

## CHAPTER I

### GENERAL INFORMATION

#### 1.0 OBJECTIVE OF GUIDE

1.1 This guide prescribes general procedures and instructions for preparing design documents under the direction of the Sacramento District, Corps of Engineers, hereinafter referred to as COE or CESP. The Architect-Engineer (A-E) (Use of the terminology "A-E" hereinafter refers to both Architect-Engineers and COE designers) is to take into account that these procedures may differ from their usual procedures, and may require a more complete and extensive analysis and documentation than is customary in private practice, since shop drawing review and field inspection will not, in most cases, be in the A-E's contract. This guide is part of a three volume set as follows:

- 1.1.1 VOL. 1-General Instructions-Army
- 1.1.2 VOL. 2-Cost Estimating - (a) Manual - (b) CACES, as appropriate
- 1.1.3 VOL. 3-Specifications

1.2 The procedures and instructions in this guide shall be strictly adhered to. In the event of conflict between this guide and the A-E's design contract, the contract shall take precedence. However, the conflict shall be brought to the immediate attention of the COE for resolution.

#### 2.0 COORDINATION WITH THE COE

2.1 A COE Project Manager (PM) is designated from the appropriate Project Management Section and is responsible for the day-to-day coordination and management of the project design and the A-E contract. All questions shall be directed to the PM. With the exception of A-E fee proposals (see Paragraph 4.0), all written communications shall be addressed to the PM at the following address:

District Engineer  
U.S. Army Engineer District, Sacramento  
ATTN: CESP-ED-M (Name of Project Manager)  
650 Capitol Mall  
Sacramento, California 95814-4794.

The fee proposal shall be labeled "FEE PROPOSAL" on the outside of the envelope to preclude premature opening of the proposal.

2.2 The A-E is cautioned to take instructions from specific COE representatives only. Any problems relating to design, which endanger fulfillment of contractual requirements, shall immediately be brought to the attention of the PM. Oral understandings shall be confirmed in writing by either the A-E or COE, at request of either party. The A-E shall not perform services requested by any person in the COE which he considers to be a change in work or services required by his contract and necessitating an adjustment in contract price until he has, 1.) made a proposal to COE covering such extra services, 2.) negotiated a mutually satisfactory fee, and 3.) received a notice to proceed in writing from the contracting officer.

### 3.0 PREDESIGN CONFERENCE

3.1 Upon approval of selection, the A-E will be notified in writing. This notification will also request that the A-E submit certain financial data (e.g., wage and overhead rates) to the A-E Negotiations Section of the COE (see address in Paragraph 4.1 below). The A-E will be requested to participate in a predesign conference to discuss the scope of the project prior to preparation of a fee proposal and actual negotiations. To assist in preparation for the conference, the COE PM will provide the A-E a copy of the Project Development Brochure (PDB) which outlines the functional requirements of the facility, and a basic technical criteria package. The A-E shall attend the Pre-design conference with his lead designers in each of the applicable disciplines assigned to the project. This conference is usually held at the military installation hosting the proposed project. Representatives of the users of the facility, the Major Command (MACOM) the users fall under, and the installation Director of Engineering and Housing (DEH) will also attend this conference. At this time the A-E may propose scope of work changes that he feels are in the best interest of the project. If the A-E is tasked with geotechnical or survey work, see appropriate Appendices for additional information.

### 4.0 PRENEGOTIATION CONFERENCE

4.1 The prenegotiation conference is scheduled by the PM and is normally held at the District Office. For smaller less complex project, the prenegotiation conference may be held telephonically. For smaller less complex projects, the prenegotiation conference may be held telephonically. During the prenegotiation conference, the predesign conference minutes, the scope of work, the requirements of the A-E's Design Quality Control Plan (see Paragraph 10.0) and all phases of the required effort affecting the A-E's fee are discussed so that the A-E has a clear understanding of the scope of his efforts and can make an equitable fee proposal. Any scope of work changes proposed shall be brought up at this time. COE PM will introduce A-E to the COE negotiator who then becomes the point of contact for matters relating to the fee proposal. The COE negotiator will explain the desired format of the A-E's fee proposal. The proposal shall be submitted on a specific date established by mutual agreement during this conference. The negotiation date will also be established at this time. A-E fee proposals shall be sent to the Chief, A-E Negotiations Section using the following address:

District Engineer  
U.S. Army Engineer District, Sacramento  
ATTN: CESPKE-M, A-E Negotiations Section  
650 Capitol Mall  
Sacramento, California 95814-4794

### 5.0 NEGOTIATION CONFERENCE

5.1 Negotiations will normally be held in COE offices. The objective is to reach an agreement on a fair and reasonable fee for the work and services required. During negotiations the scope of work will again be reviewed as necessary, and the A-E's proposal will be examined and discussed in detail. Major changes in the scope of work are unacceptable at this time unless the A-E has previously notified the PM that certain scope changes are necessary.

Subsequent to the successful completion of negotiations and upon approval of the Contracting Officer, the A-E will receive written notice to proceed.

This notice will normally be forwarded with the unsigned contract to the A-E for signature within approximately 10 days after completion of negotiations.

## 6.0 CRITERIA

6.1 Functional Criteria. The PDB provided to the A-E is prepared by the installation and is used to establish project functional requirements. Specific mention of materials, system selection, matching exterior appearance or existing systems in the PDB are informational only. Design must proceed based upon authorized standard criteria unless a specific written waiver is issued by the COE.

6.2 Technical Criteria. The COE will furnish the A-E with all available data and criteria concerning the project. A Basic Design Criteria Package will be transmitted to the A-E prior to negotiations. The A-E shall request Technical Manuals, Design Manuals, Guide Specifications, and other pertinent publications, refer to "Criteria Index" of available references in Chapter V. The A-E shall thoroughly familiarize himself with the detailed technical criteria furnished, since his design must conform to all applicable requirements contained in the criteria. Any deviations from established criteria, including the use of criteria obtained from the User, or other sources, must receive prior approval of the PM. Where the technical criteria contained or referred to is not met, the A-E will be required to re-design to the established criteria at his own time and expense. Except in those cases when specific written waiver of criteria has been issued by COE. Any questions or problems encountered by the A-E in following the established criteria shall be promptly submitted to the PM for resolution. In those instances where the Government does not possess criteria on a subject, the A-E shall clearly describe what criteria he used and why. If published criteria does not exist for a portion of the work, the A-E shall provide back-up to substantiate the development of specifications or design details for this work.

6.3 Informational Material. Any "typical" documents (Design Analysis, specifications, drawings, etc. from another project) shown to the A-E are for background information only, and are not authorized criteria unless specifically stated in the scope of work.

## 7.0 TRADE NAMES AND PROPRIETARY ITEMS

7.1 The use of trade names or proprietary items on the drawings and/or in the specifications by adopting a manufacturer's description of a particular commercial article followed by the words "or approved equal" shall be avoided. See A-E Guide, Volume 3, Specifications, for a complete discussion on use of trade names and proprietary items.

## 8.0 DESIGN EXCELLENCE

8.1 Things to Consider. Design excellence is a prime goal for all Army installations. The purpose is to achieve complete facilities which have a favorable effect on morale, personnel efficiency and community spirit. To achieve the goal, the following items must be considered throughout the design process:

- Appearance - The structure should be pleasant and in harmony with the surrounding environment. Check with the DEH and COE PM to see if specific installation, architectural standards or design guides exist.
- Function - Interior room adjacencies and exterior building relationships must be considered with flexibility in use and possibility of expansion in mind.
- Maintainability - Provide a practical design that utilizes easy to maintain materials and equipment.

## 9.0 ENVIRONMENTAL CONSIDERATIONS

9.1 Special attention shall be given to the environmental factors in the design and construction of Army installations to eliminate or minimize degradation of the environment in accordance with (IAW) Public Law 91-190, National Environment Policy Act; PL 92-500, Federal Water Pollution Control Act; PL 94-580, Resource Conservation and Recovery Act; PL 89-272, Solid Waste Disposal Act; PL 95-217, Clean Water Act; PL 95-95, Clean Air Act 1977; PL 93-523, Safe Drinking Water Act; Executive Orders 11514 and 12088; and to meet the Federal, State and local environmental quality standards, particularly with regard to air and water pollution.

## 10.0 DESIGN QUALITY CONTROL

10.1 Purpose. The responsibility of the A-E for checking and coordinating of all design documents cannot be overemphasized. The A-E is responsible for producing complete, competent, properly coordinated, and thoroughly checked design documents within agreed schedules. When a construction contractor and the COE are in dispute over an interpretation and the issue must be resolved by a claim, the contractor most often prevails since he need only prove that his position is reasonable, while the COE must prove that the design intent is free from ambiguity or uncertainty. A-E liability for design errors and omissions will be pursued by the Corps of Engineers.

10.2 Design Quality Control (DQC) Plan. Concurrent with the fee proposal submittal, three (3) copies of the A-E's written DQC Plan shall be submitted to the COE PM for approval. The DQC Plan will be reviewed by the COE negotiator, PM and Design Quality Assurance Section. If comments are generated during this review, the A-E shall respond to the comments in writing and/or revise the plan accordingly and resubmit prior to initiating design. The A-E will be expected to follow the approved DQC plan throughout the course of the project to assure a quality end product. Should future events dictate revisions to the approved DQC Plan, the A-E shall notify the PM in writing and submit the revised plan for approval. The plan shall be prepared in 8-1/2" x 11" format. Any charts or schedules included in the plan that are larger than this size shall be folded to conform to an 8-1/2" x 11" format. The plan shall include a title page and a table of contents. The following basic elements shall be included in the DQC Plan:

10.2.1 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.

10.2.2 Management Structure. Delineate the organizational composition of the firm to clearly show the interrelationship of the management and design team components including all consultants. Include an organization chart to identify the key design and review team members showing their specific responsibilities.

10.2.3 Planning and Scheduling. Include a time-scale bar chart or Critical Path Method (CPM) design schedule showing the sequence of events involved in carrying out the project tasks within the specified period of service. Clearly show the A-E review and correction periods occurring prior to submittals to the COE. It will be a forward planning as well as project monitoring tool.

10.2.4 A-E Review Effort. The Design Quality Control Plan shall include, but not be limited to the following A-E performed review elements:

- Design Development Review
- Criteria Review
- Presentation of Data Review
- Editing of Guide Specification review
- Design Budget Review
- Inter-Disciplinary Review
- Final Review

10.2.5 Quality Control. The professional quality, technical accuracy and the coordination of all design documents and other services to be provided by the prime Architect-Engineer and any subcontractors/consultants used is of major importance. It is therefore a requirement for the A-E to have a logical and functional quality control program to assure that errors and deficiencies in all submittals are minimal. To meet this requirement, the A-E shall perform technical and inter-disciplinary reviews and shall correct all errors and deficiencies in the design documents prior to submitting them to the COE for review. The A-E's cover letter which transmits the design documents for review shall include a statement of certification that the A-E has performed a detailed review and coordination of the submitted documents. The A-E's performance evaluation will be based in large part on how his design package reflects conformance with his DQC Plan. The A-E's contractual obligation to provide complete, well coordinated, and error free documents has far-reaching consequences. Therefore, the A-E is cautioned to place special emphasis on this aspect of the DQC Plan. In the event damage to the Government results from negligent performance of any of the services to be furnished under this contract, the A-E will be held liable for such damages. The Government's review effort in no way relieves the A-E of his contractual responsibilities. For this reason, an effective quality control plan is critical.

10.2.6 A-E Quality Control Checklist. The DQC Plan shall include the quality control checklist shown in Appendix A. The purpose of the checklist is to provide a useful tool for the A-E to assure a quality contract package.

The list points out numerous areas which, when appropriately considered during the design, will help ensure a quality project. This list should not be taken as covering all aspects of the project. The completed checklist shall be submitted as an attachment to the A-E's transmittal letter transmitting the final design package to the COE. If during COE review of the final design documents it becomes apparent that items initialed off have in fact not been completed/coordinated, the COE PM shall be notified and appropriate action taken. Possible actions include return of the final design package to the A-E for correction, withholding of contract payments and/or completion of an interim "unfavorable" A-E evaluation for inclusion in our A-E selection office files.

10.2.7 Corrections of Deficiencies. The A-E will establish a formal procedure to correct all design errors and omissions during construction. The A-E will maintain a master list of all errors identified and the action taken.

## 11.0 CONDUCT OF WORK

11.1 In the performance of his design service contract with the COE, the A-E shall:

11.1.1 Execute the work diligently and aggressively and promptly advise the PM of all significant developments.

11.1.2 Prepare a summary of all significant discussions between the A-E and representatives of other Government agencies relating to work under this contract and promptly furnish a copy to the PM.

11.1.3 Prepare a summary of significant telephone conversations relating to the technical phases of work under this contract and promptly furnish a copy to the PM.

11.1.4 Promptly furnish to the PM copies of all written communications pertaining to the work under this contract received from other Government agencies. When it is clearly indicated that a copy of the communications has been furnished to the PM by the originator, concurrence of action will be obtained from the PM.

11.1.5 Take appropriate measures to obtain clarification of design criteria requirements, to acquire all pertinent design information, and to incorporate such information in the work being performed. This action will be accomplished through the PM.

## 12.0 REVIEW PROCESS

12.1 Automated Review Management System (ARMS). ARMS is a computerized method for transmittal and storage of design review comments. It provides interactive capability to address and respond to design review comments. ARMS requires use of a VT100 or ANSI emulating terminal. The Sacramento District has established ARMS for use on all Army projects. An "Architect-

Engineer Response" package will be forwarded to you to explain use of the system. If you encounter any problems or have questions or comments, please call the ARMS Hotline at (916) 551-3126. A 24-hour answering machine is connected to this line.

12.2 Review Comments. All design data prepared by the A-E will be reviewed by the COE and other agencies for conformance with the contract requirements and technical as well as functional criteria. This review effort in no way replaces the A-E's review requirements outlined in Paragraph 10.0 above.

12.2.1 All review comments made by other than COE Design Quality Assurance (DQA) personnel will be "coordinated" by the DQA section. That is, they will be reviewed for applicability to the project against the project's design criteria and annotated with one of the letter codes listed below. The intent is to give the A-E direction as to what action is required on each comment:

|               |   |  |
|---------------|---|--|
| Withdrawn     | - | Withdrawn by maker. A-E take not action.   |
| Concur        | - | A-E to comply  |
| Changed Scope | - | Change in design scope - technically acceptable.<br>PM to decide on incorporation. |
| Information   | - | For A-E's information.   |
| Denied        | - | A-E take no action.  |
| Duplicate     | - | Duplicate comment. A-E take action per other similar comment.                      |

This annotation will appear, with the letters DQA preceding it, directly beneath the comment (i.e., DQA: Concur).

12.2.2 Review comments generated by DQA personnel have no annotations. All DQA comments and comments with a "Concur" annotation are to be incorporated into the design and responded to by the A-E per Paragraph 12.2.3. below.

12.2.3 The A-E shall follow directions provided in the "Architect-Engineer Response: package and respond to the review comments in ARMS as follows:

12.2.3.1 For comments annotated Withdrawn, Info, Denied, and Duplicate, a "NOT DONE" response is acceptable.

12.2.3.2 For all comments annotated Concur, or Changed Scope, the A-E shall enter a response of "DONE" or "NOT DONE" and:

12.2.3.2.1 If "DONE", A-E MUST provide the sheet number and/or page number where the change has taken place. The ARMS system will prompt the A-E with "Where" to provide this information after the "DONE" annotation is entered.

12.2.3.2.2 If "NOT DONE", the A-E MUST provide a rebuttal. The ARMS system will prompt the A-E with "Why" to provide the rebuttal. All rebuttals MUST be cleared with the appropriate DQA discipline reviewer by phone through

the PM. This is to be done and documented by the A-E as soon as possible; definitely before the next submittal.

12.2.3.3 Review comments on prior submittals will be checked for incorporation in the subsequent submittals. Those comments verified as done and explanations concurred with will be annotated, >>BACKCHECKED: A-E action done: in ARMS. Previous comments not verified as done or explanations not concurred with will be annotated, ">>BACKCHECKED: A-E action disapproved,

resubmitted" and will appear in the current review stage's comments. These comments will require further action by A-E prior to next submittal. All final submittals will be backchecked by the COE, after A-E corrections are made, to ensure compliance with or resolution of comments to the satisfaction of the COE.

12.2.4 Submitting a separate sheet of paper with location of compliance or rebuttals is not allowed. All information MUST be entered into ARMS.

12.2.5 Always annotate and forward the review comments in ARMS. If the A-E has any hardware or software problems with the ARMS system, call the ARMS hotline, (916) 551-3126.

12.2.6 The A-E is encouraged to call and discuss any problematic comments with the appropriate reviewer in our DQA Section. The last name and phone number of each DQA discipline's unit leader appears in the upper right hand corner of the cover sheet accompanying the copy of review comments sent to the A-E.

## 13.0 VALUE ENGINEERING

13.1 The COE reserves the right to perform value engineering studies on projects either during or after completion of design. The value engineering studies may be performed by the COE or other Architect-Engineer firms designated by the COE. The COE, at its discretion, may require the A-E to implement any or all design changes resulting from the value engineering studies or the engineering evaluations after completion of design. The A-E, during the course of his design, shall look for and identify those high-cost, low-value items which may be accomplished in other ways at less cost. During review of the PDB and other design criteria, and prior to initiating the design, any potential value engineering items shall be reported to the PM. Depending on the project's construction dollar value, the A-E shall prepare certain value engineering cost forms. These forms and their preparation are described in detail in the Cost Estimating Guide (Volume 2 of the A-E Guide).

## 14.0 SITE VISITS

14.1 Each time the A-E makes a visit to the project site, for whatever reason, he shall check in at the nearest COE Resident Office or Project Office. COE construction field personnel can be invaluable in facilitating the A-E's access to the project site and in contacting information sources through the DEH office at the Installation. Contact the PM for the location of the nearest COE construction Resident Office, and provide at least one day notice prior to the visit. All site visits shall be coordinated with the PM.

## 15.0 CONTRACT PAYMENTS

15.1 The A-E shall submit monthly estimates for the value of the design services performed to the District A-E Negotiation Section on ENG Form 93, which will be checked by the COE PM against progress made, and certified for payment. Forms are available from the District A-E Negotiations Section and shall be used. Completed ENG Form 93 shall be mailed to the address listed in Paragraph 4.1 of this Chapter.

## 16.0 RESPONSIBILITY AFTER DESIGN COMPLETION.

16.1 The A-E is required to support the District after completion of his design contract should errors or omissions in the documents prepared by the A-E create problems in bidding or administering the contract for construction. The support provided by the A-E shall take whatever form is necessary to correct the errors or omissions in the original documents. Such required design corrections shall be done in a timely manner at no additional cost to the Government.

16.2 Engineering related services may be required in direct support of a project's construction, apart from that described in Paragraph 16.1 above. If required, these services will be defined in a scope of work prepared by the PM. This work shall not be performed by the A-E until an appropriate fee for the work has been negotiated and notice to proceed is issued by the contracting officer of the COE. Services may include monthly site visits to the project, conference attendance or special inspections.

## 17.0 ELECTRONIC BULLETIN BOARD

17.1 An Electronic Bulletin Board (EBB) has been established by the Sacramento District to facilitate transfer of design related information such as guide specifications and other technical criteria between the COE and the A-E. At this time, staffing is not available to provide continuous updating of the material on the EBB, therefore, the A-E is not to consider material on the EBB as necessarily current. Contact your PM for access procedure.

# TYPICAL PROJECT MILESTONES

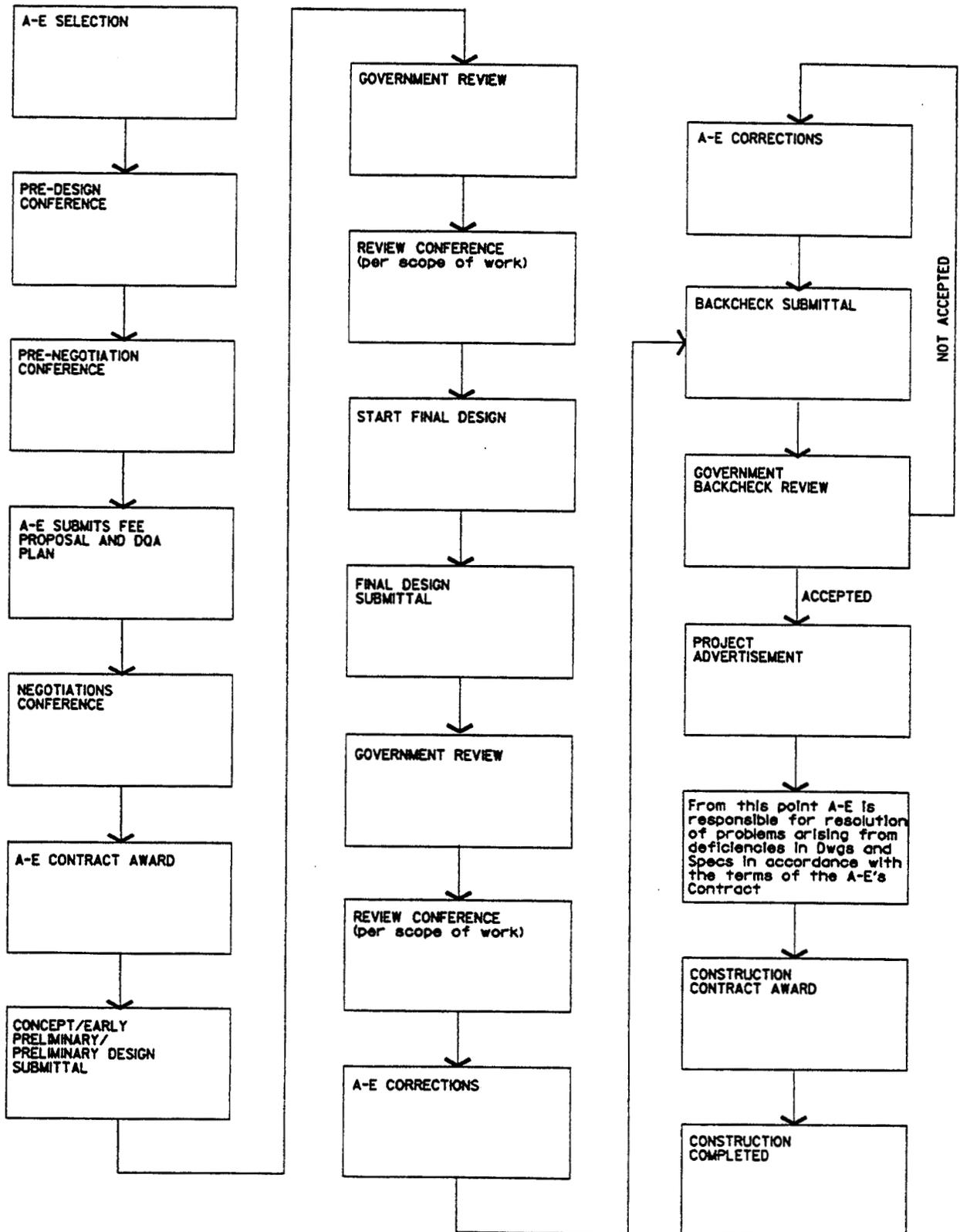


figure 1

# TYPICAL PROJECT DOCUMENTS PREPARED BY A - E

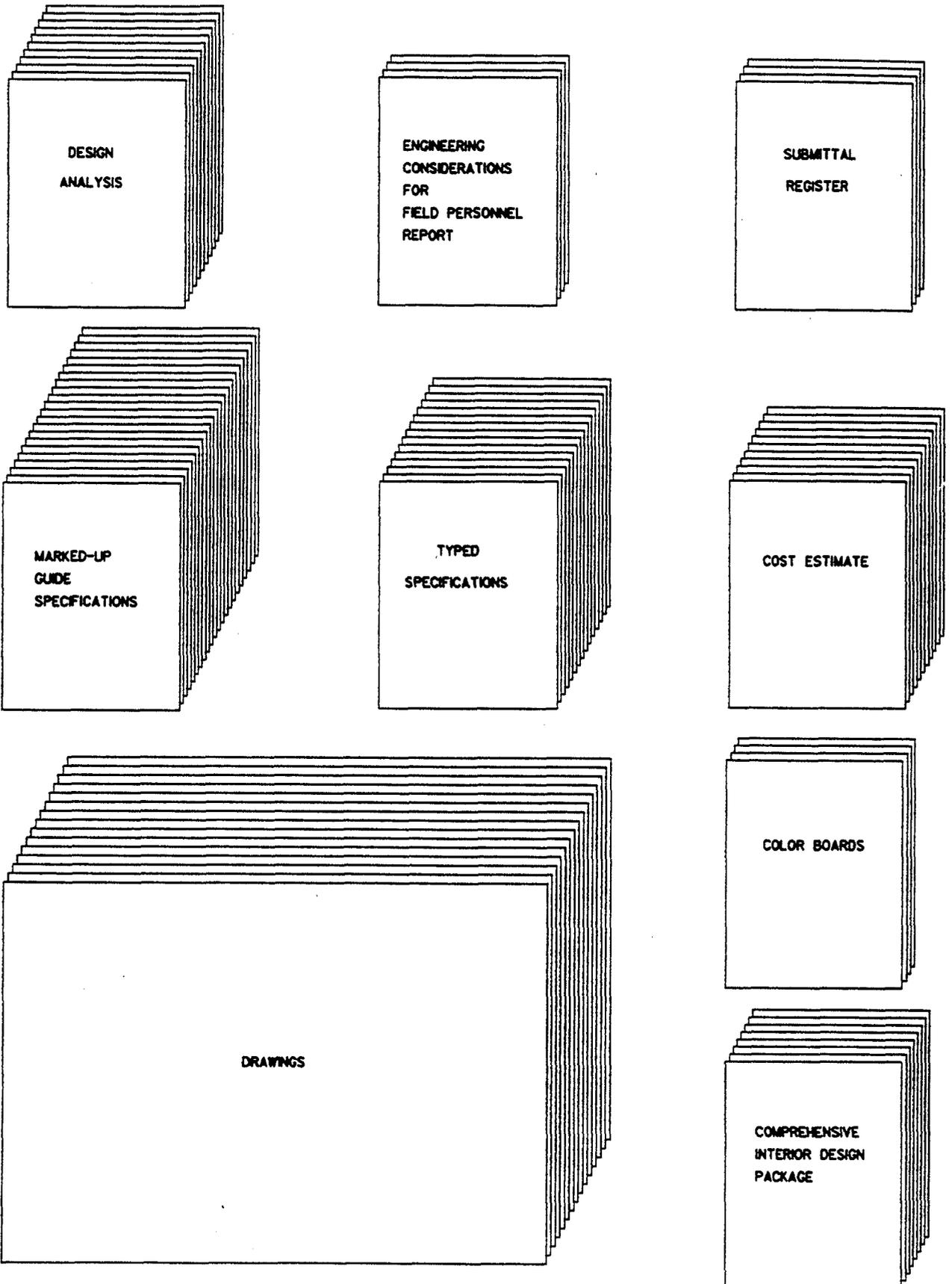


figure 2