 32 metric ton crane]. [Edit as applicable; if the 32 metric ton crane is required on one wing of repair bays, and the 7 metric ton crane on the other wing of bays, the building height and heated volume may be reduced by allowing a lower roof height on the bays with the smaller crane. Visual effect of differing roof heights should also be considered].

2-2.1.2.5 Other requirements: Electrical receptacles shall be minimum 610 mm above floor (refer to Chapter 9). Provide continuous 150 mm wide trench drains along full width of bays at exterior doors; locate drains approximately 1000 mm from inside face of exterior walls. Provide solid trench drain cover 1600 mm wide at personnel doors; provide continuous grating at remainder of drain. Personnel doors shall be provided with vision lites and exit hardware.

2-2.1.4 **Welding Shop**. One-half of one repair bay shall be dedicated to welding shop area; net area is included in provided repair bay area [Delete this paragraph if user organization is not authorized welders]. Provide acoustical concrete masonry unit partitions to define perimeter of shop; locate partitions on column centerlines and at bay centerline. Masonry thickness shall be as required to comply with applicable codes, but not less than 200 mm thick. Masonry partitions shall terminate 200 mm above ceiling, and shall be braced to building structure; bracing shall not project into the overhead (crane space) of the surrounding bay areas. Provide acoustical metal panel ceiling at minimum [___] above floor slab in the half bay dedicated as a welding shop. Ceiling installation shall not impede operation of the overhead bridge crane. Exterior wall of shop shall be the repair bay exterior wall, including the 7400 mm wide x 4300 mm high overhead door at exterior wall (refer to repair bay criteria). Provide personnel egress doors as required by applicable codes. One personnel access door shall open to adjacent circulation bay.

2-2.1.4.1 Function: welding on vehicles and equipment. [verify function with user].

2-2.1.4.2 Adjacency requirements: Adjacent to circulation bay, repair bays and/or scheduled maintenance bay. Adjacent to hardstand vehicle access aisles.

2-2.1.4.3 Furnishings/Fixtures/Equipment: Provide minimum of 2 compressed air outlets in the shop. Provide electrical power to accommodate user furnished welding equipment (welding equipment is not in contract) [Include power, and other criteria for user provided equipment].

2-2.1.4.4 Finishes:
Floor: epoxy coating on concrete
Base: none
Walls: Acoustical concrete masonry units. Exposed structure shall be painted.
Ceiling:. Prefinished acoustical metal panel ceiling. [Government will consider alternate materials for ceiling construction providing an equivalent barrier. The responsibility to prove equivalency with a prefinished acoustical metal panel ceiling shall rest with the offeror at proposal stage.]

2-2.1.4.5 Other requirements: Electrical receptacles shall be minimum 610 mm above floor

(refer to Chapter 9). Provide continuous solid cover at trench drains within shop. Provide 300 mm diameter x 1400 mm high, concrete-filled, schedule 80 galvanized steel, pipe bollards inside the shop at each vehicle door jamb (refer to Chapter 3 for exterior pipe bollards). Provide emergency eye wash. Provide minimum of [insert number] grounding points on floor. Provide welding exhaust system.

2-2.1.5 **Generator Shop**. One-half of one repair bay shall be dedicated to generator shop area; net area is included in provided repair bay area [Delete this paragraph if user organization is not authorized generator shop space]. Provide acoustical concrete masonry unit partitions to define perimeter of shop; locate partitions on column centerlines and at bay centerline. Masonry thickness shall be as required to comply with applicable codes, but not less than 200 mm thick. Masonry partitions shall terminate 200 mm above ceiling, and shall be braced to building structure; bracing shall not project into the overhead (crane space) of the surrounding bay areas. Provide acoustical metal panel ceiling at minimum [___] above floor slab in the half bay dedicated as a generator shop. Ceiling installation shall not impede operation of the overhead bridge crane. Exterior wall of shop shall be the repair bay exterior wall, including the 7400 mm wide x 4300 mm high overhead door at exterior wall (refer to repair bay criteria). Provide personnel egress doors as required by applicable codes. One personnel access door shall open to adjacent circulation bay.

2-2.1.5.1 Function: repair of power generation equipment. [verify function with user].

2-2.1.5.2 Adjacency requirements: Adjacent to circulation bay, repair bays and/or scheduled maintenance bay. Adjacent to hardstand vehicle access aisles.

2-2.1.5.3 Furnishings/Fixtures/Equipment: Provide minimum of 2 compressed air outlets in the shop. Provide electrical power to accommodate user furnished equipment [Include power, and other criteria for user provided equipment].

2-2.1.5.4 Finishes:
Floor: epoxy coating on concrete
Base: none
Walls: exposed acoustical concrete masonry units. Exposed structure shall be painted.
Ceiling: Prefinished acoustical metal panel ceiling. [Government will consider alternate materials for ceiling construction providing an equivalent barrier. The responsibility to prove equivalency with a prefinished acoustical metal panel ceiling shall rest with the offeror at proposal stage.]

2-2.1.5.5 Other requirements: Electrical receptacles shall be minimum 610 mm above floor (refer to Chapter 9). Provide continuous solid cover at trench drains within shop. Provide 300 mm diameter x 1400 mm high, concrete-filled, schedule 80 galvanized steel, pipe bollards inside the shop at each vehicle door jamb (refer to Chapter 3 for exterior pipe bollards). Provide emergency eye wash. Provide minimum of [insert number] grounding points on floor.

2-2.1.6 **Paint Bay**. [Net area for paint bay is included in provided repair bay area. Paint bay space is typically authorized only for certain DOL, DPW and general support organizations. Delete this paragraph if user organization is not authorized paint bay space. Coordinate criteria for paint booth, filters, exhaust system, breathing air system, paint mixing, stoage and dispensing systems, etc. with user requirements. In the SOW include specific information regarding user requirements, and include performance criteria for design of paint booth and related equipment. Research environmental impact on the project].

2-2.1.6.1 Function: [verify function, type of equipment to be painted, chemical characteristics of coatings, and delivery system with user].

2-2.1.6.2 Adjacency requirements:[ ]

2-2.1.6.3 Furnishings/Fixtures/Equipment: [ ]

2-2.1.6.4 Finishes: [ ]
Floor: [ ]
Base: [ ]
Walls: [ ]
Ceiling: [ ]

2-2.1.6.5 Other requirements: [ ]

2-2.1.7 **[Cold Region Vehicle Corridor**. Provide vehicle corridor area equal to a maximum of 30 percent of the repair and scheduled maintenance bay net area.] [Include paragraph only if project is in weather region 1-4.] .

2-2.1.7.1 [Function: vehicular circulation area providing central feeding of repair and scheduled maintenance bays, in lieu of drive-through bays]

2-2.1.7.2 [Adjacency requirements: Adjacent to repair bays and scheduled maintenance bay(s). Adjacent to cold region vehicle warm-up vestibule]

2-2.1.7.3 [Furnishings/Fixtures/Equipment: Provide heating, ventilation and exhaust system to remove engine exhaust from vehicle corridor area] [coordinate with user, delete if not required].

2-2.1.7.4 [Finishes:
Floor: epoxy coating on concrete slab
Base: none
Exterior walls: exposed concrete masonry units or exposed concrete to vehicle door height; prefinished metal liner panels above. Exposed structure shall be painted.
Ceiling: prefinished metal liner panels on underside of roof purlins; exposed structure shall be painted. Ceiling/roof height shall not be lower than vehicle door height.].

2-2.1.7.5 [Other requirements:]

2-2.1.8 **[Cold Region Vehicle Warm-up Vestibule**. Provide vehicle warm-up vestibule area equal to a maximum of 30 percent of the repair and scheduled maintenance bay net area. Provide 7400 mm wide x 4300 mm high overhead doors at exterior wall and at wall between vestibule and cold region vehicle corridor.] [Include paragraph only if project is in weather region 1-4.] .

2-2.1.8.1 [Function: Warm-up vehicle engines prior to entering bays.]

2-2.1.8.2 [Adjacency requirements: Adjacent to exterior hardstand vehicle access aisles. Adjacent to cold region vehicle corridor.]

2-2.1.8.3 [Furnishings/Fixtures/Equipment: Provide heating, ventilation and exhaust system to

remove engine exhaust from vestibule area. Provide vehicle exhaust evacuation system to allow [__] running vehicles to be simultaneously connected.]

2-2.1.8.4 [Finishes:
Floor: epoxy coating on concrete slab
Base: none
Exterior walls: exposed concrete masonry units or exposed concrete to vehicle door height; prefinished metal liner panels above. Exposed structure shall be painted.
Ceiling: prefinished metal liner panels on underside of roof purlins; exposed structure shall be painted. Clear ceiling height shall not be lower than vehicle door height.].

2-2.1.8.5 Other requirements: Provide 300 mm diameter x 1400 mm high, concrete-filled, schedule 80 galvanized steel, pipe bollards inside the bay at each vehicle door jamb (refer to Chapter 3 for exterior pipe bollards).

2-2.1.9 **[Inside POL Storage**. Provide heated indoor storage area for petroleum oils and lubricants used in the repair and scheduled maintenance bays.; net area [____] m^2 [Include paragraph only if project is in weather region 1-4.] .

2-2.1.9.1 [Function: Heated area for POL storage, with direct access to repair and scheduled maintenance bays]

2-2.1.9.2 [Adjacency requirements: Adjacent to repair bays and/or scheduled maintenance bay(s).]

2-2.1.9.3 [Furnishings/Fixtures/Equipment:]

2-2.1.9.4 [Finishes:
Floor: epoxy coating on concrete slab
Base: none
Exterior walls: painted concrete masonry units or exposed concrete to vehicle door height; prefinished metal liner panels above. Exposed structure shall be painted.
Ceiling: prefinished metal liner panels on underside of roof purlins; exposed structure shall be painted. Clear ceiling height shall not be lower than vehicle door height.].

2-2.1.9.5 [Other requirements:]

2-2.2 **Core Areas**. Each maintenance building will contain a core area to accommodate admin and shop control, general item repair, [compact item repair,] [special environment repair,] tool room(s), tool box storage, repairable exchange/technical supply, PLL, break/training/conference room, weapons/COMSEC vault(s), latrine/shower/locker rooms, and non-assignable/utility spaces. Core areas may be arranged in one or two story configurations. The core area, with accompanying repair bays [and warehouse bays], will constitute the primary building component for Army tactical equipment maintenance facilities. Other site storage building requirements (POL storage building and deployment storage building) are covered in Chapter 3. [The core area will be sized to accommodate the occupying unit's TOE/TDA, subject to the limitations of FPS, the TEMF Standard Design, and the information provided in the following paragraphs. The core area components, adjacencies, and sizes are subject to the limitations indicated in the TEMF Standard Design (seven standard core sizes].

2-2.2.1 **Admin and Shop Control**. Provide one space per core; minimum total net area

shall be [____] m^2. Occupants: [__] [Space is authorized at 12 m^2 net area per foreman, shop control, and clerical personnel (8 m^2 plus 4m^2 for circulation)]. May be located on first or second floor [assess impact of second floor admin space on handicapped accessibility requirements; buildings housing an organization with civilian employee work areas on the second floor will require an elevator. If the facility is large and will require more than one core, and thus more than one Admin room, it is advisable to state the area/occupants for each Admin room]. Provide operable exterior metal windows. [Provide hollow metal interior windows (with fire rating and protection as required by applicable codes) between this space and the adjacent circulation bay, to allow viewing into the repair bays.] [delete previous sentence if not required by user]. Provide plastic laminate counter and aluminum pass-through window between this room and Customer Waiting Area; size pass-through window to accommodate transfer of [insert size of biggest item; or give desired window size]. Walls or partitions between this space and the Circulation Bay, and Corridor [, and shop spaces] shall be concrete masonry or concrete; [other partitions may be metal studs with abuse-resistant gypsum wallboard] [although durability is reduced, initial cost is lower, and future flexibility is increased by allowing use of metal stud/drywall partitions; edit as necessary] [User may request additional metal stud/drywall partitions to subdivide administrative area to accommodate operational requirements.]

2-2.2.1.1 Function: Office space to accommodate foremen, production control, and clerical personnel.

2-2.2.1.2 Adjacency requirements: Adjacent to corridor and Customer Waiting Area. Adjacent to or near other core areas. [Adjacent to circulation bay.] [include previous sentence if user requires viewing windows from administration and shop control space into the repair bay areas].

2-2.2.1.3 Furnishings/Fixtures/Equipment: Design the space to accommodate the following government provided furniture and equipment [list everything the user will have in the space, including copiers, fax machine, file cabinets, bookcases, storage units, non-wired office partitions, etc.; include sizes.]. [Provide, and] design space to accommodate [__] administrative systems furniture workstations. Refer to Chapter 5 for systems furniture requirements. [Coordinate with user. Furniture systems are personal property fixed (PPF); they are not MCA funded, but can be provided as part of construction contract when funded by the user, and identified as a line item on form DD 1391. If *not* included in the construction contract, systems furniture requirements should still be included in Chapter 5 so the offeror will know what to design the space to accommodate.]. Minimum clear aisle widths shall comply with applicable codes.

2-2.2.1.4 Finishes:
Floor: vinyl composition tile
Base: resilient
Inside face of exterior walls: painted concrete masonry units, painted plaster on concrete, or painted gypsum wallboard. Structural columns shall be furred with materials matching the finish of adjacent wall surface.
Other wall surfaces: painted concrete masonry units, painted plaster on concrete, or painted gypsum
Ceiling: suspended acoustical panel ceiling; minimum ceiling height 2800 mm.

2-2.2.1.5 Other requirements: [ ].

2-2.2.2 **Tool Room**. Provide one Tool Room for each wing of Repair Bays (if Repair Bays

are located on both sides of a core, each side of core shall have a Tool Room). Locate on first floor; minimum total net area of all Tool Rooms shall be [____] m^2 . Total occupants: [__] [In TDA facilities space is authorized at 9 m^2 net area per each tool room keeper; In TOE's space is authorized at 9 m^2 net area per each unit common tool kit assigned to the organization, and 4 m^2 net area per each supplemental tool kit assigned to the unit]. Provide personnel door between Tool Room and Circulation Bay. Walls or partitions between this space and other spaces shall be concrete masonry or concrete. Partition between this space and Tool Box Storage shall be wire mesh.

2-2.2.2.1 Function: Issue and secure storage of common tool kits shared by shop personnel.

2-2.2.2.2 Adjacency requirements: Adjacent to Circulation Bay and Tool Box Storage.

2-2.2.2.3 Furnishings/Fixtures/Equipment: Design the space to accommodate the following government provided furniture and equipment [list everything the user will have in the space; include sizes.]. [Provide, and design space to accommodate the following tool storage systems: _____] [Coordinate with user. If not provided by the activity, list required storage shelving, racks, cabinets, etc].

2-2.2.2.4 Finishes:
Floor: epoxy coating on concrete slab
Base: [none] [resilient, if gypsum board partitions used]
Walls: painted concrete masonry units. Exposed structure shall be painted.
Ceiling: exposed structure, painted.

2-2.2.2.5 Other requirements: [ ].

2-2.2.3 **Tool Box Storage**. Provide one Tool Box Storage Room for each wing of Repair Bays (if Repair Bays are located on both sides of a core, each side of core shall have a Tool Box Storage Room). Locate on first floor; minimum total net area of all Tool Box Storage Rooms shall be [____] m^2 . Total occupants: [__] [Space is authorized at .3 m^2 net area per each person working inside the shop; and 2 m^2 net area per each person working outside the shop (members of contact teams)]. Provide personnel door between Tool Box Storage Room and Circulation Bay. Walls or partitions between this space and other spaces shall be concrete masonry or concrete. Partition between this space and Tool Room shall be wire mesh.

2-2.2.3.1 Function: Issue and secure storage of tool kits used by shop personnel.

2-2.2.3.2 Adjacency requirements: Adjacent to Circulation Bay and Tool Room.

2-2.2.3.3 Furnishings/Fixtures/Equipment: Design the space to accommodate the following government provided furniture and equipment [list everything the user will have in the space; include sizes.]. [Provide, and design space to accommodate the following tool storage systems: _____] [Coordinate with user. If not provided by the activity, list required storage shelving, racks, cabinets, etc].

2-2.2.3.4 Finishes:
Floor: epoxy coating on concrete slab
Base: [none] [resilient, if gypsum board partitions used]
Walls: painted concrete masonry units. Exposed structure shall be painted.
Ceiling: exposed structure, painted.

2-2.2.3.5 Other requirements: [ ].

2-2.2.4 **PLL Storage**. Provide one PLL Storage Room for each wing of Repair Bays (if Repair Bays are located on both sides of a core, each side of core shall have a PLL Storage Room). Locate on first floor; minimum total net area of all PLL Storage Rooms shall be [____] m^2 . Total occupants: [__] [Space is authorized at .19 m^2 net area per each occupant of the facility]. Provide personnel door between PLL Storage and core Corridor. Provide [__mm high x __mm wide] pass-through opening with stainless steel counter and metal overhead coiling shutter between PLL Storage and Circulation Bay. Walls or partitions between this space and the Circulation Bay, and Corridor [, and shop spaces] shall be concrete masonry or concrete; [other partitions may be metal studs with abuse-resistant gypsum wallboard] [although durability is reduced, initial cost is lower, and future flexibility is increased by allowing use of metal stud/drywall partitions; edit as necessary]. Partition between this space and RX/TS shall be wire mesh.

2-2.2.4.1 Function: Storage and issue of Prescribed Load List (PLL) items (parts kept in stock at all times because of demand or management decisions).

2-2.2.4.2 Adjacency requirements: Adjacent to Circulation Bay, Corridor, and RX/TS.

2-2.2.4.3 Furnishings/Fixtures/Equipment: Design the space to accommodate the following government provided furniture and equipment [list everything the user will have in the space; include sizes.]. [Provide, and design space to accommodate the following storage systems: _____] [Coordinate with user. If not provided by the activity, list required storage shelving, racks, cabinets, etc].

2-2.2.4.4 Finishes:
Floor: epoxy coating on concrete slab
Base: [none] [resilient, if gypsum board partitions used]
Walls: painted concrete masonry units. Exposed structure shall be painted.
Ceiling: exposed structure, painted.

2-2.2.4.5 Other requirements: [ ].

2-2.2.5 **RX/TS (Repairable Exchange/Technical Supply)**. [Delete paragraph if RX/TS space is not authorized] Provide one RX/TS Room for each wing of Repair Bays (if Repair Bays are located on both sides of a core, each side of core shall have a RX/TS Room). Locate on first floor; minimum total net area of all RX/TS Rooms shall be [____] m^2 . Total occupants: [__]. [When this area is authorized for organizational shops, space is authorized at 27.9 m^2 net area per the first Equipment Records and Parts Specialist, and 11.9 m^2 per each additional person assigned to this space]. Provide pair of personnel doors between RX/TS and core Corridor. Walls or partitions between this space and the Circulation Bay, and Corridor [, and shop spaces] shall be concrete masonry or concrete; [other partitions may be metal studs with abuse-resistant gypsum wallboard] [although durability is reduced, initial cost is lower, and future flexibility is increased by allowing use of metal stud/drywall partitions; edit as necessary]. Partition between this space and PLL Storage shall be wire mesh.

2-2.2.5.1 Function: Temporary storage of repairable items that will be exchanged for new items. This room is also used to store parts ordered on an as-needed basis from the supporting direct support activity.

2-2.2.5.2 Adjacency requirements: Adjacent to Circulation Bay, Corridor, and PLL Storage.

2-2.2.5.3 Furnishings/Fixtures/Equipment: Design the space to accommodate the following government provided furniture and equipment [list everything the user will have in the space; include sizes.] Provide a component exchange counter (plastic laminate covered base cabinets with stainless steel countertop; minimum ____ long. [Provide, and design space to accommodate the following storage systems: _____]. [Coordinate with user. If not provided by the activity, list required storage shelving, racks, cabinets, etc].

2-2.2.5.4 Finishes:
Floor: epoxy coating on concrete slab
Base: [none] [resilient, if gypsum board partitions used]
Walls: painted concrete masonry units. Exposed structure shall be painted.
Ceiling: exposed structure, painted.

2-2.2.5.5 Other requirements: [ ].

2-2.2.6 **General Item Repair**. Provide one [or more] area[s] per core. Locate on first floor; minimum total net area shall be [____] m^2 . Total occupants: [__] [Space is authorized at 15.22 m^2 net area per each person assigned to the room (includes 10.22 m^2 plus 5 m^2 for circulation)]. Provide personnel door(s) between General Item Repair and core Corridor. Provide [pair of personnel doors] [overhead coiling door (1800 mm wide x 2200 mm high) and swinging personnel door] to exterior, for pedestrian circulation and movement of items. If located adjacent to Compact Item Repair, [the partition between this space and Compact Item Repair shall be wire mesh] [the spaces do not require a partition between them] [Verify with user, delete wire mesh partition if possible]. Walls or partitions between this space and the Circulation Bay, and Corridor [, and shop spaces] shall be concrete masonry or concrete; [other partitions may be metal studs with abuse-resistant gypsum wallboard] [although durability is reduced, initial cost is lower, and future flexibility is increased by allowing use of metal stud/drywall partitions; edit as necessary].

2-2.2.6.1 Function: Shop space for repair of fabric, small generators, fuel systems, electrical systems, quartermaster and chemical equipment such as mess kits, gas masks, heaters, laundry machines, bakeries, smoke generators, fuel and water dispensing equipment, and decontamination equipment. Also may be used for machining small items, and for printing and binding publications. [In DOL and DPW facilities] [This area also includes locksmith, small item painting, tire repair, radiator repair, appliance repair, battery repair, woodworking, furniture repair, and leather repair] [Coordinate with user; edit this paragraph as required].

2-2.2.6.2 Adjacency requirements: Adjacent to Corridor; adjacent to exterior loading area.

2-2.2.6.3 Furnishings/Fixtures/Equipment: Design the space to accommodate the following government provided furniture and equipment [list everything the user will have in the space; include sizes.]. [Provide, and design space to accommodate the following: _____] [Coordinate with user. If not provided by the activity, list required workbenches, storage shelving, racks, cabinets, etc]. Provide emergency eyewash. [Provide workbench exhaust system at ___ bench locations capable of removing exhaust from the following operations:_____; exhaust systems shall comply with OSHA, and applicable NFPA and building codes] [Include a list of all functions, processes, and gasses generated, etc. at the locations that require exhaust systems. Add additional military compliance requirements if they exceed code requirements.]. [Design

the space to accommodate government provided] [Provide] parts washer, solvent disposal/recycle system [include size, capacity, make and model of systems; quantities, chemical compositions, MSDS on solvents to be used].

2-2.2.6.4 Finishes:
Floor: epoxy coating on concrete slab
Base: [none] [resilient, if gypsum board partitions used]
Walls: painted concrete masonry units. Exposed structure shall be painted.
Ceiling: suspended acoustical panel ceiling; minimum ceiling height 2800 mm .

2-2.2.6.5 Other requirements: Provide [___] wall mounted compressed air outlets. [Provide operable exterior windows] [Exterior windows are desirable].

2-2.2.7 **Compact Item Repair**. Provide one [or more] area[s] per core. Locate on first floor or second floor; minimum total net area shall be [____] m^2 . Total occupants: [__] [When this area is authorized for an activity, space is authorized at 9.6 m^2 net area per each person assigned to the room (includes 6.4 m^2 plus 3.2 m^2 for circulation)]. Provide pair of personnel doors between Compact Item Repair and core Corridor. If located adjacent to General Item Repair, [the partition between this space and General Item Repair shall be wire mesh] [the spaces do not require a partition between them] [Verify with user, delete wire mesh partition if possible]. Walls or partitions between this space and the Circulation Bay and Corridor [, and shop spaces] shall be concrete masonry or concrete; [other partitions may be metal studs with abuse-resistant gypsum wallboard] [although durability is reduced, initial cost is lower, and future flexibility is increased by allowing use of metal stud/drywall partitions; edit as necessary]

2-2.2.7.1 Function: Shop space for maintenance of radios, telephones, small switchboards, and personal computers. Repair of medically related optical, mechanical, electrical, plumbing, pneumatic, refrigeration, and low capacity x-ray equipment. [In DPW facilities] [This area also includes space for repair of audio-visual equipment, diagnostic equipment and instruments (such as thermostats, meters, monitoring equipment)] [edit this paragraph as required].

2-2.2.7.2 Adjacency requirements: Adjacent to Corridor; [adjacent to exterior wall] [Include if area requires exterior windows]. [Adjacent to General Item Repair] [If the Compact Item Repair area is small, it may be advantageous to locate adjacent to General Item Repair. In facilities with large Compact Item Repair areas, it may be better to allow the designer the flexibility to locate Compact Item Repair on the second floor, or to split the Compact Item Repair area into first and second floor rooms; verify acceptability of this arrangement with user.]

2-2.2.7.3 Furnishings/Fixtures/Equipment: Design the space to accommodate the following government provided furniture and equipment [list everything the user will have in the space; include sizes.]. [Provide, and design space to accommodate the following: _____] [Coordinate with user. If not provided by the activity, list required workbenches, storage shelving, racks, cabinets, etc]. Provide emergency eyewash. . [Provide workbench exhaust system at ___ bench locations capable of removing exhaust from the following operations:_____; exhaust systems shall comply with OSHA, and applicable NFPA and building codes] [Include a list of all functions, processes, and gasses generated, etc. at the locations that require exhaust systems. Add additional military compliance requirements if they exceed code requirements.]

2-2.2.7.4 Finishes:
Floor: epoxy coating on concrete slab

Base: [none] [resilient, if gypsum board partitions used]
Walls: painted concrete masonry units. Exposed structure shall be painted.
Ceiling: suspended acoustical panel ceiling; minimum ceiling height 2800 mm .

2-2.2.7.5 Other requirements: Provide [___] wall mounted compressed air outlets. [Exterior windows are desirable.] [Provide operable exterior windows for testing sights] [Coordinate with user] [ ].

2-2.2.8 **Special Environment Repair**. Provide one [or more] area[s] per core. Locate on first floor [or second floor]; minimum total net area shall be [____] m^2 . Total occupants: [__] [When this area is authorized for an activity, space is authorized at 13.95 m^2 net area per each person assigned to the room (includes 9.3 m^2 plus 4.65 m^2 for circulation)]. Provide pair of personnel doors between Special Environment Repair and core Corridor. Provide [pair of personnel doors] [overhead coiling door (1800 mm wide x 2200 mm high) and swinging personnel door] to exterior, for pedestrian circulation and movement of items.] [Verify exterior access requirements with user]. Walls or partitions between this space and the Circulation Bay, and Corridor [, and shop spaces] shall be concrete masonry or concrete; [other partitions may be metal studs with abuse-resistant gypsum wallboard] [although durability is reduced, initial cost is lower, and future flexibility is increased by allowing use of metal stud/drywall partitions; edit as necessary]

2-2.2.8.1 Function: Shop space with supplemental air filtering requirements, for repair of [audio visual equipment, anti-aircraft missiles, MLRs, radios, telecommunications terminal devices, communications central switch equipment, communications security (encryption) equipment, tactical and strategic electronic warfare and intelligence equipment, land combat support system test equipment for anti-tank missiles, surveillance radar, wire communications systems, automated test equipment, small arms, artillery, fire control, weather prediction equipment; fabrication of eye glasses, and calibration of other equipment using Test, Measurement, and Diagnostic Equipment (TMDE).] [Edit this paragraph as required].

2-2.2.8.2 Adjacency requirements: Adjacent to Corridor; [adjacent to exterior wall] [Include if area requires exterior windows or doors]. [Near other shop areas].

2-2.2.8.3 Furnishings/Fixtures/Equipment: Design the space to accommodate the following government provided furniture and equipment [list everything the user will have in the space; include sizes.]. [Provide, and design space to accommodate the following: _____] [Coordinate with user. If not provided by the activity, list required workbenches, storage shelving, racks, cabinets, etc]. Provide emergency eyewash. [Provide workbench exhaust system at ___ bench locations capable of removing exhaust from the following operations:_____; exhaust systems shall comply with OSHA, and applicable NFPA and building codes] [Include a list of all functions, processes, and gasses generated, etc. at the locations that require exhaust systems. Add additional military compliance requirements if they exceed code requirements.]

2-2.2.8.4 Finishes:
Floor: epoxy coating on concrete slab
Base: [none] [resilient, if gypsum board partitions used]
Walls: painted concrete masonry units. Exposed structure shall be painted.
Ceiling: suspended acoustical panel ceiling; minimum ceiling height 2800 mm .

2-2.2.8.5 Other requirements: Provide [___] wall mounted compressed air outlets. [Exterior windows are desirable.] [Provide operable exterior windows for testing sights] [Coordinate with

user]. [Military intelligence units, and electronics/comm maintenance may have special power requirements; research and edit accordingly].

2-2.2.9 **Corridor(s)**. Provide as required for circulation; minimum corridor width shall be as required by applicable codes, but not less than 1830 mm. Walls or partitions between corridors and other spaces shall be concrete masonry or concrete. Provide pairs of personnel doors connecting Corridor to Circulation Bays [and Warehouse Bay areas]. Provide glazed aluminum storefront doors at main entrance, at rear entrance on opposite side of building, and as required for compliance with egress requirements of applicable codes. Provide weather (airlock) vestibule [at main entry doors] [at all exterior doors] [edit as required for climate].

2-2.2.9.1 Function: Circulation and egress; movement of equipment and people throughout core, and from Repair Bays [and Warehouse Bays] to the core.

2-2.2.9.2 Adjacency requirements: Adjacent to [stairs, elevator,] exterior entrances. Adjacent to Customer Waiting Area, and other core areas. Adjacent to Circulation Bays [, and Warehouse Bays].

2-2.2.9.3 Furnishings/Fixtures/Equipment: [Provide wall-mounted building directory near main entry doors.] Provide room identification signage at doors to each room accessed by the Corridor. Provide vinyl die-cut building street address signage on main entrance doors (or on glass transom above doors).

2-2.2.9.4 Finishes:
Floor: vinyl composition tile
Base: resilient
Inside face of exterior walls: painted concrete masonry units, or painted plaster on concrete. Structural columns shall be furred with materials matching the finish of adjacent wall surface.
Ceiling: suspended acoustical panel ceiling; minimum ceiling height 2800 mm.

2-2.2.9.5 Other requirements: Overhang or recess at exterior doors is desirable for weather protection. [Coordinate user requirements for access control of exterior corridor doors.] [If equipment on carts or dollies is regularly moved through corridors, add requirement for wall guard and corner guard protection.]

2-2.2.10 **Customer Waiting Area**. Provide one area off the Corridor, adjacent to each Admin and Shop Control pass-through window. [Size area so that two people can stand outside the window and be out of the corridor traffic pattern.] [Area shall be approximately 10 m^2]. [Include this space in larger facilities. In 3 or 4 bay maintenance facilities it will save space and may be more functional to have a customer service counter (or desk) within the Admin and Shop Control area. Coordinate with user.]

2-2.2.10.1 Function: Waiting space off the corridor for people to access Admin pass-through window.

2-2.2.10.2 Adjacency requirements: Adjacent to corridor, Admin and Shop Control

2-2.2.10.3 Furnishings/Fixtures/Equipment: Provide signage. [Provide service bell with audible/visible indicator in Admin and Shop Control space].

2-2.2.10.4 Finishes:

Floor: vinyl composition tile
Base: resilient
Walls: refer to Corridor.
Ceiling: refer to Corridor

2-2.2.10.5 Other requirements: [ ]

2-2.2.11 **Break/Training/Conference**. Provide one room per core. Locate on the same floor as Admin and Shop Control; minimum total net area shall be [____] m^2 . Total occupants: [__] [Space is authorized at 0.7 m^2 net area per each person assigned to the building, but not less than 18.6 m^2 total] [In lieu of one large room, in facilities with large building populations it is advisable to require a small break room with kitchenette, and a separate Training/Conference Room; this strategy will allow people to use kitchen/coffee/vending area without disturbing a meeting in the larger room. Edit accordingly.]. Provide personnel door(s) between Break/Training/Conference and Corridor. Walls or partitions between this room and other spaces [shall be concrete masonry or concrete] [may be metal studs with abuse-resistant gypsum wall board].

2-2.2.11.1 Function: Serves as a snack and break area for workers, and multipurpose training/conference room.

2-2.2.11.2 Adjacency requirements: Adjacent to corridor; near Admin and Shop Control.

2-2.2.11.3 Furnishings/Fixtures/Equipment: Provide plastic laminate kitchen base and wall cabinets and countertop (minimum 3000 mm long) [increase amount of casework in larger facilities], with stainless steel two-compartment sink, garbage disposer, and instantaneous hot water dispenser; provide handicapped accessibility. Design room to accommodate the following government provided furniture:[insert table and chair requirements]. Exterior windows are desirable.

2-2.2.11.4 Finishes:
Floor: vinyl composition tile
Base: resilient
Walls: painted concrete masonry units, painted concrete, or painted gypsum wallboard. Structural columns shall be furred with materials matching the finish of adjacent wall surface.
Ceiling: suspended acoustical panel ceiling; minimum ceiling height 2800 mm.

2-2.2.11.5 Other requirements:

2-2.2.12 **Stairs**. Provide as required for circulation and egress. [Delete paragraph when two story structure is not an option] [Where more than one stair is required, one stair may be an interior space and other stairs may be exterior, fully covered stairs] [Stairs shall be interior spaces] [Interior stairs are preferable in most climates; assess functional and visual impact of covered exterior stairs; while initial cost of exterior stairs may be lower, life-cycle maintenance costs will be higher]. Minimum stair width shall be as required by applicable codes, but not less than 1220 mm. Walls or partitions between stairs and other spaces [shall be concrete masonry or concrete] [may be metal studs with abuse-resistant gypsum wall board].

2-2.2.12.1 Function: Circulation and egress; movement of equipment and people between floors of core.

2-2.2.12.2 Adjacency requirements: Adjacent to corridors, exterior entrances. Main stair should be located close to main entrance of core

2-2.2.12.3 Furnishings/Fixtures/Equipment: Provide exit signage. Stair doors shall have glazed panels (comply with code requirements for fire ratings and safety glazing). Exterior stairs shall be cast-in-place concrete construction (preferred), or galvanized steel construction with concrete-filled treads. Open risers and metal grating treads are prohibited.

2-2.2.12.4 Finishes:
Landing floor: sealed concrete with slip-resistant finish texture.
Base: none
Treads: Sealed concrete with slip-resistant finish texture. Provide slip-resistant nosing.
Risers: painted galvanized steel, or sealed concrete.
Walls at Interior Stairs: painted concrete, painted concrete masonry units, or painted gypsum wallboard
Ceiling at Interior Stairs: painted exterior gypsum soffit board, or suspended acoustical panel ceiling
Soffits at Exterior Stairs: painted exterior gypsum soffit board, painted Portland cement plaster, or painted underside of concrete structure above.

2-2.2.12.5 Other requirements: [ ].

2-2.2.13 **Mechanical Areas**. Provide dedicated interior spaces and exterior areas for plumbing, fire protection, and HVAC equipment. Size and locate rooms to allow equipment removal and maintenance Provide floor openings and vertical shaft spaces as necessary.

2-2.2.13.1 Function: Mechanical support spaces for the building.

2-2.2.13.2 Adjacency requirements: Locate main mechanical room on ground floor with doors opening to exterior. . Mechanical support spaces shall not be used for storage or other purposes; access to mechanical spaces will be limited to authorized personnel. Locate exterior mechanical equipment and air intake and openings in exterior walls to comply with force protection standards.

2-2.2.13.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-2.2.13.4 Finishes:
Floor: sealed concrete
Base: none
Walls: painted gypsum wallboard, or exposed concrete, or concrete masonry units
Ceiling: none

2-2.2.13.5 Other requirements: Locate air intake and exhaust openings to provide optimum indoor air quality. Roof mounted equipment shall not be used. Provide masonry screen walls [with lockable metal access gates] around outdoor equipment areas (refer to Chapter 3) [Coordinate with requirements of Installation Design Guide] ; comply with force protection standards.

2-2.2.14 **Electrical Rooms**. Provide dedicated interior spaces and exterior areas for electrical equipment. Size and locate rooms to allow equipment removal and maintenance. Provide floor openings and vertical shaft spaces as necessary. Provide minimum of one electrical room per floor.

2-2.2.14.1 Function: Electrical support spaces for the building.

2-2.2.14.2 Adjacency requirements: Locate main electrical equipment room on ground floor. Electrical rooms on upper floors should be located to allow efficient distribution. Size and locate rooms to allow equipment removal and maintenance. Electrical rooms shall not be used for storage or other purposes; access to electrical rooms will be limited to authorized personnel. Locate exterior electrical equipment to comply with force protection standards.

2-2.2.14.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-2.2.14.4 Finishes:
Floor: sealed concrete
Base: resilient cove base, or none.
Walls: painted gypsum wallboard, or exposed concrete, or concrete masonry units
Ceiling: none required.

2-2.2.14.5 Other requirements: Electrical service to the building shall be underground. Provide masonry screen walls with lockable metal access gates around outdoor equipment (refer to Chapter 3). [Coordinate with requirements of Installation Design Guide] It is preferable to locate transformer within the screened mechanical equipment area. Comply with force protection standards.

2-2.2.15 **Communication Rooms**. Provide dedicated interior rooms for telephone and ADP/LAN equipment. Size and locate rooms to allow equipment removal and maintenance. [Space savings can be achieved by locating ADP/LAN gear in the same room as telephone equipment; verify acceptability of this arrangement with user and post DOIM; edit if necessary]. Provide floor openings and vertical shaft spaces as necessary. Minimum dimensions for each communication room shall be 3353 mm x 3048 mm. Provide minimum of one communication room per floor. [Verify current criteria regarding IBCT/Transformation IS infrastructure requirements. It is possible that an additional 3353 mm x 3048 mm communications room adjacent to the comm. room described in this paragraph will be required to accommodate the gear required].

2-2.2.15.1 Function: Telephone and data network support spaces for the building.

2-2.2.15.2 Adjacency requirements: Locate to allow efficient distribution. Communication rooms shall not be used for storage or other purposes; access will be limited to authorized personnel.

2-2.2.15.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-2.2.15.4 Finishes:
Floor: sealed concrete
Base: resilient cove base, or none.
Walls: painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units
Ceiling: none required

2-2.2.15.5 Other requirements: Communication service to the building shall be underground.

2-2.2.16 **Weapons [and COMSEC] Storage Vault**. Provide one. Locate on first floor;

minimum net area shall be 28 m^2. Minimum dimensions shall be 4000 mm x 7000 mm. Total occupants: [__] [one Weapons/Communications Security (COMSEC) Vault is authorized per organization; minimum dimensions should be between 24 m^2 and 28 m^2. Organizations requiring greater than 1,000 m^2 of maintenance building are also authorized one COMSEC Vault with a net area of 28 m^2. When COMSEC Vault is authorized, delete "COMSEC" from this paragraph, and add the following COMSEC Vault paragraph]. Provide GSA approved Class 5 vault door [with day gate] between Weapons Storage Vault and core Corridor. Walls, floor and ceiling of Vault shall be concrete masonry or concrete; and all openings and penetrations shall be constructed in compliance with [TI 800-01 Design Criteria and AR 190-11 Physical Security of Arms, Ammunition, and Explosives)] [insert applicable requirements].

2-2.2.16.1 Function: Secure storage of weapons being repaired, especially vehicle-mounted weapons such as machine guns and firing port weapons. [It will also be used to store secure communications equipment] [retain previous sentence if combined Weapons/COMSEC Vault is to be provided].

2-2.2.16.2 Adjacency requirements: Adjacent to Corridor.

2-2.2.16.3 Furnishings/Fixtures/Equipment: Provide Class 5 Vault door in compliance with [AEI]. [Insert any requirements for arms rack anchor rings, comm storage racks, etc].

2-2.2.16.4 Finishes:
Floor: sealed concrete
Base: none.
Walls: painted concrete
Ceiling: painted concrete. Minimum ceiling height shall be [2800 mm] [verify ceiling height with user].

2-2.2.16.5 Other requirements: Provide HVAC system to control relative humidity to [__]% plus or minus [__]% [coordinate environmental requirements with user].

2-2.2.17 **COMSEC Vault**. [Include this paragraph if the organization is authorized a maintenance building larger than 1,000 m^2.]Provide one. Locate on first floor; minimum net area shall be 28 m^2. Minimum dimensions shall be 4000 mm x 7000 mm. Total occupants: [__] [one COMSEC Vault is authorized per organization requiring greater than 1,000 m^2 of maintenance building.]. Provide GSA approved Class 5 vault door [with day gate] between COMSEC Vault and core Corridor. Walls, floor and ceiling of Vault shall be concrete masonry or concrete; and all openings and penetrations shall be constructed in compliance with [Army Technical Instruction TI 800-01 and AR 190-11.] [insert applicable requirements].

2-2.2.17.1 Function: Secure storage of communications equipment, crypto gear.

2-2.2.17.2 Adjacency requirements: Adjacent to Corridor.

2-2.2.17.3 Furnishings/Fixtures/Equipment: Provide Class 5 Vault door in compliance with [AEI]. [Insert any requirements for comm racks or storage shelving].

2-2.2.17.4 Finishes:
Floor: sealed concrete
Base: none.
Walls: painted concrete

Ceiling: painted concrete. Minimum ceiling height shall be 2800 mm.

2-2.2.17.5 Other requirements: Provide HVAC system to control relative humidity to [__]% plus or minus [__]% [coordinate environmental requirements with user]

2-2.2.18 **Men's Toilet Room**. Provide one room on each floor of each core, sized to accommodate the number of plumbing fixtures required. Minimum number of fixtures shall be as required by International Plumbing Code (Business occupancy). Calculate fixture requirement on the following male-to-female occupant ratios: Repair Bays: _-to-1; Warehouse Bay spaces: _-to-1; Admin and Shop Control: _-to-1; other core spaces: _-to-1. Toilet Room and Locker Room should share common entrance off of Corridor. Arrange entrance to provide visual privacy. Walls or partitions between this room and other spaces [shall be concrete masonry or concrete] [may be metal studs with water-resistant gypsum wallboard; where ceramic tile finish is indicated provide glass mesh mortar units (cementitious tile backer board) in lieu of gypsum wallboard].

2-2.2.18.1 Function: Restrooms for male occupants.

2-2.2.18.2 Adjacency requirements: Adjacent to corridor; first floor Men's Toilet Room adjacent to Men's Locker Room.

2-2.2.18.3 Furnishings/Fixtures/Equipment: Provide countertop mounted lavatories, floor mounted toilets, and wall-hung urinals. Countertops shall be plastic laminate or solid surfacing material. Provide toilet partitions at each toilet, and urinal partitions between urinals. Partitions shall be solid polymer plastic, overhead-braced type. Provide the following toilet accessories: one continuous mirror full width of countertop at countertop mounted lavatories; one paper towel dispenser/waste receptacle per toilet room; one soap dispenser per lavatory; one toilet tissue dispenser per toilet; one robe hook on each toilet partition door. Toilet accessories shall be fabricated from stainless steel, provide semi-recessed units where possible. Provide minimum of one floor drain with deep seal trap; locate floor drain outside of traffic areas.

2-2.2.18.4 Finishes:
Floor: porcelain tile, or ceramic tile.
Base: porcelain tile, or ceramic tile.
Walls: ceramic tile, or minimum 1829 mm high ceramic tile wainscot with painted gypsum wallboard or painted concrete masonry units above.
Ceiling: painted Portland cement plaster, or painted gypsum soffit board; minimum ceiling height 2800 mm.

2-2.2.18.5 Other requirements: Provide handicapped accessibility in conformance with ADA/UFAS.

2-2.2.19 **Men's Locker Room**. Provide one room on first floor of each core, sized to accommodate the number of lockers and showers required. Provide [___] individual shower compartments (915 mm x 915 mm). [Require one shower for every 15 workers exposed to hot or dirty conditions; coordinate with user, certain job descriptions could require more showers] Provide [___] single tier steel lockers (minimum size 305 mm wide x 457 mm deep x 1829 mm high). [Require one locker for each non-administrational occupant of the building. Refer to the male-to-female ratios listed in the preceding paragraph]. Locker Room will be accessed from corridor. Arrange entrance to provide visual privacy. Toilet Room and Locker Room should share common entrance off of Corridor.

2-2.2.19.1 Function: Lockers and showers for male occupants.

2-2.2.19.2 Adjacency requirements: Adjacent to corridor, adjacent to Men's Locker Room. Accessible from Men's Toilet Room without going through Corridor.

2-2.2.19.3 Furnishings/Fixtures/Equipment: Provide the following toilet accessories: one 406 mm wide x 1524 mm high wall mounted mirror; one liquid soap dispenser per shower. [Provide one solid polymer plastic dressing partition with door and hardwood bench, in front of each shower compartment]. Toilet accessories shall be fabricated from stainless steel, provide semi-recessed units where possible. Provide hardwood locker room benches. Provide minimum of one floor drain with deep seal trap at each drying area.

2-2.2.19.4 Finishes:
Floor: porcelain tile, or ceramic tile.
Base: porcelain tile, or ceramic tile.
Walls: ceramic tile.
Ceiling: painted Portland cement plaster, or painted gypsum soffit board; minimum ceiling height 2800 mm.

2-2.2.19.5 Other requirements: Provide handicapped accessibility in conformance with ADA/UFAS. Provide at least one accessible shower/dressing area. Provide at least [2] accessible lockers.

2-2.2.20 **Women's Toilet Room**. Provide one room on each floor of each core, sized to accommodate the number of plumbing fixtures required. Number of fixtures shall be as required by International Plumbing Code (Business occupancy). Calculate fixture requirement on the following male-to-female occupant ratios: Repair Bays: _-to-1; Warehouse Bay spaces: _-to-1; Admin and Shop Control: _-to-1; other core spaces: _-to-1. Toilet Room and Locker Room should share common entrance off of Corridor. Arrange entrance to provide visual privacy. Walls or partitions between this room and other spaces [shall be concrete masonry or concrete] [may be metal studs with water-resistant gypsum wallboard; where ceramic tile finish is indicated provide glass mesh mortar units (cementitious tile backer board) in lieu of gypsum wallboard].

2-2.2.20.1 Function: Restrooms for female occupants.

2-2.2.20.2 Adjacency requirements: Adjacent to corridor, first floor Women's Toilet Room adjacent to Women's Locker Room.

2-2.2.20.3 Furnishings/Fixtures/Equipment: Provide countertop mounted lavatories, and floor mounted toilets. Countertops shall be plastic laminate or solid surfacing material. Provide toilet partitions at each toilet. Partitions shall be solid polymer plastic, overhead-braced type. Provide the following toilet accessories: one continuous mirror full width of countertop at countertop mounted lavatories; one paper towel dispenser/waste receptacle per toilet room; one soap dispenser per lavatory; one toilet tissue dispenser per toilet; one sanitary napkin disposal per toilet; one robe hook on each toilet partition door; one sanitary napkin/tampon vending machine. Toilet accessories shall be fabricated from stainless steel, provide semi-recessed units where possible. Provide minimum of one floor drain with deep seal trap; locate floor drain outside of traffic areas.

2-2.2.20.4 Finishes:
Floor: porcelain tile, or ceramic tile.
Base: porcelain tile, or ceramic tile.
Walls: ceramic tile, or minimum 1829 mm high ceramic tile wainscot with painted gypsum wallboard or painted concrete masonry units above.
Ceiling: painted Portland cement plaster, or painted gypsum soffit board; minimum ceiling height 2800 mm.

2-2.2.20.5 Other requirements: Provide handicapped accessibility in conformance with ADA/UFAS.

2-2.2.21 **Women's Locker Room**. Provide one room on first floor of each core, sized to accommodate the number of lockers and showers required. Provide [___] individual shower compartments (915 mm x 915 mm). [Require one shower for every 15 workers exposed to hot or dirty conditions; coordinate with user, certain job descriptions could require more showers] Provide [___] single tier steel lockers (minimum size 305 mm wide x 457 mm deep x 1829 mm high). [Require one locker for each non-administrational occupant of the building. Refer to the male-to-female ratios listed in the preceding paragraph]. Locker Room will be accessed from corridor. Arrange entrance to provide visual privacy. Toilet Room and Locker Room should share common entrance off of Corridor.

2-2.2.21.1 Function: Lockers and showers for female occupants.

2-2.2.21.2 Adjacency requirements: Adjacent to corridor, adjacent to Women's Toilet Room. Accessible from Women's Toilet Room without going through Corridor.

2-2.2.21.3 Furnishings/Fixtures/Equipment: Provide the following toilet accessories: one 406 mm wide x 1524 mm high wall mounted mirror; one liquid soap dispenser per shower. [Provide one solid polymer plastic dressing partition with door and hardwood bench, in front of each shower compartment]. Toilet accessories shall be fabricated from stainless steel, provide semi-recessed units where possible. Provide hardwood locker room benches. Provide minimum of one floor drain with deep seal trap at each drying area.

2-2.2.21.4 Finishes:
Floor: porcelain tile, or ceramic tile.
Base: porcelain tile, or ceramic tile.
Walls: ceramic tile.
Ceiling: painted Portland cement plaster, or painted gypsum soffit board; minimum ceiling height 2800 mm.

2-2.2.21.5 Other requirements: Provide handicapped accessibility in conformance with ADA/UFAS. Provide at least one accessible shower/dressing area. Provide at least [2] accessible lockers.

2-2.2.22 **Elevator Machine Room**. Provide one in each two-story building. Size to comply with equipment and code requirements.

2-2.2.22.1 Function: Space for hydraulic elevator equipment.

2-2.2.22.2 Adjacency requirements: Adjacent to elevator and corridor.

2-2.2.22.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-2.2.22.4 Finishes: Floor: sealed concrete
Base: resilient cove base
Walls: painted gypsum wallboard or painted concrete masonry units
Ceiling: none required.

2-2.2.22.5 Other requirements:

2-2.2.23 **Elevator**. Provide one hydraulic [passenger] elevator in each two-story building.

2-2.2.23.1 Function: Vertical conveyance of people and furniture.

2-2.2.23.2 Adjacency requirements: Adjacent to corridor; near main entry.

2-2.2.23.3 Furnishings/Fixtures/Equipment: [Passenger elevator: 2,500 lb. capacity, minimum 75 feet per minute speed; center opening doors.] [Elevator is required for handicapped accessibility to second floor. If elevator will also be used to regularly move equipment between shop areas, adjust the requirements of this paragraph to provide a freight elevator; retain handicapped accessibility requirements.] Refer to Chapter 5 for additional requirements.

2-2.2.23.4 Cab finishes: Floor: vinyl composition tile
Walls: [plastic laminate]
Ceiling: [suspended aluminum egg crate]
Car door and front: satin finish stainless steel
Hoistway entrance doors and frame: satin finish stainless steel

2-2.2.23.5 Other requirements: Handicapped accessible.

2-2.2.24 **Janitor Closet**. Provide one at each group of toilets on each floor of the building. Minimum area: 2.8 m^2. Room shall be accessed from the corridor.

2-2.2.24.1 Function: Sink and storage of cleaning supplies, soap, paper products.

2-2.2.24.2 Adjacency requirements: Near toilets and shower rooms.

2-2.2.24.3 Furnishings/Fixtures/Equipment: Provide one floor mounted mop sink, mop rack for two mops, and minimum 1829 linear mm of wall mounted stainless steel shelving.

2-2.2.24.4 Finishes:
Floor: sealed concrete
Base: resilient cove base, or ceramic tile base
Walls: painted water-resistant gypsum wallboard, or painted concrete masonry units
Ceiling: painted gypsum soffit board, or painted Portland cement plaster; minimum ceiling height 2800 mm.

2-2.2.24.5 Other requirements:

2-2.3 **Warehouse Bay Areas**. Warehouse bay areas are used for storage and issue of supplies and equipment for an organization having a tech supply mission that provides DS or GS level maintenance support. Warehouse Bay areas include Warehouse Area, Supply

Administration Area and Direct Exchange / Technical Support (DX/TX) areas. Bays shall be single-story, ground floor spaces, without interior columns; minimum eave height shall be 5500 mm. [Minimum bay depth shall be 19 600 mm deep] [Review FPS planning data and coordinate with user. If it is important to provide warehouse bay modules the same size as the repair bay modules (and, provided the required area fits evenly into a given number of modules), delete the previous sentence, retain the next sentence and insert the number of bays to be provided. It is preferable to state minimum bay depth and area, and allow offeror flexibility of warehouse bay width]. [Required area shall consist of [__] bay modules 9800 mm wide (column centerline to column centerline) x 19 600 mm deep (exterior face of column to exterior face of column)]. [Insert any requirements for floor flatness tolerance in Warehouse Bay areas]

2-2.3.1 **Warehouse Areas**. Provide one [or more] area[s]; total net area shall be [____] m^2. Total occupants: [__]. [Refer to FPS for authorized area requirements]. Provide below grade loading dock with [____] 3000 mm wide x 2900 mm high overhead doors. Loading dock shall accommodate the following vehicle types: [insert vehicle data]. [In addition to loading dock overhead doors, provide one 3000 mm wide x 2900 mm high overhead door per warehouse bay; doors shall open to hardstand vehicle access surrounding the building] [Previous sentence may be included as an optional item, additional doors will increase flexibility of warehouse space]. Provide daylighting through use of metal windows or translucent wall panels at exterior wall area above overhead door level. Occupants will use [insert vehicle type, method of propulsion, load rating, wheel type, reach height] to store and retrieve items from storage shelving.

2-2.3.1.1 Function: Storage of [insert types of materials; include hazard/flammability classifications, methods of storage, height of racks or shelves, and other data the offeror will need to establish applicable code requirements].

2-2.3.1.2 Adjacency requirements: Adjacent to DX/TS Area, Supply/Admin Area, and core areas. Adjacent to hardstand vehicle access aisles.

2-2.3.1.3 Furnishings/Fixtures/Equipment: [Provide, and] design space to accommodate the following storage systems: [insert types, quantities, dimensions, and load capacities of shelving, pallet racks, bins, etc. Coordinate with user. Storage systems can be included in the construction contract]. Minimum clear aisle width between storage units shall be [3000 mm] [verify with user].

2-2.3.1.4 Finishes:
Floor: concrete slab with sealer-hardener
Base: none
Interior side of exterior walls: painted concrete masonry units or painted concrete to overhead door head height; prefinished metal liner panels above [CMU is recommended for durability. If required due to budget constraints, metal liner panels may be used full height of interior face of exterior walls; this also may be considered as an optional bid item]. Exposed structure shall be painted.
Ceiling: prefinished metal liner panels on underside of roof purlins; exposed structure shall be painted.

2-2.3.1.5 Other requirements: Provide 300 mm diameter x 1400 mm high, concrete-filled, schedule 80 galvanized steel, pipe bollards inside the bay at each overhead door jamb, except at loading dock doors (refer to Chapter 3 for exterior pipe bollards). Provide similar bollards at interior locations as required to protect structural columns and other elements from damage.

Loading dock shall be cast-in-place concrete; dock floor shall be [____ mm] below warehouse floor. Provide resilient dock bumpers at full length of dock. [Provide adjustable dock leveler at each loading dock door. Provide dock sealing system around each loading dock door. Provide trailer restraint at each loading dock door.] [User may request to divide the warehouse area with wire mesh partitions].

2-2.3.2 **DX/TS (Direct Exchange/Technical Support)**. Provide one DX/TS Area per Warehouse Area; total net area shall be [____] m^2. Total occupants: [__]. [Refer to FPS for authorized area requirements]. At each DX/TS Area provide one 3000 mm wide x 2900 mm high overhead door opening to hardstand vehicle access surrounding the building. Provide daylighting through use of metal windows or translucent wall panels at exterior wall area above overhead door level. [Occupants will use [insert vehicle type, method of propulsion, load rating, wheel type, reach height] to store and retrieve items from storage shelving within the space.] Provide wire mesh partitions with sliding doors between DX/TS and Warehouse Area and Supply/Admin Area.

2-2.3.2.1 Function: Area for turn-in and issue of direct exchange components; storage of items for Technical Supply function. Storage of [insert types of materials; include hazard/flammability classifications, methods of storage, height of racks or shelves, and other data the offeror will need to establish applicable code requirements].

2-2.3.2.2 Adjacency requirements: Adjacent to Warehouse Area and Supply/Admin Area. Adjacent to hardstand vehicle access aisles.

2-2.3.2.3 Furnishings/Fixtures/Equipment: [Provide, and] design space to accommodate the following storage systems: [insert types, quantities, dimensions, and load capacities of shelving, racks, bins, etc. Coordinate with user. Storage systems can be included in the construction contract]. Minimum clear aisle width between storage units shall be [3000 mm] [verify with user]. Provide plastic laminate base cabinets with 14 gauge seamless stainless steel countertop for the direct exchange process. [Provide wire mesh pass-through window between this room and Warehouse Area; size pass-through window to accommodate transfer of [insert size of biggest item; or give desired window size]. Partitions between this space and the core areas shall be concrete masonry or concrete.

2-2.3.2.4 Finishes:
Floor: concrete slab with sealer-hardener
Base: none
Interior side of exterior walls: painted concrete masonry units or painted concrete to overhead door head height; prefinished metal liner panels above [CMU is recommended for durability. If required due to budget constraints, metal liner panels may be used full height of interior face of exterior walls; this also may be considered as an optional bid item]. Exposed structure shall be painted.
Ceiling: prefinished metal liner panels on underside of roof purlins; exposed structure shall be painted.

2-2.3.2.5 Other requirements: Provide 300 mm diameter x 1400 mm high, concrete-filled, schedule 80 galvanized steel, pipe bollards inside the bay at each overhead door jamb (refer to Chapter 3 for exterior pipe bollards). Provide similar bollards at interior locations as required to protect structural columns and other elements from damage.

2-2.3.3 **Supply/Admin**. Provide one Supply/Admin Area per Warehouse Area; total net area

shall be [____] m^2. Total occupants: [__]. [Refer to FPS for authorized area requirements]. Provide daylighting through use of metal windows or translucent wall panels at exterior wall area above overhead door level. [Occupants will use [insert vehicle type, method of propulsion, load rating, wheel type, reach height] to store and retrieve items from storage shelving within the space.] Provide wire mesh partitions with sliding doors between Supply/Admin Area and DX/TS and Warehouse Area.

2-2.3.3.1 Function: Workspace for Supply Administration, Warehouse Stock Control and Accounting personnel. [Add any other functions to be accommodated in the space.] [and storage of [___]. [Insert types of materials; include hazard/flammability classifications, methods of storage, height of racks or shelves, and other data the offeror will need to establish applicable code requirements].
2-2.3.3.2 Adjacency requirements: Adjacent to DX/TS Area, Warehouse Area, and core areas

2-2.3.3.3 Furnishings/Fixtures/Equipment: Design the space to accommodate the following government provided furniture and equipment [list everything the user will have in the space, including copiers, fax machine, file cabinets, bookcases, storage units, non-wired office partitions, etc.; include sizes.]. [Provide, and] design space to accommodate [__] administrative systems furniture workstations. Refer to Chapter 5 for systems furniture requirements. [Coordinate with user. Furniture systems are personal property fixed (PPF); they are not MCA funded, but can be provided as part of construction contract when funded by the user, and identified as a line item on form DD 1391. If *not* included in the construction contract, systems furniture requirements should still be included in Chapter 5 so the offeror will know what to design the space to accommodate.]. Minimum clear aisle widths shall comply with applicable codes. [Provide, and] design space to accommodate the following storage systems: [insert types, quantities, dimensions, and load capacities of shelving, racks, bins, etc. Coordinate with user. Storage systems can be included in the construction contract]. Minimum clear aisle width between storage units shall be [____ mm] [verify with user].

2-2.3.3.4 Finishes:
Floor: concrete slab with sealer-hardener
Base: none
Interior side of exterior walls: painted concrete masonry units or painted concrete to overhead door head height; prefinished metal liner panels above [CMU is recommended for durability. If required due to budget constraints, metal liner panels may be used full height of interior face of exterior walls; this also may be considered as an optional bid item]. Exposed structure shall be painted.
Ceiling: prefinished metal liner panels on underside of roof purlins; exposed structure shall be painted.

2-2.3.3.5 Other requirements: [ ].

2-2.4 **Outside Hardstand Areas**. Refer to paragraph 3-10 for additional criteria.

2-2.4.1 **Waste Oil Storage Tank(s)**. Provide one above-ground [underground] [___] liter capacity waste engine oil storage tank per each wing of Repair Bays. Tank shall be constructed of non-corrosive material. Provide secondary containment in compliance with [applicable state environmental regulations]. Tank fill shall be accessible by workers, using mobile waste oil drain receptacles [with pumping capabilities] [with gravity drain valves], without the need to climb stairs. Tank construction and location shall comply with IBC and NFPA code requirements. Provide 300 mm diameter x 1400 mm high, concrete-filled, schedule 80

galvanized steel pipe bollards, painted safety yellow, around perimeter of above-ground tank areas. Preferred location is adjacent to Scheduled Maintenance Bay. Refer to paragraph 4-18 for additional requirements.

2-2.4.2 **Waste Engine Coolant (antifreeze) Storage Tank(s)**. Provide one above-ground [underground] [___] liter capacity waste engine coolant storage tank per each wing of Repair Bays. Tank shall be constructed of non-corrosive material. Provide secondary containment in compliance with [applicable state environmental regulations]. Tank fill shall be accessible by workers, using mobile waste engine coolant receptacles [with pumping capabilities], [with gravity drain valves], without the need to climb stairs. Tank construction and location shall comply with IBC and NFPA code requirements. Provide 300 mm diameter x 1400 mm high, concrete-filled, schedule 80 galvanized steel pipe bollards, painted safety yellow, around perimeter of above-ground tank areas. Preferred location is adjacent to Scheduled Maintenance Bay. Refer to paragraph 4-18 for additional requirements.

2-2.4.3 **IFTE Dock**. Provide one cast-in-place concrete Integrated Facility for Testing and Evaluation (IFTE) Dock for connection of mobile vans [Edit this paragraph if IFTE Dock is required at more than one building in the facility complex.]. Dock design shall comply with the basic requirements shown in Figures 2-4, 2-5, and 2-6. Provide [___] 3000 mm wide bays at 900 mm height above grade, and [___] 3000 mm bays at 1200 mm above grade. Dock may be located adjacent to the exterior wall of core or Warehouse Bays, oriented perpendicular or parallel to the maintenance building, adjacent to vehicle access hardstand areas. [Provide metal canopy over area; canopy shall extend minimum 600 mm beyond edge of dock and stairs. Minimum clearance from top of hardstand to underside of canopy shall be [____] mm.]

2-2.4.3.1 Function: Multi-purpose docking facility providing grounding and power supply for vehicles. The dock can be used by maintenance support vans and operations vans (such as intelligence analysis, map printing, or communications). [Add any other functions to be accommodated.]

2-2.4.3.2 Adjacency requirements: Adjacent to vehicle access hardstand areas surrounding the maintenance building. Adjacent to exterior wall of core area [or Warehouse Bays]. Provide personnel door into building near the dock.

2-2.4.3.3 Furnishings/Fixtures/Equipment: Provide continuous resilient dock bumpers along face of dock. Provide weatherproof electrical power, grounding and communications receptacles at face of dock between each bay [Include specific power and comm. requirements; coordinate with user. Add any other required equipment]. Provide galvanized steel schedule 40 steel pipe rails as indicated on Figures 2-4, 2-5, 2-6, and as required by OSHA regulations. Stairs shall have cast-in abrasive nosing. Concrete shall have non-slip texture. Dock surface shall slope away from building.

2-2.4.3.4 Finishes:
Floor: concrete slab.

2-2.4.3.5 Other requirements: Provide lighting to illuminate stairs and dock surface

Figure 2.4 IFTE Dock Perpendicular to Building (Not to Scale)

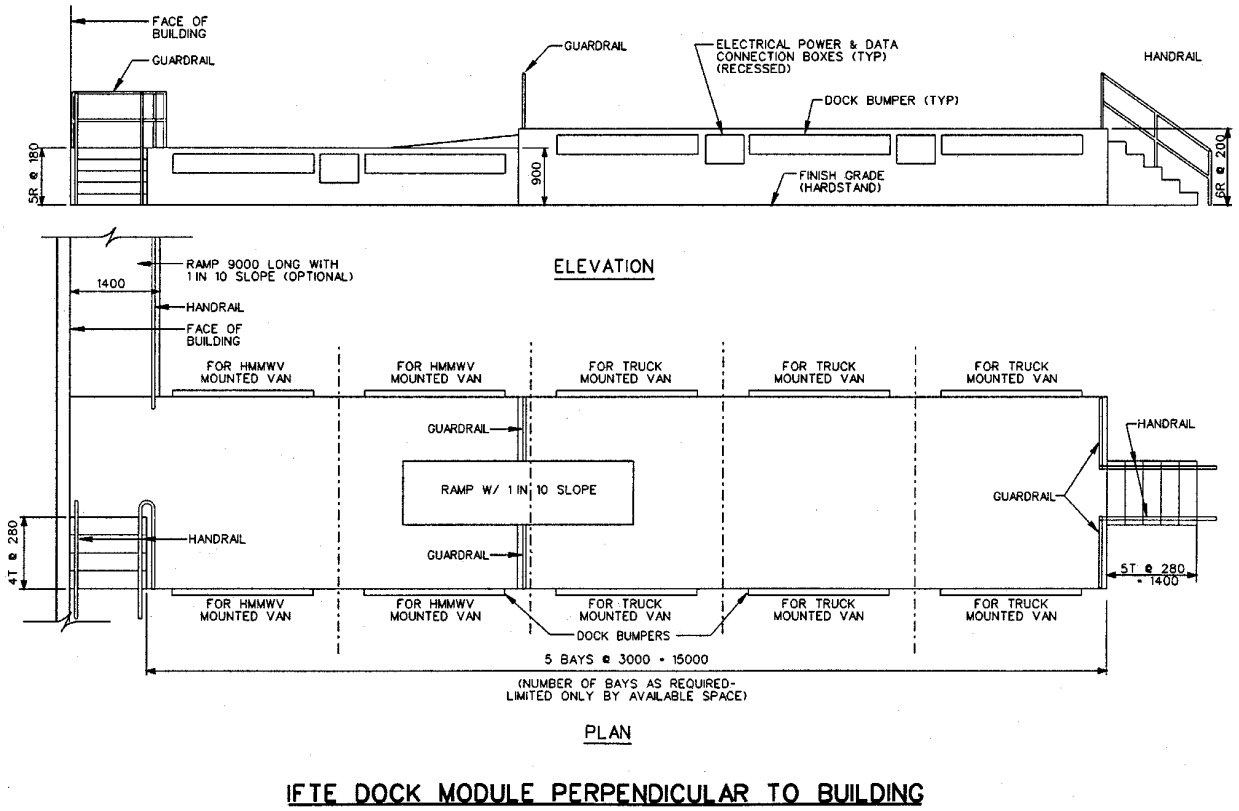


Figure 2.5 IFTE Dock Parallel to Building (Not to Scale)

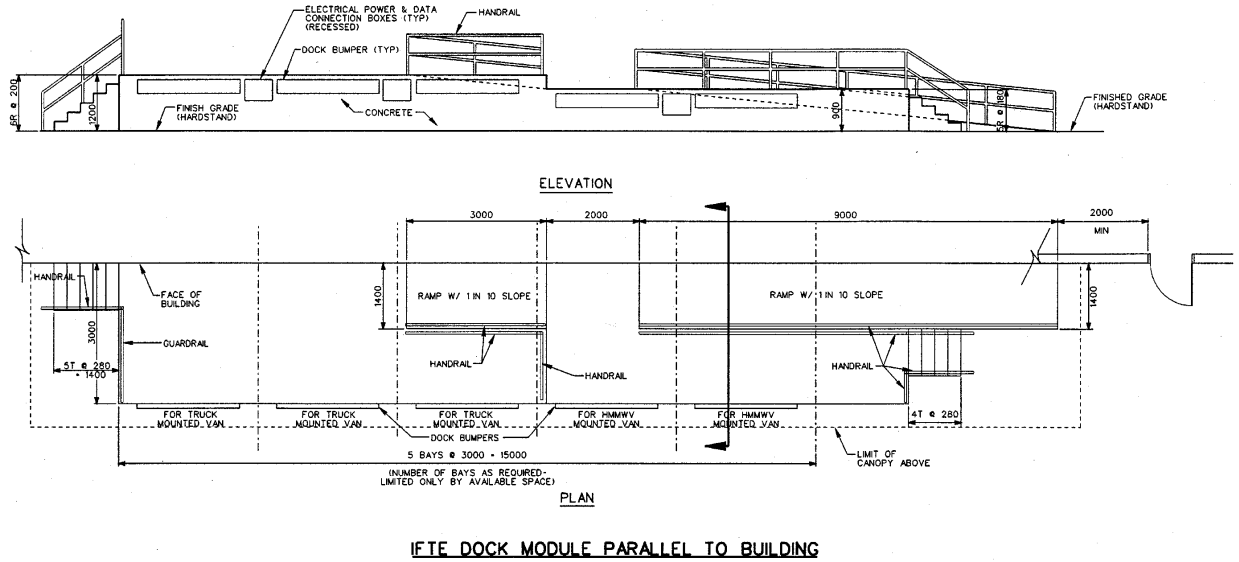
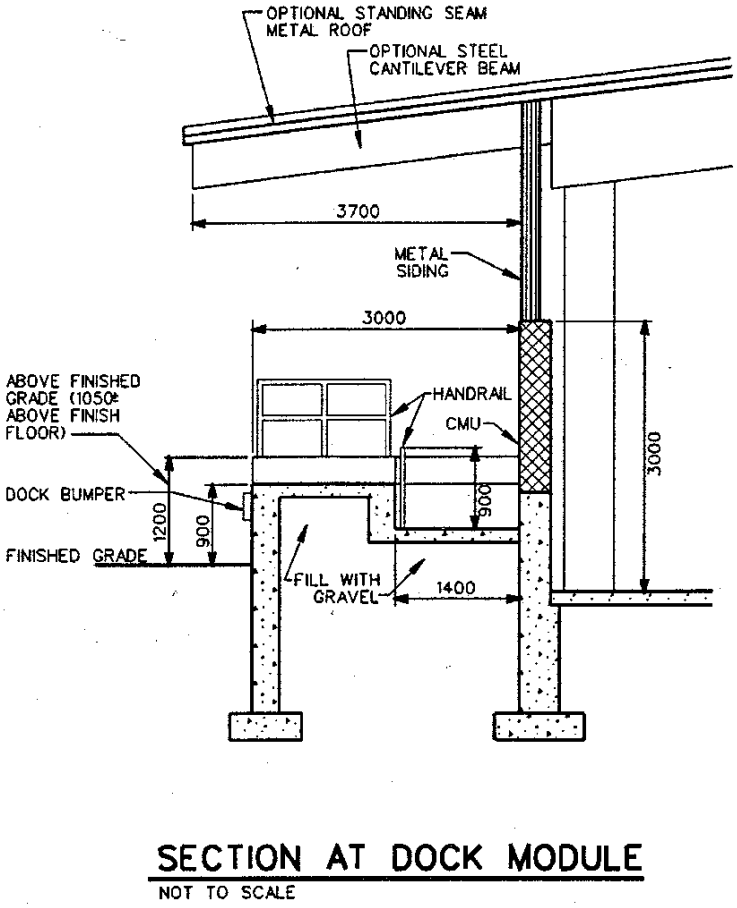


Figure 2.6 Diagrammatic Section of IFTE Dock Parallel to Building (Not to Scale)



CHAPTER 3

SITE PLANNING AND DESIGN

3-1 **SCOPE OF WORK.** This project consists of constructing Army Tactical Equipment Maintenance Facilities (TEMF). Imaginative site design is encouraged, however, the site boundaries and project composition are fixed. Based on the graphic and narrative description[s] of site opportunities and constraints provided, the offeror shall verify that the site meets the program requirements.

3-2 **SITE VERIFICATION.** Graphic and narrative descriptions of site opportunities and constraints have been provided. [Insert a description of information being provided or made available to the offerors, and the process to obtain the information. Address offeror access to base maps, as-built documents of existing facilities, points of contact with private, public and Government utilities, and related materials.] Each offeror shall verify that the site meets the program requirements. [Obtain the site analysis and the documented site opportunities and constraints to verify that the site meets the requirements that are provided. The site analysis can be obtained from [insert appropriate individual].] [No site analysis has been provided. The offeror shall perform a detailed site analysis to verify that the site meets the requirements that are provided.] [Previous land use activities should be considered to determine if possible contamination exists[in soils[and][or][groundwater]], which would negatively impact development of the site.] [The analysis results [are] [shall be] documented in a written and graphic summary of site opportunities and constraints for the TEMF]]. If the site is found to be unsuitable by an offeror, [insert appropriate action to be taken by offeror (i.e. suggest alternate available site, possible site remediation, etc].

3-3 **EXISTING CONDITIONS.** The offeror shall be provided with a [digital] [hard copy] topographic survey for this site by the Government. It is the offeror's responsibility to verify the Government-furnished survey and obtain all additional survey information that may be required for a completed design and construction project. Any discrepancies which are found in the Government furnished survey shall be brought to the immediate attention of the Contracting Officer for clarification.

3-3.1 **Station Maps.** Maps of the existing utility distribution systems including commercially owned utilities (i.e.: telephone, cable television, gas, etc.) may be obtained from the [Public Works Department] [Insert appropriate office] at the installation. [Insert other relevant information such as points of contact, restrictions on access to certain areas, hours of operation, phone and fax numbers, etc.] The locations of existing utilities shown on the site survey and utility maps are approximate only. The offeror shall scan the construction site with electromagnetic or sonic equipment and mark the surface of the ground where existing underground utilities are discovered. Immediately contact the [Contracting Officer] if actual conditions vary from the topographic survey.

3-4 **EXCAVATION PERMITS.** The contractor shall obtain approved station excavation permits prior to digging. Request for excavation permits shall be in accordance with installation policies. [List additional requirements for contacting local utility companies prior to performing excavations.] [Delete this wording and insert "Not required." if the activity does not require excavation permits.]

3-5 **SITE DEVELOPMENT PLAN.** Provide a site development plan that shows the spatial and functional arrangement of all TEMF requirements. The plan should ensure an economical, compatible and functional land use development that utilizes the advantages of the site, allows convenient access to the units which the TEMF supports and their maneuvering areas, and fosters

visual order**.** The site development plan shows consideration for the site opportunities and constraints, program requirements, and specific site design criteria and guidance provided. [The installation shall provide the contractor a copy of the recommendations of the Installation Real Property Master Plan and the Installation Design Guide. These recommendations should be addressed.]

3-5.1 **Land Use.** The plan for the area should reflect an optimum balance of floor area, open space, and pedestrian and vehicular circulation. [Space requirements should be determined in accordance with the Facility Planning Support (FPS) System and the TEMF Standard Design.] The plan should show an efficient, organized and economical land use arrangement that is compatible and functional. This plan should show the relationship of the area to adjacent land uses. [Insert specific installation criteria].

[3-5.2 **Noise Mitigation.** [Insert specific installation requirements.]]

3-5.3 **Buffer Area.** Provide appropriate buffer areas to separate and visually isolate the TEMF from [Insert specific installation criteria]. Consider providing landscaping or other screening between incompatible land uses.

[3-5.4 **Orientation.** Orient the TEMF to the maximum extent possible within the constraints of the site available to facilitate circulation within the site as well as access to other components of the complex. Provide for rapid and orderly access to the existing road network [, and provide direct access to tank trails, firing ranges, and other training facilities]. [Orientation shall be functional and efficient to provide [the maximum available space for [insert specific requirements][handling and storage of deployment equipment]. [Insert additional orientation requirements that are dependent upon known site constraints.] Additionally, solar orientation should be considered so that the long axis of the building is within 20 degrees east or west of true south, so that a major section of the roof faces within 20 degrees of south. The purpose of solar orientation is to expose a minimum surface area to direct solar gain while allowing the units the potential for passive solar applications. Additional consideration will be given during the quality evaluations with respect to unit orientations and passive solar applications considered and included. For additional passive solar information and considerations, see chapter 11 of this Statement of Work.] [Edit if necessary where known site constraints preclude compliance with this requirement.] [Insert Installation Criteria.]

3-5.5 **Unauthorized Facilities.** The following amenities are no longer authorized in individual Army Tactical Equipment Maintenance Facilities: Vehicle wash racks [a waiver may be submitted to OACSIM for installations that do not have a Centralized Vehicle Wash Facility and which desire to include wash racks in specific TEMFs], and fuel dispensing pumps.

3-6 **GRADING AND DRAINAGE.** The grading should maintain existing topography while recognizing standard gradients. Segregate areas of drainage which are likely to be contaminated by fuel or other maintenance fluids from other drainage areas to prevent discharge of contaminants. There should be a balance of the quantity of cut and fill soils which would create a smooth transition of graded areas into the existing natural site. The plan should reflect selective site clearing that preserves groups of trees. Grading should manage site runoff to maintain rate of flow and quantity to pre-construction levels, or reduce site runoff where possible. The principles of positive drainage should be applied to control the conditions that remove rainfall away from facilities and functions. Site designs should seek to minimize the disturbance of land, and utilize natural drainage paths where possible. Federal, State and local regulations regarding the design of stormwater management systems shall be considered the minimum design criteria. [Insert additional installation requirements for grading and drainage.] [Address [NPDES] permits required for

construction activities.] Additionally, minimize the impact of construction activities on drainage and prevent loss of soils by water and wind erosion. Designs which improve on existing water quality by incorporating sustainable design principles are encouraged, consistent with budget constraints and activity requirements.

3-7 **GENERAL SITE DESIGN CRITERIA.** The following are to be used as guidance for site design. Minimum spacing between buildings shall be [Insert Installation Minimum Setback Requirements]. Analyze the existing site conditions (i.e.; land use, community facilities, off-site workplaces, etc.) and incorporate a site design that results in an aesthetically pleasing and functional design. The site design shall address the following: orientation, site organization, force protection, spatial balance, character and scale, compatibility, life safety, circulation systems, view of the site, buffer zones, wind and noise control, land forms (i.e.; mounds, swales, ponds, etc.), lawns and shaded areas, vehicular access, organizational vehicle parking spaces, non-organizational vehicle parking spaces, POL storage and POL vehicle parking areas, handicapped parking, visitor parking area, service entrances, connecting walks, utility corridors, fire protection access, site lighting, site furnishings, mechanical enclosures, trash collection dumpsters with trash enclosures, landscaping, and etc.

[3-7.1 **Additional Site Design Criteria [for TOE Facilities].** In addition to the general site design criteria defined above, include the following:[Insert criteria for specific requirements of TOE user, such as deployment equipment storage buildings, and track vehicle requirements.]]

[3-7.2 **Additional Site Design Criteria [for TDA Facilities].** In addition to the general site design criteria defined above, include the following: [Insert criteria for specific requirements of TDA facilities, such as Directorates of Logistics (DOL), Directorates of Engineering and Housing (DEH), and Directorates of Public Works (DPW).]]

3-8 **CIRCULATION AND PARKING.** The vehicular and pedestrian circulation system shall promote safe, efficient movement of vehicles and pedestrians within the site area. The following criteria shall be considered for designing streets and drives for vehicles and pedestrians:

3-8.1 **Pedestrian Circulation.** Pedestrian circulation should be safe and separate from vehicle circulation to the greatest extent possible. Provide good sidewalk layout to connect all building entrances with parking and site facilities and existing walks. Pedestrian circulation should be based on pedestrian desired lines of walking between site facilities and existing walks. Design pedestrian concentration areas with adequate paved area.

3-8.2 **Vehicular Circulation.** Vehicle circulation aisles shall be 9.140 m wide. Arrange circulation to access parking in an efficient and organized manner, and to avoid congestion. [Vehicular circulation layout is determined by applying the design vehicle templates to the site design. The passenger car class includes passenger cars and light delivery trucks, such as vans and pick-ups. The passenger car template is equivalent to the non-organizational - privately owned vehicle (POV). The truck class template includes single-unit trucks, recreation vehicles, buses, truck tractor-semitrailer combinations, and trucks or truck tractors with semi-trailers in combination with full trailers. Templates showing the turning movements for design vehicles are provided by the American Association of State Highway and Transportation Officials (AASHTO). Obtain templates and utilize them during the design of the facility. Provide the vehicle clearances that are required to meet traffic safety for emergency vehicles, service vehicles, and moving vans.]

3-8.3 **Vehicular Parking.** Vehicle parking spaces shall be as follows:

3-8.3.1 **Organizational.** Parking allowance is determined by FPS based on the number and size of organizational vehicles. Parking stalls are back to back with access lane widths of 9140 mm for vehicles of 5500 mm or less in length. Where parked vehicles are longer than 5500 mm, that access aisle should be widened to 13 720 mm. Circulation aisle widths are to remain 9140 mm. Side clearances in spaces are to be 1000 mm. End clearances in spaces are to be 600 mm. Unit integrity should be maintained at the company level whenever possible.

3-8.3.2 **POL.** POL vehicles are to be parked at least 15 240 mm from other vehicles or permanent structures. POL parking spaces are 5800 mm wide by 12 200 mm to 16 800 mm, depending on the length of the vehicle. Maintain 3000 mm spacing between vehicles. Provide one additional space as a fuel dispensing point for minor day to day fueling of organizational vehicles. Provide a 15 000 mm access apron on the access side of this parking area for maneuvering.

3-8.3.3 **Dead-Line.** Provide three dead-line vehicle parking spaces 3660 mm by 9140 mm for each DS, GS or DOL repair bay provided. Size of spaces may be increased if the DS unit supports larger vehicles.

3-8.3.4 **Privately Owned Vehicles (POV).** Provide POV parking at the rate of 38% of assigned military personnel plus 100% of civilian employees. Spaces are to be 2700 mm by 4900 mm. where vehicle overhang occurs, and 2700 mm by 5500 mm where no overhang occurs. Aisles are to be 7300 mm wide.

3-8.4 **Entrance and Intersection Design.** For site entrances and drive aisle intersections, provide "T" intersection offsets of at least 38.1 m. The preferred angle of intersection is right-angle (90 degrees).

3-8.5 **Shop Hardstand**. A standard access apron of 14 000 mm is required along both sides and 6000 mm along both ends of the maintenance building. A circulation lane 9140 mm in width surrounds this area and is required for vehicular circulation routes. When a warehouse is provided, a 20 000 mm apron is required on the side with the loading dock.

3-9 ANTITERRORISM/FORCE PROTECTION AND SITE SECURITY

3-9.1 **Antiterrorism/Force Protection Construction Standards.** The layout of the site shall be in accordance with the requirements of the Department of Defense Antiterrorism Standards for Buildings, [insert version date, or most recent version if applicable]. The Standard incorporates minimum standoff distances and building spacing requirements, as well as other needed criteria.

3-9.2 **Site Perimeter Fence.** Provide at a minimum, a perimeter fence of 2 meter high chain link anti-climber security fence. Fence fabric shall be 9 gauge steel, with hot-dipped galvanized coating to 1.8 oz per square inch. Provide with 3 strands of barbed wire [, top tension wire, and embed the bottom of the fabric in the pavement a minimum of 75 mm]. A 3 meter wide zone clear of trees and shrubs is required on each side of the fence. The clear zone shall require minimal maintenance, and the area 500 mm on each side of the fence shall be treated with gravel if not paved. Design in accordance with STD 872-90-03, standard design FE6.

3-9.3 **Storage Area Security Fencing.** Provide security fencing for exterior storage areas in accordance with the requirements stated above for perimeter fence, except no barbed wire shall be required.

3-9.4 **Sentry Booth.** A Sentry Booth is [not] required. [This **OPTIONAL** booth must be a separate line item on the DD Form 1391 to be authorized for inclusion in the project. The booth must comply with all Force Protection requirements as well as comply with the Installation Design Guide.] [Provide Sentry Booth with an area of [_____ m^2] . Design of the sentry booth shall allow full control of all access to and from the facilities. Booth shall include power, lighting, heating, [cooling] and telephone service suitable for it's intended purpose.]

3-10 **SITE STORAGE.** Areas of the hardstand will be designated as storage areas for various use categories. Where possible, locate storage areas to maintain unit cohesion.

3-10.1 **Petroleum, Oil, and Lubricants (POL) Storage Building Area.** Provide a building for the storage of oil, lubricants, and flammable solvents for daily use at the rate of 5.5 m^2 for each 25 vehicles maintained. [Include number of vehicles maintained, or provide a building area requirement.] [Provide a minimum of 11 m^2.] Provide an access apron at the entry of this building 7000 mm by 8000 mm. Maintain 15 300 mm from other site structures to avoid the need for sprinkling this facility.

3-10.2 **Deployment Equipment Storage Building Area.** Deployment Equipment Storage [Category Code 442-24] is [not] required.[This area is a separate line item, independent of building and pavement areas. It should be programmed as an integral part of the maintenance facility. Provide for storage of deployment equipment at the rate of 65 m2 for each company sized unit and battalion headquarters.] [Provide Deployment Equipment Storage Building with an area of [m^2]. Provide an access apron 8000 mm wide along one side of this building.]

3-10.3 **Secured Open Storage Area.** Provide hardstand secured open storage area at the rate of 30 m^2 for the first repair bay and 10 m^2 for each additional repair bay.

3-10.4 **Open Storage Area.** Provide a hardstand area of [m2]. [This hardstand area is provided at the rate of 20% of the warehouse allocation for DS, GS, DOL, and DPW organizations].

3-10.5 **Hazardous Waste Storage Area.** This hardstand area is to be provided for the short term storage of waste fuels, spent solvents, cleaning compounds, and similar hazardous waste. Provide hardstand and access apron in the same quantity as POL Storage Building above.

3-11 **SIDEWALK PLANNING AND DESIGN.** Walks from POV parking areas or approaches to the facility complex shall be a minimum of 1.2m wide exclusive of curb width, and made [non-reinforced][wire mesh reinforced] concrete with a minimum thickness of 100 mm. Ramps for handicapped individuals shall be provided at intersections by depressing street curbs and adjacent sidewalk. Where areas are specifically planned for pedestrian access and circulation, they shall be so marked within the compound.

3-12 **LANDSCAPE PLANTING PLAN.** [Insert the requirements of the activity department in charge of landscaping criteria]. Landscaping shall be in accordance with [Insert activity criteria governing landscaping]. [A plant list of allowable plants has been attached for the contractor's use]. The offeror shall obtain and use the services of a qualified [State certified] landscape architect, experienced in site planning and planting design. [The contractor shall provide a complete, integrated landscape planting plan for the project.] [Delete requirement for landscape planting plan if planting scope is minor]. Choose plant materials on the basis of plant hardiness, climate, soil conditions, low maintenance, and quality. Selected plant materials shall be easily maintained and tolerant of the specific site conditions. Incorporate sustainable design principles into the selection of plants. Planting or seeding shall occur only during periods when beneficial results can be

obtained.

3-12.1 **Ground Cover.** Plant varieties shall be nursery grown or plantation grown stock. They shall be grown under climatic conditions similar to those in the locality of the project.

3-12.1.1 **Quality.** Well-shaped, well-grown, vigorous, healthy plants having healthy and well-branched root systems shall be provided. Plants shall be free from disease, harmful insects and insect eggs, sunscald injury, disfigurement, and abrasion. Plants shall be provided that are typical of the species or variety.

3-12.1.1.1 **Ground Cover.** Plants shall be provided with the minimum number of runners and length of runner as recommended by the agency having jurisdiction. Plants shall be furnished that have heavy, well developed, and balanced top with vigorous well developed root system, and shall be furnished in containers.

3-12.1.1.2 **Measurement.** Plant measurements shall be in accordance with the agency having jurisdiction.

3-12.1.3 **Percolation Test.** Test for percolation shall be done to determine positive drainage of plant pits and beds. All soil and drainage conditions detrimental to the growth of plant material shall be identified and a proposal correcting the conditions shall be submitted.

3-12.1.4 **Soil Test.** A soil test shall be performed for pH, chemical analysis, and mechanical analysis to establish the quantities and type of soil amendments required to meet local growing conditions for the type and variety of plant material specified.

3-12.1.5 **Installation.** Verify the location of underground utilities. When obstructions below ground or poor drainage affect the planting operation, proposed adjustments to plant location, type of plant, and planting method or drainage correction shall be submitted. The plant material shall be installed during appropriate planting times and conditions recommended by the trade for the type and variety of plant material specified. Plant pits shall be excavated and backfilled as recommended by the agency having jurisdiction. The planting operation shall be performed only during periods when beneficial results can be obtained. When special conditions warrant a variance to the planting operations, proposed planting times should be submitted.

3-12.1.6 **Maintenance During Planting Operation.** Installed plants shall be maintained in a healthy growing condition. Maintenance operations shall begin immediately after each plant is installed and shall continue until the plant establishment period commences.

3-12.1.7 **Plant Establishment Period.** On completion of the last day of the planting operation, the plant establishment period for maintaining installed plants in a healthy growing condition shall commence and shall be in effect for the remaining contract time period not to exceed 12 months. When the planting operation extends over more than one season or there is a variance to the planting times, the plant establishment periods shall be established for the work completed.

3-12.1.8 **Maintenance During Establishment Period.** The maintenance of plants shall include straightening plants, protecting plant areas from erosion, maintaining erosion material, supplementing mulch, maintaining edging of beds, checking for girdling of plants and maintaining plant labels, watering, weeding, removing and replacing unhealthy plants.

3-12.1.9 **Unhealthy Plant.** A plant shall be considered unhealthy or dead when the main leader

has died back, or 25 percent of the crown is dead. Determine the cause for an unhealthy plant. Unhealthy or dead plants shall be removed immediately and shall be replaced as soon as seasonal conditions permit in accordance with the following warranty paragraph.

3-12.1.10 **Warranty.** Furnished plant material shall be guaranteed to be in a vigorous growing condition for a period of 12 months regardless of the contract time period. A plant shall be replaced one time under this guarantee. Transplanting existing plants requires no guarantee.

3-12.2 **Turf.** Turf consists of seed, sod, and sprigs.

3-12.2.1 **Seed.** State approved seed of the latest season's crop shall be provided in the original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with applicable State seed laws. Seed mixtures shall be proportioned by weight. Weed seed shall not exceed one percent by weight of the total mixture.

3-12.2.2 **Sod.** State approved sod shall be provided as classified by applicable State laws. Each individual sod section shall be of a size to permit rolling and lifting without breaking. The sod shall be relatively free of thatch, diseases, nematodes, soil-borne insects, weeds or undesirable plants, stones larger than 50mm[2 in] in any dimension, woody plant roots, and other material detrimental to a healthy stand of turf. Sod that has become dry, moldy, or yellow from heating, or has irregular shaped pieces of sod and torn or uneven ends shall be rejected. Sod shall be machine cut to a uniform thickness of 32 mm within a tolerance of 6 mm excluding top growth and thatch. Measurement for thickness shall exclude top growth and thatch. The limitation of time between harvesting and placing sod shall be 36 hours.

3-12.2.3 **Sprig Quality.** The cultivar shall be provided as healthy living stems, stolons, or rhizomes with attached roots, including two or three nodes, and shall be from 100 to 150 mm long, without adhering soil. Sprigs shall be provided which have been grown under climatic conditions similar to those in the locality of the project. Sprigs shall be obtained from heavy and dense sod, free from weeds or other material detrimental to a healthy stand of turf. Sprigs that have been exposed to heat or excessive drying shall be rejected. The time limitation between harvesting and placing sprigs shall be 24 hours.

3-12.2.4 **Soil Test.** A soil test shall be performed for pH, chemical analysis, and mechanical analysis to establish the quantities and type of soil amendments required to meet local growing conditions for the type and variety of turf specified.

3-12.2.5 **Temporary Turf Cover.** When there are contract delays in the turfing operation or a quick cover is required to prevent erosion, the areas designated for turf shall be seeded with a temporary seed. When no other turfing materials have been applied, the quantity of one-half of the required soil amendments shall be applied and the area tilled.

3-12.2.6 **Final Turf.** The turf shall be installed during appropriate planting times and conditions recommended by the trade for the type and variety of turf specified. The turf operations shall be performed only during periods when beneficial results can be obtained. Drainage patterns shall be maintained. The turf shall be installed by using the methods as recommended by the trade for the type and variety of turf specified. Immediately after turfing, the area shall be protected against traffic or other use by erecting barricades and providing signage as required. The turf establishment period for establishing a healthy stand of turf shall begin on the first day of work under the turfing contract and shall end three months after the last day of the turfing operation. An unsatisfactory

stand of turf shall be repaired as soon as turfing conditions permit.

3-12.2.7 **Satisfactory Stand of Turf.**

3-12.2.7.1 **Seeded Lawn Area.** A satisfactory stand of turf from the seeding operation for a lawn area is defined as a minimum of 160 grass plants per square meter. Bare spots shall be no larger than 150 mm square. The total bare spots shall not exceed two (2) percent of the total seeded area.

3-12.2.7.2 **Seeded Field Area.** A satisfactory stand of turf from the seeding operation for a field area is defined as a minimum of 100 grass plants per square meter. The total bare spots shall not exceed two (2) percent of the total seeded area.

3-12.2.7.3 **Sodded Area.** A satisfactory stand of turf from the sodding operation is defined as living sod uniform in color and texture. Bare spots shall be no larger than
50 mm [2 in] square.

3-12.2.7.4 **Sprigged Area.** A satisfactory stand of turf from the sprigging operation is defined as a minimum of 20 sprigs per square meter. Bare spots shall be no larger than 225 mm square. The total bare spots shall not exceed two (2) percent of the total sprigged area.

3-12.2.8 **Maintenance During Establishment Period.** The maintenance of the turfed areas shall include eradicating weeds, eradicating insects and diseases, protecting embankments and ditches from erosion, maintaining erosion control materials and mulch, protecting turf areas from traffic, mowing, watering, post-fertilization, and replacing unsatisfactory turf areas.

3-13 **SPRINKLER AND/OR IRRIGATION SYSTEM.** [Insert installation standards for sprinkler and irrigation systems.] [Provide a complete permanent automatic irrigation system with controllers covering all common planting areas and slopes. Design the system to function with available water pressure. Investigate and employ methods of irrigation based on sustainable design principles, where practical and feasible.] [In areas where sprinkler and/or irrigation systems are not required, delete the paragraph text and insert, “Not required”].

[3-14 **VEHICLE/EQUIPMENT WASHDOWN AREA**. [Each installation shall determine the feasibility of including washdown areas as part of the TEMF project.] Provide a [concrete] paved vehicle/equipment washdown area at a location on the site. Provide [3] washing station[s] with a double hose bib and outdoor rated electrical outlet at each station for activity furnished/owned portable pressure washers. Each washing station shall be a minimum of 6 m x 12 m [insert alternative site specific size requirement] in size. Each washdown area shall be graded to drain all surface water to an open channel or trench drain. Open channel or trench drain shall be of suitable design to support easy cleaning and maintenance. All drainage water shall be directed first to a grit removal device and then to an oil water separator. All drainage water shall discharge to the[sanitary sewer] [storm sewer]system. [A post indicator valve shall be installed to bypass the sanitary sewer system and allow normal stormwater to flow to the storm sewer system.] [Additionally, provide [compressed air] [insert other required features specific to the site] at each washing station.]]

[3-15 **HARDSTAND COMMUNICATIONS OUTLETS**. Coordinate with current IBCT/Transformation criteria. If required, include in this paragraph, underground PVC conduit with pull wire, handholes, termination boxes, and vehicle-rated covers necessary to accommodate government provided communications cables to hardstand vehicle parking locations.]

CHAPTER 4

SITE ENGINEERING

4-1 SOILS.

4-1.1 **Geotechnical Report.** A Geotechnical Report is provided as part of this RFP in Attachment [8]. The report provides and overview of subsurface conditions, general recommendations for design, and is furnished for informational purposes. The offeror to whom this contract is awarded, shall perform a geotechnical investigation specific to the proposed project. The contractor shall submit a project specific geotechnical report, certified by a professional engineer experienced in geotechnical engineering, to include, but not limited to: description and classification of geologic, soil, [rock,] and groundwater conditions; subsurface profiles, boring logs and location plans; summary of laboratory and field test results; [local seismic conditions]; [local soil, rock, and groundwater problems]; [extent of boulders;] soil resistivity, moisture, and chemistry for cathodic protection; infiltration and permeability conditions; surface and subsurface drainage conditions; [description of existing foundation systems]; bearing capacity of soil [and rock]; settlement type and potential; recommendations for type and depth of foundation systems, pavement sections, slab on grade sections; [recommendations for foundation drainage systems;] general earthwork, compaction, dewatering, erosion and sediment control, excavation and safety requirements; [recommendations for field tests]; [recommendations for underpinning]; [insert any site specific requirements].

4-1.1.1 **Certification.** The offeror and his or her professional geotechnical engineer consultant shall certify in writing that the design of the project has been developed consistent with the site specific geotechnical conditions. The certification shall be stamped by the consulting professional geotechnical engineer and shall be submitted with the First Site/Utility Design Submittal (100%) . If revisions are made to the design submission, a new certification shall be provided with the next design submission.

4-1.1.2 **Changed Conditions**. As noted in paragraph 4-1.1, the geotechnical report in the RFP is for informational purposes and the offeror awarded the contract is responsible for conducting his or her own project specific geotechnical investigation and report. If the contractor encounters conditions different than provided in the RFP, the contractor shall notify the Government with the submission of the contractor project specific geotechnical report [differences that can impact cost such as rock or groundwater elevations; discovery of soil, rock, and groundwater problems; discovery of contamination; changes required for foundations or pavements; changes in earthwork requirements; etc.]. The Government shall evaluate the notification to determine if a Changed Condition exists prior to the approval to initiate construction.

4-1.2 **Soil Compaction.** Soil compaction shall be achieved by equipment approved by a professional geotechnical engineer. Material shall be moistened or aerated as necessary to provide the moisture content that will readily facilitate obtaining the compaction specified with the equipment used. Compact each layer to not less than the percentage of maximum density specified in Table 4-1, determined in accordance with ASTM D 1557, Method D.

TABLE 4-1 Soil Compaction

Subgrade Preparation, Fills, Embankments, and Backfills	Compaction Requirements (Percentage of Maximum Density)

TABLE 4-1 Soil Compaction

Subgrade Preparation, Fills, Embankments, and Backfills	Compaction Requirements (Percentage of Maximum Density)
Structures & Building Slabs	95
Streets, Paved Areas, Bike Paths, Utility Trenches	90
Sidewalks	85
Grassed Areas	80

The requirements shall be verified or modifications recommended by the consulting professional geotechnical engineer in the report wherever engineering, soils, or climatic factors indicate the necessity. Any modification to the stated compaction requirements shall require the approval of the Contracting Officer.

4-1.3 **Capillary Water Barrier.** A capillary water barrier is required for all interior slabs on grade, including garages, carports and storage rooms. As a minimum, the capillary water barrier shall [Define minimum requirements.]

4-1.4 **Soil Treatment.** [If not required insert "...(DELETED)." and delete remainder of text.] Soil treatment for termites shall be by the chemical method. Methods and extent of protection required are as follows: [Insert project specific requirements.]

4-1.5 **Decay Treatment.** Decay treatment shall apply to the following: [Insert project specific requirements.]

4-2 **EROSION AND SEDIMENT CONTROL.** Erosion and Sediment Control Facilities shall be required in accordance with [Insert state or local agency having jurisdiction and reference any applicable manual(s)], as specified in the manual entitled [insert criteria manual title].

4-3 **DEMOLITION.** Existing facilities scheduled for demolition includes [insert description or reference attached sketches]. [The following demolished materials shall [become][remain] the property of the [Contractor][Government: include installation list of recycled materials], unless otherwise indicated or specified.] Materials not owned by the Government and not used in construction shall be disposed of [off][on] government property. Obtain required demolition permits [and disposal permits] from [Insert appropriate agency having jurisdiction and reference any applicable manual(s)]. Obtain approval of the disposal site from the contracting officer[and submit haul tickets for material disposed of off of Government property].

4-4 **CLEARING AND GRUBBING.** Clear and grub all trees and vegetation necessary for construction; but, save as many trees as possible. [All timber removed from the project site shall [become][remain] the property of the [Contractor] [Government], unless otherwise indicated or specified.] [For all timber the Government desires to have ownership of, insert installation requirements for minimum size, delimbing, delivering, stacking, stump removal, and any requirements associated with chipping wastes (mulch).] [The contractor shall reimburse the Government for the value of the timber. The contractor shall submit payment to the Contracting Officer by cashier's or certified check in the amount of [__], made payable to the U.S. Treasury.

Payment shall be made within thirty (30) days of the Notice To Proceed. The contracting Officer will forward the check to [Insert appropriate office.]

[4-5 **WETLANDS.** Jurisdictional [tidal][and][non-tidal] wetlands [have][have not] been identified on the project site. [The following mitigation shall be incorporated into the design: [__].] [Determination has been made that jurisdictional wetlands are not on the site.]]

4-6 **EARTHWORK.** The contractor is responsible for defining earthwork requirements in the contractor provided site specific geotechnical report and the contractor provided specifications.

4-7 **BORROW MATERIAL.** Obtain borrow material required for construction from sources [off][on] government property. [Insert specific criteria regarding Government owned borrow sources, borrow site testing and acceptance, and other related information.]

4-8 **WATER DISTRIBUTION SYSTEM.** The design of the water distribution system shall be in accordance with the [Insert agency having jurisdiction.] Where the requirements of the agency having jurisdiction and the requirements defined herein disagree, the more stringent shall apply. The contractor shall determine the domestic and the fire demands for the facilities and shall verify the design of all components of the domestic and fire protection supply systems. Design of a water distribution system requires both domestic and fire flow demands be considered concurrently.

4-8.1 **Analysis of Existing System Capacity**. [The Preparer of the RFP will insert water flow test results of the existing system. The water flow test results will consist of static pressure, residual pressure, and flow characteristics of the existing distribution system obtained by actual field tests.] [The contractor shall provide design calculations that show the existing system is capable of handling the additional flows.] [The Preparer of the RFP will determine if the existing system is capable of providing the water flow necessary for fire protection.]

4-8.2 **Connections to Water Mains and Building Service Lines.** [Insert installation specific connection location requirements.] [The contractor shall be responsible for the design of the sizes, locations, and means of connections to the existing system based on Facility requirements and system conditions. Establish the location for the connection based upon economics and site design parameters.]

4-8.2.1 **Connections to Water Mains.** Design the connections to the station water system including the meter assemblies and the necessary backflow-preventing devices. Fire protection system shall be considered as that part of the distribution system supplying fire hydrants, or fire hydrant laterals. Service connections supply water from the main to the building. Mains shall be looped with no dead ends and be of adequate size to satisfy both domestic and fire flow requirements. Minimum main size is 150 mm [6 in]. Sufficient sectional control valves shall be provided so that no more than two fire hydrants will be out of service in the event of a single break in a water main. A copper tracer wire shall be placed directly above all non-metallic mains when plastic marking tape does not provide means of determining alignment of pipe by metal detecting equipment. The pipe, valves, and all other materials shall meet the requirements of the [agency having authority] or [Insert the installation standards] for a 1034 kPa [150 psi] working pressure system. [Provide sacrificial anodes for all valves and metal pipe.]

4-8.2.2 **Building Connections.** Design and construction shall be in accordance with the International Building Code [2000 or latest edition].

4-8.3 **Trenches.** Water and gas mains [may] [may not] be installed in the same trench. [Determine if the local gas utility supplier will allow installation in the same trench and incorporate the standards of the gas utility supplier.] Water mains shall have a minimum earth cover of 750 mm [30 in] [as specified by the agency having jurisdiction] or [Insert the installation minimum cover]. Adequate cover must be provided for freeze protection. Where frost penetrates to a depth greater than the minimum above, greater cover will be required. Sufficient cover must also be provided to protect the pipe against structural damage due to superimposed surface loads. Lines installed with less cover than the minimums stated shall be concrete encased with a minimum concrete thickness of 150 mm [6 in].

4-8.4 **Fire hydrants.** Hydrants and valves shall conform to [the requirements of the agency having jurisdiction] or [Insert the installation's base hydrant standard]. Fire hydrants shall be compatible with those presently in use at the installation [or by local Governments], with similar pump and hose connections. The maximum amount of flow that can be permitted shall be determined. Fire hydrant spacing shall be no greater that 150 m apart by paved road. In addition, a hydrant shall be provided so that all parts of the facilities can be reached by hose lines not over 105 m long. All distances shall be calculated along the closest route that the fire apparatus must travel (i.e.; along the curb or access lane). Each hydrant may account for a maximum of 95 liters per second of fire protection regardless of existing pressures or water line capacity. A fire hydrant shall be located within 15m from any fire department connection provided. Hydrant laterals shall be 150 mm minimum size, and shall not exceed 15 m in length, and shall have an underground shutoff valve. Valve box, at each lateral, shall be located within 3 m of the hydrant, and shall not be located where obstructed by parked vehicles, shrubbery, etc. Guard post barriers shall be provided where hydrant locations are subject to vehicle damage.

4-8.5 **Shutoff Valve.** Each building shall be provided with a separate service and main shutoff valve, readily accessible to maintenance and emergency personnel. Shutoff valves in walks are prohibited.

4-8.6 **Metering.** [Insert the installation metering requirements] [Meters shall be equipped with electronic or radio frequency transmitters for remote monitoring. The method of remote monitoring must be coordinated with installation utility systems.]

4-8.7 **Materials.** Materials for the water distribution system shall be in accordance with the [agency having jurisdiction] [Insert installation standards]. Copper water service lines will be dielectrically isolated from ferrous pipe. Dielectric isolation shall conform to the requirements of [insert the agency having jurisdiction]. For ductile iron piping systems (except for ductile iron piping under floor in soil) conduct an analysis to determine if cathodic protection and/or bonded or unbonded coatings are required. Unbonded coatings shall conform to the requirements of the agency having jurisdiction.

4-8.8 **Economic Analysis.** Conduct an economic analysis to determine if cathodic protection and protective coatings should be provided for the following structures in soil resistivity conditions above 10,000 Ohm-cm: ferrous metallic potable water lines; Concentric neutral cable; Other buried and submerged ferrous metallic structures not covered above; Ferrous metallic piping passing through concrete shall not be in contact with the concrete.

4-8.9 **Field Quality Control for Water Distribution.** The [Contracting Officer] [Insert the appropriate person] will conduct field inspections and witness field tests specified. The contractor shall perform field tests, and provide labor, equipment, and incidentals required for testing, [except

that water needed for field tests will be furnished as set forth in [Insert appropriate document]]. [Water needed for field tests will not be furnished by the government]. Do not begin testing on any section of a pipeline where concrete thrust blocks have been provided until at least 5 days after placing of the concrete. Testing procedures and requirements shall comply with the [requirements of the agency having jurisdiction.] [Insert the installation testing standards].

4-9 **SANITARY SEWERAGE SYSTEM.** The design of the sanitary sewer distribution system shall be in accordance with the [Insert State or local agency having jurisdiction.] Where the requirements of the agency having jurisdiction and the requirements defined herein disagree, the more stringent shall apply. The contractor shall determine the sewerage contribution for the facilities and shall verify the design of all components of the sanitary sewer system.

4-9.1 **Analysis of Existing System Capacity.** [The contractor shall provide design calculations that show the existing system is capable of handling the additional flows.] [The Installation shall state that the existing system is capable of handling the additional flows.]

4-9.2 **Calculate Sewage Contribution.** Calculate the sewage contribution from the new facilities in accordance with the [Insert State or local agency having jurisdiction.] [Insert installation standards for sewage contribution].

4-9.3 **Connections to Sewage Collection Mains and Building Service Lines.** [The installation shall insert specific connection location requirements.] [The contractor shall be responsible for the design of the sizes, locations, and means of connections to the existing system based on Facility requirements and system conditions. Establish the location for the connection based upon economics and site design parameters.] Connect to gravity mains with a manhole.

4-9.3.1 **Building Sewer Laterals and Connections.** Laterals and building connections shall be designed and constructed in accordance with the International Building Code [2000 or latest edition]. Minimum diameter for laterals shall be 150 mm [6 in] while maintaining a minimum velocity of 45 meters per minute [2.5 fps].

4-9.3.2 **Main Collection Trunks.** Pipe sizes and slopes shall be calculated using the Manning Formula. Manholes are required at all changes of direction and spaced not more than 122 m apart [or as required by installation]. Curved sewers are prohibited. Pipes shall be designed to flow full and maintain a minimum velocity of 45 meters per minute. If siphons are used, two lines of equivalent capacity shall be used with clean-outs.

4-9.4 **Trenches.** Sewer and water lines, mains or laterals, shall be placed in separate trenches. The separate trenches shall maintain a minimum lateral separation of 3 meters.

4-9.5 **Minimum Sewer and Water Distribution Pipe Separation Requirements.** Parallel water and sewer pipe and crossings between water and sewer pipe shall be in accordance with the [state or local agency having jurisdiction] [Insert the installation standards].

4-9.6 **Cover.** Sewer lines shall be located at a depth greater than the frost penetration. Coordinate with building connection requirements. To prevent the pipe from being crushed by construction vehicles and the design vehicle, the minimum cover above the top of pipes shall be 750mm unless pipe materials are used and/or unless the pipe is concrete encased with a minimum

of 150 mm thickness of concrete.

4-9.7 **Sewage Pump Station and Force Main.** Pump stations and force mains shall only be used when absolutely necessary. If required, pump stations and force mains shall be designed in accordance with the [agency having jurisdiction] [base standards]. [An on-site sewage lift station and force main shall not be required.] [An on-site sewage lift station and force main shall be required.] [The contractor shall determine if an on-site sewage lift station and force main is required and use only when required by the design or the existing system conditions.]

4.9.8 **Field Quality Control for Sanitary Sewer Distribution System.** The [Contracting Officer] [Insert the appropriate person] will conduct field inspections and witness field test specified. The contractor shall perform field tests, and provide labor, equipment, and incidentals required for testing, [except that water needed for field tests will be furnished as set forth in [Insert appropriate document]]. [Water needed for field tests will not be furnished by the government]. For force mains, do not begin testing on any section of a pipeline where concrete thrust blocks have been provided until at least 5 days after placing of the concrete. Testing procedures and requirements shall comply with the [requirements of the agency having jurisdiction.][Insert the installation testing standards].

[4-9.9 **Oil/Water Separators.** The oil/water separator shall be designed and sized in accordance with the guidance in the "Joint Service Oil/Water Separator Guidance Document", available as Army Environment Center document SFIM-AEC-EQ-CR-200010.]

4-10 **STORMWATER MANAGEMENT SYSTEMS.** [Insert the agency having jurisdiction for storm water management and drainage system design.] The storm drainage system shall be properly coordinated with surrounding properties to ensure that runoff does not cause damage to other properties. Treat contaminated stormwater prior to discharge from the site. All storm water management calculations shall be based upon a 10-year storm frequency. Design storm water management systems in accordance with the applicable requirements of "Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMPS", by the Department of Environmental Programs or in accordance with the requirements of the agency having jurisdiction. The calculation of runoff and the evaluation of existing storm sewer drainage systems shall be as described herein paragraph entitled "Storm Drainage Collection Systems and Grading". Obtain required permits from the agency having jurisdiction prior to construction.

4-10.1 **Analysis of Existing System Capacity.** [The contractor shall provide design calculations that show the existing system is capable of handling the increased runoff from the improved site.] [The Installation shall state that the existing system is capable of handling the increased runoff from the improved site.]

4-10.2 **Storm Water Retention/Detention System for Volume Control.** [For volume control, an on-site storm water retention/detention system shall not be required.] [For volume control, an on-site storm water retention/detention system shall be required.] [For volume control, the contractor shall determine if an on-site storm water retention/detention system is required, based on the capacity of the receiving system and the installation requirements.]

4-10.3 **Storm Water Quality Management for Runoff Treatment.** [For runoff treatment, an on-site storm water retention/detention system shall not be required.] [For runoff treatment, an on-site storm water retention/detention system shall be required.] [For runoff treatment, an [oil/water separator system] shall [not] be required.] [For runoff treatment, the contractor shall determine if an on-site storm water retention/detention is required, based on the requirements of the [insert

appropriate agency].]

4-11 **STORM DRAINAGE COLLECTION SYSTEMS AND GRADING.**

4-11.1 **Location of Connections to Existing Systems.** [Insert installation specific connection location requirements.] [The contractor shall select the connection location. Establish the location for the connection based upon economics, design requirements, and downstream capacity.] Connect with a manhole or appropriate drainage structure.

4-11.2 **Building Connections.** Connection to building roof or area drain lines shall be designed and constructed in accordance with the International Building Code [2000 or latest edition].

4-11.3 **Storm Sewer System.** The storm sewer gravity drainage collection system shall be designed and constructed in accordance with the requirements of [Insert the state or local agency having jurisdiction] [Insert the appropriate State Department of Transportation Drainage Manual] [Insert the appropriate State Department of Transportation Road and Bridge Specifications]. Storm sewer system shall be designed for a minimum of a 10-year return frequency and pipes shall be sized for full flow. The minimum velocity of flow in conduits during a design storm shall be 45 meters per minute. The pipe capacity shall be determined so that the calculated hydraulic grade line of the storm sewer drainage system(s) shall not exceed the curb flow line grade in pavements and the finished site grades.

4-11.4 **Manholes.** Manholes shall be located at intersections and changes in alignment or grade. Intermediate manhole maximum spacing shall be 75 m for pipes 900mm or less in diameter or box drains with the smallest dimension less than 900 mm. Maximum spacing for intermediate manholes on larger pipes and drain boxes shall be 150 m. Manholes and manhole appurtenances shall be [pre-cast concrete] [insert other acceptable materials] and shall conform to the [agency having jurisdiction] [Insert base standard]. Shape manhole inverts to the shape of the pipe with cast in place concrete after installing pipes. The manhole lid shall have a 600mm. minimum opening as measured from the face of the wall or ladder where applicable.

4-11.5 **Drainage of Grass Areas.** Except at personnel and overhead doors, the difference in grade between the finish floor elevation and the surface of the ground immediately adjacent to the building shall be a minimum of 150 mm. Minimum slopes across grass surfaces shall be one percent. In grass areas, overland sheet flow shall be held to a maximum length of 30 m; then, a swale or an inlet must be used. Minimum slopes in swale centerlines shall be 0.5 percent. Maximum swale side slopes shall be 1V: 4H and maximum swale depth shall be 600 mm. Ditches shall not be permitted. Storm drain pipe, sheet flow surfaces, and swales shall be designed to prevent standing water under normal conditions.

4-11.6 **Drainage of Roads and Pavements.** Provide a positive crown in all streets and roads. Minimum cross slopes in streets and roads shall 1:48 and the maximum cross slope shall be 1:32. Minimum sheet flow slopes across parking area and other paved areas shall be 1 percent. Curbs and gutters shall be installed at a minimum longitudinal slope of 0.30 percent. Pavement collectors for storm water shall be by curb inlets and gutters, or drop inlets. Field inlets and an underground collection system shall drain open areas. Ditches shall not be permitted. Gutter spread (or inlet approach spread) in roads shall not exceed 3 m when measured from the face of curb. The amount of runoff to any one inlet in roads and parking areas shall not exceed the capacity of that inlet. The

maximum spread allowable for determining inlet capacity shall equal that allowed for gutter spread in roads. The maximum spread allowable for determining inlet capacity in parking areas shall be height of curb or a depth of 150 mm, whichever is less.

4-11.7 **Materials.** All materials shall be in accordance with [insert the agency having jurisdiction or installation criteria]. [Select the allowable pipe materials based upon local conditions and facility criteria.] Pipe for culverts and storm drains may be of [[reinforced] concrete], [ductile iron,] [cast iron soil pipe,] [corrugated steel,] [corrugated aluminum alloy,] [ABS,] [PVC,] [insert other material here] or [HDPE].

4-11.8 **Field Quality Control for Storm Drainage System.** The [Contracting Officer] [Insert the appropriate person] will conduct field inspections. Testing procedures and requirements shall comply with the [requirements of the agency having jurisdiction.] [Insert the installation testing standards].

[4-11.9 **Oil/Water Separators.** Oil/water separator shall be coordinated with paragraph 3.14 "Vehicle/Equipment Washdown Area". The oil/water separator shall be designed and sized in accordance with the guidance in the "Joint Service Oil/Water Separator Guidance Document", available as Army Environment Center document SFIM-AEC-EQ-CR-200010.]

4-12 **PAVEMENT DESIGN CRITERIA.** Pavement design shall be in accordance with TM 5-822-5, Pavement Design for Roads, Streets, Walks, and Open Storage Areas. All hardstand areas shall be rigid pavement. Pavement for organizational vehicle parking should be designed for the heaviest vehicle at the installation. Pavement for non-organizational vehicle parking shall be designed in accordance with [Insert state or local agency/ having jurisdiction] [Insert the state department of transportation road and bridge specification manual if desired or insert the installation standard]. [Provide handicap parking area when required.] Concrete curb [and curb/gutter] [shall] [shall not] be required at the perimeter of all streets, roads, parking areas, and interior islands. For streets and roads, the design vehicle for this facility is [Insert the design vehicle]; the anticipated axle load for design is [Insert the estimated axle load for the design vehicle]; and the estimated volume of traffic is [Insert the estimated volume of traffic per day]. For bid purposes, assume that the existing subgrade soils after compaction will have a California Bearing Ratio (CBR) of [4] [Insert installation assumed CBR value based upon experience]. [For parking areas, the design vehicle for this facility is [Insert the design vehicle], the anticipated axle load for design is [Insert the estimated axle load for the design vehicle], and the estimated volume of traffic (including current traffic loading and traffic loading as a result of this project) is [Insert the estimated volume of traffic per day]. For bid purposes, assume a California Bearing Ratio (CBR) of [4] [Insert assumed CBR value.]

4-13 **PERMIT REQUIREMENTS.** [Timely acquisition of all the necessary design related permits shall be the responsibility of the Government; including the erosion and control permit, storm water management permit, discharge permit, [air permit] and the health department permit(s). Operating permits and licenses shall be the responsibility of the Contractor, in accordance with Section 00721, "Contract Clauses".] [Timely acquisition of all the necessary design and construction related permits shall be the responsibility of the contractor. As some permit process times take 6 months or more, the Contractor, upon notice to proceed, shall immediately begin working on the permits so as not to delay completion of the project. The following permits have been identified as being required for this project: [Health Department Permits for Sanitary Sewer and Water], [Storm Water Management], [Erosion and Sediment Control], [National Pollution Discharge Elimination Service], [Wetland permits for mitigation,

preservation and/or creation], [Insert any other design permits], [Excavation Permit], [Demolition Permit], [Disposal Permit] and [Insert any other permits required by the installation].

4-14 **GAS DISTRIBUTION SYSTEM**. [Insert " ... (DELETED)" if not applicable and delete remainder of text in sub-paragraphs.] [Coordinate with the installation to determine the responsible agency for installation of exterior gas lines, meters, regulators, hot taps, valves, etc. The design agent shall then add a sentence to this paragraph to inform the contractor of his or her responsibility.] Provide a gas distribution system, connected to existing systems and designed in accordance with local codes, utility company requirements, or installation regulations, whichever is more stringent. Gas distribution systems shall comply with the requirements of ASME B31.8. Connection to existing gas distribution system shall be made at the location shown on the enclosed RFP drawings. When connecting to existing steel piping system, provision shall be made to ensure that the integrity of the cathodic protection is not compromised. Shutoff valves shall be provided on the exterior of each building. A gas regulator and provision for future installation of an individual gas meter to monitor fuel use shall be provided for each building structure. The building service entrance shall be installed at a height sufficient to allow for future installation of the gas meter. Existing lines that are to be abandoned shall be either removed or physically disconnected from all gas sources and purged. Abandoning existing gas piping shall be done in accordance with ANSI B31.8, Gas Transmission and Distribution Piping Systems. Installation of gas piping will be in accordance with ANSI B31.8 and 49 CFR 192.

4-14.1 Materials. Materials and appurtenances shall be free of defects and suitable to accomplish the stated objectives of gas distribution systems. Pipe shall be polyethylene or steel as described below.

4-14.1.1 Polyethylene pipe. Shall conform to ASTM D2513, Standard Specification for Thermoplastic Gas Pressure Piping Systems, with fittings complying with either ASTM D2513 or ASTM D2683, Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing. Connections to metal pipe shall comply with ANSI B16.5, Pipe Flanges and Flanged Fittings, or manufacturer's recommended standards.

4-14.1.2 Steel pipe. Shall conform to ASTM A 53, Grade A or B, Type E or S, Schedule 40. Furnace butt welded pipe may be used in sizes 40 mm and smaller. Fittings 40 mm and smaller shall conform to ASME B16.11. Pipe flanges and flanged fittings larger than 40 mm, including bolts, nuts, and bolt patterns shall be in accordance with ASME B16.5, Class 150. Butt weld fittings shall be in accordance with ASME B16.9. Weld neck flanges shall be used.

4-14.2 Testing. Prove that the entire system of gas mains and service lines is gas-tight by an air test, in accordance with ANSI B31.8. The test shall continue for at least 24 hours between initial and final readings of pressure and temperature.

4-14.3 Drips. Unless high pressure natural gas is used, drips shall be installed at the low points, immediately following reduction from high pressure to medium pressure (at supply points) and at occasional low points throughout the system to provide for blowing out the lines.

4-14.4 Valves. Plug valves shall be installed at intersections of mains and other locations so that interruptions to service can be confined to no more than one building.

4-14.5 Mains and service lines. Lines shall not be placed under any buildings. Lines shall be placed with a minimum of 0.6 m of earth cover. Protective casings shall be provided to protect lines from superimposed street or heavy traffic loads.

4-15 **HEATING HOT WATER [AND CHILLED WATER] DISTRIBUTION.** [Insert

"DELETED" if not applicable and delete remainder of text in all paragraphs.] Prefabricated piping system shall be installed to supply and return heating hot [and chilled] water to mechanical equipment rooms. Metallic pressure pipe, fittings, and piping accessories shall conform to the requirements of ASME B31.1 and shall be types suitable for the temperature and pressure of the water.

4-15.1 Piping materials.

4-15.1.1 Steel pipe. Piping shall conform to ASTM A 53, Grade B, standard weight, black or to ASTM A 106, Grade B, standard weight.

4-15.1.2 Copper tubing. Copper tubing shall conform to ASTM B 88, Type K or L.

4-15.1.3 Reinforced Thermosetting Resin Pipe (RTRP). RTRP pipe shall conform to ASTM D 5686.

4-15.1.4 Polyvinyl Chloride (PVC) Pipe. PVC pipe shall conform to ASTM D 2241 with a Standard Thermoplastic Pipe Dimension Ratio (SDR) of 26 and PVC 1120 or 1220 as the material.

4-15.2 Casing materials.

4-15.2.1 Polyvinyl Chloride (PVC) Casing. PVC casings shall conform to ASTM D 1784, Class 12454-B with a minimum thickness equal to the greater of 1/100 the diameter of the casing or 1.50 mm [60 mils].

4-15.2.2 Polyethylene (PE) Casing. Polyethylene casings shall conform to ASTM D 1248, Type III, Class C, Category 3 or 4, Grade P 34 with thickness as follows:

Casing Diameter (in mm)	Minimum Thickness (in mm)
250 and smaller	3
250 to 450	4
450 to 600	5
over 600	6

4-15.2.3 Reinforced Thermosetting Resin Pipe (RTRP) Casing. RTRP casing shall be of the same material as the pipe, with casing thickness as follows:

Casing Diameter (in mm)	Minimum Thickness (in mm)
200 and smaller	1.2
250	2.0
300	2.7
350	2.9
400 to 450	3.0
500	3.2
600	3.9

4-15.3 End seals. Each preinsulated section of piping shall have a complete sealing of the insulation to provide a permanent water and vapor seal at each end of the preinsulated section of piping. Preinsulated sections of piping modified in the field shall be provided with an end seal which is equivalent to the end seals furnished with the preinsulated section of piping. End seals must be tested and certified in accordance with manufacturer's recommendations.

4-15.4 Insulation.

4-15.4.1 Factory applied insulation. Prefabricated pipe and fittings shall be insulated in the factory. Foam insulation for prefabricated insulated pipe and fittings shall be polyurethane foam meeting the requirements of ASTM C 591 having a density not less than 32 kg per cubic meter. The polyurethane foam shall completely fill the annular space between the carrier pipe and the casing. Insulation thickness shall be a minimum of [20] [_____] mm. The insulation thermal conductivity factor shall not exceed the numerical value of 0.02 W/mK at 24 degrees C, when tested in accordance with ASTM C 518. Manufacturer shall certify that the insulated pipe is free of insulation voids.

4-15.4.2 Field applied insulation. Field applied insulation for fittings, and field casing closures, if required, and other piping system accessories shall be polyurethane matching the pipe insulation. Thickness shall match adjacent piping insulation thickness. Buried fittings and accessories shall have field applied polyurethane insulation to match adjacent piping and shall be protected with a covering matching the pipe casing. Shrink sleeves with a minimum thickness of 1.3 mm [50 mils] shall be provided over casing connection joints.

4-15.5 Thrust blocks. Thrust blocks shall be installed at the locations shown or recommended by the pipe system manufacturer. No pipe joint shall be embedded in concrete unless the assembly has previously been hydrostatically tested. The thrust blocks shall provide for transfer of thrusts and reactions without exceeding the allowable stress of the concrete and shall be installed in accordance with pipe manufacturer's instructions. In muck or peat, all thrusts shall be resisted by piles or tie rods to solid foundations or by removal of peat or muck which shall be replaced with ballast of sufficient stability to resist thrusts.

4-15.6 Expansion loops. Expansion loops and expansion bends (Z- and L- type) shall be factory fabricated of casing, insulation, and carrier piping identical to that furnished for straight runs. Expansion loops and bends shall be properly designed in accordance with the allowable stress limits indicated in ASME B31.1 for the type of pipe used. Expansion loops and bends shall be shipped to the jobsite in the maximum size sections feasible to minimize the number of field joints. The expansion loops and bends casing and insulation where applicable, shall be suitably sized to accommodate pipe movement. Field joints shall be made in straight runs of the expansion loops and bends, and the number shall be kept to a minimum.

4-15.7 Manholes and anchors. Manholes shall be designed and installed as recommended by the system manufacturer. Anchor design shall be in accordance with the published data of the manufacturer and for prefabricated systems shall be factory fabricated by the prefabricated system manufacturer. In all cases, the design shall be such that water penetration, condensation, or vapor transmission will not wet the insulation.

4-15.8 Installation. The piping system furnished shall be installed in accordance with the piping system manufacturer's instructions. The Contractor shall obtain the services of a trained representative of the pipe system manufacturer to instruct the Contractor's work forces in the installation procedures to ensure that the system is installed in accordance with the manufacturer's published instructions and the plans and specifications. The manufacturer's representative shall be a person who regularly performs such duties for the manufacturer.

4-15.9 Testing. The carrier piping shall be hydrostatically tested at 1 ½ times the working pressure for the system. The casing shall be tested in accordance with the manufacturer's recommendations.

4-16 **STEAM [AND CONDENSATE RETURN] [HIGH TEMPERATURE HOT WATER] DISTRIBUTION.** [Insert "DELETED" if not applicable and delete remainder of text in all

paragraphs.] Distribution system shall be installed to supply steam to [and return condensate from] mechanical equipment rooms. A complete underground [heat distribution] [and] [condensate return] system including all required components such as carrier pipes, [steam pipe,] [high temperature hot water supply pipe,] [condensate return pipe,] [high temperature hot water return pipe,] and fittings, anchors, pipe supports, insulation, protective casing, and cathodic protection, for the system supplied. Gland type end seals will not be permitted. Drainable-Dryable-Testable (DDT) systems with fiberglass casings shall not be permitted.

4-16.1 Piping materials.

4-16.1.1 Steam and High Temperature Hot Water Pipe. Pipe material shall be steel; seamless ASTM A 53, Grade B or ASTM A 106, Grade B; or electric resistance welded ASTM A 53, Grade B; Schedule 40. Standard weight will be permitted for pipe sizes 300 mm and above. ASTM A 53, Type F furnace butt welded pipe will not be allowed. Joints will not be allowed in the factory fabricated straight section of the carrier pipe. Factory fabricated piping sections, as part of an expansion loop or bend, shall have all welded joints 100% radiographically inspected in accordance with ASME B31.1.

4-16.1.2 Condensate pipe. Pipe shall be steel; seamless ASTM A 53, Grade B or ASTM A 106, Grade B, schedule 80; electric resistance welded ASTM A 53, Grade B; Schedule 80. ASTM A 53, Type F furnace butt welded pipe will not be allowed. Joints will not be allowed in the factory fabricated section of the carrier pipe. Factory fabricated piping sections, as part of an expansion loop or bend shall have all welded joints 100% radiographically inspected in accordance with ASME B31.1.

4-16.2 Factory fabricated, direct-buried DDT systems.

4-16.2.1 Casing. Casing shall be smooth-wall steel, electric resistance spiral welded, conforming to ASTM A 134, ASTM A 135, or ASTM A 139. Minimum casing thickness shall be 6.35 mm. Eccentric connectors shall be provided between casing sections as needed to provide drainage of casing section between manholes and between manholes and buildings.

4-16.2.2 Casing End Plates, Vents, and Drains. End plates shall be made of ASTM A 36/A 36M steel, minimum thickness 13 mm for conduit pipe sizes above 300 mm and 9.5 mm for conduit pipe sizes 300 mm and less. A 25 mm ASTM A 53, Sch 40, galvanized vent riser pipe shall be provided on end plate vent opening. Vent pipe shall extend to top of manhole and terminate 300 mm above grade with a 180 degree bend. A 25 mm drain shall be provided at the bottom and vent at the top. Brass plugs and half coupling, constructed with welded steel and welded to the end plate, shall be furnished; drains shall be plugged; vents shall not be plugged.

4-16.2.3 Air space. Continuous 25 mm minimum air space shall be provided between carrier pipe insulation and casing.

4-16.2.4 Casing coating. Coating shall be rated by manufacturer for continuous service for at least 25 years at temperatures of 110 degrees C. Coating shall be applied in accordance with the coating manufacturer's instructions, shall be factory inspected for holidays and repaired as necessary.

4-16.2.5 Field connections. Field connection of casing sections shall be made using a compatible steel section, welded to casing sections, coated on all surfaces with manufacturer's coating field repair compound, and covered with a 1.3 mm minimum thickness polyethylene shrink sleeve designed for a service temperature exceeding 80 degrees C.

4-16.3 Factory fabricated, direct-buried water spread limiting (WSL) systems.

4-16.3.1 Casing for Steam and Condensate. The casing shall be reinforced thermosetting

resin plastic (RTRP) piping manufactured by the filament winding process. The casing pipe shall be wound to meet ASTM D 2310 classification RTRP and ASTM D 2996. The resin shall be a polyester isothalic resin. The outer surface shall be coated with a pigmented, protected resin containing a parafinated wax and ultraviolet inhibitors. Casing thickness shall be 5 mm for 100 mm and below carrier pipe sizes and 6.5 mm for carrier pipe sizes above 100 mm. Condensate piping shall not be located in casings which contain any other piping.

4-16.3.2 End seals. Each preinsulated section of piping shall completely seal the insulation, providing a permanent water and vapor seal at each end. Preinsulated factory fabricated sections of piping modified in the field shall be provided with an end seal which is equivalent to the end seals furnished with the preinsulated section of piping.

4-16.3.3 Pipe coupling, steam. Coupling shall be of a multi-stage seal designed to accommodate the expansion and contraction of the system in the coupling. Couplings shall be of corrosion resistant materials. The annular seals and carrier pipe ends shall be specifically designed to protect the seals and resist abrasion due to lateral loads in the system.

4-16.3.4 Pipe coupling, condensate. Coupling shall be a single stage seal design to accommodate the expansion and contraction of the adjacent pipes. Coupling shall be of corrosion resistant materials. The annular seals and carrier pipe ends shall be specifically designed to protect the seals and resist abrasion due to lateral loads in the system.

4-16.4 Insulation. The minimum thickness of insulation for the heat distribution system shall be in accordance with Tables 1 and 2.

Table 4.2 Minimum Pipe Insulation Thickness (mm)
For Steam (100 to 2,800 kPa (gage)) and High Temperature
Hot Water Supply and Return (120 to 230 degrees C)

	INSULATIONS For Drainable/Dryable Systems			INSULATIONS For other Pre-Engineered Systems	
Nominal Pipe Diameter (mm)	Paroc	Epitherm Delta	Kaylo-10 Thermo-12 Super Caltemp	Calcium Silicate	WSL Polyurethane
25	50	63	100	N/A	N/A
40	50	63	100	N/A	N/A
50	63	85	110	N/A	N/A
65	63	85	110	N/A	N/A
80	75	100	125	25	+31
100	75	100	125	25	+31
125	75	100	125	N/A	N/A
150	85	110	135	35	+34
200	85	110	135	50	+30
250	100	125	150	63	+33
300	100	125	150	50	+32
350	100	125	150	N/A	N/A
400	100	125	150	N/A	N/A
450	100	125	150	N/A	N/A

Table 4.3 Minimum Pipe Insulation Thickness (mm)
For Condensate Return and High Temperature Hot Water Return System

Nominal Pipe Diameter (mm)	Paroc	Epitherm Delta	Kaylo-10 Thermo-12 Super Caltemp	Polyurethane
25	35	50	75	N/A
40	35	50	75	N/A
50	35	50	75	19
65	35	50	75	N/A
80	50	63	85	26
100	50	63	85	26
125	50	63	85	N/A
150	63	76	110	30
200	63	76	110	N/A
250	76	100	125	N/A
300	76	100	125	N/A
350	76	100	125	N/A
400	76	100	125	N/A
450	76	100	125	N/A

4-16.5 Expansion loops and bends. Stresses shall be less than the maximum allowable stress from the Power Piping Code (ASME B31.1). Detailed design layout drawings and stress and anchor force calculations shall be provided for all loops and bends. Locations of all anchors, guides and supports shall be shown. Pipe-stress and system-expansion calculations for each expansion compensation elbow using a finite element computer generated 3 dimensional analysis. Calculations shall demonstrate that pipe stresses from temperature changes are within the allowable requirements in ASME B31.1 and that the anchors and the guides will withstand the resultant forces. Detailed design layout drawings shall include all analysis node points. As a minimum, computer analysis results shall include node stresses, forces, moments and displacements. Calculations shall be stamped by a registered Professional Engineer in the employ of the system manufacturer.

4-16.6 Manholes and anchors. Design and installation shall be in accordance with the published data of the manufacturer.

4-16.7 Installation. The piping system furnished shall be installed in accordance with the piping system manufacturer's instructions. The Contractor shall obtain the services of a trained representative of the pipe system manufacturer to instruct the Contractor's work forces in the installation procedures to ensure that the system is installed in accordance with the manufacturer's published instructions and the plans and specifications. The manufacturer's representative shall be a person who regularly performs such duties for the manufacturer.

4-16.8 Testing. The carrier piping shall be hydrostatically tested at 1 ½ times the working pressure for the system. The casing shall be tested in accordance with the manufacturer’s recommendations.

4-17 **FUEL OIL STORAGE AND DISTRIBUTION.** [Insert "DELETED" if not applicable and delete remainder of text in all paragraphs.] Fuel oil storage and distribution system shall be installed to supply the fuel oil-fired heating equipment. Provide a complete fuel oil storage and

distribution system designed in accordance with local codes, installation requirements, NFPA 30, and NFPA 31, whichever are more stringent. Tank size shall be determined using the ASHRAE Degree Day Method using the degree-days for the coldest 30-day period for the site.

4-17.1 Tank storage. Each facility shall be provided with a separate fuel oil storage tank. [Fuel oil storage tanks may be located underground or aboveground]. [Fuel oil storage tanks shall be located aboveground]. [Retain one of the previous sentences. Underground tanks are usually not recommended and should be avoided.] Storage tanks shall be placed in a location suitable for filling from a curbside delivery truck. Above ground tanks shall be visually screened by a wall. Fuel oil tanks shall be located in accordance with local codes, and shall be installed a minimum of 0.3 m from the edge of the tank shell to the nearest outside wall of any building or basement or from the nearest adjoining property line. Where tanks are located adjacent to exterior walls or other surfaces requiring periodic painting or other maintenance/repair requirements, a minimum clearance of 1m from the edge of the tank is preferred. [Underground tanks shall be located such that loads supported by building foundations cannot be transferred to the tank.] Proposed tank location shall be clearly indicated in the design submittal.

4-17.1.1 Aboveground tanks. Fuel oil storage tanks shall be aboveground, double wall type with leak detection monitoring. Tank containment shall comply with applicable NFPA, EPA, and local code requirements. Provide concrete pads as required by code or as recommended by the tank manufacturer.

4-17.1.2 [Underground tanks. Fuel oil storage tanks installed below grade shall be double-walled type constructed using fiberglass or steel, and installed in accordance with the manufacturer's recommendations. The top of the tank shall be at least 0.6 m below finished grade. Fiberglass tanks shall be constructed in accordance with UL 1316. Steel tanks shall be Type II, constructed in accordance with UL 58, with an STI-P3 coating and guarantee except that the cathodic protection system shall be based on protecting 5 percent of the tank's metal surface. Tanks shall be provided with the necessary fill, vent, gauge, hatch, and suction connections.]

4-17.2 Fuel oil piping. Underground fuel oil piping shall be of double-wall construction, installed without traps or sags. Outer, secondary containment pipe shall be non-metallic. Above ground piping shall be single-wall metallic pipe. Gate valves shall not be used in fuel oil piping systems. A replaceable filter shall be provided upstream of the fuel oil pump. Pipe connectors shall be in accordance with UL 567.

4-17.3 Leak detection system. A continuous surveillance leak detection system suitable for operation in an NFPA 70, Class 1, Division 1, Group D environment shall be provided to monitor the leak containment space between the interior and exterior walls of double-wall pipe and tanks. The system shall detect leakage into the containment space electronically or by monitoring interstitial pressure or liquid level variations. Liquids used in the containment space for steel tanks shall have a corrosion inhibitor. Liquids subject to freezing conditions shall contain an antifreeze solution. The leak detection system shall be compatible with the piping and tank furnished. Instructions and equipment required for calibration of the leak detection system and manufacturer's recommended calibration maintenance schedule shall be provided.

4-17.4 Special requirements. [Research local requirements for fuel oil systems installation and either add or delete items from this sub-paragraph.]

4-17.4.1 [Spill containment fill. Underground tank fill connection shall be provided in a spill container of 11.4 L capacity minimum. Contained spills shall be drained into the storage tank by means of a quick-acting drain valve.]

4-17.4.2 Overfill prevention valve. The overfill prevention valve shall be placed within the tank interior and be an integral part of the fill tube. The valve shall be a float actuated shut-off valve.

The valve shall be constructed of the same material as the fill tube. The valve shall have two stages of shutoff. In the first stage, the valve shall restrict the flow of fuel oil into the tank to approximately 0.315 L/s when the liquid level rises above 95 percent of the tank capacity. In the second stage, the valve shall completely stop the flow of fuel oil into the tank when the liquid level rises above 98 percent of the tank capacity.

4-17.4.3 Tank screening. Provide sight screening for the tank to reduce the visual impact of the fuel oil storage tank. Visual screening may be vegetation or fencing, in compliance with the local standards. [Design District shall ensure that aboveground fuel oil storage tanks are suitably screened from view. The requirements of this paragraph may be modified to suit local requirements.]

4-18 **WASTE OIL/ANTIFREEZE STORAGE.** [Insert "DELETED" if not applicable and delete remainder of text in all paragraphs.] Waste oil and antifreeze storage tanks shall be installed to temporarily hold fluids for disposal offsite. Storage shall be designed in accordance with local codes, installation requirements, NFPA 30, and NFPA 31, whichever are more stringent.

4-18.1 Tank storage. Separate tanks shall be provided for waste oil and antifreeze.

4-18.1.1 Aboveground tanks. Storage tanks shall be aboveground, double wall type with leak detection monitoring. Tank containment shall comply with applicable NFPA, EPA, and local code requirements. Provide concrete pads as required by code or as recommended by the tank manufacturer.

4-18.1.2 [Underground tanks. [Underground tanks are not recommended and should be avoided.] Storage tanks installed below grade shall be double-walled type constructed using fiberglass or steel, and installed in accordance with the manufacturer's recommendations. The top of the tank shall be at least 0.6 m below finished grade. Fiberglass tanks shall be constructed in accordance with UL 1316. Steel tanks shall be Type II, constructed in accordance with UL 58, with an STI-P3 coating and guarantee except that the cathodic protection system shall be based on protecting 5 percent of the tank's metal surface. Tanks shall be provided with the necessary fill, vent, gauge, hatch, and suction connections.]

4-18.1.3 Leak detection system. A continuous surveillance leak detection system suitable for operation in an NFPA 70, Class 1, Division 1, Group D environment shall be provided to monitor the leak containment space between the interior and exterior walls of double-wall tanks. The system shall detect leakage into the containment space electronically or by monitoring interstitial pressure or liquid level variations. Liquids used in the containment space for steel tanks shall have a corrosion inhibitor. Liquids subject to freezing conditions shall contain an antifreeze solution. The leak detection system shall be compatible with the tank furnished. Instructions and equipment required for calibration of the leak detection system and manufacturer's recommended calibration maintenance schedule shall be provided.

4-18.2 Special requirements. [Research local requirements for waste storage systems installation and either add or delete items from this subparagraph.]

4-18.2.1 [Spill containment fill. Underground tank fill connection shall be provided in a spill container of 11.4 L capacity minimum. Contained spills shall be drained into the storage tank by means of a quick-acting drain valve.]

4-18.2.2 Overfill prevention valve. The overfill prevention valve shall be placed within the tank interior and be an integral part of the fill tube. The valve shall be a float actuated shut-off valve. The valve shall be constructed of the same material as the fill tube. The valve shall have two stages of shutoff. In the first stage, the valve shall restrict the flow of fuel oil into the tank to approximately 0.315 L/s when the liquid level rises above 95 percent of the tank capacity. In the

second stage, the valve shall completely stop the flow into the tank when the liquid level rises above 98 percent of the tank capacity.

4-18.2.3 Tank screening. Provide sight screening for the tank to reduce the visual impact of the tank. Visual screening may be vegetation or fencing, in compliance with the local standards. [Design District shall ensure that aboveground tanks are suitably screened from view. The requirements of this paragraph may be modified to suit local requirements.]

4-19 **LIQUEFIED PETROLEUM (LP) GAS STORAGE AND DISTRIBUTION.** LP gas tanks shall comply with requirements of NFPA 58 and the ASME Code, Section VII, Pressure Vessels. Tanks shall be pad mounted, and shall not be located inside any building. Tanks shall be provided with all required gauges, shut off valves, safety devices, and suction connections. Shut off valves shall be installed at each tank, at the service entry to the building (if not in sight of the tank), and at each heating unit. No shut off valve shall be installed between a safety device and tank. LP gas pressure shall be reduced to a minimum service pressure of 3.5 kPa prior to the building entrance. LP gas pipe connectors shall be in accordance with UL 567.

4-20 **ELECTRICAL DISTRIBUTION.** [Design District shall determine where power is to be obtained and provide applicable characteristics of the primary system.]

4-20.1 Power. Power service to the buildings will be fed underground from the base electrical distribution system to a pad-mounted transformer located near the primary building. Power service to buildings will be fed underground from the transformer to building service entrance equipment, located in the electrical equipment room.

4-20.2 Service entrance. Shall be in accordance with NFPA 70.

4-20.3 Transformers. Transformers shall be pad mount. The high voltage compartment shall contain incoming primary feeder, load break switch, fuse protection and surge protection. The nameplate rating for the transformer shall not be less than 90 percent of the KVA demand load calculated for the transformer. [Insert transformer sizing, demand performance and other applicable characteristics.]

4-20.4 Street and area lighting. Roadway lighting, including collector streets, shall be provided in accordance with the IES Lighting Handbook. Provide lighting at roadway intersections, and at intervals not exceeding 60.9 m between intersections. Area lighting shall be provided at intervals not exceeding 60.9 m along area walkways not otherwise illuminated, common area walks, and at all steps in area walkways. Area lighting shall be provided in accordance with the IES Lighting Handbook. Luminaries shall be actuated by photoelectric control, one photocell per circuit.

4-20.5 Metering. [Design District shall determine metering requirements.]

4-21 **TELEPHONE**. The [Telephone company] [DOIM] [Contractor] will furnish and install distribution cables. Conduit required between underground terminal boxes and the buildings shall be provided by the Contractor. Trenching and backfill required to install the telephone company cables shall be included in the construction contract. Contractor provided boxes, conduits, and trenching shall comply with local telephone company criteria and shall be coordinated with the telephone company. Coordinate with Installation Director of Information Management (DOIM) for specific requirements.

4-22 **CATHODIC PROTECTION**. Cathodic Protection (CP) is mandatory on buried ferrous metallic structures as described below:

4-22.1 Department of Transportation guidance. Shall be as stated in 49 CFR, Part 192, requires that all metallic natural gas piping be coated and cathodically protected regardless of

the soil resistivity.

4-22.2 Corrosion control. Mandated for all metallic underground storage tanks storing petroleum or hazardous substance by 40 CFR, Part 280 and AR 200-1 and on hazardous liquid pipelines (e.g., liquid fuel) by 49 CFR, Part 195.

4-22.3 Design requirements. CP systems must be designed to provide protective potential to meet the requirements of the National Association of Corrosion Engineers (NACE) Standard RP-0169, Control of External Corrosion on Underground or Submerged Metallic Piping Systems, or NACE Standard RP-0185, Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems, as appropriate.

4-22.4 Compatibility. New or supplemental CP systems shall be compatible with existing CP systems and other adjacent structures or components. New systems should be compatible with existing systems to allow ease of repair and maintenance.

4-22.5 Tracer wire. When plastic pipe is used to extend a steel gas distribution main, an insulated No. 8 AWG copper wire shall be exothermically welded to the existing steel main and run the length of the new plastic main. This wire can be used as a locator tracer wire and to maintain continuity to any future steel gas main extension.

4-22.6 Coatings. CP and protective coatings shall be provided for the following buried and submerged ferrous metallic structures regardless of soil or water resistivity.

4-22.6.1 Natural gas and propane piping.

4-22.6.2 Liquid fuel piping.

4-22.6.3 Underground fuel storage tanks. Not required for those coated in accordance with UL1746.

4-22.6.4 Fire protection piping.

4-22.6.5 Ductile or cast iron piping. Required for pressurized piping under floor (slab on grade) in soil.

4-22.6.6 Conduit piping systems. Required for underground heat distribution and chilled water piping in ferrous metallic conduit.

4-22.6.7 Hazardous storage structures. Structures with hazardous products as identified by the installation.

4-22.7 Cast iron pipe. Shall be treated as follows:

4-22.7.1 Below 10,000 Ohm-cm: For soil resistivity below 10,000 Ohm-cm at pipeline installation depth, provide CP, bonded joints, and protective coatings.

4-22.7.2 Between 10,000 and 30,000 Ohm-cm: For soil resistivity between 10,000 and 30,000 Ohm-cm at pipeline installation depth, provide bonded joints only.

4-22.8 Copper water service lines: Piping will be dielectrically isolated from ferrous pipe.

Dielectric isolation shall conform with NACE RP-0286.

4-22.9 Ductile iron piping systems: Conduct an analysis (except for ductile iron piping under floor in soil) to determine if CP and/or bonded or unbonded coatings are required. Unbonded coatings are defined in ANSI/AWWA C105/A21.5.

4-22.10 Economic analysis: Conduct an economic analysis to determine if CP and protective coatings should be provided for gravity sewer lines and the following structures in soil resistivity conditions above 10,000 Ohm-cm:

4-22.10.1 Potable water lines.

4-22.10.2 Concentric neutral cable.

4-22.10.3 Other structures. Buried and submerged ferrous metallic structures not covered above.

4-22.11 Contact with concrete. Ferrous metallic piping passing through concrete shall not be in contact with the concrete.

CHAPTER 5

ARCHITECTURAL DESIGN

5-1 **DESIGN GOALS.** Overall architectural goals for the TEMF complex are to provide a functional, visually appealing facility that is a source of pride for facility users, and the installation.

5-1.1 **Site Planning Objectives**. Provide a functional layout of buildings and site elements. The site plan should place emphasis on creating a safe work environment. Arrange vehicular circulation to minimize conflict with pedestrian circulation. Pavement marking and signage shall be clearly delineate traffic patterns, even to first time visitors to the site. Integrate sustainable design principles by retaining and using existing topography to advantage; preserve environmentally sensitive areas and reduce overall project impact on the site.

5-1.2 **Exterior Design Objectives**. Design buildings to enhance the visual environment of the installation. Exterior materials, roof forms, and detailing shall comply with the Installation Design Guide, and shall be compatible with the immediate local context. Use durable, low-maintenance materials. Configure building massing and use exterior elements such as entry porches, and material detailing to provide human scale, especially at core areas.

5-1.3 **Interior Design Objectives**. Arrange spaces in an efficient, functional manner. Provide simple circulation schemes that allow easy wayfinding within buildings. Use durable materials and furnishings that can be easily maintained and replaced. Maximize use of daylighting and operable windows. Use interior surfaces that are easy to clean and light in color; avoid trendy or bright color schemes. Where feasible, arrange spaces to allow rearrangement of furniture layout. Structure interior spaces to allow maximum flexibility for future modifications; (such as a change in authorized personnel).

5-1.4 **Material and Product Selection Criteria**. Materials shall meet the requirements of the SOW. The SOW includes a range of specificity: some material requirements are specific (no option); other material requirements allow a range of options. The SOW requirements establish a minimum quality level. Higher quality materials will be judged more favorably. The offeror's proposal shall identify the quality level of all major materials to be provided.

5-2 **APPLICABLE CODES AND STANDARDS**. Except as specified otherwise in the RFP, design and construction of facilities shall comply with the latest editions (as of the date of the RFP) of the following. Major criteria references for building design are listed below; additional requirements are included throughout the RFP. Refer to Appendix A for a list of criteria references, and sources of availability.

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

5-2.2 International Building Code (IBC).

5-2.3 Federal Std 795 Uniform Federal Accessibility Standards (UFAS), and Americans With Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG). Where these criteria conflict, the most stringent requirement shall apply.

5-2.4 Department of Defense Antiterrorism Standards for Buildings.

5-2.5 The [insert name of post] Installation Design Guide (IDG), excerpts of which are included in an appendix to the Statement of Work.

5-2.6 [Insert any additional regulations known to have an impact on facility design and construction, such as airfield height limitations; AICUZ/APZ information; historic area requirements; etc. Include excerpts of the document in an appendix to the SOW, or include source of availability in Appendix A References.].

5-3 **IBC OCCUPANCY AND BUILDING TYPE CLASSIFICATIONS**.

5-3.1 **General**. Occupancy classifications, construction types, allowable areas, maximum building heights, and fire separation requirements shall comply with the requirements of the International Building Code.

5-4 **EXTERIOR DESIGN**.

5-4.1 **Acceptable Materials and Colors**. Exterior elements of the facilities shall comply with the Installation Design Guide (IDG) unless required otherwise by applicable codes or this Statement of Work.

5-4.2 **Exterior Walls**. Comply with IDG. Where masonry exterior wall finish material is used, and where allowed by code, concrete masonry or metal stud backup wall may be used. Exterior insulation finish systems shall not be used [may be used as exterior accent materials, not primary wall material] [Coordinate with installation facilities engineer (DPW) and edit appropriately].

5-4.3 **Roofs**. Sloped roofs with a minimum pitch of [__] : 12 shall be used on all buildings. Roofing material and color shall comply with IDG. Roofing system shall have Underwriters Laboratory (UL) Class A rating for fire resistance, UL 90 wind resistance rating, and Factory Mutual (FM) 1-90 fire and wind resistance rating

5-4.3.1 **Metal Roofing**. Provide manufacturers 20-year finish warranty.

5-4.3.2 **Asphalt Shingle Roofing**. Provide minimum 30-year shingles; provide minimum 30# felt underlayment. Provide self-adhering rubberized ice and water shield underlayment at all valleys, and roof perimeter [review requirement in regard to local climate].

5-4.4 **Trim and Flashing**. Materials and colors shall comply with IDG. [Review the IDG to make sure that trim and flashing materials and colors are sufficiently covered.] Gutters, downspouts, and fascias shall be prefinished metal; comply with SMACNA Architectural Sheet Metal Manual; provide 20 year manufacturers finish warranty.

5-4.5 **Miscellaneous Exterior Elements**. Comply with IDG. [review the IDG to make sure that trim and minor elements are sufficiently covered. It is advisable to prohibit any use of exterior wood with painted finish; require prefinished metal trim. If not stated in IDG, require exterior metal railings to be prefinished aluminum, or if acceptable to installation facilities engineer (DPW), allow the more economical option of using field-painted (and adequately pre-treated) galvanized steel railings. Coordinate with user to include requirements for any building-mounted operational items such as communications antennae, special lighting, warning beacons, etc.].

5-4.6 **Signage**. Comply with IDG. [Coordinate with installation facilities engineer (DPW); provide criteria for quantity, type, size and location of building identification signs. Note whether signs require illumination].

5-4.7 **Exterior Personnel Doors and Frames**.

5-4.7.1 **Main Entrance Doors**. Doors opening to building corridors or lobbies shall be aluminum storefront doors and frames with Architectural Class I anodic finish or AAMA 2605 organic coating finish. Color shall comply with IDG. Doors shall be minimum 45 mm thick. Fully glazed stile and rail doors shall be medium or wide stile. Provide aluminum storefront systems that comply with wind load requirements of applicable codes. Framing systems shall have thermal-break design.

5-4.7.2 **Exterior Non-entrance Doors**. Exterior doors and frames opening to spaces other than corridors or lobbies shall be hollow metal; comply with ANSI A250.8/SDI 100. Doors shall be Level 3, physical performance Level A, Model 2; insulated; top edge closed flush. Frames shall be Level 3, 14 gauge, with continuously welded corners and seamless face joints. Doors and frames shall be constructed of hot dipped zinc coated steel sheet, complying with ASTM A653, Commercial Steel, Type B, minimum A40 coating weight; factory primed. Anchors and accessories shall be zinc coated. Frames in masonry shall have bituminous back-coating, plaster guards, and shall be grouted solid. Fire-rated openings shall comply with NFPA 80, and the requirements of the labeling authority.

5-4.7.3 **Exterior Door Finish Hardware**.

5-4.7.3.1 **Hinges**. ANSI/BHMA A156.1; template, full mortise, heavy duty, ball bearing, minimum size 114mm x 114mm, non-ferrous base metal, non-removable pins.

5-4.7.3.2 **Locksets**. ANSI/BHMA A156.13; series 1000, Grade 1 mortise locksets, non-ferrous base metal, removable core.

5-4.7.3.3 **Exit (Panic) Devices**. ANSI/BHMA 156.3; heavy-duty touch-pad type, through-bolted mounting. Listed and labeled for panic protection based on UL 305.

5-4.7.3.4 **Closers**. ANSI/BHMA A156.4; series C02000, Grade 1, hydraulic, factory-sized, adjustable to meet field conditions. Provide for all exterior doors, [coordinate additional closer locations with user] all doors opening to corridors, and as required by codes. At all exterior doors provide overhead holders or closers with hold-open capability.

5-4.7.3.5 **Auxiliary Hardware**. ANSI/BHMA A156.16. Provide wall or floor stops for all exterior doors that do not have overhead holder/stops. Provide other hardware as necessary for a complete installation.

5-4.7.3.6 **Thresholds**. ANSI/BHMA A156.21; non-ferrous metal. Provide at all exterior doors.

5-4.7.3.7 **Weatherstripping**. ANSI/BHMA A156.22. Provide at all exterior doors.

5-4.7.3.8 **Kick Plates**. ANSI/BHMA A156.6; non-ferrous metal. Provide at all doors with closers.

5-4.8 Overhead Doors. [Insert requirements]

5-4.9 **Exterior Windows**. Provide aluminum windows complying with American Architectural Manufacturers Association AAMA/NWWDA 101 / I.S. 2. Minimum performance class shall be Heavy Commercial (HC). Minimum wind load, and resulting design pressure and performance grade shall be determined in accordance with the International Building Code (IBC). Provide windows with insulating glass and thermal break necessary to achieve a minimum Condensation Resistance Factor (CRF) of 45 [edit to require higher factor for very cold climates]. Finish shall be Architectural Class I anodic coating or AAMA 2605 organic coating [Edit to allow anodic coating if clear or bronze anodized color is acceptable]. Operable windows shall have locks; provide fiberglass or aluminum insect screens removable from the inside.

5-4.9.1 **Exterior Glass and Glazing**. To comply with force protection minimum standards: Single glazing and the inner pane of insulated glass assemblies in exterior windows and doors shall be minimum 6 mm annealed laminated glass.

5-4.10 **Thermal Insulation**. Provide exterior wall, floor, and roof/ceiling assemblies with thermal transmittance (U-values) required to comply with the proposed energy calculations for the facilities. Insulation shall not be installed directly on top of suspended acoustical panel ceilings.

5-4.11 **Exterior Noise Control**. [Add requirements for insulation of exterior walls and roof/ceiling assemblies for attenuation of external noise sources such as airfields].

5-5 **INTERIOR DESIGN**.

5-5.1 **Floors**. Comply with requirements of applicable codes. Non-combustible construction is preferable, even where combustible materials are allowed by code. Floor finish materials shall be as specified in functional and area requirements listed in Chapter 2 of the Statement of Work.

5-5.2 **Ceramic Tile**. Comply with ANSI A 137.1 and the recommendations of Tile Council of America (TCA) Handbook For Ceramic Tile Installation. Provide marble threshold under doors where a ceramic tile floor meets a different floor finish.

5-5.3 **Interior Walls and Partitions**. Comply with requirements of applicable codes. Non-combustible construction is preferable, even where combustible materials are allowed by code. Wall finish materials shall be as specified in functional and area requirements listed in Chapter 2 of the Statement of Work

5-5.3.1 **Metal Support Systems**. Non-load bearing metal studs and furring shall comply with ASTM C 645; stud gauge shall be as required by height and loading, but shall not be less than 25 gauge. Maximum stud spacing: 406 mm on center. Provide galvanized finish.

5-5.3.2 **Gypsum Board**. Comply with ASTM C 36. Minimum panel thickness: 16 mm. Provide Type X panels in fire-rated assemblies. Provide moisture resistant panels at locations subject to moisture. Provide abuse-resistant panels where indicated in functional and area requirements. Joint treatment: ASTM C 475. Screws ASTM C 646. Drywall installation: ASTM C 840.

5-5.3.3 **Ceramic Tile**. Comply with ANSI A 137.1 and the recommendations of Tile Council

of America (TCA) Handbook For Ceramic Tile Installation. Substrate for wall tile shall be mortar setting bed or cement backer board (gypsum board is not acceptable). Provide marble threshold under doors where a ceramic tile floor meets a different floor finish.

5-5.4 **Ceilings**. Comply with requirements of applicable codes. Non-combustible construction is preferable, even where combustible materials are allowed by code. Ceiling finish materials shall be as specified in functional and area requirements listed in Chapter 2 of the Statement of Work.

5-5.5 **Interior Doors and Frames**. Provide hollow metal doors and frames.

5-5.5.1 **Hollow Metal Doors**. Comply with ANSI A250.8/SDI 100. Doors shall be Level 2, physical performance Level B, Model 2; factory primed. Anchors and accessories shall be zinc coated. Frames in masonry shall have bituminous back-coating, plaster guards, and shall be grouted solid.

5-5.5.2 **Hollow Metal Frames**. Comply with ANSI A250.8/SDI 100. Frames shall be Level 2, 16 gauge, with continuously welded corners and seamless face joints; factory primed. Anchors and accessories shall be zinc coated. Frames in masonry shall have bituminous back-coating, plaster guards, and shall be grouted solid.

5-5.5.3 **Fire-rated and Smoke Control Doors and Frames**. Comply with International Building Code (IBC), NFPA 80, and requirements of labeling authority. Doors and frames shall bear labels from IBC approved testing laboratory. Comply with positive pressure testing requirements of IBC.

5-5.5.4 **Interior Door Finish Hardware**.

5-5.5.4.1 **Hinges**. ANSI/BHMA A156.1; template, full mortise; heavy duty, ball bearing on doors with closers; standard duty anti-friction bearing on doors without closers. Minimum size 114mm x 114mm.

5-5.5.4.2 **High Security Locksets**. [Insert any requirements].

5-5.5.4.3 **Locksets on Interior Doors**. ANSI/BHMA A156.13; series 1000, Grade 1 mortise locksets, non-ferrous base metal, removable core.

5-5.5.4.4 **Exit (Panic) Devices**. ANSI/BHMA 156.3; heavy-duty touch-pad type, through-bolted mounting. Listed and labeled for panic protection based on UL 305.

5-5.5.4.5 **Closers**. ANSI/BHMA A156.4; series C02000, Grade 1, hydraulic, factory-sized, adjustable to meet field conditions. Provide for all entry doors to living units, all doors opening to corridors and as required by codes.

5-5.5.4.6 **Auxiliary Hardware**. ANSI/BHMA A156.16. Provide wall or floor stops for all doors that do not have overhead holder/stops. Provide other hardware as necessary for a complete installation.

5-5.5.4.7 **Kick Plates**. ANSI/BHMA A156.6; non-ferrous metal. Provide at all doors with closers.

5-5.6 **Limitations on Use, Classification, and Flame Spread and Smoke Developed Ratings of Interior Finishes**. Refer to paragraph 12-6.2.

5-5.7 **Casework**.

5-5.7.1 **Vanity Countertop at Toilets**. Countertops shall be high-pressure plastic laminate or solid surfacing material, with integral coved backsplash. Substrate shall be two layers of 19 mm thick exterior grade plywood. Reinforce countertop with concealed steel angles so that top will not deflect more than 5 mm when 115 kg load is applied at mid-span. Comply with AWI Section 400 Custom Grade requirements.

5-5.7.2 **Other casework**. Provide architectural casework complying with AWI Section 400, Custom Grade cabinets with high pressure decorative laminate finish meeting NEMA LD3 standards. Horizontal laminate: nominal 1.27mm thick; vertical laminate: nominal 0.71mm thick. Door and drawer edges shall be heavy duty 3 mm extruded polyvinyl chloride with self-locking serrated tongue. Worksurfaces and counter shall be high pressure decorative laminate, or solid surfacing material.

5-5.8 **Window Treatments**. Provide horizontal aluminum mini-blinds at all exterior windows in core areas, except windows and storefront in corridors. Blinds shall have 25.4mm wide x 0.2mm thick slats with anti-static, anti-microbial polyester baked enamel finish. Provide heavy duty 25.4mm x 38.1mm steel headrail, and tubular steel bottom rail finished to match slats.

5-5.9 **Interior Signage**. Comply with requirements of ADAAG and UFAS. Provide interior room identification signage for the following spaces: Public toilets, [Coordinate with user and installation facilities engineer (DPW). List all rooms which require room identification signage; coordinate with the installation interior signage standard, if one exists].

5-5.10 **[Elevators**. The offeror shall provide the services of an elevator inspector employed by an independent testing company to inspect the elevator, witness the final testing, and certify elevator. The inspector shall meet all qualification requirements of ASME QEI-1 and shall be certified in accordance with ASME QEI-1. The offeror shall provide an elevator certificate signed by the inspector for each elevator. The certificate shall be provided to the Contracting Officer within 30 days of the completion of testing.] [Delete if elevator is not required].

5-5.11 **Overhead Bridge Cranes**. [Coordinate with the using activity. Include the following requirements for each type/size of crane in the facility: hook height, limits of working envelope, level of service expected from the system, minimum working characteristics of the crane trolley, range of speeds, applicable codes and regulations, and other performance criteria].

5-6 **PHYSICAL SECURITY REQUIREMENTS**.

5-6.1 **Anti Terrorism / Force Protection**. Comply with the minimum construction standards of the Department of Defense Antiterrorism Standards for Buildings. [Coordinate with the installation security forces and facilities engineer to determine if the minimum standards are adequate for the project location. If a threat analysis has identified a specific threat that requires more stringent measures than provided by the minimum standards, edit the SOW criteria accordingly.] TEMF buildings are classified as primary gathering structures

5-6.2 **Weapons [and COMSEC] Vaults**. [Include design criteria here, or as an attachment

to the SOW.]

CHAPTER 6

STRUCTURAL DESIGN

6-1 **GENERAL**. General: The structural criteria established herein shall be used for structural loading, design and installation of structural systems and foundations, including manufacturing, erection, supervision, testing, and quality assurance of the completed installation of the buildings. Structural calculations shall be checked and initialed as such by a registered engineer other than the original design engineer. Construction Documents (drawings and specifications) shall be sealed and signed by a Professional Engineer registered and licensed to perform work in the jurisdiction.

6-2 **STRUCTURAL WORK**. The structural work generally consists of, but is not limited to, design and construction of:

6-2.1 Building Foundations - Spread footings, piles, drilled piers or others as recommended by the geotechnical report.

6-2.2 Ground floor slab systems - Slab on grade, pile supported or framed over crawl space as recommended by the geotechnical report.

6-2.3 Load Bearing and Nonload Bearing Walls - Including masonry, concrete, or stud wall construction acting as primary vertical load carrying members and/or shear walls.

6-2.4 Vertical Framing Members - Including steel and concrete columns or masonry pilasters.

6-2.5 Horizontal Framing Members - Including roof and floor decks and diaphragms, roof and floor beams, joists and trusses.

6-2.6 Interconnection Details - Including all fastening requirements.

6-2.7 Special Conditions - Such as expansion, construction, control joints, and changes in floor levels.

6-2.8 Attachment provisions for architectural, mechanical, and electrical elements.

6-2.9 Site structures and foundations.

6-3 **DESIGN CRITERIA**. Structural loads (including dead, live, hydrodynamic, earth, vehicular snow, wind, and seismic loads) and design shall be in accordance with the International Building Code (IBC) and all codes referenced therein.

6-3.1 **Minimum Live Load Requirements**:

Ground Floor	735 k/m^2
Corridors	390 k/m^2
Stairwells	490 k/m^2
Roof	100 k/m^2

6-3.2 All other building floor live loads shall be in accordance with the International Building Code (IBC).

6-3.2.1 Repair Bay and Scheduled Maintenance Bay Floors: Floor structure design shall consider the weight and distribution of such weight on the floor system. The effects of wheeled vehicles, tracked vehicles, construction equipment, missile launchers, towed howitzers, self-propelled artillery, tank chassis, tank turrets, infantry fighting vehicle chassis and turrets, and larger power generation equipment shall be accounted for.

6-4 **SELECTION OF STRUCTURAL SYSTEMS**. The structural systems shall conform to all applicable criteria and guidance as well as industry standards and commonly accepted methods of practice. Consider logical alternative foundations and framing methods when selecting an appropriate structural system. The following elements shall be evaluated and addressed:

6-4.1 Total Life Cycle cost effectiveness of the system.

6-4.2 Constructibility.

6-4.3 Experience level of local contractors and labor force.

6-4.4 Availability and use of local materials.

6-4.5 Sustainable Design.

6-5 **SPECIAL REQUIREMENTS**.

6-5.1 AISC Certification requirements: All fabrication of structural steel shall be accomplished by an AISC certified Category Sbd fabricating plant.

6-5.2 Anti-terrorism Force Protection: Designs shall conform to the Department of Defense Anti-terrorism Standards for Buildings. [RFP preparation team shall indicate the Design Basis Threat here if not classified. If classified, ensure that the offerors will be notified of the minimum requirements.]

6-5.3 Crane System – The effects of a 7 metric-ton capacity under-running bridge crane and a 32 metric ton capacity top-running bridge crane shall be incorporated into the design of the structure. The 32 metric ton crane shall be supported by its own separate structural system. Consideration to gravity and lateral effects inherent to crane systems shall be included.

CHAPTER 7

THERMAL PERFORMANCE

7-1 **THERMAL CHARACTERISTICS**. Building construction shall conform to the requirements of ASHRAE 90.1-2001. The R and U values shall be calculated in accordance with ASHRAE methods.

7-2 **THERMAL INSULATION**.

7-2.1 Characteristics. Thermal insulation shall have a flame-spread rating and a smoke-development rating in accordance with IBC requirements. A vapor barrier shall be provided on the warm-in-winter side of exterior wall and ceiling insulation, except in humid areas as defined below. Polyurethane is allowed as an insulation material for slabs and outside concrete or unit masonry walls. It is prohibited as an injected insulation material in walls or floor cavities or within the building envelope.

7-3 **HUMID AREA DESIGN.** [Climates which have 3000 hours or more of 19.4 degrees C or higher wet bulb temperature in combination with an outside design condition of 50 percent or higher relative humidity, or climates which have 1500 hours or more of 22.8 degrees C or higher wet bulb temperature in combination with an outside design condition of 50 percent or higher relative humidity shall be considered humid areas. In other areas that do not meet the strict definitions of a humid area but experience humid conditions on numerous occasions, these same criteria shall be used by the designer as appropriate for the facility and the climate]. An effective infiltration barrier is critical to limiting moisture flow into occupied spaces. In humid areas, interior surfaces of ceilings and exterior walls shall be covered with materials which allow escape of water vapor from inside the walls into the conditioned space to prevent the growth of mold on interior surfaces. The vapor barrier in humid areas shall have a maximum perm rating of 0.5, and shall be located on the outside face of the exterior wall or ceiling insulation.

7-4 **INFILTRATION**. To limit air infiltration (especially in humid areas), the core areas within TEMFs will be sealed with an air infiltration barrier, installed in accordance with the manufacturer's recommendations. The core area envelope shall be caulked, gasketed, weatherstripped or otherwise sealed: around window and door frames, between wall cavities and frames, between walls and ceiling and roof, between walls and floors, at access doors and panels, at utility penetrations through walls, floors, and roofs, and at any other exterior envelope joint which may be a source of air leakage. These steps shall constitute tight building construction.

CHAPTER 8

PLUMBING

8-1 **DESIGN STANDARDS AND CODES**. Plumbing system shall be designed and installed in accordance with the latest edition of the International Plumbing Code (IPC). Inspection and testing of the plumbing system shall be performed as prescribed in the International Plumbing Code. Specified materials and equipment shall be standard products of a manufacturer regularly engaged in the manufacturer of such products. Specified equipment shall essentially duplicate equipment that has performed satisfactorily at least two years prior to bid opening.

8-1.1 Additional consideration in the technical evaluation will be given to systems which incorporate measures beyond the requirements of this STATEMENT OF WORK which are designed to increase energy conservation, ease of maintenance, or occupant comfort (such as water filtration and purification), higher efficiency water heating systems, higher grade plumbing fixture materials (such as enameled cast iron tubs as opposed to enameled steel or plastic), etc.

8-1.2 System design and installation must conform to the following mandatory energy and water conservation criteria: ASHRAE Standard 90.1-2001.

8-2 **DESIGN CALCULATIONS**.

8-2.1 Hot water heater calculations. Design shall be based on the methods described in the American Society of Plumbing Engineers (ASPE) Volume I, Fundamentals of Plumbing Design. Submit calculations for determining storage capacity and recovery rate. Hot water delivered to toilet facilities shall not exceed 38 C; hot water delivered to showers shall not exceed 44 C.

8-2.2 Piping. Design shall be based on the International Plumbing Code for domestic water, sanitary waste and vent piping. All water piping shall be sized in accordance with methods outlined in the International Plumbing Code, to limit water velocity in the pipe to 2440 mm/sec unless a lower velocity is recommended by the plumbing fixture manufacturer(s). An isometric diagram of the water system shall be included in the design submittal. An isometric diagram of the sanitary sewer system shall be included in the design submittal.

8-3 **EQUIPMENT**.

8-3.1 Water heaters shall have round, glass lined tanks, and shall be installed with an integral insulating wrap with a minimum R value of 5. Access shall be provided in the wrap for service and maintenance openings. Storage water heaters that are not equipped with integral heat traps and having vertical pipe risers shall be installed with heat traps directly on both the inlet and outlet. Circulating systems need not have heat traps installed. The water heater relief drain shall be manufacturer approved, and shall be indirectly connected to the building sanitary sewer system. Water heaters shall be sized in accordance with paragraph 8-2.1 for a 32 degrees C rise. Minimum equipment efficiencies shall be in accordance with DOE Buying Energy Efficient Products Recommendations (refer to www.eren.doe.gov/femp/procurement for recommended efficiencies) or Energy Star. Additional consideration in the technical evaluation will be given to designs which include water heaters which exceed the minimum energy efficiency requirements and which utilize high efficiency, power vented, or sealed

combustion water heaters. [Preparer of RFP shall clearly indicate which equipment applies when multiple building types are involved.]

8-3.1.1 Gas fired water heater. Gas fired water heaters shall be in accordance with ANSI Z21.10.1, Water Heaters, Gas, Volume I, Storage Type, 22 kW [75,000 BTUH] Input or less, and shall be sealed combustion high efficiency type. Water heaters with powered ventilation shall be vented in accordance with manufacturer's instructions. Minimum equipment efficiencies shall be in accordance with DOE Buying Energy Efficient Products Recommendations (refer to www.eren.doe.gov/femp/procurement for recommended efficiencies) or Energy

8-3.1.2 Electric water heater. Electric water heaters shall comply with UL 174, Water Heaters, Household Electric Storage Tank Type. Minimum equipment efficiencies shall be in accordance with DOE Buying Energy Efficient Products Recommendations (refer to www.eren.doe.gov/femp/procurement for recommended efficiencies) or Energy Star.

8-3.1.3 Oil fired water heater. Oil fired water heaters shall be in accordance with UL 732. Units shall be UL listed.

8-3.1.4 Steam water heater. Storage tanks shall be ASME stamped for the working pressure. The tank shall be cement-lined or glass-lined steel type in accordance with AWWA D100. The heat loss shall conform to the requirements of ASHRAE 90.1. The heat exchanger shall be double wall type that separates the potable water from the heat transfer medium with a space vented to the atmosphere in accordance with the code and shall have a working pressure of 1034 kPa with steam at a temperature of 208 degrees C. Tubing shall be light-drawn copper tubing conforming to ASTM B 75.

8-3.2 Pumps. Recirculating pumps shall be inline type and shall be provided whenever hot water piping extends further than 15 m from a tank.

8-3.3 Air compressors. Unit shall be a UL-listed, factory-packaged assembly including duplex compressors mounted on a receiver tank with automatic means for alternating compressors. Each compressor shall [start and stop automatically at upper and lower pressure limits of the system] [regulate pressure by constant speed compressor loading and unloading]. Means shall be provided for draining condensed moisture from the receiver by an automatic float type trap. Receivers shall be designed and constructed in accordance with ASME BPV VIII Div 1 and for a working pressure of 1034 kPa. The system shall be provided with the necessary regulator valves to maintain the desired pressure for the installed equipment.

8-4 **FIXTURES**. The following fixtures will be acceptable for the facilities on this project except where noted otherwise for specific buildings. Provide handicap accessible type as required by Uniform Federal Accessibility Standards. Fixtures shall be water conservation type, in accordance with the International Plumbing Code. Fixtures shall be provided complete with fittings, and chromium- or nickel-plated brass (polished bright or satin surface) trim. All fixtures, fittings, and trim in a project shall be from the same manufacturer and shall have the same finish.

8-4.1 Vitreous china plumbing fixtures shall conform to ANSI A112.19.2, Vitreous China Plumbing Fixtures. Stainless steel fixtures shall be in accordance with ANSI A112.19.3, Stainless Steel Plumbing Fixtures (residential design). Plastic fixtures shall conform to ANSI Z124. Enameled cast iron plumbing fixtures shall comply with ANSI A112.19.1, and enameled

steel fixtures shall comply with ANSI A112.19.4.

8-4.2 Exposed traps shall be chromium-plated, adjustable-bent tube, 20-gauge brass. Concealed traps may be plastic (ABS).

8-4.3 Faucets shall be single-control type, with seals and seats combined in one replaceable cartridge designed to be interchangeable among lavatories, bathtubs and kitchen sinks, or having replaceable seals and seats removable either as a seat insert or as a part of a replaceable valve unit. Water flow shall be no more than .158 L/s from any faucet.

8-4.4 Showers shall be equipped with a combination valve and flow control device to limit the flow to 0.158 L/s at pressures between 137.9 to 413.7 kPa.

8-4.5 Piping shall be concealed. Individual shutoff or stop valves shall be provided on water supply lines to all plumbing fixtures except showers. Shutoff valves shall be provided for each bathroom group. In two story buildings, provide separate shutoff valve for each floor.

8-4.6 Water closets. Water closets shall have regular bowl, close coupled siphon jet, floor outlet with wax gasket, closed-front seat and cover, and an anti-siphon float valve. Water consumption shall be no more than 6 L per complete flushing cycle. Water closet trim shall conform to ANSI A112.19.5, Trim for Water-Closet Bowls, Tanks, and Urinals (Dimensional Standards). Shall be flush valve type for floor or wall mounted, water saver type and shall meet the requirements of the code.

8-4.7 Urinals. [Shall be flush valve, wall mounted type and shall meet the requirements of the code.] [Urinals shall be wall mounted, waterless type and shall meet the requirements of the code.]

8-4.8 Lavatories. Lavatories shall be rectangular counter top type, minimum 508 by 457 mm in size or oval minimum 480 by 410 mm in size. Lavatories shall be vitreous china, cast iron rimless type (without rings), or cross-link acrylic molded counter top with integral bowl. Lavatories shall have pop-up drains. Shall meet the requirements of the code.

8-4.9 Showers. Shower stalls shall be of ceramic tile, floor to ceiling, over membrane waterproofing on a cementitious substrate [; or gel-coated, glass-fiber reinforced polyester.] [Shower receptors shall be slip resistant cast stone or gel-coated, glass-fiber-reinforced polyester.] [Shower stall wainscots shall be ceramic tile or gel-coated, glass-fiber-reinforced polyester.] [Edit as applicable].

8-4.10 Service sinks. Shall meet the requirements of the code.

8-4.11 Electric water cooler. Units shall be electric refrigerated type and shall conform to the requirements of ARI 1010 and the Lead Contamination Control Act of 1988.

8-4.12 Emergency eyewash/shower and emergency eyewash units. Shall meet the requirements of the code. Provide as indicated in Chapter 2 Functional and Area Requirements.

8-5 **PIPING SYSTEMS**. Piping shall be concealed. Individual shutoff or stop valves shall be provided on water supply lines to all plumbing fixtures except bathtubs and showers. Shutoff valves shall be provided for each bathroom group. In two story buildings, provide separate shutoff valves for each floor. Provide cathodic protection and pipe joint bonding systems as

required. Individual shutoff valves shall be provided on compressed air lines to each branch line and at individual outlets or points of use. Fittings and valves shall be compatible for the piping systems in which installed.

8-5.1 Gas. The design and installation of natural gas distribution systems and equipment shall be in conformance with manufacturer's recommendations and applicable sections of ASME B31.8 and NFPA 54. The installation of interior natural gas distribution systems shall be in conformance with the provisions of NFPA 54. The use of semi-rigid tubing and flexible connectors for gas equipment and appliances is prohibited, except that the final connections to the movable gas burning equipment shall be made using flexible connectors conforming to ANSI Z21.45, Flexible Connectors of Other Than All Metal Construction for Gas Appliances, not less than 1000 mm long. Provide accessible gas shutoff valve and coupling for each gas equipment item. Comply with UBC or model code seismic requirements. Exposed horizontal piping shall not be installed farther than 150 mm from the nearest parallel wall in laundry areas or areas where clothes hanging could be attempted.

8-5.2 Domestic water piping. Piping and fittings shall be copper tubing or chlorinated polyvinyl chloride (CPVC) plastic pipe. Valves shall be provided at each fixture and piece of equipment, at each toilet and kitchen, and on takeoffs from risers to each floor. Under slab supply piping shall be limited to service entrance only.

8-5.2.1 Copper tubing. Water piping under concrete slabs shall be copper tubing, type K, annealed. Joints under the slabs are prohibited. If copper tubing is selected for interior water piping, it shall be type K, L, or M hard-drawn copper. Type M copper tubing shall not be installed in exposed areas where the tubing may be exposed to external damage. Additional consideration in the technical evaluation shall be given to designs using copper types K or L. Fittings for soft copper tubing shall conform to ANSI B16.26, Cast Copper Alloy Fittings for Flared Copper Tubes, and for hard-drawn to ANSI B16.22, Wrought Copper and Copper alloy Solder Joint Pressure Fittings.

8-5.2.2 Chlorinated Polyvinyl Chloride (CPVC) Plastic Pipe. [Determine the acceptability of CPVC and edit text as required.] If plastic pipe is selected for interior water piping, it shall be Chlorinated Polyvinyl Chloride (CPVC) plastic pipe, conforming to ASTM D-2846, Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Hot- and Cold-Water Distribution Systems. CPVC thicknesses shall meet Standard Design Ratio 11 for sizes 13 mm to 51 mm and shall be schedule 80 pipe for sizes larger than 51 mm.

8-5.3 Soil, waste, vent, and drain. Piping and fittings shall be cast iron, copper or polyvinyl chloride (PVC) plastic pipe. Cleanouts shall be provided as required by the code.

8-5.4 Repair bay floor drainage system. A continuous concrete trench drain shall be located along the exterior wall to collect drainage from repair bays. Piping shall discharge through an oil water separator on the exterior of the building prior to entering the sanitary sewer.

8-5.4.1 Trench. The trench shall be a minimum of 305 mm wide and shall have a continuous open grate top. Provide a solid cover at all doorways and in the welding shop and the generator shop.

8-5.4.2 Piping. Piping and fittings shall be same as for drain piping. A basket strainer shall be provided in the discharge piping from the trench. Adequate cleanouts shall be provided in the floor drainage system.

8-5.5 Compressed air. Piping shall be steel piping conforming to ASTM A 53/A 53M, Grade B, black steel, schedule 40 or copper tubing conforming to ASTM B 88, ASTM B 88M, Type K or L. fittings shall conform to ANSI B16.3 or ANSI B16.9 for steel and ANSI B16.22 for copper.

8-6 **MISCELLANEOUS ITEMS**.

8-6.1 Cleanouts. Cleanouts shall be provided at each change in direction of sanitary sewer lines, at the intervals specified in the International Plumbing Code, and at the building service entrance. All cleanouts shall be permanently accessible. Ground cleanouts shall be installed in a 305 mm by 305 mm concrete pad, flush with grade. Wall and floor types shall be provided as required by the code. Provide access panels or cover plates in exposed areas.

8-6.2 Hose bibbs. Hose bibbs shall be provided at minimum 50 m intervals along the perimeter each main building. Hose bibbs shall be frost proof, and shall be supplied with an integral vacuum breaker. Provide as required by the code.

8-6.3 Wall hydrants. Provide every 45 m along the perimeter of the building.

8-6.4 Backflow preventers. Provide as required by the code.

8-7 **PIPE INSULATION.** Insulation type shall be cellular glass (CG) – ASTM C 552 – Type II and Type III, polyisocyanurate (PC) – ASTM C 591 – Type I, or phenolic foam (PF) – ASTM C 1126 – Type III or flexible cellular insulation, ASTM C 534, Type I and II.

8-7.1 Domestic service hot water piping. Minimum pipe insulation performance shall be in accordance with the requirements of the latest edition of ASHRAE/IESNA 90.1.

8-7.2 Domestic service cold water piping shall be insulated with a minimum of 13-mm insulation with vapor jacket.

8-7.3 Roof drain piping. Provide 25-mm thickness insulation on all horizontal piping.

CHAPTER 9

ELECTRICAL SYSTEMS

9-1 **DESIGN STANDARDS AND CODES**. The electrical design for all facilities shall be in accordance with the current version of the National Electrical Code.

9-1.1 **Facility Energy Conservation Requirements.** The entire facility design, including siting, building envelope, plumbing systems, lighting, electrical systems, and HVAC systems form a complete assembly/structure which is in compliance with ASHRAE 90.1-2001.

9-2 **DESIGN CALCULATIONS**. Provide calculations for the following:

9-2.1 Interior lighting. Provide calculations for each room or area.

9-2.2 Exterior lighting. Provide calculations for all sight lighting to include parking areas, walkways, roadways and security.

9-2.3 Load Analysis for each building to include connected and estimated demand. Separate loads by categories such as lighting, receptacles, HVAC, special equipment, etc.

9-2.4 Fault – short circuit calculations for electrical system(s).

9-2.5 Voltage drop – Provide calculations to verify voltage drops. Do not exceed limits as given in the National Electric code (NEC).

9-2.6 Coordination – provide data to verify proper protection and coordination is provided for the equipment/system(s).

9-3 **MATERIALS AND EQUIPMENT**. All materials and equipment shall be the standard catalogued products of manufacturers regularly engaged in the production of such equipment and material, and shall be the manufacturer's latest design. All equipment and material shall conform to the requirements of American National Standards Institute (ANSI), American Society of Testing and Materials (ASTM), National Electrical Manufacturer's Association (NEMA), National Fire Protection Association (NFPA) or other national trade association as applicable. Where standards exist, materials and equipment shall bear the label and be listed by Underwriters Laboratories, Inc. (UL) or other recognized testing organization.

9-3.1 Space requirements. Electrical space shall be provided for all electrical equipment. Space shall provide clearances and working areas as required by codes. Coordinate location to consider factors such as ease of maintenance, vicinity to loads being served and accessibility.

9-3.2 Wiring. Shall be copper and shall be run in conduit. Use solid bare copper wire for sizes No. 8 AWG and smaller diameter, and Class B, stranded bare copper wire for sizes No. 6 AWG and larger diameter.

9-3.3 Motors. Motors shall be high energy efficient type. Motors larger than one-third horse power shall be three phase. Motors one-third horsepower and smaller shall be single phase. Motor starters for mechanical and special equipment will be furnished as an integral part of the mechanical or special systems.

9-3.3.1 Motor Efficiencies. Minimum motor efficiencies shall be either Energy Star or in accordance with DOE Buying Energy Efficient Products Recommendations (refer to www.eren.doe.gov/femp/procurement for recommended efficiencies). Applications which require definite purpose, special purpose, special frame, or special mounted polyphase induction motors are excluded from these efficiency requirements. Motors provided as an integral part of motor driven equipment are excluded from this requirement if a minimum seasonal or overall efficiency requirement is indicated for that equipment by the provisions of another section.

9-3.4 Switchboard/panelboard. Dead-front construction, NEMA PB1 and UL 67.

9-4 **LIGHTING**.

9-4.1 Lighting. Lighting designs will incorporate the necessary hazardous area requirements of the latest edition of NFPA 70, National Electrical Code. Illumination of the service bays should consider super T8 fluorescent lighting or High Intensity Discharge (HID) color corrected metal halide fixtures. The fixture layout must be coordinated with the traveling bridge crane requirements. Fluorescent fixtures will be used in other areas. Illumination levels will be in accordance with the IESNA Lighting Handbook. Maintained illumination levels will be in accordance with the following table:

Table 9.1 - Lighting Levels

FUNCTIONAL AREA	LEVEL IN LUX
Administration and Shop Control	540
Warehouse and Storage	160
Latrines, Showers, and Lockers	160
Break, Training, and Conference	325
Repair and Scheduled Maintenance Bays	325
Weapons Storage and COMSEC Vaults	160
Repair Shops (General Item, Compact Item, Special Environment, Battery, etc.)	325

Fluorescent lights shall be energy efficient fluorescent with electronic ballast. Lighting in occupied areas shall be color corrected with a Color Rendering Index (CRI) of 85 or better. For energy conservation dual switching, occupancy sensors and automatic dimming shall be considered. [Design District may review http://www.energystar.gov/products/ for additional information.]

9-4.2 Exterior. Site and area lighting shall be high intensity discharge (HID).

9-5 **POWER AND GROUNDING**. Power service to the buildings will be fed underground from the base electrical distribution system to a pad-mounted transformer located near the

primary building. Power service to buildings will be fed underground from the transformer to building service entrance equipment, located in the electrical equipment room.

9-5.1 Special Power Requirements. Electrical power outlets for special power should be coordinated with workbench locations in shops, and provided in the maintenance bays. [Coordinate with activity and include detailed requirements. Both low voltage (for example, 70 V) and high frequency (for example, 400 Hz) power may be required. These requirements are unit specific, and the using service must identify these special power requirements and provide the O&MA or OPA funding for the purchase of equipment to support these needs. Although these requirements may be included in the construction contract, they cannot be provided from MCA funds.]

9-5.2 Receptacles. Receptacles and devices in repair bays, except inspection pit, will be located a minimum of 500 mm above finished floor. Equipment located in inspection pits will be suitable for installation in a class 1, division 1, hazardous location.

9-5.3 Grounding. Each maintenance building will have a ground grid around the building perimeter for grounding incoming service, building steel, telephone service, piping, and internal grounding requirements. Ground straps will be provided where required by function and will be connected to the building grounding system. A grounding point will be provided in each repair and scheduled maintenance bay. Grounding points will be provided in vehicle and equipment parking areas on 10 000 mm centers. [Additional grounding may be provided based on project requirements. Coordinate with Chapter 2 requirements].

9-6 **TELECOMMUNICATIONS**. Communications and data lines will be underground from the base communications system to the main distribution equipment located in the communications room of the primary building. Telephone and data outlets will be provided in core areas and supply administration areas. Provide a minimum of one data and one telephone outlet in each space requiring outlets. In administration and shop control areas provide a telephone and a data outlet for each 7.5 m^2 of floor area. Every work station should have a telephone and data outlet. In mechanical and electrical rooms and corridors provide outlets for wall mounted equipment. For controlled access facilities, provide outlets for wall mounted equipment at primary entrance. [Additional locations may be provided based on coordination with the facility user]. All cable distribution and telecommunications requirements shall be in accordance with I3A and TIA/EIA 568 & 569.

9-6.1 Cable and jacks shall be Category 5E per EIA/TIA 568A, Commercial Building Telecommunications Cabling Standard. Provide wiring from outlet jack to termination on patch panel. Follow requirements of ANSI/TIA/EIA-569-A for telecommunications closets and equipment rooms. [For specialized circuits, such as pay phones, coordinate with the local telephone company. Provide electrical and telephone outlets installed per the Americans with Disabilities Act (ADA) to accommodate TTD's and other devices.] [When systems furniture is installed as part of the construction contract, insure that systems furniture specifications include ANSI/TIA/EIA-568-A and ANSI/TIA/EIA-569-A cabling and raceway standards. Use fiber optic cable for backbone data service, unless expanding an existing site where other backbone cable types are required or requested by user. Refer to the “Installation Information Infrastructure Architecture (I3A) Design and Implementation Guide"].

9-7 **PAGING SYSTEMS**. A paging system will be provided for the maintenance bay areas with the microphone located in the administration and shop control area.

9-8 **SECURITY SYSTEM(S)**. [Design District shall determine requirements for security systems.] Intrusion Detection Systems. Intrusion detection systems are required for arms and COMSEC vaults. Provide an empty raceway or conduit. [Coordinate system requirements with the using activity, and add applicable requirements.]

9-9 **SPECIAL SYSTEMS**. [Design District shall determine requirements for special systems.]

CHAPTER 10

HEATING, VENTILATING, AND AIR CONDITIONING

[Delete all references to comfort cooling where air conditioning is not authorized. Delete references to inapplicable systems throughout the following paragraphs.]

10-1 **DESIGN STANDARDS AND CODES**. The HVAC design shall be in accordance with the current version of the International Mechanical Code.

10-1.1 **Facility Energy Conservation Requirements.** The entire facility design, including siting, building envelope, plumbing systems, lighting, electrical systems, and HVAC systems form a complete assembly/structure which is in compliance with ASHRAE 90.1-2001.

10-2 **DESIGN CALCULATIONS**.

10-2.1 Heat loss[and heat gain] calculations. Heating[and cooling] loads shall be in accordance with the current edition of the ASHRAE Handbook of Fundamentals. Computer-generated load calculations shall be provided, and shall include complete input and output summaries. Equipment shall be sized to meet the total load determined by computer calculation. Equipment may be oversized to no more than 115 percent of the computer generated load. Design shall be based on weather data from UFC 3-400-02, Engineering Weather Data; from ASHRAE Handbook of Fundamentals; or from other recognized and authoritative sources of weather data. Indoor design shall be in accordance with TABLE 10-1. Room air flow requirements shall be computed based on the individual room load. Values for internal cooling loads shall be included in the computerized load calculations in accordance with ASHRAE recommendations. Minimum space heating and ventilation shall be provided in spaces normally unoccupied, such as storage and equipment rooms. Any industrial ventilation requirement, other than that required per human occupant, may be considered process load when selecting supplemental heating equipment for the bay area.

10-2.1

TABLE 10-1 – INDOOR DESIGN DATA

Type of Design /Design Information	Metric	
Heating		
Indoor Design Temperature (Core areas)	20 °C	
Indoor Design Temperature (Bay areas)	13 °C	
Unoccupied Space Design Temperature	13 °C	
Cooling		
Indoor Design Temperature	24 °C	

10-2.1.1 **Load design criteria.** The internal loads shown in Table 10-2 shall be included for each space listed. The degree of activity for all people shall be moderately active office work. Lights shall be included for the actual quantity provided. Any additional equipment furnished under this contract shall also be included in the appropriate space.

TABLE 10-2 – INTERNAL LOADS

Space	People	Equipment
Administration & Shop Control	1 / 12 sm	1 PC/ person
Customer Waiting	1 / 3 sm	1 Coffee Pot
Break/Training/Conference	1 / 1.5 sm	2 PC's
Special Environment Repair	1 / 14 sm	21.5 watt / sm
Compact Item Repair	1 / 9 sm	21.5 watt / sm
General Repair	1 / 15 sm	21.5 watt / sm
Tool Room	1 / 12 sm	1 PC/28 sm
PLL & RX/TS	1 / 12 sm	1 PC/28 sm
Weapons Vault	0	None
Comsec Vault	0	None
Corridors	1 / 28 sm	None
Toilet, Shower & Lockers	0	None

10-2.2 Ventilation air calculations. Calculations determining minimum outside ventilation air shall be provided for each building space. Ventilation rates shall be in accordance with the current edition of the International Mechanical Code. Outside air quantities will be sufficient to meet ventilation requirements and, for office type areas, maintain a positive pressure relative to the outdoors unless noted otherwise.

10-2.3 Exhaust air calculations. Calculations determining minimum exhaust shall be provided for each exhaust system. Exhaust rates shall be in accordance with the current edition of the International Mechanical Code.

10-2.4 Piping calculations. Calculations shall be provided for pressure drop calculations for all piping systems, including head loss calculations for all pumps.

10-2.5 Duct calculations. Calculations shall be provided for sizing all duct systems, including static pressure drop calculations for all fans. Ductwork layout drawings shall also be provided to indicate all fittings and devices to substantiate calculations.

10-3 **HUMID AREA DESIGN**. [Climates which have 3000 hours or more of 19.4 degrees C or higher wet bulb temperature in combination with an outside design condition of 50 percent or higher relative humidity, or climates which have 1500 hours or more of 22.8 degrees C or higher wet bulb temperature in combination with an outside design condition of 50 percent or higher relative humidity shall be considered humid areas. In other areas that do not meet the strict definitions of a humid area but experience humid conditions on numerous occasions, these same criteria shall be used by the designer as appropriate for the facility and the climate.] In humid areas, all air heating and cooling systems shall be provided, and economizer cycles will not be allowed. Closet and storage spaces shall have louvered doors, and building return air shall be drawn through these spaces to a ducted return air system. Cooling coils shall have a maximum of 315 fins/m to allow for easy cleaning, and shall be sized for a maximum face

velocity of 2.8 m/s to preclude moisture carryover. Heating and cooling equipment in humid areas shall be designed to meet the load determined by computer calculation. However, a larger fan may be required to meet minimum air flow requirements than would be anticipated based on the computer load. Equipment may be oversized by no more than 15 percent of the computer generated sensible load.

10-3.1 Load calculations. The one percent wet bulb temperature, from the approved weather data source of 10-1.2 above, will be used in calculating the latent cooling load and for equipment sizing. In addition to calculating the cooling load at maximum design temperature, cooling load calculations or thermal simulations should also be made at maximum dew point temperatures or for low temperature, high humidity conditions to determine the greatest dehumidification load that may be encountered. Latent heat gain due to water vapor flow through roofs and walls will be included in the cooling load analysis when the ambient design dew point exceeds the room design dew point by more than 11.1 degrees C.

10-3.2 Chilled water systems. The cooling capacity of 350 kW and over systems will be divided between two or more chillers to ensure reliability and constant chilled water supply without temperature fluctuations, to prevent short cycling, and to minimize hot gas by-pass. The combined capacity of the chillers will not exceed the total requirement, including diversity. The selection of the number of chillers will be based on the analysis of part load operating hours for extended periods of low load conditions.

10-3.3 Packaged units. Packaged unitary units with multiple reciprocating compressors (not to exceed eight) will be used for systems between 123 kW and 750 kW. Each compressor will have separate, independent, refrigerant circuits and cycles to provide multiple steps of capacity control. Two compressors may be combined into one independent refrigerant circuit. For systems up to 123 kW, single compressors with a minimum of three-step capacity unloading may be used.

10-3.4 Outside air. Where the outside air requirements are a significant part of the cooling load, the use of desiccant cooling, enthalpy wheels and similar devices for conditioning the outside air and transferring latent and sensible heat to the exhaust air shall be considered. If appropriately sized, these units can eliminate or minimize the latent load in the conditioned space saving significant energy and greatly increasing the comfort level.

10-4 **MECHANICAL SYSTEMS**. Each building core area shall be provided with a [central] heating [and air conditioning] system[s]. Systems shall be designed, installed, balanced, and adjusted to distribute heat [and cooling] to all habitable rooms, as well as bathrooms, in proportion to the calculated load requirements of these spaces. Each repair bay shall be provided with a heating [and ventilating] system. Each warehouse bay shall be provided with a heating [and ventilating] system. [<u>The District in close coordination with the installation shall determine the allowable system types and fuel options to be used. Also coordinate unit locations with installation facilities engineering personnel (DPW). Select a system type below or provide a description of other acceptable systems as an additional subparagraph. All reasonably equivalent fuel options within a range of 10 percent based on life cycle cost analysis shall be allowed. The Design District may assist the Installation in preparation of the fuel life cycle cost comparison</u>.] Additional consideration in the technical evaluation will be given to systems utilizing energy efficient equipment, additional space in the mechanical room, and other features which contribute to ease of system operation and maintenance. Additional consideration will also be given to designs which provide measures to increase energy conservation or occupant comfort such as division of each building into more than one

conditioning zone for increased control.

[Edit the following list as applicable for the particular project. Note where systems are applicable for core areas, repair bays, scheduled maintenance bays, warehouse bays and/or detached storage. If not acceptable for any, insert "... (Deleted)" following subparagraph letter and delete remainder of text. If the desired system type is different than what is described, modify the description as required for the particular system desired or provide additional paragraphs as necessary. Preparer of RFP shall get approval from installation for each system used.]

10-4.1 Incremental equipment. [Provide individual thru-wall self-contained air-to air heat pumps for each individual space that is to be conditioned.] [Provide individual thru-wall packaged terminal air conditioning units for each individual space that is to be conditioned.] [Fan coil units with hydronic heating [and cooling] shall be provided for each individual space that is to be conditioned.] [Direct fired radiant heating units with shall be provided for each bay that is to be heated.]

10-4.2 Air distribution systems. Heating [and cooling] will be provided from [rooftop air handling units] [central air handling units] [warm air furnaces] [fan coil units]. [Air handling units shall deliver air to [variable air volume boxes in] [dual duct boxes in] [induction units in] each space.]]. [Air handling units which deliver preconditioned ventilation air when fan coil units or heat pumps are utilized, shall deliver the air directly to each space.] [Designate a maximum area served per individual unit or a maximum unit size.]

10-4.3 Hydronic distribution systems. Provide pumped [condenser water] [hot water] [and] [chilled water] piping system[s] with a standby pump provided for each system pump provided. Chilled water will be provided from [central system] [central equipment indicated]. Hot water will be provided from [central hot water system] [central steam system and convertor] [central equipment indicated]. Condenser water will be from [ground source heat pump system] [central equipment indicated]

10-4.4 Ground source heat pump systems. Provide a ground source heat pump system with water source heat pumps. System design shall be in accordance with IGSHPA standards. Supplemental heating and cooling source shall be as indicated. [Designate a maximum area served per individual unit or maximum unit size.]

10-4.5 Heating only systems. For spaces where heating only is required, provide [unit heaters], [fin tube radiation], [cabinet heaters] or [convectors]. Units shall be [hydronic] [electric] [gas fired].

10-4.6 Central heating equipment. Provide [gas fired hot water boiler] [oil fired hot water boiler] [dual fuel gas/oil fired hot water boiler]. [Designate if multiple units are required.]

10-4.7 Central cooling equipment. Provide [packaged air cooled chiller] [water cooled chiller with cooling tower] [water cooled chiller with evaporative cooler] for cooling. [Designate if multiple units are required.]

10-4.8 Radiant heating systems. Provide overhead radiant heating with separate ventilation air system. [Designate if multiple units are required.]

10-4.9 Exhaust systems. Provide [individual ceiling mounted fans for][central building

continuous exhaust systems for] toilet exhausts. Provide [individual ceiling mounted fans for][central building exhaust systems for] general exhaust systems. Provide individual thermostatically controlled exhaust fans for mechanical/electrical rooms and other spaces where ventilation only is required.

10-5 **INCREMENTAL EQUIPMENT**. The following equipment will be acceptable for the facilities on this project except where noted otherwise for specific buildings. Minimum equipment efficiencies shall be in accordance with DOE Buying Energy Efficient Products Recommendations (refer to www.eren.doe.gov/femp/procurement for recommended efficiencies) or Energy Star.

10-5.1 Packaged air conditioning units. Unit shall be a through-the-wall mounted, heavy-duty commercial grade, factory assembled and precharged air-conditioner [heat pump] unit. Unit shall be in accordance with ARI 310/380 and UL 1995. Units shall be removable from inside the building for servicing without removing the outside cabinet. Louver shall be stormproof type, constructed of anodized, stamped or extruded aluminum. Controls shall include an on-off switch, multiple speed fan mode and an adjustable [cooling and] heating thermostat. Function and temperature controls shall be [integral to unit][remote mounted].

10-5.2 Air-to-air heat pump units. Unit shall be a through-the-wall mounted, heavy-duty commercial grade, factory assembled and precharged heat pump unit. Unit shall be in accordance with ARI 310/380 and UL 1995. Units shall be removable from inside the building for servicing without removing the outside cabinet. Louver shall be stormproof type, constructed of anodized, stamped or extruded aluminum. Sleeve shall be a water and airtight [completely insulated] [noninsulated] assembly, with weather-resistant protective coating. Units shall contain a reversing valve to change unit to heating cycle. An outdoor coil temperature sensor shall be provided to guard against coil freeze-up by either switching to supplemental heat only, or by cycling the compressor to defrost the coil. Controls shall include an on-off switch, multiple speed fan mode and an adjustable [cooling and] heating thermostat. Function and temperature controls shall be [integral to unit][remote mounted].

10-5.3 Water source heat pumps. Units shall be horizontal or vertical type with easily accessible filters. Controls shall include an on-off switch, multiple speed fan mode and an adjustable [cooling and] heating thermostat.

10-5.4 Evaporative coolers. [<u>Evaporative coolers shall be considered only at installations which traditionally use evaporative cooling, and comfort conditions can be maintained through their use. Determine whether evaporative coolers will be allowed as a design option to the offeror</u>.] Units shall be self-contained, single stage, weather- resistant type, and shall conform to UL 507 and UL 746C. The fan shall be centrifugal type and shall be complete with motor, drive equipment, and vibration-isolation supports between motor and fan housing on single phase motors. Water distributor or rotary wheel motor shall be provided with a time delay in the fan circuit to allow media to be thoroughly wetted before air flow starts. Manual or automatic reset type thermal overload protection shall be provided. Evaporative cooler fans shall have air delivery ratings based on AMCA 210 tests by an AMCA approved laboratory. An ultraviolet retarding agent shall be part of or applied on exterior nonmetallic components susceptible to ultraviolet degradation from sun rays and conforming to UL 746C. Evaporative media shall be specifically manufactured for use with evaporative coolers. Media shall be honeycombed type, fabricated such that no moisture entrainment shall occur. Face velocities shall be limited to those recommended by media manufacturer. Indirect coolers shall consist of an air-to-air heat exchanger, water distribution header, scavenger fan and motor, recirculating water pump,

supplemental cooling coil (as required), drain, overflow and makeup water lines and an accessible damper to allow change-over from heating to cooling. Cooler shall be drainable, and shall be provided with a mounting frame.

10-5.5 Dehumidifiers. Units shall be self-contained, refrigeration type with an adjustable built-in humidistat.

10-5.6 Direct gas fired radiant heaters. Heaters shall conform to the requirements of ANSI Z83.6 and shall be [vented] [or] [unvented] type [as indicated]. [Vented heaters shall be vented to the outside atmosphere.] Heater style shall be [surface combustion][tubular] type [as indicated]. Reflector shape shall be [parabolic] [horizontal] [or] [standard] [as indicated]. Heaters shall be provided with space thermostats which control the unit's burner. Thermostats located in the direct radiation pattern shall be covered with a metal shield.

10-5.7 Unit heaters. Units shall be horizontal or vertical air discharge types complete with fans, [electric] [hot water] [steam] coils, housing and discharge vanes or diffuser.

10-5.8 Fin tube radiation. Fin tube radiation. Units shall be complete with [electric] [plate fin] heating elements and enclosures. Enclosures shall be constructed of sheet steel not less than 20 gauge.

10-5.9 Cabinet heater. Units shall be complete with fans, heating elements and enclosing cabinets. Heating elements shall be constructed of cast iron or of nonferrous material. Cabinets shall be constructed of sheet steel not less than 20 gauge.

10-5.10 Convectors. Units shall be complete with heating elements and enclosing cabinets having bottom recirculating opening, manual control damper and top supply grille. Heating elements shall be constructed of cast iron or of nonferrous alloys. Cabinets shall be constructed of black sheet steel not less than 20 gauge.

10-6 **AIR DISTRIBUTION TERMINAL UNITS**. Minimum equipment efficiencies shall be in accordance with DOE Buying Energy Efficient Products Recommendations (refer to www.eren.doe.gov/femp/procurement for recommended efficiencies) or Energy Star.

10-6.1 Fan coil units. Base units shall include galvanized coil casing, coil assembly drain pan valve and piping package, air filter, fans, motor, fan drive, and motor switch, plus an enclosure for cabinet models and casing for concealed models. Outside air cannot be supplied directly through unit. Room fan-coil units shall be certified as complying with ARI 440, and shall meet the requirements of UL 1995. Enclosures shall be fabricated of not lighter than 18 gauge steel, reinforced and braced. Front panels of enclosures shall be removable and provided with 13 mm thick dual density fibrous glass insulation. Access doors or removable panels shall be provided for piping and control compartments. Duct discharge collar shall be provided for concealed models. Enclosures shall have easy access for filter replacement. Fans shall be galvanized steel or aluminum, multiblade, centrifugal type. Disassembly and re-assembly shall be by means of mechanical fastening devices and not by epoxies or cements. Coils shall be seamless copper tubing, with copper or aluminum fins mechanically bonded or soldered to the tubes. Drain and drip pans shall be sized and located to collect all water condensed on and dripping from any item within the unit enclosure or casing. Drain pans shall be constructed of not lighter than 21 gauge steel, galvanized after fabrication, thermally insulated to prevent condensation. Auxiliary drain pans to catch drips from control and piping packages, eliminating insulation of the packages, may be plastic; if metal, the auxiliary pans shall comply with the

requirements specified above. Insulation at control and piping connections thereto shall extend 25.4 mm minimum over the auxiliary drain pan. Filters shall be of the fiberglass disposable type, 25.4 mm thick. Filters in each unit shall be removable without the use of tools. Motors shall be of the permanent split-capacitor type with built-in thermal overload protection, directly connected to unit fans. Motor switch shall be two or three speeds. In lieu of the above fan speed control, a solid-state variable-speed controller having a minimum speed reduction of 50 percent may be provided. Motors shall have permanently-lubricated or oilable sleeve-type or combination ball and sleeve-type bearings with vibration isolating mountings suitable for continuous duty.

10-6.2 Variable air volume terminal unit. Units shall be pressure independent type. Unit enclosures shall be constructed of galvanized steel not lighter than 22 gauge or aluminum sheet not lighter than 18 gauge. Units shall be internally insulated with factory mounted controls. Unit air volume shall be factory preset and readily field adjustable without special tools. Heating coils shall be provided. Filters shall be provided when air is recirculated. Acoustic performance of the terminal units shall be based upon units tested according to ARI 880. Acoustical lining shall be according to NFPA 90A.

10-6.2.1 Constant volume type. Terminal units shall contain within the casing, a mechanical or pneumatic constant volume regulator. Volume regulators shall control air delivery to within plus or minus 5 percent of specified air flow subjected to inlet pressure from 18 to 150 Pa.

10-6.2.2 Variable volume type. Terminal units shall be provided with a calibrated air volume sensing device, air valve or damper, actuator, and accessory relays. Units shall control air volume to within plus or minus 5 percent of each air set point volume as determined by the thermostat with variations in inlet pressures from 18 to 150 Pa. Internal resistance of units shall not exceed 10 Pa at maximum flow range. External differential pressure taps separate from the control pressure taps shall be provided for air flow measurement with a 0 to 25 Pa range. Unit volume controller shall be normally [open] [closed] upon loss of pneumatic pressure.

10-6.2.3 Fan-powered type. Terminal units shall be provided with a calibrated air volume sensing device, air valve or damper, actuator, fan and motor, and accessory relays. Units shall control primary air volume to within plus or minus 5 percent of each air set point as determined by the thermostat with variations in inlet pressure from 18 to 150 Pa. Unit fan shall be centrifugal, direct-driven, double-inlet type with forward curved blades. Fan motor shall be either single speed with speed controller or three-speed, permanently lubricated, permanent split-capacitor type. Fan/motor assembly shall be isolated from the casing to minimize vibration transmission. Fan control shall be factory furnished and wired into the unit control system. A factory-mounted pressure switch shall be furnished to operate the unit fan whenever pressure exists at the unit primary air inlet or when the control system fan operates.

10-6.3 Dual duct terminal unit. Unit enclosures shall be constructed of galvanized steel not lighter than 22 gauge or aluminum sheet not lighter than 18 gauge. Units shall be internally insulated with factory mounted controls. Units shall be provided with hot and cold inlet valve or dampers. Dampers shall be controlled in unison by single or dual actuators. Unit shall control delivered air volumes within plus or minus 5 percent with inlet air variations from 25 to 200 Pa in either duct. Mixing baffles shall be included with the unit casing. Cabinet and closed duct leakage shall not exceed 2 percent of maximum rated air volume. Unit air volume shall be factory preset and readily field adjustable without special tools. Acoustic performance of the terminal units shall be based upon units tested according to ARI 880. Acoustical lining shall be according to NFPA 90A.

10-6.4 Unit ventilators. Unit ventilators shall be of the year-round classroom type with automatic controls arranged to properly heat, cool, and ventilate the room. Automatic valves and controls shall be provided. Enclosures shall be fabricated of not lighter than 16 gauge galvanized steel, reinforced and braced, or all welded framework with panels to provide equivalent strength. The casing shall be acoustically and thermally insulated internally with not less than 13 mm thick dual density fibrous glass insulation. Removable panels or access doors shall be provided for all piping and control compartments. Gaskets shall be provided at the back and bottom of the unit for effective air seal, as required. Fans shall be of galvanized steel or aluminum, multiblade, centrifugal type, direct connected, dynamically and statically balanced. Drain and drip pans shall be sized and located to collect all condensed water dripping from any item within the unit enclosure. An outside air proportioning damper shall be provided on each unit. In addition, a vane shall be provided to prevent excessive outside air from entering unit and to prevent blow-through of outside air through the return air grille under high wind pressures. Where outside air and recirculated air proportioning dampers are provided on the unit, an additional vane will not be required. Face and bypass dampers shall be provided for each unit to ensure constant air volume at all positions of the dampers. Each unit shall be provided with a factory installed control cam assembly, pneumatic motor, or electric motor to operate the face and bypass dampers and outside air damper or outside air and recirculated air dampers. Motors shall be of the permanent split-capacitor type with built-in thermal overload protection and automatic reset. Motor shall be mounted on a resilient mounting, isolated from the casing and shall be suitable for operation on electric service available. A manually operated motor switch shall provide for 2 or 3 speeds. In lieu of speed control, a solid state variable speed controller having minimum speed reduction of 50 percent may be provided. Outside air intakes shall be the manufacturer's standard design and provided with 13 mm mesh bird screen or louvers on 13 mm centers.

10-6.5 Induction units. Unit shall include air plenums, air-discharge nozzles, air discharge grilles, recirculation grilles, water coil assembly, valve and piping package, condensate drain pan, filters and adjustable air-balancing dampers, plus an enclosure for cabinet models and casing for concealed models. Automatic valves and controls shall be provided. Each unit shall be secured to the building structure. The induction units shall conform to the provisions of ARI 445. Enclosures shall be fabricated of not lighter than 18 gauge steel, reinforced and braced. Front panel of enclosure shall be removable and insulated when required acoustically and to prevent condensation. Plastic discharge and return grilles are not acceptable. Access doors shall be provided for all piping and control compartments. An adjustable air-balancing damper shall be provided in each unit. Drain and drip pans shall be sized and located to collect condensed water dripping from any item within the unit enclosure. Drain pans shall be constructed of not lighter than 21 gauge steel, galvanized after fabrication, and thermally insulated to prevent condensation.

10-6.6 Exhaust fans. Fans shall be centrifugal [or propeller] type, roof or wall mounted, direct or V-belt driven with backward inclined, non-overloading wheel. Motor compartment housing shall be hinged or removable and weatherproof, constructed of heavy gauge aluminum. Fans shall be provided with birdscreen, disconnect switch, gravity or motorized dampers. Roof mounted units shall be provided with roof curb. Lubricated bearings shall be provided. Fans shall be tested and rated according to AMCA 210. [Grease-laden kitchen exhaust fans shall be centrifugal type according to UL 705 and fitted with V-belt drive, round hood, and windband upblast discharge configuration, integral residue trough and collection device, motor and power transmission components located in outside positively air ventilated compartment.]

10-6.7 In-line fans. Fans shall have centrifugal, backward inclined blades, stationary

discharge conversion vanes, internal and external belt guards, and adjustable motor mounts. Fans shall be mounted in a welded tubular casing. Air shall enter and leave the fan axially. Inlets shall be streamlined with conversion vanes to eliminate turbulence and provide smooth discharge air flow. Fan bearings and drive shafts shall be enclosed and isolated from the air stream. Fan bearings shall be sealed against dust and dirt and shall be permanently lubricated, and shall be precision self aligning ball or roller type. Fans shall be tested and rated according to AMCA 210.

10-6.8 Ceiling destratification fans. [Fans shall be mounted in high bays and shall be [propeller] [centrifugal] type. Fans shall be controlled by [thermostat] [wall switch].]

10-7 **AIR DISTRIBUTION CENTRAL EQUIPMENT**. Minimum equipment efficiencies shall be in accordance with DOE Buying Energy Efficient Products Recommendations (refer to www.eren.doe.gov/femp/procurement for recommended efficiencies) or Energy Star.

10-7.1 Indoor air handling units. Units shall include fans, coils, airtight insulated casing, adjustable V-belt drives, belt guards for externally mounted motors, access sections for maintenance, combination sectional filter-mixing box, vibration-isolators, and appurtenances required for required operation. Air handling unit shall have published ratings based on tests performed according to ARI 430. All sections shall be constructed of a minimum 18 gauge galvanized steel, or 18 gauge steel outer casing protected with a corrosion resistant paint finish. Casing shall be designed and constructed with an integral structural steel frame such that exterior panels are non-load bearing. Casings shall be provided with inspection doors, access sections, and access doors. Inspection and access doors shall be insulated, fully gasketed, double-wall type, of a minimum 18 gauge outer and 20 gauge inner panels. Drain pans shall be constructed water tight, treated to prevent corrosion, and designed for positive condensate drainage. Coils shall be fin-and-tube type constructed of seamless [copper] [red brass] tubes and [aluminum] [or] [copper] fins mechanically bonded or soldered to the tubes. Coils shall be rated and certified according to ARI 410. Filters shall be listed according to requirements of UL 900. Filters shall be 50 mm depth, sectional, disposable type of the size indicated and shall have an average efficiency of 25 to 30 percent when tested according to ASHRAE 52.1. Filters shall be UL Class 2. Fans shall be double-inlet, centrifugal type with each fan in a separate scroll. Fan bearings shall be sealed against dust and dirt and shall be precision self-aligning ball or roller type. Bearing life shall be L50 rated at not less than 200,000 hours as defined by AFBMA Std 9 and AFBMA Std 11. Bearings shall be permanently lubricated or lubricated type with lubrication fittings readily accessible at the drive side of the unit.

10-7.2 Rooftop packaged air handling units. Units shall be same as indoor air handling units except casing and intakes shall be weatherproof and roof curbs shall be supplied with the unit.

10-7.3 Heating and ventilating units. Units shall be same as indoor air handling units.

10-7.4 Warm air furnaces. Furnace shall be a manufacturer's standard, self-contained, forced circulated air heating type furnace. Furnace and furnace components shall be completely factory-assembled and wired. Furnace casing shall be factory insulated and be compatible with the operating temperatures. Furnace shall be provided with removable service panels which allow access to all internal components requiring cleaning, servicing, or adjustment.

10-7.4.1 Gas-fired furnace. Shall be the high efficiency, condensing type in accordance with ANSI Z21.47. Furnace design shall be certified by the American Gas Association Laboratories

(AGA). Gas-burning equipment shall include the gas burners, ignition equipment, gas-control valve, gas piping, gas-pressure regulating valve, when applicable, and accessories necessary for a fully automatic system that is listed in IAS Directory. Gas-fired units equipped with programming controls shall be furnished both with high and with low gas supply pressure switches in the fuel supply piping. Ignition systems shall be of the direct spark, hot surface, or interrupted intermittent type with automatic electric ignition. The pilots shall be of the electrically-ignited proven type. Continuous pilots will not be permitted. Burner shall be designed in accordance with NFPA 54 and located so that parts are protected against overheating. Provisions shall be made in the burner housing for inspection of the pilot flame. Vent piping shall be in accordance with UL 441, [Type B] [Type BW]. Vent shall conform to NFPA 211 and NFPA 54. Plastic materials polyetherimide (PEI) and polyethersulfone (PES) are forbidden to be used for vent piping of combustion gases. [Direct venting shall be used for high efficiency, condensing type furnaces. Both the air intake and exhaust vents shall be sized and located as recommended by the furnace manufacturer. A separate combustion air intake vent and exhaust shall be provided for each furnace. The combustion air intake piping shall be constructed of Schedule 40 PVC in accordance with ASTM D 1784. The exhaust vent piping shall be constructed of Schedule 40 CPVC or stainless steel in accordance with UL 1738 and the furnace manufacturer's recommendations.]

10.7.4.2 Oil-fired furnace. The equipment shall include the oil burner motor, ignition equipment safety devices, and accessories necessary for a full automatic system that conforms to UL 296. Oil-fired units equipped with programming controls shall be furnished with low oil-pressure switches in the fuel supply piping. Oil-fired units not equipped with programming controls shall be equipped with a delayed opening or shutoff valve. The valve shall automatically delay delivery of oil to the burner until such time as the combustion air fan and, when applicable, the induced draft fan are operated at rated speed. Ignition systems shall be of the [direct-electrical spark type] [direct-electric spark type or interrupted type] in accordance with UL 296. Vent piping shall be in accordance with UL 641, Type L. Vent shall conform to NFPA 211. Plastic materials polyetherimide (PEI) and polyethersulfone (PES) are forbidden to be used for vent piping of combustion gases.

10-8 **CENTRAL HEATING EQUIPMENT**. Minimum equipment efficiencies shall be in accordance with DOE Buying Energy Efficient Products Recommendations (refer to www.eren.doe.gov/femp/procurement for recommended efficiencies) or Energy Star.

10-8.1 Hot water boilers, gas fired. Boilers shall be gas fired and shall be designed, constructed and equipped in accordance with the ASME Boiler Pressure Vessel Code, Section IV, Heating Boilers. Each boiler shall be of the [firetube] [watertube] [cast iron] [condensing] type. The boiler capacity shall be based on the ratings shown in HYI-01 or as certified by the American Boiler Manufacturers Association, or American Gas Association. Boiler shall be designed to burn gas. Each boiler shall comply with Federal, state, and local emission regulations. Burners shall be UL approved [mechanical draft burners with all air necessary for combustion supplied by a blower where the operation is coordinated with the burner] [natural draft/atmospheric burners]. Burners shall be provided complete with fuel supply system in conformance with UL 795, ANSI Z21.13 or NFPA 8501.

10-8.2 Hot water boilers, oil fired. Boilers shall be oil fired and shall be designed, constructed and equipped in accordance with the ASME Boiler Pressure Vessel Code, Section IV, Heating Boilers. Each boiler shall be of the [firetube] [watertube] [cast iron] type. The boiler capacity shall be based on the ratings shown in HYI-01 or as certified by the American Boiler Manufacturers Association. Boiler shall be designed to burn oil. Each boiler shall comply with

Federal, state, and local emission regulations. Oil-fired burners and controls for oil-fired units firing No. 2 oil shall be atomizing, forced-draft type in conformance with UL 726.

10-8.3 Hot water boilers, dual fuel fired. Boilers shall be gas fired and oil fired. Boilers shall be designed, constructed and equipped in accordance with the ASME Boiler Pressure Vessel Code, Section IV, Heating Boilers. Each boiler shall be of the [firetube] [watertube] [cast iron] type. The boiler capacity shall be based on the ratings shown in HYI-01 or as certified by the American Boiler Manufacturers Association, or American Gas Association. Boiler shall be designed to burn gas and oil. Each boiler shall comply with Federal, state, and local emission regulations. Combination gas and oil-fired units shall conform to UL 296. Burner shall be provided complete with fuel supply system in conformance with ASME CSD-1 or NFPA 8501.

10-8.4 Steam converter. Exchangers shall operate with steam in shell and low temperature water in tubes. Shell and tube sides shall be designed for 1035 kPa working pressure and factory tested at 2070 kPa. Steam, water, condensate, and vacuum and pressure relief valve connections shall be located in accordance with the manufacturer's standard practice. Tubes shall be seamless copper or copper alloy, constructed in accordance with ASTM B 75 or ASTM B 395, ASTM B 395M, suitable for the temperatures and pressures specified.

10-9 **CENTRAL COOLING EQUIPMENT**. Minimum equipment efficiencies shall be Energy Star or in accordance with the following minimum efficiencies:

Minimum Efficiencies for Air-Cooled Chillers

	Full Load		IPLV	
	COP	(EER)	COP	(kW/ton)
Air-Cooled (with Condenser):				
527 kW (150 tons) or less	2.8	(9.5)	3.1	(1.12)
greater than 527 kW (150 tons)	2.7	(9.2)	2.9	(1.22)
Air-Cooled (Condenserless):				
All Capacities	3.1	(10.6)	3.2	(1.10)

Minimum Efficiencies for Water-Cooled Chillers

	Full Load		IPLV	
Capacity	COP	(EER)	COP	(kW/ton)
281 kW (80 tons) or less	3.9	(13.3)	4.7	(0.75)
greater than 281 kw (80 tons) or less than or equal to 351 kw (100 tons)	3.9	(13.3)	5.1	(0.70)
greater than 351 kw (100 tons) or less than or equal to 702 kw (200 tons)	4.7	(16.0)	5.4	(0.65)

greater than 702 kw (200 tons) or less than or equal to 1757 kw (500 tons)	5.7	(19.4)	6.1	(0.58)
greater than 1757 kw (500 tons)	5.9	(20.0)	6.3	(0.56)

10-9.1 Packaged air cooled liquid chillers. Units shall be assembled, leak-tested, charged (refrigerant and oil), and adjusted at the factory. Chiller shall be provided with factory installed insulation on surfaces subject to sweating including the liquid cooler, suction line piping, economizer, and cooling lines. Chiller shall include all customary auxiliaries deemed necessary by the manufacturer for safe, controlled, automatic operation of the equipment. Chiller shall be provided with a single point wiring connection for incoming power supply. Factory installed insulation shall be provided on all suction piping from the evaporator to the compressor and on the liquid cooler shell. Where motors are the gas-cooled type, factory installed insulation shall be provided on the cold-gas inlet connection to the motor per manufacturer's standard practice. Compressors shall be scroll, reciprocating, rotary screw or centrifugal type. Scroll and reciprocating chillers shall be constructed and rated in accordance with ARI 590. Rotary screw chillers shall be constructed and rated in accordance with ARI 550 or ARI 590 as applicable. Centrifugal chillers shall be constructed and rated in accordance with ARI 550. Chiller shall conform to ASHRAE 15. Refrigerants shall be one of the fluorocarbon gases. Refrigerants shall have number designations and safety classifications in accordance with ASHRAE 34. Refrigerants shall meet the requirements of ARI 700 as a minimum. Refrigerants shall have an Ozone Depletion Potential (ODP) of less than or equal to 0.05. Chiller shall be provided with a complete factory mounted and prewired [electric] [microprocessor based control system]. Controls package shall contain as a minimum a digital display or acceptable gauges, an on-auto-off switch, motor starters, power wiring, control wiring, and disconnect switches. Controls package shall provide operating controls, monitoring capabilities, programmable setpoints, safety controls, and EMCS interfaces.

10-9.2 Water cooled liquid chillers. Total chiller system shall be constructed and rated in accordance with ARI 590. Individual chiller components shall be constructed and rated in accordance with the applicable ARI standards. Chiller shall be assembled, leak-tested, charged (refrigerant and oil), and adjusted at the job site by a factory representative. Unit components delivered separately shall be sealed and charged with a nitrogen holding charge. Unit assembly shall be completed in strict accordance with manufacturer's recommendations. Chiller shall operate within capacity range and speed recommended by the manufacturer. Parts weighing 50 pounds or more which must be removed for inspection, cleaning, or repair, shall have lifting eyes or lugs. Chiller components (excluding field installed refrigerant piping) shall be provided with factory installed insulation on surfaces subject to sweating. Chiller shall include all customary auxiliaries deemed necessary by the manufacturer for safe, controlled, automatic operation of the equipment. Refrigerants shall be one of the fluorocarbon gases. Refrigerants shall have number designations and safety classifications in accordance with ASHRAE 34. Refrigerants shall meet the requirements of ARI 700 as a minimum. Refrigerants shall have an Ozone Depletion Potential (ODP) of less than or equal to 0.05. Chiller shall be provided with a complete factory mounted and prewired [electric] [microprocessor based control system]. Controls package shall contain as a minimum a digital display or acceptable gauges, an on-auto-off switch, motor starters, power wiring, control wiring, and disconnect switches. Controls package shall provide operating controls, monitoring capabilities, programmable setpoints, safety controls, and EMCS interfaces.

10-9.3 Cooling towers. Each tower shall be the [induced] [forced] mechanical draft, [crossflow] [or] [counterflow], factory fabricated, factory-assembled type. Towers shall conform to NFPA 214. Fire hazard rating for plastic impregnated materials shall not exceed 25. Plastics shall not drip or run during combustion. Determine ratings by ASTM E 84 or NFPA 255. Casing shall be constructed Type 304 stainless steel or FRP. Basin shall be completely watertight and constructed of Type 304 stainless steel or FRP. The fill shall be [PVC formed sheets arranged in a honeycomb or waveform configuration] [or] [treated Douglas-fir, hemlock or redwood]. Fill shall be removable or otherwise made accessible for cleaning. Provide space supports as required to prevent sagging and misalignment, and provide for an even mixing of air and water. Structural supports shall be provided in accordance with the recommendations of the manufacturer of the tower unless otherwise indicated. Water distribution systems shall be accessible and permit flexibility of operation. Systems shall be self-draining and nonclogging. Provide drift eliminators in tower outlet to limit drift loss to not over 0.02 percent of specified water flow. Fans shall be the [centrifugal] [or] [adjustable-pitch propeller] type, constructed of Type 304 stainless steel, aluminum or an aluminum alloy, or FRP.

10-9.4 Closed circuit coolers. Casing shall be constructed of hot-dip galvanized steel with fan section constructed of stainless steel. Coil and frame shall be steel and hot-dip galvanized after fabrication. Access doors or panels suitably sized and located shall be provided for access for cleaning, repair, or removal. Provide discharge damper controls to minimize heat loss during reduced operation and electric heater in sump for freeze protection.

10-9.5 Evaporative condensers. Condenser shall be rated and tested in accordance with requirements of ASHRAE 64. Condenser shall include fans, water pump with suction strainer, electric motor and drive equipment, water eliminators if required, condensing coil, liquid receiver if required, water pan or sump, spray nozzles or water-distribution pan, water strainer, water make-up assembly, bleeder with flow valve of the needle valve type sized for the flow required or a fixed orifice, enclosure with suitable access doors, and air-inlet and outlet openings. No water shall carry over into the unit discharge outlet. Enclosure shall be constructed of [18 gauge hot-dip galvanized steel] [aluminum], reinforced and braced. Access doors or panels suitably sized and located shall be provided for access to water nozzles or distribution pan, coils, and valves for cleaning, repair, or removal of the item.

10-9.6 [Manufacturer’s multiyear compressor warranty. The Contractor shall provide a [5] [10] year [parts only (excludes refrigerant)][parts and labor (includes refrigerant)] manufacturer's warranty on the chiller compressor(s). This warranty shall be directly from the chiller manufacturer to the Government and shall be in addition to the standard one-year warranty of construction. The manufacturer's warranty shall provide for the repair or replacement of the chiller compressor(s) that become inoperative as a result of defects in material or workmanship within [5] [10] years after the date of final acceptance. When the manufacturer determines that a compressor requires replacement, the manufacturer shall furnish new compressor(s) at no additional cost to the Government. Upon notification that a chiller compressor has failed under the terms of the warranty, the manufacturer shall respond in no more than [6] [24] [_____] hours. Response shall mean having a manufacturer-qualified technician onsite to evaluate the extent of the needed repairs. The warranty period shall begin on the same date as final acceptance and shall continue for the full product warranty period.]

10-10 **AIR DISTRIBUTION SYSTEMS**. Provide duct systems conforming to the recommendations of the SMACNA Duct Construction Standards including seal class requirements. Fire dampers shall be provided where required by code. Balancing dampers shall be provided at all branch takeoffs and for all supply outlets. Permanent access to dampers shall

be provided. Air intakes shall be placed at the highest practical level in the building. Intakes shall be covered with screens to prevent insects and foreign objects from entering.

10-10.1 Ductwork. All ductwork including fittings and components shall conform to SMACNA HVAC Duct Construction Standards. Seal class shall be as recommended by SMACNA. [Internally lined ductwork shall not be allowed.] Pressure sensitive tape shall not be used as a sealant. Ductwork leak test shall be performed for the entire air distribution and exhaust system, including fans, coils, [filters, etc.] [filters, etc. designated as static pressure Class 750 Pa through Class 2500 Pa. Test procedure, apparatus, and report shall conform to SMACNA Leakage Test Manual. The maximum allowable leakage rate is [_____] l/s. Ductwork leak test shall be completed with satisfactory results prior to applying insulation to ductwork exterior.

10-10.2 Supply diffusers and registers. Diffusers shall be located to ensure that the air distribution will completely cover all surfaces of exterior walls with a blanket of conditioned air or may be of a compact design so long as 'dead spots' within the units are avoided. Diffusers shall be provided with integral opposed blade damper. Diffusers shall be provided with air deflectors as required for proper air flow in the space. Plastic diffusers are prohibited. Core velocity shall be limited to 3 m/sec maximum, with a maximum pressure drop of 25 Pa. Ceiling mounted units shall have factory finish to match ceiling color, and be installed with rims tight against ceiling. Sponge-rubber gaskets shall be provided between ceiling or wall and surface-mounted diffusers for air leakage control. Diffuser boots shall be sealed tight to the wall or ceiling they penetrate using duct mastic or caulking. Suitable trim shall be provided for flush-mounted diffusers. Duct collar connecting the duct to diffuser shall be airtight and shall not interfere with volume controller. Wall supply registers shall be installed at least 150 mm below the ceiling.

10-10.3 Return/exhaust registers and grilles. Grilles shall be fixed horizontal or vertical louver type similar in appearance to the supply diffuser face. Registers shall be provided with integral opposed blade damper. Plastic units are prohibited. Core velocity shall be limited to 2 m/sec maximum, with a maximum pressure drop of 15 Pa. Grilles shall be provided with sponge-rubber gasket between flanges and wall or ceiling. Register/grille boots shall be sealed tight to the wall or ceiling they penetrate using duct mastic or caulking. Wall return grilles shall be located at least 150 mm above the floor or below the ceiling.

10-10.4 Flexible duct. Shall be limited to runouts, shall be adequately supported to prevent kinks and shall not exceed 3.2 m in length. Runouts shall be preinsulated, factory fabricated, and conform with NFPA 90 and UL 181.

10-10.5 Fire dampers. Fire dampers shall be located and installed in accordance with NFPA 90A, and shall conform to the requirements of UL 555. Fire dampers shall be automatic operating, and shall be rated for the maximum system velocity and pressure. Fire dampers shall be equipped with a steel sleeve or adequately sized frame installed in such a manner that disruption of the attached ductwork, if any, will not impair the operation of the damper. Dampers shall not reduce the duct or the air transfer opening cross-sectional area. Access doors shall be provided at all fire dampers.

10-10.6 Balancing dampers. Provide in ducts serving each supply, return and exhaust air device.

10-10.7 Access doors. Provide in ductwork and plenums at all air flow measuring devices, automatic dampers, fire dampers, coils, thermostats and other devices requiring service and

inspection.

10-11 **HYDRONIC DISTRIBUTION SYSTEMS**.

10-11.1 Pumps. Provide [inline] [base mounted] centrifugal pump for each hydronic system provided. Provide flexible connections and pressure gauges on pump inlet and outlet. [Provide primary and backup pump for each hydronic system provided.]

10-11.2 Air separator. Provide air separator for each closed hydronic system provided.

10-11.3 Expansion. Provide a [bladder tank] [expansion tank] for each closed hydronic system provided.

10-11.4 Chemical feed systems. Provide means for chemical treatment for each hydronic system provided. Provide automatic chemical treatment systems for all open water systems. Provide initial treatment and one year supply of chemicals for each system provided.

10-11.5 Makeup water. Provide backflow preventers and pressure reducing valves on each makeup water system provided. Each hydronic system shall have a separate pressure reducing valve.

10-12 **SPECIALIZED EXHAUST SYSTEMS.** Provide vehicle exhaust systems for all repair bays. [A hanging reel type system is preferred.] Provide welding exhaust systems in all areas designated for welding.

10-12.1 Vehicle exhaust. Provide a [hanging exposed overhead] [hanging disappearing overhead] [disappearing underfloor] [nondisappearing (plug-in underfloor)] type vehicle tail pipe exhaust system. Construct and install in accordance with applicable requirements of NFPA 91.

10-12.1.1 Fans. Fans shall be centrifugal type. [Provide unit of all welded construction, utilizing minimum 14-gage carbon steel in AMCA Class II construction.] [Internal and external protective coating shall be manufacturer's standard, engineered quality type, with properties comparable to [air-dry or baked phenolic,] [or] [epoxy] applied in multiple coats of 0.10 to 0.15 mm dry film thickness.] [Mount entire assembly for vibration isolation on structural steel base and spring or elastomer type isolators with minimum transmissibility of [10] [5] percent.] [Provide split sleeve or flexible connection at fan inlet.]

10-12.1.2 Ducts. Construct ducts and miter or stamped fittings with galvanized steel. Duct sheet metal gages shall conform to Class I in SMACNA RIDCSTD and SMACNA RIDCS. Construct suction side ductwork with lock groove seam longitudinal joints. Connect circumferential joints between sections with push-on or bead and crimp type, secured with a minimum 4 rivets or screws on ducts up to and including 100 mm diameter, and with screws or rivets a minimum 80 mm on center on larger sizes of duct. Lap joints in the direction of air flow. On disappearing overhead systems, assemble roller duct sections using pop rivets. Solder all joints or construct ductwork leak-tight as for discharge side ductwork below. Construct ductwork on the discharge side of the fan leak-tight with joints and seams welded, brazed, or soldered. Provide flanges with suitable gaskets, where required. Repair damaged galvanizing with galvanizing repair compound.

10-12.1.3 Flexible Tail Pipe Exhaust Tubing and Connectors. Provide interlocking helical seam metallic type construction of 0.3 mm minimum thickness up to and including 150 mm diameter

and 0.51 mm minimum thickness over 150 mm diameter corrosion-resistant steel. Connect to duct by welding or with screws or flanged joint with gasket. Install vehicle adapters provided by the using activity. Secure hose terminal connections by screws, clamps, or flanged connections. [Provide winch operated hose assembly.]

10-12.1.4 Supporting Elements. Support ducting with anti-sway bracing to resist perceptible movement in response to forces imposed by flexible tubing location on handling. Suspend tubing from overhead location and provide means to raise and lower for use. Assemble suspension system with rigid pulley restraint, 3 mm diameter aircraft cable, pulleys, and manually operated winch fitted with safety ratchet lock and slip resistant hand grip.

10-12.2 Welding exhaust. Provide a [hanging] [long reach type] welding fume exhaust system as specified and indicated. Construct and install in accordance with applicable requirements of NFPA 91.

10-2.2.1 Fans. Fans shall be centrifugal type. [Provide unit of all welded construction, utilizing minimum 14-gage carbon steel in AMCA Class II construction.] [Internal and external protective coating shall be manufacturer's standard, engineered quality type, with properties comparable to [air-dry or baked phenolic,] [or] [epoxy] applied in multiple coats of 0.10 to 0.15 mm dry film thickness.] [Mount entire assembly for vibration isolation on structural steel base and spring or elastomer type isolators with minimum transmissibility of [10] [5] percent.] [Provide split sleeve or flexible connection at fan inlet.]

10-2.2.2 Ducts. Construct ducts and miter or stamped fittings with galvanized steel. Duct sheet metal gages shall conform to Class I in SMACNA RIDCSTD and SMACNA RIDCS. Construct suction side ductwork with lock groove seam longitudinal joints. Connect circumferential joints between sections with push-on or bead and crimp type, secured with a minimum 4 rivets or screws on ducts up to and including 100 mm diameter, and with screws or rivets a minimum 80 mm on center on larger sizes of duct. Lap joints in the direction of air flow. On disappearing overhead systems, assemble roller duct sections using pop rivets. Solder all joints or construct ductwork leak-tight as for discharge side ductwork below. Construct ductwork on the discharge side of the fan leak-tight with joints and seams welded, brazed, or soldered. Provide flanges with suitable gaskets, where required. Repair damaged galvanizing with galvanizing repair compound.

10-2.2.3 Flexible Tail Pipe Exhaust Tubing and Connectors. Provide corrosion protected, spring steel helix reinforced, neoprene impregnated, woven fibrous glass fabric laminate, flexible tubing with cuffed ends or equivalent construction. Connect to duct with clamp or gasketed flange [and fit with swivel connected conical fume hood, constructed of minimum 20 gage aluminum [or 26 gage galvanized steel] and fitted with 13 mm mesh intake screen and magnets for holding receptor in fixed location]. Secure tubing to terminal devices by clamping. [Provide spring or weight counterbalanced supporting arms for flexible hose section of long reach system.]

10-2.2.4 Supporting Elements. Support ducting with anti-sway bracing to resist perceptible movement in response to forces imposed by flexible tubing location on handling. Suspend tubing from overhead location [and provide means to raise and lower for use].

10-13 **PIPING SYSTEMS**. Piping systems shall be in accordance with the following subparagraphs. Fittings and valves shall be compatible for the piping systems in which installed. Provide dielectric unions where required. Provide flexible connections where necessary to

prevent vibrations from transmitting from equipment to the piping system. Expansion loops, expansion joints and offsets shall provide with adequate anchors and guides where required to prevent excessive forces within the piping systems. All piping shall be properly and adequately supported. Pipe supports shall conform to MSS SP-58 and MSS SP-69.

10-13.1 Chilled water. Shall be steel piping conforming to ASTM A 53/A 53M, Grade A or B, black steel, schedule 40 or copper tubing conforming to ASTM B 88, ASTM B 88M, Type K or L.

10-13.2 Hot water. Shall be steel piping conforming to ASTM A 53/A 53M, Type E or S, Grade A or B, black steel, schedule 40 or copper tubing conforming to ASTM B 88, ASTM B 88M, Type K or L.

10-13.3 Refrigerant. Copper tubing shall conform to ASTM B 280 annealed or hard drawn as required. Copper tubing shall be soft annealed where bending is required and hard drawn where no bending is required. Soft annealed copper tubing shall not be used in sizes larger than 35 mm. Refrigerant piping, valves, fittings, and accessories shall conform to the requirements of ASHRAE 15.

10-13.4 Steam. Shall be steel piping conforming to ASTM A 53/A 53 M, Type E or S, Grade A, black steel, schedule 40.

10-13.5 Steam condensate. Shall be steel piping conforming to ASTM A 53/A 53 M, Type E or S, Grade A, black steel, schedule 80.

10-13.6 Condensate drain. Shall be copper tubing or PVC pipe.

10-14 **INSULATION**. Pipe and duct insulation shall be in accordance with ASHRAE 90.1. Equipment insulation shall be a minimum of 50 mm thickness or as necessary to prevent the surface temperature from exceeding 60 degrees C. Thermal insulation on piping, fittings, ductwork, equipment and vessels shall be installed per the “National Commercial & Industrial Insulation Standards” (MICA) Manual. The sample specification format in Section VI of the MICA manual shall be used and edited to suit the work to be performed.

10-14.1 Duct insulation. Provide on the exterior of all supply and outside air ducts and plenums and on all return ducts in unconditioned spaces. Exhaust ductwork does not require insulation. Insulation shall be faced with a vapor barrier material having a performance rating not to exceed 1.0 perm. Insulation, vapor barrier, and closure systems shall be non-combustible as defined in NFPA 255, with a flame-spread rating of not more than 25, and a smoke development rating of not more than 50, as defined in ASTM E-84. Where insulated ducts pass through fire walls, fire partitions, above grade floors, and fire rated chase walls, the penetration shall be sealed with fire stopping materials.

10-14.2 Pipe Insulation. Provide on all aboveground hot and cold piping systems except PVC condensate drains. Insulation shall form a continuous thermal retarder and shall have a vapor retardant to prevent condensation on cold piping systems. Installation shall be with full length units of insulation and using a single cut piece to complete a run. Cut pieces or scraps abutting each other shall not be used. Supply the insulation with manufacturers recommended factory applied jacket except for flexible cellular. Piping exposed to weather shall be insulated and an aluminum jacket or PVC jacket shall be applied. Where insulated pipes pass through fire walls, fire partitions, above grade floors, and fire rated chase walls, the penetration shall be sealed with fire stopping materials.

10-14.2.1 Cold aboveground piping. Insulation for minus 34.5 degrees to plus 15.6 degrees C for outdoor, indoor, exposed or concealed applications, shall be as follows:

10-14.2.1.1 Cellular Glass: ASTM C 552, Type II, and Type III.

10-14.2.1.2 Flexible Cellular Insulation: ASTM C 534, Type I or II with vapor retarder skin on both sides.

10-14.2.1.3 Phenolic Insulation: ASTM C 1126, Type III.

10-14.2.1.4 Polyisocyanurate Insulation: ASTM C 591, Type I.

10-14.2.2 Hot aboveground piping. Insulation for above 15.6 degrees C [60 degrees F] for outdoor, indoor, exposed or concealed applications, shall be as follows:

10-14.2.2.1 Mineral Fiber: ASTM C 547, Types I, II or III.

10-14.2.2.2 Calcium Silicate: ASTM C 533, Type I indoor only, or outdoors above 121 degrees C pipe temperature.

10-14.2.2.3 Cellular Glass: ASTM C 552, Type II and Type III.

10-14.2.2.4 Flexible Cellular Insulation: ASTM C 534, Type I or II to 93 degrees C service.

10-14.2.2.5 Phenolic Insulation: ASTM C 1126 Type III to 121 degrees C service shall comply with ASTM C 795. Supply with manufacturer’s recommended factory applied jacket.

10-14.2.2.6 Polyisocyanurate Insulation: ASTM C 591, Type 1, to 149 degrees C service. Supply with manufacturer’s recommended factory applied jacket.

10-14.3 Equipment. Provide on all equipment when temperatures are below 16 degrees C, above 40 degrees C or where condensation can occur. Insulation shall be suitable for the temperature encountered. Insulation shall be formed or fabricated to fit the equipment. Removable insulation sections shall be provided to cover parts of equipment which must be opened periodically for maintenance including vessel covers, fasteners, flanges and accessories. Supply the insulation with manufacturer's recommended factory applied jacket.

10-15 **CONTROLS**. Control system shall be [DDC] [or] [electric]. Pneumatic actuators for automatic valves, dampers and similar will be allowed. Provide all devices required, including air compressors, refrigerated dryers, current transducers, transformers, thermostats, sensors, controllers, actuators, control valves, dampers, transmitters, flow meters, etc., to provide a

complete and operable system. All thermostats for systems that provide both heating and cooling shall have a deadband of 2.8 degrees C. All equipment and systems shall be automatically controlled [and monitored] by the control system. [The control system shall tie into the existing [EMCS] [UMCS] system.] [A description of the existing system shall be provided by the design agent.] Control system instructions shall be provided for each system. The instructions shall consist of half-size laminated drawings and shall include the control system schematic, equipment schedule, ladder diagram, sequence of operation, panel arrangement drawings, wiring diagram, and valve and damper schedules.

10-16 **TESTING, ADJUSTING AND BALANCING**. Testing, adjusting and balancing of each system shall be the Contractor's responsibility. Testing and balancing of air and hydronic systems shall be accomplished by a firm certified for testing and balancing by the Associated Air Balance Council (AABC) or National Environmental Balancing Bureau (NEBB). Prior to testing, adjusting, and balancing, the Contractor shall verify that the systems have been properly installed and are operating as specified. Testing of individual items of equipment shall be performed by a person authorized to perform such testing and startup by the equipment manufacturer. The contractor shall correct all systems and equipment not found in compliance, and shall be responsible for all labor and materials required for this effort. AABC MN-1 or NEBB-01 shall be used as the standard for providing testing of air and water systems. The selected standard shall be used throughout the entire project. All recommendations and suggested practices contained in the selected standard shall be considered mandatory. Instrumentation accuracy shall be in accordance with selected standard. The provisions of the TAB standard, including checklists, report forms, etc., shall, as nearly as practical, be used to satisfy the Contract requirements.

10-16.1 Piping systems. Each piping system including pipe, valves, fittings and equipment shall be hydrostatically tested and proved tight at a pressure of 1-1/2 times the design working pressure, but not less than 699 kPa for a period of not less than two hours with no appreciable loss in pressure. Piping shall not be insulated until testing is completed and acceptable. Upon completion of installation and prior to startup, each hydronic system shall be balanced. All balancing data, including deficiencies encountered and corrective action taken, shall be recorded. Following final acceptance of certified reports by the Contracting Officer, the setting of all HVAC adjustment devices shall be permanently marked by the Contractor's balancing engineer so that adjustment can be restored if disturbed at any time.

10-16.2 Air systems. Where specific systems require special or additional procedures for testing, such procedures shall be in accordance with the standard selected. All data, including deficiencies encountered and corrective action taken, shall be recorded. Following final acceptance of certified reports by the Contracting Officer, the setting of all HVAC adjustment devices shall be permanently marked by the Contractor's balancing engineer so that adjustment can be restored if disturbed at any time.

10-16.3 Equipment. Equipment. Each item of central operating equipment provided, including boilers, [air handling units,] [ ] and chillers shall be tested in accordance with the equipment manufacturer’s standard testing procedures. A factory representative shall be present for the startup and testing of each item of equipment. A certified report shall be provided for each item of equipment tested.

10-17 **COMMISSIONING**. All HVAC systems and equipment including controls shall be commissioned in accordance with the following Clauses 5 (Program-Phase Procedure), 6 (Design Phase), 7 (Construction Phase), 8 (Acceptance Phase) and 12 (Commissioning

Documentation) in ASHRAE Guideline 1. The Commissioning Authority (CA), referenced in ASHRAE Guideline 1, shall be hired by the prime Contractor. The CA shall be completely independent from the Contractor and shall not be a Contractor's employee or be an employee or principal of a firm in a business relationship with the Contractor negating such independent status. The roles and responsibilities of the CA are defined in Annex A DIVISION 15 PART 1 Paragraph 1.03 (B.) and shall become part of the contract requirements. Clause 6.2.3 makes reference to Appendix A6.4 for a sample commissioning specification which shall become part of the contract requirements and shall be edited to suit the work to be performed. The CA must meet the following qualifications:

1. Be employed by an AABC or NEBB certified firm.
2. Hold a management position in the firm, be able to represent the firm on all HVAC commissioning matters, and have a reputation of integrity with building owners, consultants and awarding authorities. The CA must have experience equal to either of the following;
    a. A Bachelor of Science engineering degree from an accredited college or university with a least four (4) years of experience in HVAC installation or HVAC design work, or
    b. A minimum of ten (10) years experience in any (or combination) of the following HVAC testing-adjusting-balancing, HVAC installation, HVAC design work or HVAC technical education with a minimum of four (4) years Project Responsibility.
3. Become NEBB or AABC qualified and/or maintain NEBB or AABC qualification as a TAB supervisor for both AIR and HYDRONIC systems by passing appropriate written and practical TAB examinations.
4. Demonstrate Knowledge in the category or categories of HVAC commissioning.

10-18 **TRAINING**. The Contractor shall conduct a training course for the operating for all HVAC operating systems and individual items of equipment. The training program shall be conducted in accordance with Clause 11, Operations and Maintenance Training Program, in ASHRAE Guideline 1 in addition to the following requirements. The field instructions shall cover all of the items of equipment provided as well as the overall systems. The training period shall consist of a total of [8] [16] [__] hours of normal working time and shall start after the systems are functionally completed and testing, adjusting and balancing have been completed. Factory representatives shall be present to assist in training for every item of operating equipment provided. Contractor shall provide two copies of operation and maintenance instructions for each item of equipment provided. Training shall consist of startup, normal operation and shutdown, as well as demonstrations of routine maintenance operations. The Contracting Officer shall be notified at least 14 days prior to date of proposed conduction of the training course.

CHAPTER 11

ENERGY CONSERVATION

[The Installation shall determine which energy conservation alternatives are feasible and should be used. Where life cycle cost effective, specify equipment efficiencies in the upper 25% of that available. In all cases, all equipment in the project shall, as a minimum, conform to FEMP or Energy Star criteria.]

11-1 **PASSIVE SOLAR APPLICATIONS.** Passive solar architectural applications shall routinely be considered as a part of all project designs. Unique applications such as attached sun spaces, earth sheltering, mass trombe walls, solar chimneys, solar dehumidifiers, and other innovations may be considered. Operational controls, such as shading and venting mechanisms, to control the amount of heat admitted into the building during the day, reduce the amount of heat escaping from the building at night, and provide for thermal comfort of the occupants, are parts of this system.

11-1.1 South glazing. If used as part of the solar energy system, glazing shall be of the commercially available off-the-shelf type and shall face within 20 degrees of solar south. The glazing shall be architecturally compatible with building design and the environment. It shall face directly into the living space so that the walls, floors, ceiling, and other massive objects can absorb the entering solar energy, and shall have a whole-window U value less than 1.6 square meter-kelvin (K)/watt.

11-1.2 Storage mass. If thermal performance calculations indicate a need for additional mass (beyond that provided by the building structure) substantiating data will be submitted. The storage mass will be well integrated into the building design. The thermal mass surface area in the space must be a minimum of three times the glazing area. Six to nine times the glazing area is recommended to control temperature swings. The surfaces to absorb solar energy must not be more than 10% covered.

11-1.3 Shading of Glazing. Cooling season shading of glazed surfaces on the east, west and south elevations is required.

11-2 **PRE-ENGINEERED ACTIVE SOLAR APPLICATIONS**. Pre-engineered active solar applications proposed for domestic water heating shall be evaluated for life-cycle-cost effectiveness using a recognized process design program. Whether site-mounted or unit-mounted, systems must be designed for maximum ease of maintenance and for architectural compatibility with the surrounding environment. .

11-3 **GEOTHERMAL**. Geothermal energy sources such as wet or dry steam sources, geothermal hot water, hot dry rock, etc., when determined cost effective, may be considered in regions with established geothermal sources. Each design utilizing geothermal sources shall address the project's environmental impact relating to discharge of hazardous, noncondensable gases or other hazardous effluents, noise emission, heat rejection, ground water contamination, land use, etc.

11-4 **WIND**. Wind power may be considered in regions where determined cost effective. Factors such as average wind speed, available wind power, and wind variability shall be considered when investigating the annual useful energy production potential.

11-5 **CONDENSER HEAT RECOVERY**. In regions authorized for cooling, consideration shall be given to installation of a heat exchanger to recover condenser heat and desuperheat for use in heating domestic water. A standard, domestic water heater shall be provided in conjunction with this system to provide hot water during the heating season. Heat pump water heaters can be considered in hot climates.

11-6 **ENERGY RECOVERY EQUIPMENT**.

11-6.1 Plate heat exchangers. Unit shall be a factory fabricated and tested assembly for stationary air-to-air energy recovery by transfer of sensible heat from exhaust air to supply air stream. Heat transfer surface shall be constructed of aluminum. Enclosure shall be fabricated from galvanized steel and shall include maintenance access provisions.

11-6.2 Rotary heat exchangers. Unit shall be a factory fabricated and tested assembly for air-to-air energy recovery by transfer of sensible heat from exhaust air to supply air stream. Device performance shall be according to ASHRAE 84. Exchange media shall be chemically inert, moisture-resistant, fire-retardant, laminated, nonmetallic material which complies with NFPA 90A. Exhaust and supply streams shall be isolated by seals which are static, field adjustable, and replaceable. Chain drive mechanisms shall be fitted with ratcheting torque limiter or slip-clutch protective device. Enclosure shall be fabricated from galvanized steel and shall include maintenance access provisions.

11-6.3 Heat recovery coils. Coil assembly shall be factory fabricated and tested air-to-liquid-to-air energy recovery system for transfer of sensible heat from exhaust air to supply air stream. System shall deliver an energy transfer effectiveness without cross-contamination with maximum energy recovery at minimum life cycle cost. Components shall be computer optimized for capacity, effectiveness, number of coil fins per mm, number of coil rows, flow rate and frost control. Coils, pumps, controls and piping materials shall conform to Chapter 10 – HVAC.

11-6.4 Heat pipe. Device shall be a factory fabricated, assembled and tested, counterflow arrangement, air-to-air heat exchanger for transfer of sensible heat between exhaust and supply streams. Device shall deliver an energy transfer effectiveness without cross-contamination. Heat exchanger tube core shall be seamless aluminum or copper tube with extended surfaces, utilizing wrought aluminum Alloy 3003 or Alloy 5052, temper to suit. Tubes shall be fitted with internal capillary wick, filled with an ASHRAE 15, Group 1 refrigerant working fluid, selected for system design temperature range, and hermetically sealed. Heat exchanger frame shall be constructed of not less than 16 gauge galvanized steel and fitted with intermediate tube supports, and flange connections. Tube end-covers and a partition of galvanized steel to separate exhaust and supply air streams without cross-contamination and in required area ratio shall be provided. [A drain pan constructed of welded Type 300 series stainless steel shall be provided.] Heat recovery regulation shall be provided by [system face and bypass dampers and related control system as indicated] [interfacing with manufacturer's standard tilt-control mechanism for summer/winter operation, regulating the supply air temperature and frost prevention on weather face of exhaust side at temperature indicated]. Coil shall be fitted with pleated flexible connectors.

11-6.5 Pretreatment of Outside Air. Dessicant cooling and other methods should be considered for pretreatment of outside air.

11-7 **REBATES AND INCENTIVES**. Systems and techniques which take advantage of rebates and incentives offered by utilities are preferred.

CHAPTER 12

FIRE PROTECTION

12-1 **DESIGN STANDARDS AND CODES**. The fire protection design for all facilities shall be in accordance with the current versions of the International Building Code and the National Fire Protection Association (NFPA) standards and codes.

12-1.1 **Fire Protection Engineer**. The contractor shall provide the services of a qualified registered fire protection engineer. The fire protection engineer shall be an integral part of the design team and shall be involved in all aspects of the design of the fire protection system.

12-1.2 **Fire Protection and Life Safety Analysis**. The fire protection engineer shall perform a fire protection and life safety design analysis of the proposed facility design. The analysis shall be submitted with the preliminary design submittal. The analysis shall include type of construction; height and area limitations; classification of occupancy; building separation or exposure protection; specific compliance with NFPA codes and the IBC; requirements for fire-rated walls, doors, fire dampers, etc.; analysis of automatic suppression systems and protected areas; water supplies; fire alarm system, including connection to the base-wide system; fire detection system; fire extinguishers; interior finish ratings; and other pertinent fire protection data. The submittal shall include a life safety floor plan showing occupant loading, occupancy classifications and construction type, egress travel distances, exit capacities, sprinklered areas, fire extinguisher locations, ratings of fire-resistive assemblies, and other data necessary to exhibit compliance

12-2 **HYDRANT FLOW DATA**.

[The Activity preparing the RFP shall address the adequacy of the existing water supply to meet the demands of the fire protection system required. The Activity preparing the RFP shall perform or witness the required water flow testing and verify that test results are accurate. Flow testing shall be conducted at or near the point of connection to the existing water main. Accepting historical water supply information without verification is not acceptable. The Activity preparing the RFP shall perform a preliminary hydraulic analysis to determine if the existing water supply is adequate to meet the demand, or if a fire pump and water storage tank is needed. Information shown below must be completed by the RFP preparing Activity.]

12-2.1 A preliminary hydraulic analysis performed using recent flow test data indicates that the sprinkler system design for this facility will require a [fire pump] [fire pump and storage tank] […….]. Proposed design shall be based on test data as described below.

Flow Data:

Date and Location of Test: [_____]
Static Pressure Measured: [___] [kPa]
Residual Pressure of: [___] [kPa] Flowing [_____] [liters/min]

12-2.2 The contractor shall provide detailed calculations which demonstrate that the systems designed meet the flow demands of the sprinkler systems within the facility and the fire department hose stream requirements from the fire hydrants.

12-3 **SPRINKLER SYSTEM**.

12-3.1 Wet pipe sprinkler system. [All new facilities constructed in this project] [describe

spaces to be sprinkled] shall be protected by a wet pipe sprinkler system except that sprinklers may be omitted from small detached buildings of less than 465 square meters which are separated by more than 15 240 mm in distance from any other buildings. Sprinkler system shall be designed and installed in accordance with the provisions of NFPA 13, Standard for the Installation of Sprinkler Systems. Provide hydraulic calculations to support design of the system. Sprinkler systems shall be hydraulically designed to discharge the following minimum density over the hydraulically most demanding 278.7 square meter of floor area in the following locations:

a. Maintenance Bays including Paint Bays:	10.18 L/min/m^2
b. POL Storage Areas:	16.29 L/min/m^2
c. Office and Admin Areas:	4.07 L/min/m^2
d. All other areas:	8.15 L/min/m^2

12-3.2 Dry pipe sprinkler system. Provide dry pipe sprinkler system for [describe spaces to be sprinkled]. Sprinkler system shall be designed and installed in accordance with the provisions of NFPA 13, Standard for the Installation of Sprinkler Systems. Provide hydraulic calculations to support design of the system. Dry pipe systems shall be hydraulically designed to discharge the following minimum density over the hydraulically most demanding 362 square meter of floor area in the following locations:

a. Maintenance Bays including Paint Bays:	10.18 L/min/m^2
b. POL Storage Areas:	16.29 L/min/m^2
c. Office and Admin Areas:	4.07 L/min/m^2
d. All other areas:	8.15 L/min/m^2

12-3.3 POL storage facilities if larger than 465 square meter in area or located within 15 240 mm distance of the structure, require sprinkler protection.

12-3.4 Sprinkler Heads. All sprinkler heads located in finished areas shall be recessed pendent type.

12-3.5 Covered loading docks shall be fully sprinkled by a suitable sprinkler system.

12-4.1 FIRE PUMP. [Delete requirement for fire pump if adequate water pressure is available to support the fire protection system provided.] Type of pump shall be in accordance with Mil Handbook 1008C.]

12-4.1.1 Electric fire pump. Provide electric driven fire pump and controllers in accordance with NFPA 20.

12-4.1.2 Diesel fire pump. Provide electric driven fire pump and controllers in accordance with NFPA 20. Provide a diesel fuel tank in accordance with NFPA criteria.

12-5 BUILDING CONSTRUCTION. Comply with requirements of International Building Code and NFPA 101Life Safety Code.

12-5.1 Fire Extinguishers and Cabinets. Provide portable fire extinguishers in accordance with NFPA 10. Provide bracket mounted extinguishers in non-core areas. Provide semi-recessed aluminum fire extinguisher cabinets with clear view panel in core areas. Provide fire-rated cabinets in fire-rated wall assemblies.

12-5.1.1 Interior Wall and Ceiling Finishes. Wall and ceiling finishes and movable partitions shall conform to the requirements of the IBC and NFPA 101, except as follows [The following, more stringent, interior finish requirements are included to comply with MilHdbk 1008C, Fire Protection for Facilities Engineering, Design, and Construction]:

12-5.1.2 Interior finish for exits, and exit passageways shall be Class A only.

12-5.1.3 Flame spread (FS) and smoke development (SD) shall be tested in accordance with IBC requirements. Class C materials shall only be permitted in fully sprinklered buildings.

12-5.1.4 Cellular plastics shall not be used as interior wall and ceiling materials.

12-5.1.5 Carpeting and other textile wall coverings shall not be applied as an interior finish.

12-6 FIRE ALARM. Provide fire alarm system conforming to requirements of NFPA 72 and NFPA 101. Fire alarm system shall consist of pull stations, audiovisual devices, control/annunciation panel and tamper and/or flow connection/supervision to the sprinkler system. Provide supervision of fire pump where fire pump is provided. [Fire alarm system shall tie into the base-wide system in accordance with base requirements.]

12-6.1 [Design Activity shall provide detailed information on the existing base-wide fire alarm system if one exists.]

CHAPTER 13

SUSTAINABLE DESIGN

13-1 **SUSTAINABLE DESIGN GOALS**. The goals for improving the sustainability of facilities include: (a) use resources efficiently and minimize raw material resource consumption, including energy, water, land and materials, both during the construction process and throughout the life of the facility, (b) maximize resource reuse, while maintaining financial stewardship, (c) move away from fossil fuels towards renewable energy sources, (d) create a healthy and productive work environment for all who use the facility, (e) build facilities of long-term value, and (f) protect and, where appropriate, restore the natural environment.

13-2 **PROJECT REQUIREMENTS**. Sustainable design techniques shall be considered as they relate to site and building design, construction, and operation and deconstruction. Techniques that conserve energy, improve functionality, and can be justified by life cycle cost analysis as cost effective are encouraged.

13-2.1 Sustainable design is a proposal evaluation factor. The level of incorporation of sustainable design principles will be measured through use of the Army developed Sustainable Project Rating Tool (SPiRiT), available from the following website: www.cecer.army.mil/sustdesign .

13-2.2 Each offeror will complete and submit the SPiRiT Facility Points Summary with the proposal; the total point score will determine the SPiRiT Sustainable Project Certification Level: SPiRiT Bronze, Silver, Gold, or Platinum. The certification level will be used as a proposal evaluation factor as defined in RFP Section 00120 – Proposal Evaluation and Contract Award.

13-2.3 Proposals that do not achieve a SPiRiT [____] certification level will be considered non-conforming.

13-2.4 Proposals that do not comply with the "Required" criteria listed in the SPiRiT document will be considered non-conforming. For example: SPiRiT category *3.R3 CFC Reduction in HVAC&R Equipment* requires zero use of CFC-based refrigerants in new mechanical systems. Although no credit points are available, the requirement must be met to achieve the minimum certification level.

13-2.5 Some SPiRiT categories award potential points (credits) for strategies or decisions that are not within the control of the Offeror. These areas may include installation master planning, site selection, or involving facility users in the programming process. The Offeror will receive points in the following credit categories for criteria met by the government: [insert the credits earned by government actions that are not within the scope of the proposal requirements. Especially look at SPiRiT categories *1.C1 Site Selection, 1.C2 Installation/Base Redevelopment, 1.C10 Facility Impact, and 6.C1 Holistic Delivery of Facility*]. Other than the credits stated in this paragraph, the Offeror shall not receive points for any SPiRiT criteria that cannot be substantiated by information contained in the proposal.

APPENDIX A

REFERENCES

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Department of the Navy	
Standardization Documents Order Desk 700 Robbins Avenue, Bldg. 4D Philadelphia, PA 19111-5094	MIL-HDBK-1008, Fire Protection for Facilities Engineering, Design, and Construction
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	ARI 550/590 (1998; Addendum June 1999) Water-Chilling Packages Using the Vapor Compression Cycle;
	ARI 700 (1999) Specifications for Fluorocarbons and Other Refrigerants
	ARI 880 (1998) Air Terminals
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Air Movement and Control Association 30 W. University Drive Arlington Heights, IL 60004-1893	AMCA 210 (1985) Laboratory Methods of Testing Fans for Rating
American Architectural Manufacturers Association (AAMA) 1827 Walden Office Square, Suite 104 Schaumburg, IL 60173-4268	AAMA 101 Voluntary Specifications for Aluminum, Vinyl and Wood Windows and Glass Doors
	AAMA 605 Voluntary Specification Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
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American Bearing Manufacturers	AFBMA Std 9 (1990) Load Ratings

Association 1200 19th Street, NW Washington, DC 20036-4303	and Fatigue Life for Ball Bearings AFBMA Std 11 (1990) Load Ratings and Fatigue Life for Roller Bearings
American Boiler Manufacturers Association (ABMA) 950 N. Glebe Rd, Suite 160 Arlington, VA 22203-1824	ABMA ISEI Industry Standards and Engineering Information
American National Standards Institute 11 West 42 Street New York, NY 10036	ANSI 70 (1996) National Electrical Code ANSI B16.3 (1998) Malleable Iron Threaded Fittings Classes 150 and 300 ANSI C2 (1997) National Electrical Safety Code ANSI Z21.10.1 (1993; Z21.10.1a; Z21.10.1b; Z21.10.1c) Gas Water Heaters Vol. I, Storage Water Heaters with Input Ratings of 75,000 Btu Per Hour or Less ANSI Z21.13 (1991; Addenda 1993 and 1994) Gas-Fired Low-Pressure Steam and Hot Water Boilers ANSI Z21.45 (1995) Flexible Connectors of Other Than All-Metal Construction for Gas Appliances ANSI Z21.47 (1998) Gas-Fired Furnaces ANSI Z83.6 (1990; Addenda 1992 and 1993) Gas-Fired Infrared Heaters ANSI Z124.3 (1995) American National Standard for Plastic Lavatories. ANSI Z124.6 (1997) Plastic Sinks

	ANSI/TIA/EIA-569-A (1998) Commercial Building Standard for Telecommunications Pathways and Spaces
American Society of Plumbing Engineers 3617 E. Thousand Oaks Blvd. Westlake Village, CA 91362	Volume 1 (1998) Fundamentals of Plumbing Engineering
American Society for Testing and Materials 100 Bar Harbor Drive West Conshohocken, PA 19428-2959	ASTM A 36/A 36M (2000) Carbon Structural Steel
	ASTM A 53 (1999) Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
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	ASTM B 75 (1999) Seamless Copper Tube
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	ASTM B 280 (1999) Seamless Copper Tube for Air Conditioning and Refrigeration Field Service
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Atlanta, GA 30329-2305

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Associated Air Balance Council 1518 K Street NW, Suite 708 Washington, DC 20005	AABC MN-1 (1989) National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems
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180 S. Washington Street
Falls Church, VA 22046

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1300 N 17th Street, Suite 1847
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45 Bristol Drive, Suite 101
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UL 1746 (1993; Rev thru Sep 1998) External Corrosion Protection Systems for Steel Underground Storage Tanks

UL 1995 (1995; Rev thru Aug 1999) Heating and Cooling Equipment

LIST OF ATTACHMENTS TO THE STATEMENT OF WORK

NUMBER	DESCRIPTION
1.	TECHNICAL SPECIFICATIONS
2.	RESERVED
3.	RESERVED
4.	RESERVED
5.	PROPOSAL DRAWING FORMAT
6.	SITE AND LOCALITY MAPS
7.	PROJECT AND SAFETY SIGNS
8.	GEOTECHNICAL REPORT
9.	EXCERPTS FROM THE INSTALLATION DESIGN GUIDE
10.	FIRE FLOW DATA
11.	LIST OF DRAWINGS
12.	ASBESTOS AND LEAD PAINT SURVEY RESULTS

ATTACHMENT 1

TECHNICAL SPECIFICATIONS

ATTACHMENT 1

TECHNICAL SPECIFICATIONS

GUIDE SPECIFICATIONS MODIFIED FOR DESIGN-BUILD CONSTRUCTION CONTRACTS:

Several Guide Specifications, covering contract procedures and execution issues must be modified for design-build construction contracts to reflect the integrated design and construction aspects, as well as the non-traditional roles and responsibilities of the parties. Some of these modified Specifications have been included herein. In addition, we have included a sample Section 01012 “DESIGN AFTER AWARD” modified to suit a typical design/build construction project. USACE Design District must review, edit, and tailor these specifications to suit the particular project.

Current UFGS Specification Sections available through CCB have been edited to include provisions to address Design-Build contracts. Design Districts shall take particular care in preparing these administrative specifications so that the provisions which address Design-Build requirements remain in the edited sections.

SUBMITTALS (SECTION 01330)

Design submittals are covered in Division 01 General Requirements, Section 01012 “DESIGN AFTER AWARD”. Construction submittal requirements are addressed in, Section 01330, “SUBMITTAL REQUIREMENTS”. In design-build contracts, design and construction submittals are generally reviewed for conformance to the contract requirements. They are NOT routinely “reviewed for approval”. The only time review for approval is necessary is for totally prescriptive specialty designs for which the Government desires to assume design responsibility. The requirement for approval should be determined during the development of the D-B RFP. The design-build project team needs to be explicit as to what needs Government approval and why the approval is necessary. The team also needs to be explicit as to what needs Government review and that the review is to ensure conformance to the contract requirements. The primary principle to remember is that if the Government chooses to approve the submittal, they may be taking some responsibility from the Contractor on design issues. One of the main advantages of D-B is the single point of responsibility for both design and construction. The Government shifts the risk of design adequacy to the D-B by avoiding assumption of the traditional role of “approval” of design and construction products to the maximum extent possible.

Section 01330 makes the D-B Contractor’s Designer(s) of Record responsible for assuring the adequacy and integration of the design, including written approval for all extensions of design, critical materials, any deviations from the solicitation, the accepted proposal, or the completed design, equipment whose compatibility with the entire system must be checked. The Government must concur with deviations to the completed design and must approve deviations to the accepted proposal and RFP; the latter are considered formal “changes”, unless inconsequential in scope and cost

This attachment provides the location for the placement of the “font end” type specifications which are used to control contractor overall operations and represent the standards of operation and communication between the Corps Construction District and the contractor.

The specifications included here should represent the minimum information necessary for the construction Area Office to adequately administer the contract, it is not the intention of this attachment to include material specific technical specifications from the Corps of Engineers Guide Specifications (CEGS) or other similar sources.

Below is a list of specifications which could typically be included in this attachment.

Section 01005	Special Work Requirements and Restrictions
Section 01012	Design After Award (Design/Build)*
Section 01111	Safety and Health Requirements
Section 01200	Project Meetings
Section 01300	Submittal Procedures
Section 01320	Project Schedule (Design/Build)
Section 01330	Submittal Procedures (Design/Build)
Section 01451	Contractor Quality Control (Design/Build)
Section 01500	Temporary Construction Facilities
Section 01560	Environmental Protection
Section 01780	Closeout Submittals
Section 09900	Painting, General
Section 13280	Asbestos Abatement
Section 13283	Removal and Disposal of Lead-Contaminated Paint

** Sample specifications edited to suit the design build procurement strategy are included in this UFC for editing and use by Design Districts*

SECTION 01012
DESIGN AFTER AWARD

[*Design Districts shall review and edit this specification as necessary to suit the project.]*

1.0 GENERAL

1.1 The Contractor shall propose a schedule for the number and composition of the design submittal phases. As a minimum, design submittals are required at the preliminary (50%), final (100%), and at the design complete stage. The requirements of each design stage are listed hereinafter. The Contractor shall reflect the number and schedules for the design submittals phases in the progress charts. As a maximum, the 50%, 100%, and design complete submittals shall be made in one consolidated package which includes each of the major categories listed in paragraph “Contents of Design Submittals”.

[Design District shall edit and remove the following paragraph if fast track design-construction is not be permitted in the particular project. Fast-track design-construction is the established standard for this program. Designers are cautioned that removal of the fast track option will inherently increase contractor costs and may cause the proposers to eliminate some quality features from the design proposal.]

1.2 To facilitate fast-track design-construction activities the contractor shall submit a 100% Site/Utility Design as the first design submittal. Following review, resolution, and incorporation of all Government comments, and submittal of a satisfactory set of site/utility design documents, the [insert USACE Construction District] shall issue a limited Notice to Proceed (NTP) which shall allow the contractor to proceed with site development activities within the parameters set forth in the accepted design submittal. Submittal review, comment, and resolution times from this specification apply to this initial 100% Site/Utility Design Submittal. No on-site construction activities shall begin prior to receipt of a construction NTP by the contractor.

2.0 DESIGNER OF RECORD

The Contractor shall identify, for approval, the Designer of Record for each area of work. One Designer of Record may be responsible for more than one area. All areas of design disciplines shall be accounted for by a listed, registered Designer of Record. The Designer(s) of Record shall stamp, sign, and date all design drawings under their responsible discipline at each design submittal stage (see SCR - "Registration of Designers").

3.0 DEFINITION OF DESIGN SUBMITTALS

3.1 First Site/Utility Design Submittal (100%). This submittal is provided to allow the contractor to concentrate initial efforts for the site/utility portions of the project. By allowing this work to be separated, the contractor is given the opportunity to fast track and begin construction on the site/utility work prior to completion of the building designs. This submittal shall consist of the following:

3.1.1 Design analysis, developed to 100%, site work and utility work only.

3.1.2 100% complete site/utility drawings

3.1.3 Final site/utility specifications

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

3.1.5 Contractor prepared site specific geotechnical report and analyses.

3.2 Preliminary Conformance - 50% Building Submittal. This submittal is intended to insure that the contractors design is proceeding in accordance with the terms of the solicitation and the contractor's original proposal as well as in a timely manner. This submittal shall consist of the following:

3.2.1 Design analysis, developed to 50%

3.2.2 50% complete drawings

3.2.3 Draft specifications

3.2.4 Site Utility design information need not be included in this submittal package except where interface to the interior building systems is required.

3.3 Final Design - 100% Building. The review of this submittal is to insure that the design is in accordance with directions provided the Contractor during the design process as well as the original solicitation and the contractor's proposal. The Contractor shall submit the following documents for Final Design Review:

3.3.1 50% review comments and responses.

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

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

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

3.3.5 Site Utility design information need not be included in this submittal package except where interface to the interior building systems is required.

3.4 Design Complete Submittal. After the Final Design Review, the Contractor shall revise the Contract Documents by incorporating any comments generated during the Final Design Review and shall prepare final hard copy Contract Specifications. The Contractor shall submit the following documents for the design complete submittal:

3.4.1 Design analysis, in final 100% complete form.

3.4.2 100% complete drawings.

3.4.3 Final specifications

3.4.4 Final review comments and responses.

3.4.5 Electronic Submission: All CADD files in native [AutoCAD] [MicroStation] format, as well as all prepared technical specifications shall be provided on CD-ROM. Two copies are required.

3.5 Structural Interior Design.

3.5.1 Definition: The Structural Interior Design (SID) shall involve the selection and sampling of all applied finishes including material, color, texture and patterns necessary to complete the building's interior architectural features. The SID shall also include all prewired workstation finishes and required drawings for prewired workstations. This information shall be submitted in 3" D-ring binders, 8-1/2" x 11" format.

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

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

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

3.5.5 Format: Submit all SID information and samples on 8 1/2"x 11" modules with only one foldout. The maximum foldout width shall be approximately 25 inches. No foldouts on the top or bottom of the pages. Place the project title, base, architectural firm, page number and date on the bottom of each page or module.

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

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

3.5.5.3 Material and finish samples shall indicate true pattern, color and texture. Carpet samples shall be large enough to indicate a complete pattern or design.

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

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

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

3.5.6 The SID Binder shall include the following information at each design submittal in this order:

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SEQUENCE OF SID SUBMITTAL

1. Title page

2. Table of contents

3. Design objectives - A statement of design objectives explaining the interior design philosophy of the facility shall be provided in the SID. Design objectives and the proposed method of accomplishing the objectives. Shall cover, when applicable, energy efficiency, safety, health, maintenance, image, personal performance of occupants and functional flexibility.

4. Interior floor plan

5. Interior sample finish boards

Scheme A
Scheme B
Scheme C

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

6. Room finish schedule

7. Signage

8. Signage plan

9. Prewired workstation composite floor plans

10. Prewired workstation typicals - elevations and component inventory.

11. Prewired workstation panel identification plan with electrical outlet placement including base feed.

12. Integration and layout of ACSIM specific furniture. Plan must show suitability of proposed space to suit the furniture to be provided.

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4.0 QUANTITY OF DESIGN SUBMITTALS

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

DISTRIBUTION

Activity and Address	Drawings Size <Full>	Drawing Size <Half>	Color Boards **
Commander, U.S. Army Engineer District,	*	*	*
Commander, Installation	*	*	*
U.S. Army Corps of Engineers Construction Area Office	*	*	*
[Other As Applicable]	*	*	

*USACE Design District to complete required quantities based on project requirements.

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

5.0 MAILING OF DESIGN SUBMITTALS

5.1 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. The submittals shall be mailed to four (4) different addresses.

6.2 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.

6.0 COORDINATION

6.1 Written Records. The Contractor shall prepare a written record of each design site visit, meeting, or conference, either telephonic or personal, and furnish within five (5) working days copies to the Contracting Officer and all parties involved. The written record shall include subject, names of participants, outline of discussion, and recommendation or conclusions. Number each written record for the particular project under design in consecutive order.

6.2 Design Needs List. Throughout the life of his contract the Contractor shall furnish the COR a monthly "needs" list for design related items. This list shall itemize in an orderly fashion design data

required by the Contractor to advance the design in a timely manner. Each list shall include a sequence number, description of action item, name of the individual or agency responsible for satisfying the action item and remarks. The list will be maintained on a continuous basis with satisfied action items checked off and new action items added as required. Once a request for information is initiated, that item shall remain on the list until the requested information has been furnished or otherwise resolved. Copies of the list will be mailed to both the Administrative Contracting Officer and the agencies tasked with supplying the information.

7.0 GOVERNMENT REVIEW

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

7.2 After receipt, the Government will be allowed fourteen (14) days to review and comment on each design submittal. For each design review submittal, the COR will furnish, to the Contractor, a single consolidated listing of all comments from the various design sections and from other concerned agencies involved in the review process. The review will be for conformance with the technical requirements of the solicitation and the Successful Offeror's (Contractor's) RFP proposal. If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he must clearly outline, with ample justification, the reasons for noncompliance within five (5) days after receipt of these comments in order that the comment can be resolved. The Contractor shall furnish disposition of all comments, in writing, with the next scheduled submittal. The Contractor is cautioned in that if he believes the action required by any comment exceeds the requirements of this contract, that he should take no action and notify the COR in writing immediately. Review conferences will be held for each design submittal at (NAME OF BASE). The Contractor shall bring the personnel that developed the design submittal to the review conference. These conferences will take place the week after the receipt of the comments by the Contractor.

7.3 If a design submittal is over one (1) day late in accordance with the latest design schedule, the Government review period will be extended 7 days. Submittals date revisions must be made in writing at least one (1) week prior to the effect submittal.

7.4 Post review conference action: Copies of comments, annotated with comment action agreed on, will be made available to all parties before the conference adjourns. Unresolved problems will be resolved by immediate follow-on action at the end of conferences. Valid comments will be incorporated. After receipt of final corrected design documents upon incorporation of backcheck comments the [USACE Design District] will recommend issuance of a Construction Notice to Proceed (NTP). The Government, however, reserves the right to disapprove design document submittals if comments are significant. If final or backcheck submittal(s) are incomplete or deficient, and require correction by the Contractor and resubmittal for review, the cost of rehandling and reviewing will be deducted from payment due the Contractor at the rate of $ 5,000.00 per submittal.

8.0 DESIGN ANALYSIS

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

8.2 Organization. Assign the several parts and sheets of the design analysis a sequential binding

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

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

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

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

9.0 DRAWINGS

9.1 Prepare all drawings on Computer-Aided Design and Drafting (CADD) so that they are well-arranged and placed for ready reference and so that they present complete information. The Contractor shall prepare the drawings with the expectation that the Corps of Engineers, in the role of supervision, will be able to construct the facility without any additional assistance from the Contractor. Drawings shall be complete, unnecessary work such as duplicate views, notes and lettering, and repetition of details shall not be permitted. Do not show standard details not applicable to the project, and minimize unnecessary wasted space. Do not include details of standard products or items which are adequately covered by specifications on the drawings. Detail the drawings such that conformance with the RFP can be checked and to the extent that shop drawings can be checked. Do not use shop drawings as design drawings. The design documents shall consist of drawings on a 36" x 24" format. The Contractor shall use standard Corps of Engineers title blocks and borders on all drawings. Submit an index of drawings with each submittal. The COR will furnish the Contractor file, drawing, and specification numbers for inclusion in the title blocks of the drawings.

9.2 Create all drawings using CADD methods in MicroStation or AutoCAD format. Save all Design Complete CADD files as MicroStation 5.0 and AutoCAD R-2002. The Contractor shall use EM 1110-1-1807 Standards Manual for U.S. Army Corps of Engineers Computer-Aided Design and Drafting (CADD) Systems as guidance to for standard details, cell libraries, title blocks, and layer/level assignments. Drawing features not addressed in EM 1110-1-1807 shall conform to drafting standards.

9.3 Only standard fonts provided by MicroStation or AutoCAD are allowed to be used in the creation of CADD files. No fonts created by third parties or the designer are permitted.

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

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

- Read/Write CD-ROM Disk

10.0 SPECIFICATIONS

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

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

11.0 CONTENTS OF DESIGN SUBMITTALS

11.1 The First Site/Utility Design Submittal 100% shall contain, as a minimum, the following:

11.1.1 General Narratives:

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

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

11.1.2 All drawings included in the required technical data for the proposal submission (see SECTION 00110A: PHASE 2 TECHNICAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS), shall be developed to 100 percent completion. In addition to the individual utility plans, submit a combined utility plan drawn to the same scale as the individual utility plans.

11.1.2.1 General Site Layout: Scale shall be included.

11.1.2.2 Site Grading and Drainage Plans: Show locations of all sediment basins, diversion ditches, and other erosion control structures. Indicate the approximate drainage areas each will service. Indicate the materials, construction and capacity of each structure. Include limits of landscaping and seeded areas. General site grading and drainage shall be indicated by contour lines with an interval of not more than approximately 1 m.

11.1.2.3 Road Alignment Plans: Scale shall be no greater than as indicated in SECTION 00110A: PHASE 2 TECHNICAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS and profiles showing pavement and shoulder widths, azimuths and curve data, limits of grading, and erosion control. The materials to be used shall be indicated.

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

11.1.2.5 Sanitary Sewer Plan: Scale shall be as indicated in SECTION 00110A: PHASE 2 TECHNICAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS and profiles showing location and elevation of pipe, thrust blocks, manholes, etc. Materials and construction of main and appurtenances shall be indicated. Specifications shall be provided.

11.1.2.6 Water Supply Line Plans: Scale shall be as indicated in SECTION 00110A: PHASE 2 TECHNICAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS and profiles showing locations of valves, thrust blocks, connections, etc. Materials shall be indicated and specifications shall be provided for valves, pipes, etc.

11.1.2.7 Electrical Plan Requirements:

11.1.2.7.1 Required diagrams and details on Site Electrical Drawings.

11.1.2.7.1.a. Off-Site Electrical Distribution Plan:
11.1.2.7.1.b. Off-Site Primary Circuit Routing Plans:
11.1.2.7.1.c. Off-Site One Line Diagram. (If applicable)
11.1.2.7.1.d. Off-Site Details. (Aerial Pole Line Construction, etc.) (If applicable).
11.1.2.7.1.e. On-Site Electrical Distribution Plan:
11.1.2.7.1.f. On-Site One Line Diagram.
11.1.2.7.1.g. On-Site Distribution Transformer Schedule: Provide with the following headings:
Transformer Designation. Transformer Size (KVA). Building(s) Served.
Primary Phase(s) and Circuit to which connected.
11.1.2.7.1.h. On-Site Details (Site Lighting, Trenching, Pad-Mounted Transformer, etc.).

11.1.2.8 Specifications: Provide final draft specifications which include all sections which apply to site/utility work.

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

11.1.2.10 Geotechnical Report: Geotechnical information must be provided to support all assumptions and design parameters utilized in the presented site/utility design as applicable.

11.2 The Preliminary Conformance - 50% Building Submittal shall contain, as a minimum, the following:

11.2.1 Not Used.

11.2.2 Not Used.

11.2.3 Architectural

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

11.2.3.2 Architectural Floor Plans shall indicate dimensions, columns lines, and detail references. Toilets and other specialized areas shall be drawn to 1/4" scale and shall show any needed interior features.

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

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

11.2.3.5 List any special graphics requirements that will be provided.

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

11.2.3.7 Hardware sets using BHMA designations.

11.2.3.8 Composite floor plan showing all prewired workstations. Also show typical elevations of each type of workstation.

11.2.3.9 SID package.

11.2.3.10 Fire Protection and Life Safety Analysis. This analysis must be performed by a Registered Fire Protection Engineer (FPE). NICET certification is not sufficient to address this requirement.

11.2.4 Structural Systems

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

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

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

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

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

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

11.2.5 Plumbing Systems

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

11.2.5.2 Provide justification and brief description of the types of plumbing fixtures, piping materials and equipment proposed for use.

11.2.5.3 Prepare detail calculations for systems such as sizing of domestic hot water heater and piping; natural gas piping; [lp gas piping and tanks] [fuel oil piping and tanks].

11.2.5.4. Indicate locations and general arrangement of plumbing fixtures and major equipment.

11.2.5.5 Include plan and isometric riser diagrams of all areas including hot water, cold water, waste and vent piping. Piping layouts and risers should also include natural gas (and meter as required), [LP gas], [fuel oil] and other specialty systems as applicable.

11.2.5.6 Include equipment and fixture connection schedules with descriptions, capacities, locations, connection sizes and other information as required.

11.2.6 Fire Protection/Suppression

11.2.6.1 List all references used in the design including Government design documents and industry standards used to generate the fire protection analysis.

11.2.6.2 Classify each building in accordance with fire zone, building floor areas and height and number of stories. This information shall be contained in the fire protection analysis.

11.2.6.3 Discuss and provide description of required fire protection requirements including extinguishing equipment, alarm equipment and water supply. This information shall be contained in the fire protection design analysis.

11.2.6.4 Prepare a plan for each floor of each building that presents a compendium of the total fire protection features being incorporated into the design. Provide the following types of information:

The location and rating of any fire-resistive construction such as occupancy separations, area separations, exterior walls, shaft enclosures, corridors, stair enclosures, exit passageways, etc.

The location and coverage of any fire suppression systems (sprinkler risers, standpipes, etc.).

The location of any other major fire protection equipment.

Indicate any hazardous areas and their classification.

11.2.6.5 Prepare a schedule describing the internal systems with the following information: fire hazard and occupancy classifications, building construction type, GPM/square foot sprinkler density, area of operation and other as required.

11.2.6.6 Hydraulic calculations based on water flow test shall be prepared for each sprinkler system to insure that flow and pressure requirements can be met with current water supply.

11.2.7 Elevators

11.2.7.1 A list of criteria codes, documents and design conditions used. Reference to any authorized waiver of these criteria or codes.

11.2.7.2 Permits and Registration: Provide a list of all required permits and registrations for

construction of items of special mechanical systems and equipment.

11.2.7.3 A description of the proposed control system.

11.2.7.4 Description, approximate capacity and location of any special mechanical equipment such as elevators, etc.

11.2.8 Electronic Systems: Electronic Systems responsibilities include the following:

Fire Alarm System
Fire Suppression System Control
Public Address System
Telephone System
Cable Television System
Special Grounding Systems
Cathodic Protection
Intrusion Detection, Card Access System
Central Control and Monitoring System

11.2.8.1 The design analysis shall include all calculations required to support design decisions and estimates at this stage of design. The analysis shall include specific criteria furnished, conference minutes and cost analyses of all systems considered.

11.2.8.2 Design of the fire alarm system shall include layout drawings for all devices and a riser diagram showing the control panel, annunciator panel, all zones, radio transmitter and interfaces to other systems (HVAC, sprinkler, etc.).

11.2.8.3 Specify all components of the Fire Suppression (FS) System in the FS section of the specifications. Provide a clear description of how the system will operate and interact with other systems such as the fire alarm system. Include a riser diagram on the drawings showing principal components and interconnections with other systems. Include FS system components on drawing legend. All components shown of floor plans shall be designated as FS system components (as opposed to Fire Alarm components). Show the location of FS control panels, HVAC control devices, sensors, and 120V power panel connections on the floor plans. Indicate zoning of areas by numbers (1, 2, 3) and detectors subzoned for cross zoning by letter designations (A and B). Differentiate between ceiling mounted and underfloor detectors with distinct symbols and indicate subzone of each.

11.2.8.4 Show location of telephone outlets (including pay phones) on the plans. Include legend and symbol definition to indicate height above finished floor. Show Telephone Conduit System Riser Diagram. Size conduit on Riser Diagram. Do not show conduit runs between backboard and outlets on the floor plans. Underground telephone distribution conduit shall be shown on either the electrical or electronic site plan.

11.2.8.5 Grounding System. The specifications and drawings shall completely reflect all of the design requirements. The specifications shall require field tests (in the construction phase), witnessed by the Contracting Officer, to determine the effectiveness of the grounding system. The design shall include drawings showing existing construction. Verification of the validity of any existing drawings and/or any other data furnished by the Government shall be the responsibility of the engineering services firm.

11.2.8.6 Provide a statement describing the extent of any exterior work such as telephone lines, duct banks, etc., outside of 5 feet from the building line.

11.2.8.7 Provide the name of the licensed corrosion engineer or NACE specialist. Provide the following for cathodic protection systems:

Clearly define areas of structures or components in soil or water to be protected.

Type system recommended, comparison of systems, cost estimates showing all equipment alternatives.

Calculations on all systems that are considered showing all information and descriptions.

11.2.8.7.1 Design of Cathodic Protection. The design shall clearly provide a thorough and comprehensive specification and drawing. The design plans and specifications shall show extent of the facilities to be protected, location and type of anodes, location of test points, details for sectionalizing an underground piping system. This design shall be complete enough to purchase equipment and build without design changes to meet criteria of protection.

11.2.8.8 Exterior work to be shown on electrical site plan.

Existing and new communications service lines, both overhead and underground, shall be properly identified.

Show removals and relocations, if any.

11.2.8.9 Provide a descriptive narrative of all electronic systems that are required for project. Define any hazardous areas (as defined in the National Electric Code) and indicate the type of equipment proposed for use in such areas. Show the location of all electronic system panels, etc., on the floor plans. Show the proposed riser diagrams for all systems. Sizes of all conduit, wires, cables, panels, etc. Provide a complete symbol legend for all devices or equipment shown on the plans. For work requiring removals or demolition, the designer shall show by use of drawings or narrative, how demolition work is to be done.

11.2.9 Electrical and Mechanical Systems: Provide all information as required on the 100% design submittal developed to 50% completion.

11.2.10 Specifications: Draft of specifications for all facilities, including index and trade sections.

11.3 The Final Design - 100% Building submittal shall contain, as a minimum, the following items for all submittals:

11.3.1 General: A complete set of construction documents plans and specifications at the same level of detail as if the project were to be bid including a complete list of equipment, fixtures and materials to be used. The final drawings are an extension of the reviewed 50% drawings and are to include the 50% comments and responses. All details shall be shown on the drawings.

11.3.2 The design analysis is an extension of the reviewed 50% design analysis and supports and verifies that the design complies with the requirements of the project.

11.3.3 Submit marked-up specifications. The specifications shall be coordinated with the drawings and describe in detail all items shown on the drawings.

11.3.4 Not Used.

11.3.5 Architectural

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

11.3.5.2 Prewired workstation composite floor plans. Prewired workstation typicals - elevations and

component inventory. Prewired workstation panel identification plan with electrical outlet placement including base feed.

11.3.5.3 SID package.

11.3.5.4 Fire Protection and Life Safety Analysis. This analysis must be performed by a Registered Fire Protection Engineer (FPE). NICET certification is not sufficient to address this requirement.

11.3.6 Structural Design

11.3.6.1 Furnish complete checked calculations for all structural members. Incorporate any changes required by comments on 50% Design Submittal.

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

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

The allowable soil bearing value.
The design stresses of structural materials used.
The design live loads used in the design of various portions of the structures.
The design wind speed.
The seismic zone and the "K", "C", "I" and "Z" values used in design.

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

11.3.7 Fire Sprinkler System: Provide a file of the input data used in the computer program to design the fire sprinkler system as well as the output data.

11.3.8 Specific Mechanical and Plumbing Requirements:

11.3.8.1 Required Plans, Diagrams, Schedules and Details on Unit Mechanical Drawings:

11.3.8.1.1. Mechanical Floor Plan: The floor plans shall show all principle architectural features of the building which will affect the mechanical design. The floor plans shall also show the following:

Room designations.
Mechanical legend and applicable notes.
Location of all ductwork or piping (double line ductwork required).
Location and capacity of all terminal units (i.e., registers, diffusers, grilles, hydronic baseboards).
Exhaust fan and range hood location.
Size of all ductwork and piping.
Thermostat location.
Location of heating/cooling plant (i.e., boiler, chiller, cooling tower, etc).
Location of all air handling equipment.
Return air paths (i.e., undercut doors, transfer grilles).
Flue piping size and location.
Piping diagram for forced hot water system (if used).
Fuel supply and return piping

11.3.8.1.2. Equipment Schedule: Complete equipment Schedules shall be provided. Schedule shall also include:

Capacity
Electrical characteristics

Efficiency (if applicable)
Manufacturer's name
Optional features to be provided
Physical size

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

11.3.8.2 Plumbing Floor Plan: The floor plan shall show all principal architectural features of the building which will affect the plumbing design. Separate plumbing plans will not be required if sufficient information can be shown on the mechanical plans to meet the requirements shown above. The floor plan shall also show the following:

Room designations.
Fixture Schedule.
Location of utility entrances.
Waste and water pipe location and size.
Fixture designations.

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

11.3.9 Specific Electrical Requirements:

11.3.9.1 Required Plans, Diagrams, Schedules, and Details on Unit Electrical Drawings:

11.3.9.1.1. Electrical Floor Plan. The floor plans shall show all principle architectural features of the building which will affect the electrical design. The floor plan shall also show the following:

Room designations.
Electrical legend and applicable notes.
Lighting fixtures, properly identified.
Location of smoke and CO detectors.
Location of telephone and cable TV outlets.
Switches for control of lighting.
Receptacles.
Location and designation of panelboards. Plans should clearly indicate type of mounting required (flush or surface) and be reflected accordingly in specifications. Service entrance (conduit and main disconnect).
Location, designation and rating of motors and/or equipment which requires electrical service. Show method of termination and/or connection to motors and/or equipment. Show necessary junction boxes, disconnects, controllers (approximate only), conduit stubs, and receptacles required to serve the motor and/or equipment.

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

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

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

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

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

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

11.3.9.2. Required Electrical Design Analysis: Design analysis and calculations for the electrical systems shall be prepared by a licensed professional engineer with experience in commercial/industrial facilities, and shall be stamped as such. The design analysis shall be separately bound, in one or more volumes. Show functional and engineering criteria, design information, and calculations applicable to the project. The analysis shall be organized in a format appropriate for review, approval, and record purposes. The design calculations shall indicate methods and references identified, and shall explain assumptions and conclusions.

11.3.9.2.1. Voltage Drop (VD) Calculations: Select conductor sizes of primary feeders, site lighting circuits, service laterals, and unit feeder conductors. Calculate maximum length for each phase of each primary circuit, using a maximum allowable VD for each circuit. Calculate voltage drops for each conductor. Maximum allowable voltage drop for site lighting and service laterals is 3%. The combined voltage drop for the service laterals, unit feeders, and branch circuit cannot exceed 5%. Calculate the available fault current at the main breaker for the living unit panel. Provide a coordination study to support breaker selection.

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

11.4 Design complete submittal:

11.4.1 Design Drawings: Drawings shall be 100% complete, signed and sealed by the designer of record. All previous review comments shall be incorporated.

11.4.2 Design Analysis: Complete design analysis for all design disciplines. The final Fire Protection and Life Safety Analysis shall be included in the Design Analysis.

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

11.4.4 This submittal shall include all drawings and design information from the 100% site/utility submittal to form a complete design package.

12.0 DESIGN RELATED PRODUCTS

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

12.2 DD Form 1354: Three (3) sets of DD Form 1354, Transfer and Acceptance of Military Real Property shall be prepared in accordance with ER 415-345-38 and submitted to the Contracting Officer. Copies of Form 1354 and ER 415-345-38 will be furnished to the successful contractor following award of the project.

12.3 Submittal Register, ENG FORM 4288: The Contractor shall complete and submit three (03) copies of a "preliminary" Eng Form 4288, Submittal Register to Contracting Officer. The "preliminary" Eng Form 4288, Submittal Register shall have the column "Submittal Identification", "Specification Paragraph Number", "Description of Submittal" "Type of Submittal", and "Remarks" completed; the Contractor shall identify whether the submittal is for "Government Approval" or for "Government Information" under the column "Remarks." The "final" Eng Form 4288, Submittal Register, shall be in accordance with clause CONTRACTOR SUBMITTALS AND SUBMITTAL CONTROL in this section.

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

ATTACHMENT 2

RESERVED

ATTACHMENT 3

Reserved

ATTACHMENT 4

Reserved

ATTACHMENT 5

PROPOSAL DRAWING FORMAT

ATTACHMENT 5

PROPOSAL DRAWING FORMAT

NOTE TO USACE DESIGN ACTIVITY: TECHNICAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS are stated in Section 00110A. Inclusion of additional drawing format standards in the RFP is optional. If this attachment is used, it should be coordinated with Section 00110A.

1. POLICY.

Drawings shall be prepared in accordance with Section 00110A, PHASE 2 TECHNICAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS, and the following instructions on graphic format.

2. DRAFTING.

a. The drawings shall show sufficient detail so that they clearly delineate the proposed construction. Original drawings shall be made on size standard size A1 [approximately 594mm x 841mm, 23 1/2" x 33"] sheets, and CADD format as defined by the design agent. The final proposal submittal of drawings shall also be in CADD format on A1 standard full size sheets. The revision block and title block shall be as provided by the design agent. Design agent may request offerors to provide proposal drawings in half-size format. [Insert Revision Block and Title Block Example at end of this attachment.]

b. The first or cover sheet shall contain the title and location of the project and the Drawing Index.

c. The drawing layout will be evaluated with care before the beginning of the drafting. Ample space, without crowding, will be provided, not only for the required plans and details with all necessary titles, dimensions and notes, but also for incidental information required, such as graphic scales, general and reference notes, schedules, North Arrow, etc.

d. Sheets shall be well ordered and drawn at the scales indicated in Section 00110A. Any drawings not specifically listed shall be drawn at a reasonable scale and suitable for reduction. Cluttered and overcrowded layouts shall be avoided.

e. A graphic scale for each of the different scales used on a drawing shall be placed on the particular drawing to the left of the title block. Scale shall be indicated at each plan, elevation, section, and detail, unless all drawings on the same are at the same scale. No scale larger than 1:2 shall be used without prior approval.

f. Sheets devoted to details should have such details reasonably spaced and arranged left to right or top to bottom. Groups of details relating to one particular aspect should be adequately separated from other groups and identified with a title. Sections and details of the final design should be numerous enough to show all design features.

g. Unnecessary details or details of small standard products or items which are adequately covered by specifications and/or catalogs shall not be included on the drawings.

h. A symbol for major disciplines should be selected to properly arrange the sheets in the package. Adequate cross-referencing must be shown to avoid confusion and misunderstanding between disciplines.

3. DRAWING PREPARATION.

a. Preparation for Size Reduction. Since drawings will be reduced, all drafting (line widths, spacing, lettering sizes, etc.) shall be adequate size and density to be easily legible after reduction.

b. Scales. Carefully plan drawing layout together with suitable scales in advance to properly delineate the project. Similar work for all design disciplines shall, whenever possible, be shown at the same scale on the various drawings involved.

c. Lettering. Use single stroke lettering, all capitals. Minimum height shall be 5/32".

d. Sheet Reference. The proposer will reference all drawings within a discipline of work. The divisions designated below will be utilized.

Discipline Designation	Design Discipline
T	Title, Location Map, & General Notes
L	Site Planning, Landscaping Planting and Children's Outdoor Play Areas
C	Civil Engineering
A	Architecture
S	Structural Engineering
M	Mechanical Engineering
E	Electrical Engineering
G	Geotechnical Engineering

e. Drawing Designation. Each drawing in the particular division shall be designated by the discipline designation and sheet number (i.e., E-6 is the sixth electrical drawing.) This system as listed will be used in establishing sequence of drawings. The notation system shall be placed in the last increment of the drawing number block entitled "sheet."

f. Ring Number. Consecutive ring numbering shall begin with the cover sheet. Ring number shall be placed in a circle directly below "Sheet" block of the Title Block. Sheets inserted after ring numbers have been finalized shall be designated with the ring number of the original sheet preceding it and an alpha from A to Z beginning with A (i.e., ring 32A follows ring 32).

g. Cross Reference. Cross-referencing for sections and details shall be based on the sheet reference number.

h. Symbols and Conventions. Symbols and conventions serve two main purposes. One is to simplify the drawing and improve comprehension; the other is to follow or establish a standard which is easily recognized. Symbols shall be the standards used by the various disciplines.

ii. Legends. Place legends of symbols and material indications on the drawings. Since many symbols are limited to certain design disciplines, use separate symbol legends on the initial sheet of each design discipline. Symbols in the legend shall be at the same scale or slightly larger than used on the drawings.

ATTACHMENT 6

SITE AND LOCALITY MAPS

USACE Design District shall include general site and locality maps in this attachment for information purposes. Maps included in this attachment are not meant to provide driving directions for potential contractors.

ATTACHMENT 7

PROJECT AND SAFETY SIGNS

USACE Design Activity to include the size and design requirements for the project and safety signs.

ATTACHMENT 8

GEOTECHNICAL REPORT

USACE Design District shall include in this attachment the geotechnical report for the proposed construction site. This report should include boring logs, a site map identifying bore hole locations, and an engineering analysis of the soils information which makes recommendations and conclusions with respect to the suitability of the existing site soils to support the proposed project. Investigations should be performed to a level which assures adequate information to determine the general type of structure best suited to the site conditions and sufficient to ascertain the costs of the project. See Statement of Work paragraph 4-1.1 for suggested report content suitable for general type structure best suited for the site conditions.

If the USACE Design District Geotechnical Engineer feels that the site conditions warrant specific mandatory requirements for a particular project, those requirements must be included in the Statement of Work as well as included in this appendix.

ATTACHMENT 9

EXCERPTS FROM THE INSTALLATION DESIGN GUIDE

USACE Design District shall obtain from the Installation copies of the Installation Design Guide (IDG). PA/PE shall thoroughly review the IDG with the Installation Project Manager and identify all areas of the IDG which could apply to the construction of the new Facilities. Those pieces of the DG shall be included in the solicitation in this attachment for review, use, and consideration by the contractor.

Complete copies of the IDG inserted in this attachment is discouraged as it will add volume to the solicitation with little additional value added to the project.

ATTACHMENT 10

FIRE FLOW DATA

The Activity preparing the RFP shall address the adequacy of the existing water supply to meet the demands of the fire protection system required. The Activity preparing the RFP shall perform or witness the required water flow testing and verify that test results are accurate. Flow testing shall be conducted at or near the point of connection to the existing water main. Accepting historical water supply information without verification is not acceptable. The Activity preparing the RFP shall perform a preliminary hydraulic analysis to determine if the existing water supply is adequate to meet the demand, or if a fire pump and water storage tank is needed. Information shown below must be completed by the RFP preparing Activity.

ATTACHMENT 11

LIST OF DRAWINGS

USACE Design District shall include a list of all informational drawings provided as part of the solicitation. Typical drawings include topographic surveys of the proposed site as well as utilities information and proposed tap points for the utilities to serve the new facility development.

ATTACHMENT 12

ASBESTOS AND LEAD PAINT SURVEY RESULTS

If the project includes the demolition of existing structures, the provision of the asbestos and lead survey and testing results is imperative to the success of the project. USACE Design District must include this information in the solicitation.

Typically the Installation can provide this information for inclusion in the solicitation, if this information is not available from the Installation, the Design Distict shall have these surveys conducted and completed during the development of the solicitation.