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# Savannah District Design Manual for Military Construction

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Volume I of II  
General and Administrative Requirements



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## **PREFACE**

This manual prescribes standard procedures for design of military projects by architect-engineer firms under contract to the U.S. Army Corps of Engineers, Savannah District. This document is a part of the design contract and all requirements of this manual must be satisfied unless specifically exempted. Additional requirements are given in specific instructions and in listed applicable publications. The manual is intended to inform, instruct, and guide architect-engineer firms. It contains information on the organization of the Savannah District and requirements relating to administrative, general, and technical matters. The ultimate purpose of this manual, along with all other endeavors associated with the design process, is to produce a quality product, on time, within budget, which meets applicable criteria and User needs. It is the responsibility of the architect-engineer to ensure that copies of this manual, all specific instructions, and other documents pertaining to design requirements are furnished consultants in order to ensure a well-coordinated design. The manual consists of two volumes, which are:

### **VOLUME I GENERAL AND ADMINISTRATIVE REQUIREMENTS**

And

### **VOLUME II TECHNICAL, COST ESTIMATING, AND VALUE ENGINEERING REQUIREMENTS**

Note: The term "architect-engineer firm" as used in this manual refers to designers, whatever their disciplines. For example, instructions for an "architect-engineer" will be valid for a project which may include only civil engineering work.

**VOLUME I**  
**GENERAL AND ADMINISTRATIVE**  
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**VOLUME I**  
**GENERAL AND ADMINISTRATIVE**  
**REQUIREMENTS**

**GENERAL**

1. **PURPOSE.** The purpose of this chapter is to provide general design guidance to design agents for construction. These instructions are written for the purpose of assisting designers in the preparation of design documents for military construction and, in as is applicable, for civil works construction. It is limited in scope to technical rather than management aspects of design.

2. **DESIGN POLICY.**

2.1 *Reference.*

2.1.1 Design Criteria TI 800-01

2.1.2 Design Analysis ER 1110-345-700

2.1.3 Design: General Building Requirements UFC 1-200-01

2.1.4 Military Handbook MIL-HDBK 1190, for Air Force designs.

2.1.5 Occupational Safety and Health Act, Code of Federal Regulations, Title 29, Chapter XVII, Parts 1910 and 1926

2.1.6 Various Facility Standard Designs developed in accordance with DA Standardization program <http://www.projnet.org/>

2.1.7 Installation and Corps standards available on the World Wide Web such as <http://tsc.wes.army.mil/> will be identified at predesign conference.

2.1.8 Documents and specifications can be found at the following URL's:  
<http://www.hnd.usace.army.mil/techinfo/> and  
<http://en.sas.usace.army.mil/>  
<http://www.usapa.army.mil/>  
<http://www.ccb.org/>  
<http://www.e-publishing.af.mil/>

2.1.9 Various Standard Designs developed by the COE. Such reference documents are basic for distribution and design application, together with other specific policies as pertinent to the individual project contract. Whereas these documents site basic standards for design, it should be recognized that both interregional and local environmental conditions are significant factors in achieving quality design.

2.2 Headquarters, U.S. Army Corps of Engineers (HQUSACE) design policy is established by Architect and Engineering Instructions and Design Criteria TI 800-01. Directives and

accompanying program/project data will be issued through HQUSACE respective Regional Division commanders. Except for standard designs and elements of medical and housing programs, the design responsibilities of HQUSACE are delegated to Division and District Commanders.

2.3 Metric Design Policy. The Corps design policy is to design projects in metric using a 100 mm building design module. The public law (P.L 104-289) recognizes the use of 100 mm building design modules as the preferred design module. The law also takes into account the "total installed price," as opposed to a simple material cost when choosing between a hard and soft metric version of CMU and RLF (concrete masonry units and recessed light fixtures) in a metric project. This is because Lawmakers' recognized the fact that use of modular or hard metric materials saves labor costs by avoiding unnecessary cutting or trimming. In the case of CMU wall, one might come ahead on a total installed cost basis even after paying a small metric premium on materials because more than 50% of the cost of walls is labor.

2.3.1 Exceptions. Generally, the only exceptions are modifications to existing facilities that have as-built drawings in inch-pound units, or reactivation of projects that have been designed and were shelved for one reason or another. However, waivers for other projects may be granted on a case by case basis depending upon current analysis showing the use of metric design is impractical or is likely to cause significant inefficiencies or loss of markets to US firms (Executive Order 12770). The Project Manager must obtain a waiver from U.S. Army Corps of Engineers (HQUSACE) to deviate from the all-metric design policy. There is no such thing as a Soft Metric design. It is either a Metric or English design.

### **3. RESPONSIBILITIES.**

3.1 District staffs perform the technical requirements for each phase of design for "in-house" projects and review Architect-Engineer (AE) prepared designs from the earliest design submittal through final contract drawings.

3.2 Using services prepare the basic programming and budgeting documents for congressional funding and authorization of the construction project. These documents generally describe the construction functional requirements for the project and provide a basis for funding. The extent of professional design content of program documents varies with the personnel level and time available at various installations. These documents are reviewed for adequacy to initiate design prior to issuance to the design AE. Although the design agent has the responsibility for the preparation of final plans and specs, the Using services have final authority concerning functional relationships of the project.

3.3 AE's Design Agents as Planners, Designers, and Engineers provide design services to the Contracting Officer for timely completion of a quality design. Basic responsibilities are set forth in Section C – Scope of Work to the AE design contract. General guidance is presented in the USACE-TI 800-01, UFC 1-200-01 and MIL-HDBK-1190 and this manual covers regional design procedures. Specific criteria will be covered by project design and engineering instructions and project criteria are cited below. Some of this criteria has been established as standards and are broadly disseminated. Where these criteria are in conflict with sound project planning and design practice for specific project environmental conditions or life safety, present

these conflicts and recommendations for resolution to the Corps of Engineers in the initial design analysis submittal for approval through SASEN which has authority to grant deviations from technical criteria on a project-to-project basis with approval from higher headquarters.

4. **COORDINATION.** During the predesign, design and construction phases of a project, an AE firm may interact with several agencies. These agencies and their relationships are as follows:

4.1 *U.S. Army Corps of Engineers (COE).* The COE is represented by the Contracting Officer, or Contracting Officers Representative and supporting offices in Savannah District which report to the South Atlantic Division (SAD). The Savannah District representative at an installation is the Area Engineer or Resident Engineer (RE).

4.1.1 **Consultation with the client activity or User.** The PM is the focal point between all Government representatives and the A/E regarding technical and performance issues. The A/E may be required to consult with the Installation Public Works Office or Public Works Business Center in matters concerning local conditions or operational requirements. Technical and design considerations which conflict with the directions from the PM shall be brought to the PM's attention immediately.

4.2 *Army Installations.* At the Army installations the Director of Public Works (DPW) or Public Works Business Center (PWBC) reports to an installation commander and is, through the PM, the point of contact for all questions related to projects. The DPW or PWBC is responsible to the commander for all engineering activities of the installation for the Using agent or organization. This responsibility includes review of designs and inspection of construction performed by Contractors under contract to Savannah District.

4.3 *Air Force Installations.* On projects for the U.S. Air Force, the role of the Corps of Engineers remains the same as for Army projects, but the Base Civil Engineer (BCE) represents the using service at the installation level. Official contact with the Air Force is through the major commands. Savannah District does business with the following Air Force major commands: Air Mobility Command (AMC) for Pope AFB, Air Combat Command (ACC) for Seymour Johnson ARB N.C. Air Force Special Operations Command (AFSOC) for Moody AFB, GA, Air Force Material Command (AFMC) for Robins AFB, Headquarters at Robins AFB, and Air Force Reserve (AFRES) for Dobbins AFB, GA.

4.4 *Other Agencies.* Depending on the nature and scope of the project, various representatives of the Army, Air Force, and other agencies may be concerned with the project. Typically, these may be:

4.4.1 Training and Doctrine Command (TRADOC); major command for Fort Jackson, Fort Gordon, and Fort Benning.

4.4.2 Forces Command (FORSCOM); major command for Fort Bragg, Fort Stewart, Fort McPherson, and Fort Gillem.

4.4.3 Special Operation Command (SOCOM); tenant at Fort Bragg, Fort Stewart/Hunter AAF and Fort Benning, Ga.

4.4.4 Chief, Army Reserve (USAR); various locations throughout the District.

4.4.5 The Information Systems Engineer Command, Ft. Detrick, Md.; responsible for Army communications.

4.4.6 Southern Communications; responsible for Air Force communications.

4.4.7 Army Center of Excellence, Subsistence, ASTM-CES, Ft. Lee, VA.; responsible for dining halls.

4.4.8 Huntsville Engineering and Support Center; responsible for Army Pollution Abatement Program and Energy Monitoring and Control System.

4.4.9 Eastern Paralyzed Veterans Association (EPVA); responsible for accommodations for the physically handicapped.

4.4.10 Health Facility Planning Agency; proponent for the Army Surgeon General and responsible for all Army medical facilities design.

4.4.11 Health Facilities Office; proponent for the Air Force Surgeon General and responsible for all Air Force medical facilities design.

4.4.12 U.S. Army Community and Family Support Center in Alexandria, VA; non-appropriated fund projects.

4.5 *Savannah District*. The AE will primarily be dealing with three Divisions of the Savannah District Office. The Engineering Division will furnish criteria, and review the design for compliance with criteria. Programs, and Project Management Division will supervise and administer the A-E contract, coordinate advertisement and award the construction contract and provide most of the contact with the A-E. Construction Division will perform a constructibility review of the final design documents and will supervise and administer the construction contract.

4.5.1 Area and resident engineers may have contracting officer authority over portions of AE contracts having to do with site visits during construction, shop drawing review, and design deficiencies discovered during the construction phase of a project.

5. **PROJECT CRITERIA.** The following forms of criteria will be furnished, all of which must be directed through the assigned district Project Manager (PM).

5.1 Functional criteria are established by the using service and may be furnished in the form of a DD form 1391, Requirements Document (RD) or Customer Concept Document (CCD). The using service and District Project Manager shall assure that sufficient data is furnished concerning personnel capacities and occupancies, operational requirements, access and clearances, life safety and future expansion prior to initial predesign or site conference. Subsequent to the initial conference, the design agent or AE shall confirm any missing or questionable data by discipline in order to expediently proceed with design. This process of AE coordination with the user functional requirements will be required under a basic AE contract with Savannah District and under the design portion of a Design Build contract administered by the Savannah District. Basic space allowances and operational standards are outlined in the TI800-01 and Air Force Instructions.

5.2 Economic criteria include both program authorization (project cost limitation) and scope allowance (space limitation) which will be set forth in the funding documents, Project Description and Scope approved by Congress and/or project design or engineering instructions. It is the designers responsibility to design the project within these limitations or report as early as practicable that the project cannot be designed within the authorized program and scope limitations.

5.3 Environmental criteria may be included in the DD form 1391, RD or CCD; however, it is the designer's responsibility to confirm and complete this criteria at the Pre-Design Conference and/or site investigations and to establish any natural, physical or social conditions which would affect the design and to present the design response to such conditions in the project design analysis. However, it is the installation's responsibility through their PWBC, DPW or BCE to obtain all environmental clearances such as wetlands, endangered species, etc. The design will include an erosion and sedimentation control plan that will meet requirements of the local approving authority.

5.4 Technical criteria for specific design subjects are the responsibility of the design agency and is identified in specific instructions if not identified in the discipline's chapter of this manual. Text of technical manuals is available on the Internet at <http://www.hnd.usace.army.mil/techinfo/>, [www.ccb.org](http://www.ccb.org) or on CD from the National Institute of Building Sciences. The AE is responsible for using latest available criteria from one of these sources. Other sources of information are identified throughout this manual. Also a CD of Savannah District standard, this manual, and sample details and criteria are available at no cost through the Project Manager upon request. If additional documents are needed, the designer shall request them through the Federal Government Publications Center.

6. **TYPES OF DESIGN.** Project criteria will direct use of varying levels of developed design documents to be used for project economy and standardization as follows:

6.1 New design shall normally be based upon DD form 1391, RD or CCD documents providing budgetary and programming data. This data is generally developed for parametric estimate for funding and establishing general functional relationships. Since these documents normally require comprehensive development designers shall confirm design parameters and design flexibility.

6.2 Definitive design of repetitive building types are basic single line outline plans and design instructions for uniform development of complete project documents.

6.3 Site adapted designs are actual as-built project documents and field standards to be utilized for project design. It should be recognized that most site-adapt documents furnished for project design will require various levels of design development to meet regional, local and project conditions. The use of these documents may range from basic definitive layouts to complete working documents for construction. The AE contract or project documents shall, therefore specify the level of site-adaptation expected and explicitly set forth special design latitude for revising the documents. Where the site-adapted design conflicts with environmental design conditions and sound architectural and engineering practice, the designer shall present recommendations for modifications required in the design analysis for approval action. All references to amendments and contract modifications shall be removed from the drawings and the drawings shall be updated to current criteria. Original plates with the design

agents name shall remain unchanged. A stamp shall be utilized to indicate that the documents are site adapted from a previous project and will include the new design agents name.

6.4 Standard designs are national and regional repetitive project documents which are to be utilized as completely as practicable for project design conditions. Analyses of foundations, structural and mechanical systems are normally authorized. Revisions and approval through the appropriate MACOM to HQUSACE and Office of Assistant Chief of Staff for Installation Management (OACSIM).

6.5 Standard definitive designs are essentially 10 percent standard floor plans, without any detailed design. Standard definitive designs are available for about 20 different Army facilities such as Tactical Equipment Shops, Brigade Headquarters and Barracks. Use of these standards for Army projects is mandatory and will be required by the 1391 form. Deviations from these standards are not permitted without waiver authorities.

6.6 Renovation projects and additions to existing construction are the most difficult to assess for funding and design. Therefore, it is very important for the designer to make thorough site investigations and evaluate project criteria. Establishing the amount of renovation and additional new construction to achieve the optimum balance of improvement at prestige requires careful design and construction coordination.

**7. SCOPE OF WORK.** The scope of work is covered in Section C of the AE contract or Service Order. After the selection of an A/E, a copy of the Statement of Work will be forwarded to the A/E with a request for a fee proposal. The SOW will indicate the extent of the work to be accomplished by the A/E and serves as the basis for the A/E's fee proposal and the Government's estimate of the A/E fee. The SOW is a part of the contract between the A/E and the Government, therefore, it is essential that the two parties agree that the work to be accomplished as described therein is accurate and complete. Changes to the SOW, when necessary, will be made by the Contracting Officer in writing in accordance with the contract clauses.

**7.1 Special Instructions.** AE contract documents may emphasize significant items directly pertinent to the project or which require special attention for design quality and review coordination. Essential instructions are provided in this manual.

#### **7.2 Pre-Negotiations Conference.**

For certain projects, pre-negotiation visits to the Activity may be necessary for reviewing and clarifying the proposed items of A/E Services and to become more familiar with site conditions. The pre-negotiation conference will normally be attended by the PM and representatives of the Activity. A/E attendance is voluntary and the Government will not be responsible for A/E costs incurred by this visit.

**7.3 Award of A/E Contract.** Upon receipt of the A/E's fee proposal and subsequent agreement on a price, the Government will issue a contract, signed by the Contracting Officer. The A/E is authorized to begin work as of the contract date.

7.4 Requirements for submittals should be covered at the predesign conference. This is a very important issue because projects have been delayed and redesigned when coordination was not made with the proper review authorities. The first exhibit at the end of Volume I, Design Submittals, lists most of the requirements on a major project; however, the list is not all inclusive.

**8. REVIEW STRATEGY.** A plan for a project covering the number, type, and timing of all Government reviews of A/E prepared work, including related review conferences, is summarized in the Schedule of the SOW, and may include some combination of the following:

**a. Traditional review** - A/E submits design documents and stops work while the Government reviews, typical stages are 30%, 60% and 95%.

**b. In-progress review** - Same as traditional review except the A/E continues design effort while the Government reviews.

**c. On-board review** - Government reviewers and the A/E visit the activity to review the design documents submitted by A/E; designated on board/in progress, or on board/traditional depending on whether or not the A/E continues or stops work while the Government reviews.

**d. Over-the-shoulder review** – Government reviewers visit the A/E’s office to review the A/E’s work in progress.

8.1.1 Review of A/E’S Work: It will be the responsibility of the A/E, acting in a professional capacity, to ensure accuracy, completeness, and correctness of the design, cost estimate and all engineering concepts and details of the work, including the coordination of the various architectural, civil, structural, mechanical, electrical, and other subdivisions thereof with each other and with the specifications. The Governments will not do a complete independent technical or coordination review of the project but only spot check and review for compliance with codes and criteria requirements. Design checklists and other methods as listed in the AE scope of work shall be submitted with each phase documenting the AE’s Design Quality Control plan utilization.

8.1.2 Projnet/DrCheck Web Based tool for review comments. DrChecks is a module on the Internet at [www.projnet.org](http://www.projnet.org) used for entering review comments. Training (telephonic) and access to the system is available free to the A/E. Comments generally are available for viewing as soon as they are entered.

8.1.3 Action by AE. Once all review organizations are completed with the review or a suspense date is reached, the PM will close that review cycle and notify the AE to annotate the comments. The AE has access to all the reports and to the Evaluate column for annotating the comments. Once all comments are “Evaluated”, notify the Project Manager so that the comments can be back checked with the next submittal.

8.1.4 Backcheck. The PM will order a backcheck of the annotations or wait until the next submittal is received. The reviewers can access the system and check the AE's annotations to insure that they were acceptable or when AE did not concur or the work was outside the scope of the AE's contract that a satisfactory conclusion was reached. It is the intent that all valid review comments will be satisfactorily closed before the project is awarded.

## **9. SUBMITTAL REQUIREMENTS.**

9.1 *Preconcept Submittal Requirements.* For a building, this submittal may consist of a site layout, floor plan and major elevations at the 10 percent design stage. For a large project, three separate schemes may be required. Review time will be short or layouts and schemes will be presented at the installation for onsite approval. Each section or discipline has unique preconcept submittal requirements. Respective chapters of the design manual should be reviewed to determine the exact nature of these requirements.

## 9.2 *Concept/Early Preliminary (35 Percent) Design Submittal Requirements.*

9.2.1 Concept/early preliminary design is extensively defined by each discipline in this manual. Design will be stopped for this review phase unless stated otherwise by specific instructions. The installation, through the Savannah District PM, has approval authority for concept design(s). The concept submittal is typically a narrative with design analysis and drawings in half-size presenting the design. The concept submittal must contain enough information for the reviewer to understand the functional and technical approach the designer is following to complete the project. As a minimum, the narrative shall discuss the civil, site engineering and architectural requirements; construction materials and finishes; structural and foundation system; communications systems; power and electrical systems; force protection; sustainable design and development features most favorable for this project; and plumbing and HVAC systems. Items or details which cannot adequately be described in narrative form should be graphically shown on fold-out drawings, sketches, tabulations, and/or photographs bound in a brochure or notebook. An estimate of construction costs, time and phasing will also be included in the submittal. In addition, an index of the anticipated guide specifications to be utilized for the design shall be included. If required, Energy Analysis Studies and Solar Studies, described in Chapter 7, Volume II shall be submitted with the Concept Submittal, but bound separately. A cost estimate shall be developed and submitted as specified in Chapter 9, Volume II, Cost Estimates.

9.2.2 Medical Facilities. An additional pre-concept submittal (20 percent) and a corrected concept will normally be required in addition to a pre-concept (10 percent) and concept submittals.

9.2.3 Notice to Proceed. The AE will proceed on the concept design subsequent to the receipt of a signed contract. The date of the notice to proceed will be listed in the contract and will have been agreed to by the AE and the PM.

9.2.4 Packaging. Prior to submittal of the finished concept design, the AE shall ensure that the design has been thoroughly checked and coordinated between the various design specialties. All material submitted shall be dated in an appropriate location. Whenever items are corrected or later resubmitted, they will show a revised date in order to differentiate later material from the original submittal. Each page of the submittal shall be numbered consecutively by section, i.e, number the pages in Chapter A-2 - Structural; 2-1, 2-2, 2-3, etc.

9.3 *Preliminary (60 Percent) Submittal Requirements.* Submittals at the 60% stage may be either an over the shoulder review or a formal review as stated in the SOW or specific instructions.

9.3.1 Preliminary OVER THE SHOULDER *Submittal Requirements.* This submittal consists of reproducing the **drawings in their state (degree of completion) at that particular point in time**, design analysis at this point and a cost estimate when design effort is not stopped. The submittal will be made approximately half-way through the final design phase. The submittal is required to check progress, cost, and the functional layout. Final design will not stop during review of this submittal. The intent is to give the customer an idea of the direction the design is proceeding, without stopping the design team to put together a formal submittal. Review comments however should be documented in DrChecks and annotated for the next review stage.

**9.3.2 Preliminary Design Submittal Requirements (60 Percent submittal).** Sixty- percent submittal **is a major submittal in which design is stopped until receipt of comments and** consists of an expansion of the concept design drawings and a cost estimate. Preliminary submittals are required on all Air Force projects unless exception is made. Preliminary submittals may be required on Army projects in lieu of or in addition to concept submittals. The requirement for a preliminary submittal on an Army project will be established within the AE SOW or specific instructions and usually discussed at the predesign conference. The submittal will represent design progress halfway from concept acceptance to the final design phase. The intent is to check progress, cost, and layouts per customer and reviewers comments. See the requirements for each discipline in Volume 2. Note that **Chapter A-9 states that the same type of cost estimate is required for either type of 60% submittal. The PM must give clear direction to the AE to stop design or proceed during this design review phase.** Normally design effort toward final design will stop at 60 percent submittal unless the schedule dictates otherwise.

**9.3.3 Checking.** Prior to submitting the finished preliminary design to the District Office, the AE shall ensure that the design has been thoroughly checked and coordinated between various design specialties.

**9.3.4 Utility Systems.** The preliminary submittal will include a tabulation recapitulating the total utility system loads - electrical, steam, gas, sanitary sewer, water, etc., -- giving the point of connection into the existing utility systems. Any unusual utility system aspects of the project, especially those requiring resolution prior to final design, will be commented upon. The average annual energy use per square foot of net floor area shall be calculated and stated in BTU per square foot.

**9.3.5 Dating Materials.** All material submitted shall be dated in an appropriate location. Whenever items are corrected or later resubmitted, they will show a revised date in order to differentiate later material from the original submittal.

**9.3.6 Packaging.** Except as indicated in exception below, the preliminary submittal will be mailed to the District Office.

**EXCEPTION:** Under certain conditions it may be advantageous to have a responsible member of the firm hand carry the design documents, itemized above, to the District Office. Examples of instances where this will be required are where certain aspects of the design are questionable, or where the design exceeds allowable costs.

**9.3.7 Notes.**

**9.3.7.1** Copies of design analyses will be bound separately for Structural, Mechanical, Electrical, and Site Development. Each folder shall identify the project and the firm preparing the design analyses. The folder need not be elaborate, but may be the ordinary manila file folder with identification imprinted thereon or typed on paper and securely pasted thereon.

9.3.7.2 DO NOT submit originals with the preliminary submittal unless specifically requested.

9.3.7.3 Projects involving multicolor or overlay printing shall be submitted on composite prints where all work is new. For design involving maintenance, rehabilitation and repair, composite prints plus overlay prints shall be submitted.

9.4 *Final (100 Percent) Design Submittal Requirements.* The 100 percent submittal includes copies of bid documents which should be ready to advertise. All design work should be complete.

9.4.1 Comments. After the preliminary or concept design review is complete, the review comments will be furnished to the AE by the PM. Within 15 days of the receipt of the comments, the AE should notify the PM if he does or does not intend to comply with the comments. The PM will take whatever action is required to resolve any controversial comments. Notice to proceed on final design will be by separate letter signed by the Contracting Officer or the COR.

9.4.2 Checks. Prior to submission to the District Office the AE shall make a thorough check of plans, specifications, and other required data to eliminate errors, inconsistencies, and for coordination between architectural, structural, mechanical and other applicable phases of the work. Final reproducible specifications shall be completely proofed and corrected to eliminate typographical errors, misspelled words, etc. Copies of the checklists shall be included with the submittal in accordance with the design quality control plan.

9.4.3 Date Stamping of Changes.

9.4.3.1 It is particularly important that all material submitted be dated in an appropriate place. Whenever items are corrected or later resubmitted, they will show a revised date in order to differentiate the later material from the original submitted.

9.4.3.2 Except as indicated below the final submittal shall be separated into design packages and mailed to the District Office. Each design package shall include marked prints, design analyses, cross sections, quantity backups, etc., furnished the AE with the preliminary or concept annotated design review comments. Direct submittals shall be made to other reviewing agencies as indicated in Section C, Scope of Work. These packages will also include marked prints, design analyses, cross sections, quantity backups, etc., furnished the AE with the preliminary or the concept design review comments.

EXCEPTION: Under certain conditions it may be advantageous to have a responsible member of the firm hand carry the design documents, itemized above, to the District Office. Examples of instances where this will be required are where certain aspects of the design are questionable or where the design Current Working Estimate (CWE) exceeds the Programmed Amount (PA).

9.4.4 Technical Specifications. Use the Unified Facility Guide Specifications (UFGS) with SPECINTACT software. Use the most current version of the sections on the National Institute of Building Sciences Construction Criteria Base (CCB) CD-ROM in effect at the time of NTP for the final design. For index of technical specifications web site <http://www.hnd.usace.army.mil/TECHINFO/> UFGS icon.

9.4.5 Design Analyses. Bind design analyses similar to that required for preliminary submittal. Indicate on the cover all revisions made subsequent to preliminary submittal, indicating sheet numbers and dates revised; for added sheets so indicate, with dates added. Indicate on each sheet revised or added annotations identical to those on the cover. Ensure that all pages of final design analyses are initialed by the designer and the individual checking.

9.4.6 Bid Schedule. Provide a proposed bid schedule for the project. Lump Sum items are generally preferred for Military projects.

9.4.6.1 Occasionally Unit Price Schedule are more suitable. Ensure that this unit price schedule is in agreement with payment paragraphs of technical specifications and is prepared in accordance with instructions contained in Chapter A-9 of this manual.

9.4.7 Checklist for AE Submittal of Final Designs. This particular checklist is attached to Section C of the AE's contract. The AE shall include this checklist in the PM's package of the first final submittal. Final payment for final design will be withheld until this checklist is received.

9.5 *Corrected Final Design Submittal Requirements.* AE's will normally be allowed from 7 to 21 days to incorporate any comments resulting from the final review.

9.5.1 Notice. Corrected final submittals are not considered a normal design review level and are required only when final submittals must be revised or corrected due to errors or omissions.

9.5.2 Comments. Transmittal of final review comments and direction to submit corrected final documents will be by letter signed by the COR. Once again, the PM will resolve any controversial comments.

9.5.3 Correction, Originals, Prints. The AE is responsible for corrections to drawings, design analyses, specifications, cost estimate, color boards, etc., as a result of review of the final submittal. Corrected final submittal will consist of original corrected plans, specifications, design analyses, and project review comments with proper annotation of action taken on each comment. AE will furnish the negotiated copies of plans, specifications, design analyses, etc., marked as CORRECTED FINAL SUBMITTALS. The indicated sets of prints of corrected final drawings and specifications will be submitted to the PM with corrected final submittal. Additional sets required of the corrected final submittal may be established on a case-by-case basis at the predesign or pre-negotiation conference.

9.5.4 Reference Materials. At the completion of the project design the AE shall return to the District all reference materials, including Technical Manuals and Unit Price Books, which were originally furnished by the PM.

10. **PROFESSIONAL QUALIFICATIONS.** When this manual or any applicable publications require work which public laws, codes, standards, or criteria indicate should be performed by

or under the supervision of Registered Professionals, then such registration shall be required. Evidence of credentials must be submitted no later than with the work done under their authority.

11. **TECHNICAL ELEMENTS OF DESIGNS.** The following major categories constitute parts of a total design. Whenever the term "design" is used in this manual it shall mean the coordinated design, including all parts.

11.1 *Plans.* All drawings shall be in metric format unless a waiver has been granted for the project and prepared in accordance with Chapter A-10, Drawings.

11.2 *Specifications.* Prepare specifications in accordance with Chapter A-11, Specifications. Careful attention will be given to the preparation of the specifications, and they will be tailored to the project and checked against the drawings. Upon completion of design the designer shall review the design and correct the specifications as required to assure conformance with the latest guide specifications, codes, etc., to assure the specifications are up to date. Any changes required in the design to conform to code or other criteria changes shall be reported to the Contracting Officer for consideration. Such design changes may be the basis for a contract modification if a change in the design is directed.

11.3 *Estimates.* Prepare estimates in accordance with Chapter A-9, Cost Estimates.

11.4 *Analyses.* A total design analysis is an assembly of information, calculations, data, and conclusions presented coherently with narrative explanations. In addition to the general requirements of ER 1110-345-700 and as stated here, all technical analyses required by this manual shall be included in the total design analysis.

11.4.1 Content. Unless otherwise specified, analyses shall include the following.

- a. Listing of applicable criteria and publications.
- b. Narrative history of the project, including scope.
- c. Statement of customer's goals and needs.
- d. Calculations, research, technical analyses.
- e. Narrative summaries of major decisions.
- f. All technical comments with resolutions explained.
- g. Other items as required by pertinent technical disciplines.
- h. Listing of the names and credentials of all professionals involved.
- i. All work coordinated between disciplines, checked and approved.

11.4.2 Format. Unless otherwise specified, analyses shall conform to the following:

- a. All documents shall be legible and reproducible on standard copiers.

- b. Documents shall be bound, titled, dated and have a Table of Contents.
- c. All pages shall be sequentially numbered.
- d. Technical sections shall be tabbed and indexed.
- e. All pages of the technical sections shall be initialed or signed by both the designer and the checker.

11.4.3 Alternatives. Unless otherwise approved, all alternatives analyzed, studied or included in designs must meet the following requirements.

- a. The overriding factor in all design decisions shall be the functional needs of the User at the installation. Alternatives must satisfy the functional use requirements within scope and authority limitations.
- b. Selections between alternatives shall be based on obtaining the overall optimal design with the lowest Total Life Cycle Cost.
- c. Alternatives must satisfy the Buy American Act.
- d. Alternatives must have at least three competitive manufacturing sources.

11.5 Submittal register. AE shall utilize SpecsIntact software in the development of all project specifications. As a product of this software, a submittal register shall be generated and this register shall be in compliance with ER 415-1-10, Contractor Submittals for Approval. Generally, it is desirable that the requirements for government approval of shop drawings be kept to a minimum pursuant to this ER. Generally, only submittals requiring significant extensions of a design, designer oversight of complex systems or commissioning requirements will be listed as requiring Government approval (GA submittals). These submittals requiring Government approval shall be flagged within the submittal register as requiring DDC funding after contract award.

11.6. *Dating Materials.* Drawings, design analyses, estimates, resume of utility loads, etc., which are submitted to the Savannah District shall be appropriately dated. When such material is revised, appropriately revised dates will be shown.

## 12. **SCHEDULES.**

12.1 *Types of Funds.* Scheduling requirements vary with the type of funding for the project. The funding type will be identified on the design directive.

12.2 *Unique Requirements.* Each project may have unique scheduling requirements which should be established at the predesign conference. General statements concerning MCA and RPMA projects can be made as follows:

12.2.1 For projects authorized by Congress (not RPMA), there are three important milestones which must be met to either ensure that a project is awarded for construction rather than reprogrammed or to satisfy goals set by the Army for Savannah District. These milestones are:

a. For current fiscal year project: Projects must be awarded for construction prior to September 30 (end of fiscal year).

b. For current fiscal year plus 1 year projects: Project must be ready to advertise for construction prior to October 1 of current year.

c. For current fiscal year plus 2-year projects: Concept design must be completed, reviewed, and approved prior to August 1 of current year.

12.2.2 Milestones for RPMA are established by the installations.

12.3 *Meeting Schedules.* In spite of the fiscal year of the project, changes to the fiscal year and the milestones listed above, the AE is expected to have negotiated a realistic contract time and to maintain this schedule unless the contract is modified by the Contracting Officer. Staying with the schedule is extremely important to Savannah District in scheduling the work load. Missing the established schedule milestones is inefficient and disruptive. The schedule should never be changed as a result of the AE not ordering specifications, or other similar inactions, and not allowing sufficient time. The only changes which are acceptable will be due to criteria or User requested changes. The ability to meet schedules is a most important consideration in the consideration of an AE firm for future work with Savannah District.

12.4 *Schedules and Evaluations.* Staying on schedule is a very important consideration in a satisfactory performance evaluation.

13. **PROJECT BUDGET.** For each and every submittal, including amendments to bid documents and construction contract modifications, the project budget must be considered and a cost estimate will be necessary. Possibly the most important consideration as far as the budget is concerned is that engineer regulations will not permit bids to be opened or the proposals evaluated on a project unless there is an approved Government estimate. Just as important authority to advertise a project for construction bids will not be granted without a time-consuming waiver if the estimate is above the programmed amount even by a minute amount.

EXCEPTION: Installation Commanders can give authority on RPMA projects.

13.1 *Terms.* In discussions of budget, four terms must be understood. These terms are:

13.1.1 Programmed Amount (PA). The programmed amount represents the total funds, excluding design, which are available for the project. The programmed amount is for cost of construction in place, cost of supervision and administration during construction, contingencies, cost of value engineering studies performed during design, cost of communications over and above the basic contract, cost of as-built drawings, cost of energy monitoring and control system connections and possibly other costs. The programmed amount is set by law and cannot be changed except by Congress (except for RPMA). However, HQUSACE and the Secretary of the Army have limited authority to fund projects in excess of the programmed amount provided funds are available within their agency.

13.1.2 Current Working Estimate (CWE). The current working estimate compares with the programmed amount and obviously should consider all elements cited above which comprise the PA.

13.1.3 Construction Cost Limit (CCL). The construction cost limit should be compared with the construction bid for the project. The CCL is the amount of funds available to build the project after the cost of all other elements of the construction cost, in excess of the cost of the project in place, are subtracted from the PA. If no better figures are available, the CCL equals 89.0 percent of the PA for all except RPMA projects for which the CCL equals 87.5 percent of the PA.

13.1.4 Escalated Contract Cost (ECC). The escalated (to midpoint of construction) contract cost is the Government estimate of the bid price for the construction work to be performed by a contractor. The ECC must always be below the CCL, just as the CWE must always be below the PA. Otherwise, bid additives or options must be established. Obviously, economical design is preferable to bid additives.

13.2 *Purposes of Estimates.* Estimates prepared in conjunction with submittals are for purposes outlined as follows:

13.2.1 Concept/Early Preliminary Estimate. The concept/early preliminary estimate will, in many cases, be the basis on which Congress establishes the programmed amount. It may be impossible to change the programmed amount based on later estimates; therefore, the importance of the concept estimate is obvious.

13.2.2 Preliminary or 60 Percent Estimates. The preliminary or 60 percent estimate is used as a check to eliminate last minute adjustment during the advertisement period. Adjustments to the programmed amount may be possible at the preliminary stage, depending on the status of the budget process.

13.2.3 Final Estimate. As stated earlier, bids cannot be opened without an approved Government estimate. Programmed amounts can almost never be changed as a result of a final estimate except on RPMA projects where changes in the Programmed Amount do not exceed the installations authority level.

13.2.4 Several items which must be covered to prevent problems with final estimates are as follows:

- a. Prepare estimate based on completed design package, not on incomplete coordination drawings. Project schedule should allow designer to give complete design to cost engineers.
- b. Coordinate estimates with plans and specifications.
- c. Provide detailed cost breakdowns and backup material.
- d. Get latest communication cost from PM.
- e. Prepare estimate in accordance with specific instructions and Technical Design Manual.

f. Research to ensure lowest reasonable unit cost is used.

g. AE's estimate of construction contract time should be approved based on 60 percent submittal.

13.2.5 *Amendments to Bid Documents.* Obviously, the cost of work added by amendments, especially omissions, will affect the Government estimate, and consequently, the authority to open bids. Estimates must be provided with each amendment and will be complete, accurate, and timely.

13.2.6 *Construction Contract Modifications.* The Government cannot enter into negotiations with a construction contractor without an approved Government estimate of the contract cost.

13.3 *Special Action.* Due to the critical nature of estimates, cost engineers will at times be required to take special action. Examples are as follows:

13.3.1 Cost engineers will almost always be required to participate in negotiated construction contracts.

13.3.2 If a final estimate is inadequate and time is critical, the estimator will be required to come to Savannah for a working session.

13.4 *Design Within PA.* It is the AE's responsibility to design projects within programmed amounts. If this is impossible, for all except RPMA projects, the AE's are required to develop a base bid package with a CWE equal to or less than 89.5 percent of the PA for a project. For RPMA projects the installation commander has the option of increasing the PA.

13.4.1 The AE is to contact the PM prior to completing the estimate to obtain the amounts for Value Engineering, communications and EMCS connection.

13.4.2 For any projects not in the RPMA program, if the AE computes an "OCE CWE" which is greater than 90 percent of the PA, then he must establish additives to produce a base bid which is less than or equal to 90 percent of the CWE. The AE should immediately notify the PM to discuss the establishment of additives. Items of discussion will include:

a. Suggested additives or options.

b. Plan for installation approval and/or recommendations of additives.

c. Time frame for design of additives or options. Delay additives or options at final submittal stage or wait and display at corrected final.

13.5 *Change in CCL.* It is conceivable that the construction cost limit of a project can and, in most cases, will change between the time the project is negotiated and the time final design is complete. The AE will be advised of all changes in the construction cost limit. A change, or changes, in the construction cost limit shall not categorically constitute a change in scope nor justify any change in the AE's fee.

14. **QUALITY.** The AE is required to prepare a logical Design Quality Assurance (DQA) Plan to accomplish design services. This plan is considered to be merely a formalized version of the plan that an AE uses on all his projects for private industry. The AE will be expected to closely follow the DQA Plan throughout the course of the project to assure a quality end product. Should events dictate revisions to the approved DQA Plan, the AE is required to notify the PM in writing and submit the revised plan for approval. The following are the basic elements to be included in the Design Quality Assurance Plan.

14.1 *Management Approach.* Define the specific management methodology to be followed during the course of the contract including such aspects as design coordination procedures, quality control, communications, and managerial continuity and flexibility.

14.2 *Management Structure.* Delineate the organizational composition of the firm to clarify the interrelationship of the management, the design quality control manager, and design team components including all consultants. Include organization chart to identify the key design and review team members showing their specific organizational responsibilities. The AE is required to advise the PM if he changes a designer/professional/team member during the design.

14.3 *Quality Control.* The professional quality, technical accuracy and the coordination of all designs, drawings, specifications and other services to be provided by the AE is of major importance. It is, therefore, a requirement for the AE to have a logical and functional quality control program to assure that errors or deficiencies in all submittals are maintained at a minimum. The QC plan will cover such items but not be limited to:

14.3.1 Coordination between disciplines; e.g., Mechanical - Electrical.

14.3.2 Coordination between drawings and specifications.

14.3.3 Site investigation to verify existing, as built conditions and ensure proper interface with new work.

14.3.4 Preparation of Cost Estimates - content and format.

14.3.5 Incorporation of specialized User needs; e.g., Government-furnished equipment, occupancy during construction, special security, construction phasing requirements. To meet this requirement, the AE will be required to perform technical reviews and to correct all errors and deficiencies in the design documents prior to submitting them to the Government for review.

The AE is cautioned to place special emphasis on this aspect of the DQA Plan. The contractual obligations of the AE to provide complete, well coordinated, and error free documents has far-reaching consequences. In the event possible subsequent damage to the Government results from negligent performance of any of the services to be furnished under this contract, the AE will be held liable for such damages. The Government's reviews in no way will relieve the AE of these contractual responsibilities. For this reason, an effective quality control plan is essential.

14.4 *Planning and Scheduling.* Include a time-scaled bar chart or CPM design schedule showing the sequence of the events involved in carrying out the project task within the specified period of service. This should be a general level of scheduling with planning efforts

focused on identifying major items that most often control the flow of work. Indicate the AE review and correction period prior to submittal. All DQC checks must be performed by the AE prior to submittal of the documents to the Corps of Engineers. Copies of checklists used and other documentation of an active DQC program must be provided with each submittal. This schedule should show work to be performed by consultants. The schedule should also show when the drawings are available to begin the cost estimate to ensure that the cost estimate is included with the design submittal and include time frames for site investigation and field investigation. This schedule should be a forward-planning as well as a project monitoring tool.

14.5 Design Restrictions and special considerations for HVAC systems. The use of plenum designs is prohibited by Design Branch policy in Savannah District. However, requests for waiver of this policy will be accepted through the Project Manager. Such requests shall be submitted to the Mechanical Team Leader located in EN-DEM for review and recommended approval action by Mechanical Section staff. Following a technical review, the request for waiver will be forwarded to Chief, Design Branch for final approval action. Results of the waiver approval process will then be forwarded to the appropriate Project Manager. The A-E should be instructed to include with the request for waiver, a detailed technical and economic justification for the planned use of a plenum system (whether return air or supply air plenum). Details should be provided in a narrative or sketch form which describes/depicts how the design will achieve the functional results required for plenum designs. The A-E designer's QA/QC plan should include a specific peer review of the HVAC system, to include focus on the HVAC supply and return air systems. The designer will also be required to provide a written certification during the design process which clearly states that the design features as shown on the plans and specifications will result in a sealed, functional plenum, if the completed construction conforms to the contract documents. This certification will further document the district's increased focus on the HVAC system selection and enhance our chances of obtaining a satisfactory design product.

15. **PREDESIGN CONFERENCE.** The purpose of the predesign conference is for the AE to develop a thorough understanding of the scope of work and to meet the appropriate personnel associated with the project.

15.1 *Importance.* The predesign conference is possibly the most important meeting that will be held concerning the design of a project. It will probably be the only opportunity, without calling a special meeting, for the AE to meet collectively and receive input from representatives of the user of the project, installation engineers, the major command over the installation, agencies which develop criteria, such as Army Center of Excellence, Subsistence, ASTM-CES, and the Corps of Engineers. Field investigations made after contract award are generally only attended by the installation and not the other agencies mentioned. Representatives of each discipline involved in the project should be present.

15.2 *Parts.* The predesign conference should consist of three parts, which are:

15.2.1 Review of data pertaining to the specific project.

15.2.2 Administrative/contractual requirements.

15.2.3 Site visits.

15.3 *Checklist.* The AE should have a clear understanding of all items on any pre-design conference checklist as to how they relate to the project under design. An understanding of the items should be clear by the end of the predesign conference if at all possible, but under no circumstances should the negotiations be completed until an understanding is reached.

15.4 *Minutes.* Detailed minutes covering each of the three parts and items addressed under each part will be recorded and distributed to all attendees by the Project Manager. The A/E is to provide his minutes along with the fee proposal.

**16. FEE PROPOSALS.** *Requirements for fee proposals will be detailed in Section C of the AE's contract.*

**17. ARCHITECT-ENGINEER CONTRACT MODIFICATIONS.**

17.1 *Negotiations Prior to Work.* Normally the AE fee for a modification to the AE contract will be negotiated prior to the performance of the work. However, in special cases, the AE will be directed to perform the work and to submit a request for adjustment within 30 days. Whether or not the fee is negotiated prior to the performance of the work, in no case is the AE to perform work unless directed to do so in writing by the Contracting Officer. The COR during design, ARCO or ACO during construction, can request a fee proposal; however, only the Contracting Officer can direct that the work be performed.

17.2 *Work Outside Scope.* The Contracting Officer wishes to process valid modifications reflecting bonafide increases in required services beyond the scope of the contract as quickly as possible; therefore, the AE will evaluate all interim, written and/or telephoned instructions and required review comments on submittals to determine if by his interpretation any of the above are beyond the scope of services in the contract. Such items as he believes to be subject to modification should be reported to the Contracting Officer within 1 week, with the exception of review comments where 15 days will be allowed for reporting. In many instances, clarification of intent may avoid necessity for modification.

17.3 If within 30 days of a request for a fee proposal, the proposal has not been received, the lack of a response will indicate there will be no additional charge for the work.

**18. PAYMENT REQUESTS.** *Requirements for payments will be detailed in Section C of the AE's contract.*

**19. ARCHITECT-ENGINEER EVALUATIONS.**

19.1 *Interim Evaluations.* An interim AE evaluation will be made for each submittal received from the AE. These evaluations are for internal use only and they will not be furnished to the AE nor to any person or agency outside of Savannah District. The only action which may result from an interim appraisal is in the event that the PM determines that work is unsatisfactory, the AE may be called in to Savannah District to discuss how the performance may be improved.

19.2 *Interim Evaluation after Final Submittal.* A design evaluation will be completed by the PM once the design has been completed and this evaluation will be entered into the ACASS system.

19.3 *Project Final Evaluation.* The projects' final evaluation will be completed by the PM after construction is complete and before the AE contract is closed. This evaluation will replace the interim final-design evaluation. For each discipline involved in the design, the AE's design and firm are rated on performance factors as follows:

19.3.1 Accuracy.

19.3.2 Completeness.

19.3.3 Cooperation.

19.3.4 Coordination.

19.3.5 Management.

19.3.6 Meeting schedule.

19.3.7 Personnel ability.

19.3.8 Work quality.

Services during construction are considered in the evaluation.

19.4 *Evaluation Database.* The final evaluation results are entered into a database that currently carries data for the Army, Navy, and Air Force. Data from other Government agencies will soon be carried in the system. The data is carried for a period of 6 years.

20. **AMENDMENTS.** The AE is responsible for preparation of amendments, for corrections to drawings as a result of amendments required to clarify design, for coordinating drawings with specifications, and for correcting design errors. Copies of all amendments will be mailed to the AE as they are issued. Drawing changes are to be incorporated by the AE to the drawing files, noted in the revision block, replotted and mailed to Savannah District at the time of each amendment is developed. Meeting the time requirements is imperative because the drawings must be processed, reproduced, and furnished to the Contractor so as not to cause a delay in the start of construction.

21. **CONSTRUCTION CONTRACT MODIFICATIONS.** Preparation of construction contract modifications is the number one priority for Savannah District. Prior to the transmittal of a letter outlining the scope of work, the PM will contact the AE to discuss the urgency of the response and the methods to expedite the process. Negotiations will be held and notices to proceed will be issued in the most expeditious possible way. Overnight mail, fax and telephonic procedures will be used.

22. **SERVICES DURING CONSTRUCTION.**

22.1 *Types of Service.* During the construction phase of a project, AE firms may be used for:

22.1.1 Shop Drawing Review of "GA|D" level shop drawings, requiring Government approval before construction.

22.1.2 Periodic site visits and inspections of construction materials.

22.1.3 Preparation of Operation and Maintenance Manuals, Test Procedures and Training.

22.1.4 Assistance during construction.

22.2 *Engineering Services During Construction.* AE firms are frequently called upon to provide engineering services during construction phase (formerly called Title II Services). These services can include construction inspection and shop drawing reviews by an AE firm through Architect-Engineer Contracts. Traditionally this has been done by modifying the original design contract or initiating a new contract.

22.2.1 Government Approval Action. The Corps of Engineers guide specifications have submittal requirements identified as Government Approval (GA) being necessary. It is the A/E's responsibility to edit this paragraph of each specification section to indicate "GA|F" (for Government Approval Filed Level) or GA|D (Government Approval Designer). A spreadsheet of generally recommended review levels will be furnished giving guidance on this matter but some of the choices depend on the type of design and editor must make choices. At the final design phase the A/E shall print out the DA Form 4288 from SPECINTACT showing the review levels by the designer or Corps. If the initial design contract did not include shop drawing review, the PM should subsequently initiate appropriate contract modification action for this work. Fee proposal will be requested and modification negotiated.

22.2.2 Shop Drawing Submittal. The construction Contractor submits shop drawings to the Resident Office, who in turn forwards the shop drawing to the PM or mail it directly to the AE with ENG Form 4026 to document recommended review action.

22.2.3 Review Action. The reviewer shall date stamp the drawings upon receipt and shall initiate review action promptly. Typical construction contract provisions allow 30 days duration for shop drawing review. This includes mail time back to the Resident Office. Monetary delay claims to the Government are justifiable if review action is not received within this 30-day period. The AE shall review the shop drawings for compliance with contract requirements and compliance with applicable referenced codes. The reviewer shall mark necessary corrections in red and green markings on the drawings. Red indicating new correction and green indicating deletion. Provide REVIEW ACTION CODE recommendation on ENG Form 4026. The recommendation will be considered but final decision shall be made by the Contracting Officer. The AE shall promptly return the reviewed shop drawings to the Resident Office requesting the review.

23. ***VISITS TO INSTALLATIONS AND PHOTOGRAPHS.*** When making site inspection visits at the installation, the necessary arrangements for such visits will normally be made with the PM. The AE is responsible for determining existing site conditions and coordinating new work with existing conditions. As-built drawings for typical buildings furnished the AE may not

necessarily reflect the existing conditions; therefore, each building in the contract must be field checked and drawings revised to indicate the existing conditions. AE's shall document visits to installations in two ways - by signing in at the area/resident office and by preparing a trip report.

**23.1 *Contact Area/Resident Engineer.*** The area/resident engineer is Savannah Districts' primary representative at an installation. As such, they should be aware of all activities at the installation taking place under the administration of the District Office.

**23.2 *Coordination by Project Manager.*** The Savannah District PM should be called prior to any visit for the purpose of coordinating the visits with persons or activities at the installation.

**23.3 *Trip Reports.*** When the AE visits the site and discusses the project with representatives of the DPW or Base Civil Engineer and/or using service or other personnel, a brief report of the visit, or conclusions reached or commitments made shall be furnished to the Savannah District Office PM.

**23.4 *Photographs.*** Designer shall submit photographs showing, where possible, all field conditions influencing the design. A narrative report shall be submitted describing the general conditions and all specific conditions for which it is impractical to submit specific photographs. Each photograph will be specifically labeled to identify the subject and how it is applicable to the design. The report and photographs shall be organized by design discipline and shall be submitted for each discipline with each design review submittal with the design analysis for each discipline. Photographs submitted with concept and/or preliminary submittals will be returned to the designer for his use and resubmittal with subsequent submittals. Photographs will be original prints or copies of such quality and size to clearly show field conditions and verify quantity and quality of work required.

**24. *SITE ADAPTATIONS.*** The District frequently reuses existing AE or Government prepared designs to meet construction needs. The site adapting AE will be furnished plans, specifications, and design analyses for the existing design with specific instructions outlining the aspects of the design that are to be changed to meet the new site conditions and the need of the new user. The site adapting AE shall review the design and design analysis and shall use the existing design as a guide in developing his design. The site adapting AE shall perform whatever additional calculations and checks as are necessary to ensure that the portion of the design that is reused is correct. Responsibility for errors and omissions shall be with the site adapting AE. In addition to this check, additional design to meet user or site needs shall be performed as indicated in the specific instructions. As a minimum, new design will be required in the following areas:

- a. Exterior paving, grading, utilities and other site preparation beyond the 5-foot building line.
- b. Foundation design.
- c. Revision of the exterior finishes to insure the new design is compatible with surrounding structures and the installation design guide.
- d. Rewriting specifications to update them to the latest criteria and to add any additional sections required by new design.

e. Verification that the wind, snow, seismic, heating, air conditioning, and energy conservation designs are appropriate for the proposed site.

25. **HEALTH AND SAFETY STANDARDS.** The facilities, systems and equipment design standards of the Occupational Safety and Health Act, Code of Federal Regulations, Title 29, Chapter XVII, Parts 1910 and 1926 as applicable will be incorporated into all engineering designs and analyses furnished pursuant to the A/E contract. Any problem in incorporating these standards due to conflict with other technical criteria will be promptly submitted to the Contracting Office for decision. The following categories correspond to OSHA citation criteria:

a. Category 1 - Imminent Danger: There is reasonable certainty that the hazard will cause death or serious physical harm (or catastrophic damage to property or equipment) either immediately or within a short period of time.

b. Category II - Serious Violation: There is substantial probability that death or serious physical harm (or major property or equipment damage) could result at some point in time from exposure.

c. Category III - Nonserious Violation: A hazard that could result in an accident or occupational illness, but probably not death or serious irreversible physical harm. A hazard that could cause substantial damage to property or equipment.

d. Category IV - DeMinimus Violation: A hazard which would probably not affect employee safety or health, but is nevertheless in violation of a specific standard. A hazard that could result in minor damage to property or equipment.

END OF SECTION

## LIST OF EXHIBITS

- I-A-1 - DESIGN SUBMITTALS CHECKLIST
- I-A-2 - SUBMITTAL DISTRIBUTION SPREADSHEET
- I-A-3 - PREDESIGN CONFERENCE CHECKLIST
- I-A-4 - PAYMENT ESTIMATE - CONTRACT PERFORMANCE (ENG Form 93)
- I-A-5 - SUGGESTED FORMAT FOR REPORT OF FIELD VISIT
- I-A-6 ARCHITECT-ENGINEER AND RELATED SERVICES QUESTIONNAIRE  
FOR SPECIFIC PROJECT (SF 255)
- I-A-7 SAMPLE OF DD FORM 1391
- I-A-8 ROUTING OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL  
SAMPLES OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE  
FOR APPROVAL (ENG Form 4026)
- I-A-9 RELEASE OF CLAIMS FORM

**SUBMITTAL MATRIX SUMMARY  
FOR A TYPICAL MILITARY CONSTRUCTION PROJECT**

ITEM	DESCRIPTION	10 %	35 %	60 %	100%	RTA
	<b>SITE DEVELOPMENT</b>					
C-a.	Site Plan sketch of the proposed project site showing the "existing" topography, scale, spot grades, etc	X				
C-b.	Design Analysis/Narrative a. General Descriptive Data b. Demolition/Removal Explanation c. Site Geometry Rationale d. Site Grading Features e. Storm Drainage Design f. Pavement Design g. Landscape Design h. Berm Design	X	X		X	X
C-1.	Site Development Drawings		X	X	X	X
L-2.	Landscape Plans		X	X	X	X
C-3.	Outline Specifications Both Site & Landscape		X			
C-4.	Estimated Sitework Quantities	X	X	X	X	
C-5.	Survey Data		X			
C-6.	Annotated Review Comments From Previous Submittal			X	X	X
C-7.	Drawings in Electronic Copy					X
C-8.	Specifications (Electronic & Hard Copy)				X	X
C-9.	Erosion and Sedimentation Control Plan			X	X	X
	<b>SOILS</b>					
D-1.	Design Analysis, a Completed SAS Form Letter 363		X			
D-2.	Reproducible Site Plan Drawings		X			

ITEM	DESCRIPTION	10 %	35 %	60 %	100%	RTA
D-3.	Annotated Review Comments From Previous Submittal			X	X	X
D-4.	Specifications (Electronic & Hard Copy)				X	X
	<b>STRUCTURAL</b>					
S-1.	Structural Narrative	X	X	X	X	
S-2.	Design Analysis		X		X	X
S-3.	Structural System Selection Analysis		X			
S-4.	Structural Drawings			X	X	X
S-5.	Outline Specifications		X			
S-6.	Preliminary Specifications					
S-7.	Specifications (Electronic & Hard Copy)				X	X
S-8.	Quality Assurance				X	
S-9.	Annotated Review Comments From Previous Submittal			X	X	X
S-10.	Drawings in Electronic Copy		X		X	X
	<b>ARCHITECTURAL</b>					
A-1.	Functional Floor Plans, Major Elevations	X				
A-2.	Detailed Floor Plans, All Elevations		X	X	X	
A-3.	Architectural Design Approach Narrative/ General Description of the Project	X	X		X	
A-4.	Annotated Review Comments From Previous Submittal		X	X	X	X
A-5.	Architectural Drawings		X	X	X	X
A-6.	Outline Specifications		X			
A-7.	Specifications (Electronic & Hard Copy)				X	X
A-8.	Hardware Schedule and Consultant Name & Credentials				X	
A-9.	Color Boards* SEE NOTE ON NEXT PAGE				X	X

ITEM	DESCRIPTION	10 %	35 %	60 %	100%	RTA
	<b>MECHANICAL</b>					
M-1.	Mechanical Narrative	X	X	X	X	
M-2.	Annotated Review Comments From Previous Submittal		X	X	X	X
M-3.	Design Analysis/Standard Computation Forms		X		X	X
M-4.	Mechanical Drawings		X	X	X	X
M-5.	Field Trip Report(s)		X			
M-6.	Outline Specifications		X			
M-7.	Specifications (Electronic & Hard Copy)				X	X
M-8.	Drawings in Electronic Copy		X	X	X	X
	<b>ELECTRICAL POWER, LIGHTING, GROUNDING, COMMUNICATIONS AND ALARM SYSTEMS</b>					
E-1.	Electrical Narrative Interior Electrical System Design Narrative Exterior Electrical Distribution System Design Narrative Energy Conservation Design Narrative	X	X	X	X	
E-2.	Field Trip Report		X			
E-3.	Annotated Review Comments From Previous Submittal			X	X	X
E-4.	Design Analysis/Standard Computation Forms		X		X	X
E-5.	Electrical Drawings		X	X	X	X
E-6.	Outline Specifications		X			
E-7.	Specifications (Electronic & Hard Copy)				X	X
E-8.	Drawings in Electronic Copy		X	X	X	X
	<b>FIRE PROTECTION</b>					

ITEM	DESCRIPTION	10 %	35 %	60 %	100%	RTA
FP-1.	Design Analysis		X		X	X
FP-2.	Fire Prevention/Life Safety Drawing(s)		X	X	X	X
FP-3.	Fire Prevention Engineer Certification				X	
FP-4.	Annotated Review Comments From Previous Submittal		X	X	X	X
FP-5.	Outline Specifications		X			
FP-6.	Final Specifications (Electronic & Hard Copy)				X	X
FP-7.	Drawings in Electronic Form		X	X	X	X
	<b>ENERGY ANALYSES, ECONOMIC ANALYSES, HVAC CONTROL SYSTEMS, AND EMCS</b>					
MC-1.	HVAC Alternatives Coordination	X	X			
MC-2.	Modeling Input Data	X				
MC-3.	Energy Analysis Narrative a. Printouts of I/O data for EB and LCC simulations. b. U-value calculations for exterior surfaces. c. EB breakdown for each building. d. Life Cycle Cost Analysis. e. Energy conservation methods report. f. List of specs to be used. g. I/O data diskette (when required).		X			
MC-4.	HVAC Controls Drawings & EMCS Plans		X	X	X	X
MC-5.	Annotated Review Comments		X	X	X	X
MC-6.	Outline Specifications		X			X
MC-7.	Final Specifications (Electronic & Hard Copy)				X	X
MC-8.	HVAC Controls Design Analysis				X	
MC-9.	Revised energy budget calculations and report for any significant changes				X	X
MC-10.	Drawings in Electronic Form		X	X	X	X

ITEM	DESCRIPTION	10 %	35 %	60 %	100%	RTA
	<b>ENVIRONMENTAL</b>					
W-1.	Studies (If required)		X			
W-2.	Study Plan Submittal		X			
W-3.	Exterior Utility Layouts Drawings		X	X	X	X
W-4.	Fire Flow Analysis		X		X	X
W-5.	Design Analysis, tabulation recapitulating the total utility system loads; sanitary sewer, water			X	X	
W-6.	Outline Specifications		X			
W-7.	Final Specifications (Electronic & Hard Copy)				X	X
W-8.	Drawings in Electronic Copy		X	X	X	X
	<b>COST ESTIMATING</b>					
CE-1.	Cost Estimate (Electronic & Hard Copy)	X	X	X	X	X
CE-2.	Cost Estimate backup & quantity take-off		X	X	X	X
	<b>ABATEMENT DESIGNS</b>					
R-1.	Asbestos Survey and Abatement Plans	X	X		X	X
R-2.	Lead Base Paint Survey and Abatement Plans	X	X		X	X
	<b>MISCELLANEOUS</b>					
O-1.	Scope of Work Narrative for CBD				X	
O-2.	Construction Time Estimate				X	
O-3.	Schedule (Section B)				X	
O-4.	Table of Contents of Technical Specifications				X	
O-5.	List of Government-Furnished Equipment				X	
O-6.	Salvageable Material Listing				X	

ITEM	DESCRIPTION	10 %	35 %	60 %	100%	RTA
O-7.	List of special situations requiring special work restraints				X	
O-8.	Field Trip Report(s)	X	X	X	X	X
	<b>CONSTRUCTION PHASING</b>					
PH-1.	Verbal Description of Phasing				X	X
PH-2.	Site Plans Showing each Demolition and/or Construction Phase				X	X

\* This may be submitted later following the actual submittal with prior coordination with the Project Engineer or Project Manager.

**SUBMITTAL DISTRIBUTION**

L.I. _____, FY-_____, Fort _____																				
DESIGN PHASE		Code 3 Design			Concept/Early Prelim/Prelim Design				60% Design		Final Design					Corrected Final Design				
		Dgn Anal/ Plans	Cost Narrative	Est	Dgn Anal/ Plans	Cost Narrative	Est	Other	Plans	Cost Est	Plans	Spec	Dgn Anal/ Narrative	Cost Est	Other	Plans	Spec	Dgn Anal/ Narrative	Cost Est	Other
SAS Submittals																				
Project Engineer	EN-EME	2	2	1	2	2	1	0	1	1	2	2	2	1	1	1	1	1	1	1
Design Branch	EN-D	1	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0
Structural	EN-DS	1	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0
Architectural	EN-DA	1	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0
Interior Design	EN-DA	1	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0
Mechanical	EN-DM	1	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0
Energy Analysis	EN-DM	1	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0
Fire Protection	EN-DM	1	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0
Electrical	EN-DE	1	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0
Environmental	EN-DG	1	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0
Site Development	EN-DG	1	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0
Geotechnical	EN-GG	1	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0
HTRW	EN-GH	1	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0
Soils/Geotech	EN-GS	1	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0
Cost Engineering	EN-C	1	1	0	1	1	1	0	1	1	1	1	1	1	0	0	0	0	1	0
Specifications	EN-ES	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
CADD	EN-EC	1	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
Files	EN-ESF	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Project Manager	PM-M	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Construction	CD-QT	0	0	0	0	0	0	0	0	0	4	4	0	0	0	1	1	0	0	0
Value Engineer	EN-V	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Originals (Full/Half Size)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
Subtotal		19	18	3	21	20	6	2	18	4	23	23	18	4	3	5	5	4	5	4
External Submittals																				
Installation		12	12	1	12	12	1	0	2	1	12	12	12	1	1	2	2	2	1	0
Area Engineer		1	1	0	1	1	0	0	0	0	2	2	0	0	0	1	1	0	0	0
USAISEC-CONUS		0	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0
EPVA Review		0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0
COS Design Agency		1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Army Ctr of Excellence (Din Fac)		1	1	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0
ITR Agency		0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0
MACOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAD		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HQ USACE		1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OACSIM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design A-E		3	3	1	3	3	1	1	3	1	3	3	3	1	1	0	0	0	0	0
Subtotal		19	19	3	20	20	2	1	5	2	21	21	17	2	3	4	4	3	1	0
Total		38	37	6	41	40	8	3	23	6	44	44	35	6	6	9	9	7	6	4

Pre-design Checklist

LOCATION: \_\_\_\_\_ DATE: \_\_\_\_\_  
 FY: \_\_\_\_\_ LINE NO.: \_\_\_\_\_ DESCRIPTION: \_\_\_\_\_  
 DIRECTIVE NO.: \_\_\_\_\_ DATE: \_\_\_\_\_ SCOPE: \_\_\_\_\_  
 BASIS OF DESIGN: ORIGINAL: \_\_\_\_\_ DEFINITIVE: \_\_\_\_\_ SITE ADAPT: \_\_\_\_\_

	P r e d e s i g n	C o n c e p t	P r e l i m i n a r y	F i n a l	
Item					Remarks

A. General Sitting: **(CESAS-PM)**

- 1. Complies with Master Plan: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2. Orientation: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 3. Clean Site: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 3.a. DPW letter on hand: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 4. Future Expansion: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 5. Relocation's: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 6. Demolition: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 6.a. By whom: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 6.b. Date: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 7. Real Estate Action: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 8. Phasing: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 9. Special working Restrictions: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 10. Special Problems: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

B. Criteria: **(CESAS-PM)**

- 1. Approved Site Plan: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2. Design Cost Target: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 3. Functional Dsgn Data: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 4. Engineering Inst.: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 5. Specific Inst.: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

C. Basic Information: **(CESAS-PM)**

- 1. Topography: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2. Existing Imp: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 3. Foundation Survey: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 4. As-Built Plans: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 4.a. Bldg.: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 4.b. Utilities: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 5. Utility Outage Req.: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 6. Street Crossing restr: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 7. Other Restrictions: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

D. Building (Structural): **(CESAS-EN-DS)**

- 1. Special Foundations: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2. Special Loading: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 3. Framing: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

Predesign Checklist

E. Building (Architectural): **(CESAS-EN-DA)**

- 1. Type (AFM 88-15): \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.a. "N": \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.b. "C": \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.c. Fire Resistive: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2. Type AR 210-18: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 3. Type EM 1110-3-101: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 4. Construction Materials: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 4.a. Optional dsgns: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 4.b. Departure frm plans: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 4.c. Special Reqs: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 5. Painting (Color Ref.): \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 6. Security Features: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 6.a. Hardware: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 6.b. Penetration: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 6.c. Values: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 7. Master Keying: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 8. Materials in short supply: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 9. Mat long proc time: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 10. Other: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

F. Building (Mechanical): **(CESAS-EN-DM)**

- 1. Heat., Vent., & Air Conditioning:
  - 1.a. Type:
    - 1.a.1. Heat \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
    - 1.a.2. Vent: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
    - 1.a.3. A C: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 1.b. Controlling Design Factors: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 1.c. Humidity: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 1.d. Temp Special Req.: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 1.e. Heat Generation of Equipment (by room): \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 1.f. Outside Air Req.: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 1.g. Diversity Factors: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 1.h. Personnel Loads: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 1.i. Type Fuel: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 1.j. Standby: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 1.k. Outage Requirements on Existing Systems: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2. Steam: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 3. Refrigeration: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 4. Compressed Air: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

Predesign Checklist

_____	( )	( )	( )	( )	_____
5. Controls: _____					_____
_____	( )	( )	( )	( )	_____
6. Venting: _____					_____
_____	( )	( )	( )	( )	_____
7. Special Access: _____					_____
_____	( )	( )	( )	( )	_____
8. Space Allocation: _____					_____
_____	( )	( )	( )	( )	_____
9. Separate Boiler Plant: _____	( )	( )	( )	( )	_____
10. Separate Equip. Room: _____	( )	( )	( )	( )	_____
11. Phasing Requirements: _____					_____
_____	( )	( )	( )	( )	_____
12. Optional Materials: _____					_____
_____	( )	( )	( )	( )	_____
13. Plumbing:					
13.a. Special Features: _____	( )	( )	( )	( )	_____
_____					
13.b. Rough-in for equipment: _____	( )	( )	( )	( )	_____
_____					
13.c. Fixtures: _____	( )	( )	( )	( )	_____
_____					
13.d. Sumps: _____	( )	( )	( )	( )	_____
_____					
13.e. Avail Pressure: _____	( )	( )	( )	( )	_____
_____					
13.f. Optional Materials: _____	( )	( )	( )	( )	_____
_____					
14. Sound Suppression: _____	( )	( )	( )	( )	_____
_____					
15. Fire Protection:					
15.a. Sprinklers:					
15.a.1. Type: _____	( )	( )	( )	( )	_____
15.a.2. GPM: _____	( )	( )	( )	( )	_____
15.a.3. Demand: _____	( )	( )	( )	( )	_____
15.a.4. GPM: _____	( )	( )	( )	( )	_____
15.a.5. Storage: _____	( )	( )	( )	( )	_____
15.b. Hose racks: _____	( )	( )	( )	( )	_____
_____					
15.c. Extinguishers: _____	( )	( )	( )	( )	_____
_____					
15.d. Automatic: _____	( )	( )	( )	( )	_____
_____					
15.e. Existing System: _____	( )	( )	( )	( )	_____
_____					
15.e.1. Tie in Rqmts: _____	( )	( )	( )	( )	_____
_____					

G. BUILDING ( ELECTRICAL): **(CESAS-EN-DE)**

Predesign Checklist

1. Lighting:

- 1.a. Ineand: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.b. Fluor: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.c. Intensity: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.d. Hazard areas: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.e. Refrig areas: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.f. High bay: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.g. Low bay: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.h. Special process  
(safelight, ultra violet, etc): \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.i. Controls (dimming,  
contactors, etc): \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.j. Wiring:
  - 1.j.1. Conduit: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 1.j.2. Cable: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 1.j.3. Trough: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 1.j.4. Duct: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 1.j.5. Bus: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.k. Shock: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.l. Shield: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.m. Mount: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.n. Phasing  
Requirements: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.o. Optional materials: \_\_\_\_\_  
\_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

2. Power:

- 2.a. Voltage: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.b. Frequency: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.c. Demand: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.d. Loads: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.e. Special outlets: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.f. Transformers: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.g. Rectifiers: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.h. Generators: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 2.h.1. Standby: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 2.h.2. Micro power: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.i. Transfer:
  - 2.i.1. Auto.: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
  - 2.i.2. Manual: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.j. Shock: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.k. Shielding: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.l. Mounting: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.m. GFE Ratings: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.n. Outage Restrictions: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.o. Optional Materials: \_\_\_\_\_  
\_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

3. Switches:

- 3.a. Explosion proof: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 3.b. Moisture proof: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

4. Special controls:

- 4.a. Security: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 4.b. Interlock: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

Predesign Checklist

H. COMMUNICATIONS: (CESAS-EN-DE)

- 1. Fire Alarm: ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.a. Type: \_\_\_\_\_
- 1.a.1. Auto.: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.a.2. Manual: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.a.3. Sprinkler: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.b. Match exists: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.c. Canceled: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.d. Exposed: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.e. Temp: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.f. Smoke: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.g. Flame: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.h. C02: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.i. Foam: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.j. Halon: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2. Intercom: \_\_\_\_\_
- 2.a. Nurse call: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.b. Dr. Paging: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.c. PA: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.d. Radio: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.e. TV: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.f. Phono: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.g. Transcript: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.h. Dict.: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.i. Conduit only: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2.j. Complete: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

I. LIGHTNING PROTECTION: (CESAS-EN-DE)

\_\_\_\_\_  
 \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

J. CATHODIC PROTECTION: (CESAS-EN-DE)

- 1. Existing: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2. Soil Resistivity: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 3. Coverage: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

K. OUTSIDE ELECTRICAL: (CESAS-EN-DE)

- 1. Primary: \_\_\_\_\_
- 1.a. O'hd: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.b. Under.: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.c. Direct lay: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.d. DuctS.: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.e. Manholes: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.f. Grounding: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.g. Shielding: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.h. Characteristics: \_\_\_\_\_
- \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.i. Configuration: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.j. Grounding: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.h. Shielding: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.i. Aluminum: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.j. Copper: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.k. Guying: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 1.l. Relocate: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

Predesign Checklist

1.m. Phasing requirements:	( )	( )	( )	( )	_____
<hr/>					
1.n. Optional Materials:	( )	( )	( )	( )	_____
<hr/>					
2. Substation:					
2.a. Mounting:					
2.a.1 Pole: _____	( )	( )	( )	( )	_____
2.a.2. Pad: _____	( )	( )	( )	( )	_____
2.a.3. Transclosure: _____	( )	( )	( )	( )	_____
2.b. Voltage: _____	( )	( )	( )	( )	_____
2.c. Integrater: _____	( )	( )	( )	( )	_____
2.d. Grounding: _____	( )	( )	( )	( )	_____
2.e. Grading: _____	( )	( )	( )	( )	_____
2.f. Fencing: _____	( )	( )	( )	( )	_____
2.g. Signs: _____	( )	( )	( )	( )	_____
2.h. Other: _____	( )	( )	( )	( )	_____
<hr/>					
2.i. Phasing requirements: _____	( )	( )	( )	( )	_____
<hr/>					
2.j. Optional materials: _____	( )	( )	( )	( )	_____
<hr/>					
3. Secondary:					
3.a. Size: _____	( )	( )	( )	( )	_____
3.b. Voltage: _____	( )	( )	( )	( )	_____
3.c. Voltage drop: _____	( )	( )	( )	( )	_____
3.d. Clearance: _____	( )	( )	( )	( )	_____
3.e. Insulators: _____	( )	( )	( )	( )	_____
3.f. Service drops: _____	( )	( )	( )	( )	_____
3.g. Type duct (und.): _____	( )	( )	( )	( )	_____
3.h. Stub-outs: _____	( )	( )	( )	( )	_____
3.i. Phasing reqs.: _____	( )	( )	( )	( )	_____
<hr/>					
3.j. Optional materials: _____	( )	( )	( )	( )	_____
<hr/>					
4. Street Lighting:					
4.a. Pole:					
4.a.1 Length: _____	( )	( )	( )	( )	_____
4.a.2. Class: _____	( )	( )	( )	( )	_____
4.a.3. Length mast: _____	( )	( )	( )	( )	_____
4.b. Mounting Ht.: _____	( )	( )	( )	( )	_____
4.c. Loc. of CCT on poles: _____	( )	( )	( )	( )	_____
4.d. Cable rating: _____	( )	( )	( )	( )	_____
4.e. Series: _____	( )	( )	( )	( )	_____
4.f. Lamp ratings: _____	( )	( )	( )	( )	_____
4.g. Transformation: _____	( )	( )	( )	( )	_____
4.h. Regulation: _____	( )	( )	( )	( )	_____
4.i. Light pattern: _____	( )	( )	( )	( )	_____
4.j. Control: _____	( )	( )	( )	( )	_____
4.k. Phasing reqs: _____	( )	( )	( )	( )	_____
<hr/>					
4.l. Optional materials: _____	( )	( )	( )	( )	_____
<hr/>					
5. Fence lighting:					
5.a. Purpose:					

Predesign Checklist

5.a.1. In:	_____	( )	( )	( )	( )	_____
5.a.2. Out:	_____	( )	( )	( )	( )	_____
5.b. Security:						
5.b.1. OH:	_____	( )	( )	( )	( )	_____
5.b.2. UG:	_____	( )	( )	( )	( )	_____
5.c. Circuitry:	_____	( )	( )	( )	( )	_____
5.d. Fixture type:	_____	( )	( )	( )	( )	_____
5.e. Control:	_____	( )	( )	( )	( )	_____
5.f. Interference:	_____	( )	( )	( )	( )	_____
6. Parking area lighting:						
6.a. Pole protection:	_____	( )	( )	( )	( )	_____
<hr/>						
6.b. Shielding from building:	_____	( )	( )	( )	( )	_____
<hr/>						
6.c. Phasing:	_____	( )	( )	( )	( )	_____
<hr/>						

**K. WATER: (CESAS-EN-DM)**

1. Demand:						
1.a. Domestic:	_____	( )	( )	( )	( )	_____
1.b. Industrial:	_____	( )	( )	( )	( )	_____
1.c. Fire:	_____	( )	( )	( )	( )	_____
2. Storage:	_____	( )	( )	( )	( )	_____
3. Treatment:	_____	( )	( )	( )	( )	_____
4. Outage restrictions:	_____	( )	( )	( )	( )	_____
<hr/>						
5. Optional materials:	_____	( )	( )	( )	( )	_____
<hr/>						
6. Phasing requirements:	_____	( )	( )	( )	( )	_____
<hr/>						

**M. SEWAGE & IND. WASTE: (CESAS-EN-DM)**

1. Collection:	_____	( )	( )	( )	( )	_____
<hr/>						
2. Treatment:	_____	( )	( )	( )	( )	_____
<hr/>						
3. Disposal:	_____	( )	( )	( )	( )	_____
<hr/>						
4. Outage Restrictions:	_____	( )	( )	( )	( )	_____
<hr/>						
5. Optional Materials:	_____	( )	( )	( )	( )	_____
<hr/>						
6. Phasing Requirements:	_____	( )	( )	( )	( )	_____
<hr/>						

**N. AGRONOMY: (CESAS-EN-DG)**

1. Erosion Control:	_____	( )	( )	( )	( )	_____
2. Shrubs:	_____	( )	( )	( )	( )	_____
3. Grassing:						
3.a. Seeding:	_____	( )	( )	( )	( )	_____
3.b. Spot sod:	_____	( )	( )	( )	( )	_____
3.c. Solid soil:	_____	( )	( )	( )	( )	_____
4. Sprinklers:	_____	( )	( )	( )	( )	_____
<hr/>						

Predesign Checklist

O. WALKS: (CESAS-EN-DG)

- 1. Type: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2. Width: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

P. ROADS & DRIVES: (CESAS-EN-DG)

- 1. Loading: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2. Class: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 3. Width: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 4. Radii: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 5. Limit: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 6. Curbs: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 7. Gutters: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 8. Surface: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 9. Traffic Control: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 10. Temp. by pass req.: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 11. Phasing: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 12. Optional Materials: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

Q. PARKING AREA: (CESAS-EN-DG)

- 1. Size: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2. Surface: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 3. Location: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 4. Access: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 5. Load: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 6. Angle: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

R. GRADING & DRAINAGE: (CESAS-EN-DG)

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

S. FENCING: (CESAS-EN-DG)

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

T. AIRFIELD PAVING: (CESAS-EN-DG)

- 1. Type: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 2. Alternate: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 3. Loading: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 4. Grade limitation: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 5. Overrun: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 6. Clearance: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 7. Blast pads: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 8. Blast deflectors: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 9. Warm-up pad: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 10. Shoulders: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 11. Painting, marking: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 12. Relocation's: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 13. Fencing: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 14. Hazard removal: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 15. Real estate: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 16. Anchors: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_
- 17. Phones: \_\_\_\_\_ ( ) ( ) ( ) ( ) \_\_\_\_\_

Predesign Checklist

- |                                   |     |     |     |     |       |
|-----------------------------------|-----|-----|-----|-----|-------|
| 18. Hydrants: _____               | ( ) | ( ) | ( ) | ( ) |       |
| 19. Dust & erosion control: _____ | ( ) | ( ) | ( ) | ( ) | _____ |
| 20. Overrun barriers: _____       | ( ) | ( ) | ( ) | ( ) | _____ |
| 21. Lighting: _____               | ( ) | ( ) | ( ) | ( ) | _____ |
| 22. Power: _____                  | ( ) | ( ) | ( ) | ( ) | _____ |
| 23. Nav aids: _____               | ( ) | ( ) | ( ) | ( ) | _____ |
| 24. Hydra Refuel: _____           | ( ) | ( ) | ( ) | ( ) | _____ |
| 25. Special Criteria: _____       | ( ) | ( ) | ( ) | ( ) | _____ |
| 26. Waivers: _____                | ( ) | ( ) | ( ) | ( ) | _____ |
| 27. Construction Phasing: _____   | ( ) | ( ) | ( ) | ( ) | _____ |

**U. SPOIL & BORROW AREA: (CESAS-EN-DG)**

- |       |     |     |     |     |       |
|-------|-----|-----|-----|-----|-------|
| _____ |     |     |     |     |       |
| _____ | ( ) | ( ) | ( ) | ( ) | _____ |

**V. DRAWINGS/SUBMITTALS: (CESAS-EN-EP)**

- |                                  |     |     |     |     |       |
|----------------------------------|-----|-----|-----|-----|-------|
| 1. Comply with Design Mn.: _____ | ( ) | ( ) | ( ) | ( ) |       |
| 2. Drawings Legible: _____       | ( ) | ( ) | ( ) | ( ) | _____ |
| 3. Reproducible Quality: _____   | ( ) | ( ) | ( ) | ( ) | _____ |

**W. ENVIRONMENTAL ISSUES: (CESAS-PM-H)**

- |   |     |     |     |     |       |
|---|-----|-----|-----|-----|-------|
| 1. HTRW Concerns: _____                                   | ( ) | ( ) | ( ) | ( ) |       |
| 2. Air/Water/Noise Pollution & Abatement: _____           | ( ) | ( ) | ( ) | ( ) | _____ |
| 3. Other Environmental Impacts to Include Wetlands: _____ | ( ) | ( ) | ( ) | ( ) | _____ |

**X. SPECIAL REQUIREMENTS: (CESAS-EP)**

- |  |     |     |     |     |       |
|--|-----|-----|-----|-----|-------|
| 1. Studies & Investigations: _____     | ( ) | ( ) | ( ) | ( ) |       |
| 2. Specintact Training for AE _____    |     |     |     |     |       |
| 3. MCASES Training f/AE: _____         |     |     |     |     |       |
| 4. Utility Tie-ins: _____              | ( ) | ( ) | ( ) | ( ) | _____ |
| 5. Expansion Consideration: _____      | ( ) | ( ) | ( ) | ( ) | _____ |
| 6. GFE:                                |     |     |     |     |       |
| 6.a. List: _____                       | ( ) | ( ) | ( ) | ( ) | _____ |
| 6.b. Responsibility: _____             | ( ) | ( ) | ( ) | ( ) | _____ |
| 6.c. Availability: _____               | ( ) | ( ) | ( ) | ( ) | _____ |
| 7. Additive Item Priority: _____       | ( ) | ( ) | ( ) | ( ) | _____ |
| 8. Special Use Criteria: _____         | ( ) | ( ) | ( ) | ( ) | _____ |
| 9. Source: _____                       | ( ) | ( ) | ( ) | ( ) | _____ |
| 10. Special App./Concurrence: _____    | ( ) | ( ) | ( ) | ( ) | _____ |
| 11. Operating Manuals: _____           | ( ) | ( ) | ( ) | ( ) | _____ |
| 12. Oper Training: _____               | ( ) | ( ) | ( ) | ( ) | _____ |
| 13. Utilities Service Contracts: _____ | ( ) | ( ) | ( ) | ( ) | _____ |

Predesign Checklist

14. Cost Limitations: _____					
15. Est. Cost vs. Program Amounts: _____	( )	( )	( )	( )	_____
<hr/>					
16. Real Estate:					
16.a. Acquisition: _____	( )	( )	( )	( )	_____
16.b. Entry: _____	( )	( )	( )	( )	_____
16.c. Permits: _____	( )	( )	( )	( )	_____
17. Utility Service Outages: _____	( )	( )	( )	( )	_____
<hr/>					
18. Project Office Space: _____	( )	( )	( )	( )	_____
<hr/>					
19. Construction Phasing: _____	( )	( )	( )	( )	_____
<hr/>					
19. Security Clearance for Personnel: _____	( )	( )	( )	( )	_____
<hr/>					
20. Avail Utilities for Construction: _____	( )	( )	( )	( )	_____
<hr/>					
21. Justification for Short Construction Period: _____	( )	( )	( )	( )	_____
<hr/>					
22. Justification for Restrictive Items: _____	( )	( )	( )	( )	_____
<hr/>					
23. Solicitation Advertisement Method					
23a. EBS on CD only/paper for field				( )	_____
23b. EBS CD and Internet / Paper for field				( )	_____
<hr/>					
24. Other: _____	( )	( )	( )	( )	_____
<hr/>					
<hr/>					

The undersigned agree that this document represent the agreements reached and the understanding of the scope at the indicated stage. Conditions or requirements may change due to circumstances beyond the control of this parties.

<b>ATTENDANTS:</b>	<b>Name</b>	<b>Office Symbol/Org</b>	<b>Tel No./Fax No.</b>	<b>E-Mail Address</b>
<b>Project Manager:</b>	_____			
<b>Technical Manager:</b>	_____			
<b>Installation DPW/BCE:</b>	_____			
<b>MAJCOM:</b>	_____			
<b>Area/Resident Engineer:</b>	_____			
<b>Designer (A-E):</b>	_____			
<b>Others:</b>	<b>Name</b>	<b>Office Symbol/Org</b>	<b>Tel No./Fax No.</b>	<b>E-Mail Address</b>
<hr/>				

EXHIBIT 4

PAYMENT ESTIMATE  
CONTRACT PERFORMANCE  
(ENG FORM 93)

SAMPLE		PAYMENT ESTIMATE - CONTRACT PERFORMANCE		1. DATE		SHEET 1 of 1	
2. CONTRACTOR AND ADDRESS Smith, Brown and Jones Inc. 200 East St. Julian Street, Savannah, Georgia 31401		3. CONTRACT NO. DACA21-83-C-0200		4. DISTRICT Savannah		5. DATE 10 July 1987	
5. DESCRIPTION OF WORK Architect-Engineer Services (or Engineering Svs)		6. APPROVAL AND PROJECT By Approval of Firm		7. REQUIRED COMPLETION DATE N/A		8. DISTRICT Savannah	
8. LOCATION Fort		9. PERIOD COVERED BY THIS ESTIMATE FROM		10. JOB ORDER NO. N/A		11. ESTIMATE NO. Start w/1	
ITEM NO.	DESCRIPTION	QUANTITY AND UNIT	UNIT PRICE	AMOUNT	QUANTITY AND UNIT	TOTAL TO DATE	AMOUNT
1	Design of (Name of project as shown on the contract)		LS	(Copy from contract)	(Percentage of completion)		(Cumulative Earnings)
2	Phase I, Concept Design		LS				
3	Phase II, (Option), Final Design		LS				
4	Modification No. P00001						
I. CERTIFY THAT THIS BILL IS CORRECT AND JUST AND PAYMENT HAS NOT BEEN RECEIVED							
INCLUDES MODIFICATION THRU:		TOTAL CONTRACT		TOTAL EARNINGS TO DATE			
12. PRESENTED FOR PAYMENT		14. A. PREVIOUS DEDUCTIONS OTHER THAN RETAINED PERCENTAGE**		TOTAL CONTRACT			
PAYEE (Type name of Firm as shown on contract)		PER (signature of official)		B. PREVIOUS RETAINED PERCENTAGE		0	
DATE		TITLE (Title of official Signing)		C. PREVIOUS PAYMENTS			
13. APPROVED FOR PAYMENT				D. PREVIOUS EARNINGS (A+B+C)			
I CERTIFY that I have checked the quantities covered by this bill or estimate; that the work was actually performed; that the quantities are correct and consistent with all previous computations as actually checked; that the quantities and amounts are wholly consistent with the requirements of the contract or other instrument involved.				E. EARNINGS THIS PERIOD (TOTAL EARNINGS TO DATE MINUS D)			
SIGNATURE		DATE		F. LESS RETAINED PERCENTAGE			
THIS SPACE RESERVED FOR SAVANNAH DISTRICT APPROVALS AND SIGNATURES				G. LESS DEDUCTION OTHER THAN RETAINED PERCENTAGE FOR			
CONTRACTING OFFICER APPROVAL (Signature)		DATE		H. TOTAL DEDUCTIONS THIS PERIOD (F+G)		0	
				I. RETAINAGE REFUNDED			
				J. OTHER REFUNDS		0	
				K. TOTAL REFUNDS THIS PERIOD			
				L. AMOUNT DUE CONTRACTOR (E-H+K)			
				15. RECAPITULATION			
TOTAL RETAINED PCTG. (B+F-I) \$				TOTAL PAID (C+L) \$			

ENG FORM 93 PREVIOUS EDITION OF THIS FORM IS OBSOLETE \*\*USE REVERSE SIDE FOR DETAILED EXPLANATION AND/OR REMARKS

ENG FORM 93

- Submit original and 1 signed copy.
- Be sure to include the following statement on each request for payment:  
"I CERTIFY THAT THIS BILL IS CORRECT AND JUST AND PAYMENT HAS NOT BEEN RECEIVED."
- Send ENG Form 93 to the following address:  
Commander, U.S. Army Engineer District, Savannah, ATTN: (Appropriate Project Manager), P.O. Box 889, Savannah, GA 31402

SAMPLE		PAYMENT ESTIMATE - CONTRACT PERFORMANCE		5. DATE		SHEET 1 of 1	
2. CONTRACTOR AND ADDRESS Smith, Brown and Jones, Inc. 31101 Atlanta, Georgia		3. CONTRACT NO. DAF321-87-C-0208		4. DISTRICT Savannah			
5. DESCRIPTION OF WORK Architect-Engineer Services		6. APPROPRIATION AND PROJECT 0182030-908-9223 P6310-2000-247D		7. REQUIRED COMPLETION DATE N/A			
8. LOCATION Fort Benning, GA		9. PERIOD COVERED BY THIS ESTIMATE FROM 1 May 87 TO 30 Jun 87		10. JCS DIBERN NO. N/A		11. ESTIMATE NO.	
ITEM NO.	DESCRIPTION	QUANTITY AND UNIT	UNIT PRICE	AMOUNT	QUANTITY AND UNIT	AMOUNT	TOTAL TO DATE
1	Design of Military Operations in Built-up Areas		13	23,250.00	75%	19,938.00	
	Phase I, Concept Design		16	55,000.00	0%	0	
I CERTIFY THAT THIS BILL IS CORRECT AND COST AND PAYMENT HAS NOT BEEN RECEIVED							
INCLUDES MODIFICATION TARIFF:				TOTAL CONTRACT \$ 80,250.00			
13. UNREVIEWED NON PAYMENT				TOTAL EARNINGS TO DATE			
PAYER				D			
DATE				D			
10 July 1987				D			
14. APPROVED FOR PAYMENT				TOTAL EARNINGS TO DATE			
Smith, Brown and Jones Inc.				19,938.00			
DATE				0			
10 July 1987				0			
15. OTHER REPAIRS				0			
SIGNATURE				0			
TITLE				0			
DATE				0			
CONTRACTING OFFICER APPROVAL SIGNATURE				0			
DATE				0			
TOTAL PAID TO DATE				19,938.00			

FORM 1 MAR 70 53 USE PREVIOUS EDITION OF THIS FORM IS OBSOLETE

TYPICAL SAMPLE - CONCEPT DESIGN COMPLETE BUT NOT REVIEWED

NOTE: Use this example with the concept or preliminary design submittal. No more than 75% less 10% retainage for small business or 20% for large business will be paid until project is reviewed and accepted. Use this payment estimate example if immediate payment is desired prior to review approval and acceptance.

\* - 10% Small Business or 20% Large Business



SAMPLE		PAYMENT ESTIMATE - CONTRACT PERFORMANCE		1. DATE		SHEET 1 of 1	
For use of the form, see ER 11-2-19 and ER 31-2-19.		2. CONTRACT NO.		3. DISTRICT			
3. COMPANY TO BE AWARDED WORK Smith, Brown and Jones, Inc. 200 East St. William Street, Savannah, GA 31401		4. CONTRACT NO. DACA21-83-C-0300		5. DISTRICT Savannah			
5. DETERMINATION OF WORK Acadibest-Engineer Services		6. APPROXIMATE AND PROJECT 219200 908-9223 P6300-2000-4874		7. REQUESTED COMPLETION DATE N/A			
8. LOCATION Fort Ransom, Georgia		9. PERIOD COVERED BY THIS ESTIMATE FROM 1 May 87 THRU 30 Jun 87		10. FOR ORDER NO. N/A		11. ESTIMATE NO. 3	
ITEM NO.	DESCRIPTION	QUANTITY AND UNIT	UNIT PRICE	AMOUNT	QUANTITY AND UNIT	AMOUNT	TOTAL TO DATE
	Design of Military Operations in Built-up Areas		LS	25,250.00	100%	25,250.00	
	Phase II, Concept Design		LS	55,000.00	45%	24,750.00	
I CERTIFY THAT THIS BILL IS CORRECT AND JUST AND PAYMENT HAS NOT BEEN RECEIVED.							
INCLUDES MODIFICATION THRU		TOTAL CONTRACT		TOTAL EARNINGS TO DATE		4,100,000.00	
12. PRESENTED FOR PAYMENT		13. PREVIOUS REDUCTIONS OTHER THAN RETAINED PERCENTAGE*		0			
DATE		Smith, Brown and Jones, Inc.		2,525.00			
TITLE		Vice-President		22,725.00			
13. APPROVED FOR PAYMENT		D. PREVIOUS EARNINGS (net of C)		25,250.00			
DATE		E. EARNINGS THIS PERIOD (TOTAL EARNINGS TO DATE MINUS D)		10%		2,525.00	
I CERTIFY that I have checked the figures covered by this bill to determine that the work was actually performed; that the quantities are correct and complete; and that all previous commitments in fully executed contracts for this project and amount are hereby complied with the requirements of the contract or other instrument involved.		F. LESS RETAINED PERCENTAGE		2,475.00			
SIGNATURE		G. LESS DEDUCTIONS THIS PERIOD (F-G)		0			
TITLE		H. TOTAL DEDUCTIONS THIS PERIOD (F-H)		2,475.00			
DATE		I. RETAINAGE REFUNDED		2,525.00			
DATE		J. OTHER REFUNDS		0			
DATE		K. TOTAL REFUNDS THIS PERIOD		2,525.00			
DATE		L. AMOUNT DUE CONTRACTOR (K-M)		24,800.00			
DATE		M. RECEIPT TOTAL:					
DATE		TOTAL RECEIVED (N-O) 2,475.00		TOTAL PAID (N-I) 47,525.00			

FORM 11-2-78 80 PREVIOUS EDITION OF THIS FORM OBSOLETE

\* USE REVERSE SIDE FOR DETAILED EXPLANATION AND FOR REMARKS

### TYPICAL SAMPLE - PARTIAL PAYMENT OF FINAL DESIGN

NOTE: Use this example for partial payment of final design. No more than 75% will be paid on progress to date on final design less 10% or 20% retainage. Progress to date in this case will be 60% (75% x 80% = 60%)

\* - 10% Small Business or 20% Large Business



SAMPLE PAYMENT ESTIMATE - CONTRACT PERFORMANCE		DATE		SHEET		
1. CONTRACTOR AND ADDRESS SMITH, BROWN AND DOBBS INC. 2001 EAST ST. JULLIEN, GEORGIA 31401		10 JULY 1987		1 of 1		
2. DESCRIPTION OF WORK ACQUISITION ENGINEER SERVICES PO BOX 1000, GEORGIA		3. DISTRICT Savannah		4. CONTRACT NUMBER 140324-01-0-0200		
5. LOCATION PO BOX 1000, GEORGIA		6. CONTRACT START DATE 2192050 049-9223 06300 2000-2570		7. REQUIRED BY CONTRACT NO. IF N/A		
8. PERIOD COVERED BY THIS ESTIMATE FROM 1 MAY 87 TO 30 JUN 87		9. TO ORDER NO. N/A		10. ESTIMATE NO.		
ITEM NO.	DESCRIPTION	QUANTITY AND UNIT	UNIT PRICE	AMOUNT	DENSITY AND UNIT	TOTAL TO DATE
	Design of Military Operations in Tuckahoe Area		LS	25,250.00	100%	25,250.00
	Phase I, Concept Design		LS	55,000.00	100%	55,000.00
I CERTIFY THAT THIS BILL IS CORRECT AND JUST AND PAYMENT HAS NOT BEEN RECEIVED						
NEEDS MODIFICATION THEN:						
TOTAL CONTRACT → 1,80,250.00						
TOTAL PAID TO DATE → 0						
TOTAL DEDUCTIONS OTHER THAN PREVIOUS DEDUCTIONS OTHER THAN PREVIOUS PERCENTAGE → 0						
TOTAL PREVIOUS PERCENTAGE → 4,325.00						
TOTAL PREVIOUS PAYMENTS → 62,375.00						
TOTAL PREVIOUS EARNINGS (A+B-C) → 66,500.00						
TOTAL PREVIOUS EARNINGS MINUS TOTAL EARNINGS TO DATE MINUS DEDUCTIONS → 13,750.00						
TOTAL PREVIOUS PERCENTAGE → 1,325.00						
TOTAL PREVIOUS PERCENTAGE MINUS PREVIOUS PERCENTAGE FOR THIS PERIOD (F-G) → 0						
TOTAL PREVIOUS PERCENTAGE FOR THIS PERIOD (F-G) → 1,375.00						
TOTAL PREVIOUS PERCENTAGE FOR THIS PERIOD (F-G) → 0						
TOTAL PREVIOUS PERCENTAGE FOR THIS PERIOD (F-G) → 12,375.00						
TOTAL PREVIOUS PERCENTAGE FOR THIS PERIOD (F-G) → 74,750.00						

FORM 1 MAIL 70 83 PREVIOUS EDITION OF THIS FORM IS OBSOLETE  
 \*\*USE REVERSE SIDE FOR DE TA-150 EXPLANATION AND/OR REVISIONS

REDUCED TO 10% AFTER FINAL REVIEW IS COMPLETE AND SATISFACTORY

NOTE: Use this example if payment is desired after final design has been reviewed, approved, and accepted subject to comments and corrections to be made.

\* - 10% for Small Business - 20% for Large Business

This pay estimate No. 5 may be submitted as early as pay estimate No. 4 but will not be processed for payment until final design has been reviewed and accepted. This will require approximately 30 days.

SAMPLE		PAYMENT ESTIMATE - CONTRACT PERFORMANCE		DATE		SHEET 1 of 1			
CONTRACTOR AND ADDRESS Smith, Brown and Jones Inc. 200 East St., Polk St. Savannah, GA 31401 Architect-Engineer Services		3 COMPANY NO. DACK21-87-C-0200 4 AIA NO. FOR ESTIMATE 2192050 908 R3DR-2000-2570 5 AIA CONTRACT NO. N/A 6 ESTIMATE NO. 6		7 DATE 10 July 1987		8 BUSINESS Savannah 9 AIA CONTRACT NO. N/A 10 ESTIMATE NO. 6		11 TOTAL TO DATE AMOUNT PAID	
12 LOCATION Fort Ranning, GA		13 PERIOD COVERED BY THIS BILL FROM 1 MAY 87 TO 30 JUN 87		14 CONTRACT NO. N/A		15 ESTIMATE NO. 6		16 TOTAL TO DATE AMOUNT PAID	
17 ITEM NO. a		18 DESCRIPTION b Design of Military Operation in Built-up Areas Phase I, Concept Design Phase II (Option), Final Design		19 AMOUNT \$		20 PERCENTAGE %		21 AMOUNT \$	
				15		100%		25,250.00	
				55		100%		55,000.00	
		I CERTIFY THAT THIS BILL IS CORRECT AND AMOUNT HAS NOT BEEN RECEIVED							
22 INCLUDES DESCRIPTION (if any): 23 PREPARED FOR PAYMENT PAYEE Smith, Brown and Jones, Inc. DATE 10 July 1987 TITLE Vice-President 24 APPROVED FOR PAYMENT I CERTIFY that I have checked the quantities covered by this bill or estimate and that work was actually performed and that facilities are correct and sufficient with all items incorporated in quantity sheets that it appears in any drawings or finally contract and the applicable part of the contract or other documents (if any).		25 TOTAL CONTRACT \$ 80,250.00		26 AMOUNTS DEDUCTIBLE FROM OTHER THAN RETAINED PERCENTAGE \$ 0		27 TOTAL AMOUNT \$ 80,250.00		28 TOTAL TO DATE \$ 80,250.00	
SIGNATURE CONTRACTING OFFICER APPROVAL SIGNATURE DATE		TITLE DATE		29 TOTAL AMOUNT \$ 5,400.00		30 TOTAL TO DATE \$ 5,400.00		31 TOTAL PAID TO DATE \$ 5,400.00	
32 SIGNATURE DATE		TITLE DATE		33 TOTAL AMOUNT \$ 5,400.00		34 TOTAL TO DATE \$ 5,400.00		35 TOTAL PAID TO DATE \$ 5,400.00	

TYPICAL SAMPLE - RETAINAGE RELEASED FOR CONCEPT DESIGN

NOTE: Use this example for payment after all design is complete and no corrections required.

\* \$100.00 retainage is required to keep the contract open





**DEPARTMENT OF THE ARMY**

SAVANNAH DISTRICT, CORPS OF ENGINEERS

P.O. BOX 889

SAVANNAH, GEORGIA 31402-0889

REPLY TO  
ATTENTION OF:

SASEN-EA

DATE: \_\_\_\_\_

SUBJECT: Release of Claims - To be Submitted with Final Payment Estimate

CONTRACT NO. \_\_\_\_\_

ARCHITECT-ENGINEER/CONTRACTOR \_\_\_\_\_

ADDRESS \_\_\_\_\_

PROJECT \_\_\_\_\_

LOCATION \_\_\_\_\_

The undersigned Architect-Engineer/Contractor, under above numbered contract, between the United States of America and said Architect-Engineer/Contractor, in accordance with the PAYMENTS clause of said Contract, hereby releases the United States, its officers, agents, and employees from any and all claims arising under or by virtue of said Contract or any modification or change thereof except with respect to those claims, if any, listed below:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE \_\_\_\_\_ FIRM \_\_\_\_\_

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Title)

<b>PAYMENT ESTIMATE - CONTRACT PERFORMANCE</b> <small>For use of this form, see ER 37-2-10 and ER 37-345-10.</small>		1. DATE		SHEET ___ of ___
2. CONTRACTOR AND ADDRESS		3. CONTRACT NO.		4. DISTRICT
5. DESCRIPTION OF WORK		6. APPROPRIATION AND PROJECT		
8. LOCATION		9. PERIOD COVERED BY THIS ESTIMATE FROM _____ THRU _____		10. JOB ORDER NO. _____
11. ESTIMATE NO. _____		7. REQUIRED COMPLETION DATE		
ITEM NO. a	DESCRIPTION b	QUANTITY AND UNIT c	UNIT PRICE d	AMOUNT e
		CONTRACT		TOTAL TO DATE
		QUANTITY AND UNIT f	AMOUNT g	AMOUNT g
		TOTAL CONTRACT \$		TOTAL EARNINGS TO DATE \$
12. PRESENTED FOR PAYMENT		14. A. PREVIOUS DEDUCTIONS OTHER THAN RETAINED PERCENTAGE**		
PAYEE	PER	B. PREVIOUS RETAINED PERCENTAGE		
DATE	TITLE	C. PREVIOUS PAYMENTS		
13. APPROVED FOR PAYMENT		D. PREVIOUS EARNINGS (A+B+C)		
<small>I CERTIFY that I have checked the quantities covered by this bill or estimate; that the work was actually performed; that the quantities are correct and consistent with all previous computations as actually checked; that the quantities and amounts are wholly consistent with the requirements of the contract or other instrument involved.</small>		E. EARNINGS THIS PERIOD (TOTAL EARNINGS TO DATE MINUS D)		
		F. LESS RETAINED PERCENTAGE		
		G. LESS DEDUCTION OTHER THAN RETAINED PERCENTAGE FOR		
		H. TOTAL DEDUCTIONS THIS PERIOD (F+G)		
SIGNATURE	TITLE	DATE	I. RETAINAGE REFUNDED	
CONTRACTING OFFICER APPROVAL (Signature)		DATE	J. OTHER REFUNDS	
			K. TOTAL REFUNDS THIS PERIOD	
			L. AMOUNT DUE CONTRACTOR (E-H+K)	
15. RECAPITULATION:		TOTAL RETAINED PCTG. (B+F-I) \$		
		TOTAL PAID (C+L) \$		

ENG FORM 1 MAR 78 93 PREVIOUS EDITION OF THIS FORM IS OBSOLETE \*\* (USE REVERSE SIDE FOR DETAILED EXPLANATION AND/OR REMARKS)

(DATE) \_\_\_\_\_

MEMORANDUM FOR RECORD

SUBJECT: Report of Field Visit to \_\_\_\_\_

Project: \_\_\_\_\_, L.I. \_\_\_\_\_, FY-\_\_\_\_\_

AE Contract Number  
\_\_\_\_\_

1. Time of Visit:
2. Place:
3. Purpose of Visit:
4. Persons Contacted and Making Inspections:
5. Specific Matters Considered:
6. Summary:
7. Instructions Issued and Commitments Made:
8. Comments and/or Recommendations:

SIGNATURE: \_\_\_\_\_

TITLE: \_\_\_\_\_

**ARCHITECT-ENGINEER AND RELATED  
SERVICES  
QUESTIONNAIRE FOR SPECIFIC PROJECT  
(SF 255)**

## Architect-Engineer and Related Services Questionnaire for Specific Project

Standard Form 255  
General Services Administration  
Washington, D.C. 20405

6. If respondent is not a joint venture, but intends to use outside (as opposed to in-house or permanent and formally affiliated) consultants or associates, he should provide names and addresses of all such individuals or firms, as well as their particular areas of technical/professional expertise, as it relates to this project. Existence of previous working relationships should be noted. If more than eight outside consultants or associates are anticipated, attach an additional sheet containing requested information.
7. Regardless of whether respondent is a joint venture or an independent firm, provide brief resumes of key personnel expected to participate on this project. Care should be taken to limit resumes to only those personnel and specialists who will have major project responsibilities. Each resume must include: (a) name of each key person and specialist and his or her title, (b) the project assignment or role which that person will be expected to fulfill in connection with this project, (c) the name of the firm or organization, if any, with whom that individual is presently associated, (d) years of relevant experience with present firm and other firms, (e) the highest academic degree achieved and the discipline covered (if more than one highest degree, such as two Ph.D.'s, list both), the year received and the particular technical/professional discipline which that individual will bring to the project, (f) if registered as an architect, engineer, surveyor, etc., show only the field of registration and the year that such registration was first acquired. If registered in several states, do not list states, and (g) a synopsis of experience, training, or other qualities which reflect individual's potential contribution to this project. Include such data as: familiarity with Government or agency procedures, similar type of work performed in the past, management abilities, familiarity with the geographic area, relevant foreign language capabilities, etc. Please limit synopsis of experience to directly relevant information.
8. List up to ten projects which demonstrate the firm's or joint venture's competence to perform work similar to that likely to be required on this project. The more recent such projects, the better. Prime consideration will be given to projects which illustrate respondent's capability for performing work similar to that being sought. Required information must include: (a) name and location of project, (b) brief description of type and extent of services provided for each project (submissions by joint ventures should indicate which member of the joint venture was the prime on that particular project and what role it played), (c) name and address of the owner of that project (if Government agency, indicate responsible office), and name and phone number of individual to contact for reference (preferably the project manager), (d) completion date (actual when available, otherwise estimated), (e) total construction cost of completed project (or where no construction was involved, the approximate cost of your work) and that portion of the cost of the project for which the named firm was/is responsible.

9. List only those projects which the A-E firm or joint venture, or members of the joint venture, are currently performing under direct contract with an agency or department of the Federal Government. Exclude any grant or loan projects being financed by the Federal Government but being performed under contract to other non-Federal Governmental entities. Information provided under each heading is similar to that requested in the preceding Item 8, except for (d) "Percent Complete." Indicate in this item the percentage of A-E work completed upon filing this form.

10. Through narrative discussion, show reason why the firm or joint venture submitting this questionnaire believes it is especially qualified to undertake the project. Information provided should include, but not be limited to, such data as: specialized equipment available for this work, any awards or recognition received by a firm or individuals for similar work, required security clearances, special approaches or concepts developed by the firm relevant to this project, etc. Respondents may say anything they wish in support of their qualifications. When appropriate, respondents may supplement this proposal with graphic material and photographs which best demonstrate design capabilities of the team proposed for this project.

11. Completed forms should be signed by the chief executive officer of the joint venture (thereby attesting to the concurrence and commitment of all members of the joint venture), or by the architect-engineer principal responsible for the conduct of the work in the event it is awarded to the organization submitting this form. Joint ventures selected for subsequent discussions regarding this project must make available a statement of participation signed by a principal of each member of the joint venture. **ALL INFORMATION CONTAINED IN THE FORM SHOULD BE CURRENT AND FACTUAL.**

**STANDARD  
FORM (SF)  
255**

Architect-Engineer  
and Related Services  
Questionnaire for  
Specific Project

1. Project Name/Location for which Firm is Filing:

2a. Commerce Business  
Daily Announcement  
Date, if any:

2b. Agency Identification  
Number, if any:

3. Firm (or Joint-Venture) Name & Address

3a. Name, Title & Telephone Number of Principal to Contact

3b. Address of office to perform work, if different from Item 3

4. Personnel by Discipline: (List each person only once, by primary function.) Enter proposed consultant personnel to be utilized on this project on line (A) and in-house personnel on line (B).

(A) _____ (B) _____	Administrative	(A) _____ (B) _____	Oceanographers	(A) _____ (B) _____
(A) _____ (B) _____	Architects	(A) _____ (B) _____	Planners: Urban/Regional	(A) _____ (B) _____
(A) _____ (B) _____	Chemical Engineers	(A) _____ (B) _____	Sanitary Engineers	(A) _____ (B) _____
(A) _____ (B) _____	Civil Engineers	(A) _____ (B) _____	Soils Engineers	(A) _____ (B) _____
(A) _____ (B) _____	Construction Inspectors	(A) _____ (B) _____	Specification Writers	(A) _____ (B) _____
(A) _____ (B) _____	Draftsmen	(A) _____ (B) _____	Structural Engineers	(A) _____ (B) _____
(A) _____ (B) _____	Ecologists	(A) _____ (B) _____	Surveyors	(A) _____ (B) _____
(A) _____ (B) _____	Economists	(A) _____ (B) _____	Transportation Engineers	(A) _____ (B) _____
				Total Personnel

5. If submittal is by JOINT-VENTURE list participating firms and outline specific areas of responsibility (including administrative, technical and financial) for each firm: (Attach SF 254 for each if not on file with Procuring Office.)

5a. Has this Joint-Venture previously worked together?  Yes  No

6. If respondent is not a joint-venture, list outside key Consultants/Associates anticipated for this project (Attach SF 254 for Consultants/Associates listed, if not already on file with the Contracting Office).

Name & Address	Specialty	Worked with Prime before (Yes or No)
1)		
2)		
3)		
4)		
5)		
6)		
7)		
8)		

7. Brief resume of key persons, specialists, and individual consultants anticipated for this project.	
a. Name & Title:	
b. Project Assignment:	
c. Name of Firm with which associated:	
d. Years experience: With This Firm..... With Other Firms.....	
e. Education: Degree(s)/Year/Specialization	
f. Active Registration: Year First Registered/Discipline	
g. Other Experience and Qualifications relevant to the proposed project:	

7. Brief resume of key persons, specialists, and individual consultants anticipated for this project.	
a. Name & Title:	
b. Project Assignment:	
c. Name of Firm with which associated:	
d. Years experience: With This Firm..... With Other Firms.....	
e. Education: Degree(s)/Year/Specialization	
f. Active Registration: Year First Registered/Discipline	
g. Other Experience and Qualifications relevant to the proposed project:	

7. Brief resume of key persons, specialists, and individual consultants anticipated for this project.	
a. Name & Title:	
b. Project Assignment:	
c. Name of Firm with which associated:	
d. Years experience: With This Firm..... With Other Firms.....	
e. Education: Degree(s)/Year/Specialization	
f. Active Registration: Year First Registered/Discipline	
g. Other Experience and Qualifications relevant to the proposed project:	

7. Brief resume of key persons, specialists, and individual consultants anticipated for this project.	
a. Name & Title:	
b. Project Assignment:	
c. Name of Firm with which associated:	
d. Years experience: With This Firm..... With Other Firms.....	
e. Education: Degree(s)/Year/Specialization	
f. Active Registration: Year First Registered/Discipline	
g. Other Experience and Qualifications relevant to the proposed project:	

8. Work by firms or joint-venture members which best illustrates current qualifications relevant to this project (list not more than 10 projects).					
a. Project Name & Location	b. Nature of Firm's Responsibility	c. Project Owner's Name & Address and Project Manager's Name & Phone Number	d. Completion Date (actual or estimated)	e. Estimated Cost (In Thousands)	
				Entire Project	Work For Which Firm Was/Is Responsible
(1)					
(2)					
(3)					
(4)					
(5)					
(6)					
(7)					
(8)					
(9)					
(10)					

9. All work by firms or joint-venture members currently being performed directly for Federal agencies.

a. Project Name & Location	b. Nature of Firm's Responsibility	c. Agency (Responsible Office) Name and Address and Project Manager's Name & Phone Number	d. Percent Complete	e. Estimated Cost (In Thousands)	
				Entire Project	Work For Which Firm is Responsible



2000

29 JUL 1998

ARMY

28 AUG 1991

Fort Benning  
Georgia

Ammo Holding Facility - LAAF

38974

REQUIREMENT: (Continued)

Immediate Ready Company. Additionally, 463 L pallet loads require handling to meet air load planning requirements of the 75th Ranger Regiment. The covered shed must have a minimum interior height of 18 feet and have lighting that will not affect aircraft operations. The new hot load area is to be located 1,300 feet from the center of the airfield runway. This vehicle hardstand is required to keep tracked vehicles clean as they are being prepared for loading onto deployment aircraft.

CURRENT SITUATION:

Since 1984, ammunition for deployment/contingency missions has been brought to Lawson Army Airfield's (LAAF) Holding Area 32 where it is unloaded, stored, sorted and prepped for loading onto aircraft. This is an unimproved grassed area, which is not level and is poorly drained. Transfer of the ammunition from trucks to storage, final changes to the palletization of ammunition and movement from storage to the aircraft is slow and unpredictable at best. Inclement weather magnifies these problems due to the exposed ammunition and muddy conditions, thus slowing work and causing greater potential hazards. Temporary lighting must be acquired and set up for each operation. The potential for delays in deployment is significant, especially for the Ranger Regiment's 10 hour deployment requirement and the 18 hour requirement of the 3D Brigade. Fort Benning's current hot load area is located on an old taxiway approximately two miles from the aircraft loading apron.

IMPACT IF NOT PROVIDED:

If this project is not provided, the ammunition will continue to be exposed to weather. Excessive wear and tear on loading equipment will continue, and a significant potential for deploying aircraft being delayed will persist.

ADDITIONAL:

This project has been coordinated with the installation physical security plan, and all required physical security and/or combatting terrorism (CBT/T) measures are included. This project complies with the scope and design criteria of DOD 4270.1-M, Construction Criteria, that were in effect 1 January 1987, as implemented by the Army's Architectural and Engineering Instructions (AEI), Design Criteria, dated 3 July 1994. Alternative methods of meeting this

**ROUTING OF SHOP DRAWINGS, EQUIPMENT DATA,  
MATERIAL SAMPLES OR MANUFACTURER'S  
CERTIFICATES OF COMPLIANCE FOR APPROVAL  
(ENG FORM 4026)**

**ROUTING OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES  
OF COMPLIANCE FOR APPROVAL**

*(Used to route ENG Form 4025 with items attached. Not to become a part of the Contractor's record.)*

<b>1</b>	<b>TO:</b>	<b>FROM:</b>	<b>DATE</b>
The attached items listed on ENG Form 4025 are forwarded for approval action.			
<b>CONTRACT NUMBER</b>		<b>CONTRACTOR</b>	
<b>TRANSMITTAL NUMBERS</b>		<b>PROJECT TITLE AND LOCATION</b>	
<b>COMMENTS</b> <i>(Attach additional sheet, if necessary.)</i>			
<b>NO. OF INCL.</b>	<b>TYPED NAME AND TITLE</b>	<b>SIGNATURE</b>	
<b>2</b>	<b>TO:</b>	<b>FROM:</b>	<b>DATE</b>
<b>COMMENTS</b> <i>(Attach additional sheet, if necessary.)</i>			
<b>NO. OF INCL.</b>	<b>TYPED NAME AND TITLE</b>	<b>SIGNATURE</b>	
<b>3</b>	<b>TO:</b>	<b>FROM:</b>	<b>DATE</b>
<b>COMMENTS</b> <i>(Attach additional sheet, if necessary.)</i>			
<b>NO. OF INCL.</b>	<b>TYPED NAME AND TITLE</b>	<b>SIGNATURE</b>	
<b>4</b>	<b>TO:</b>	<b>FROM:</b>	<b>DATE</b>
The following action codes are given to items listed on ENG Form 4025:			
<b>ACTION CODES</b>			
<b>A - APPROVED AS SUBMITTED.</b> <b>B - APPROVED, EXCEPT AS NOTED ON DRAWINGS. RESUBMISSION NOT REQUIRED.</b> <b>C - APPROVED, EXCEPT AS NOTED ON DRAWINGS. REFER TO ATTACHED SHEET. RESUBMISSION REQUIRED.</b>		<b>D - WILL BE RETURNED BY SEPARATE CORRESPONDENCE.</b> <b>E - DISAPPROVED (SEE ATTACHED)</b> <b>F - RECEIPT ACKNOWLEDGED</b> <b>G - OTHER (specify)</b>	
<b>ACTION CODES TO BE INSERTED IN COLUMN G, SECTION I, ENG FORM 4025</b> <i>(Attach sheets, when required.)</i>			
<b>ITEM NO.</b> <i>(Taken from ENG Form 4025)</i>			
<b>CODE GIVEN</b>			
<b>REMARKS</b>			



**DEPARTMENT OF THE ARMY**  
SAVANNAH DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 889  
SAVANNAH, GEORGIA 31402-0889

REPLY TO  
ATTENTION OF:

SASEN-ES

DATE: \_\_\_\_\_

SUBJECT: Release of Claims - To be Submitted with Final Payment Estimate

CONTRACT NO.

\_\_\_\_\_

ARCHITECT-ENGINEER/CONTRACTOR

\_\_\_\_\_

ADDRESS

\_\_\_\_\_

PROJECT

\_\_\_\_\_

LOCATION

\_\_\_\_\_

The undersigned Architect-Engineer/Contractor, under above numbered contract, between the United States of America and said Architect-Engineer/Contractor, in accordance with the PAYMENTS clause of said Contract, hereby releases the United States, its officers, agents, and employees from any and all claims arising under or by virtue of said Contract or any modification or change thereof except with respect to those claims, if any, listed below:

