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Improving Distribution of Military Programs' Technical Criteria

U.S. Army Corps of Engineers

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John H. Cable
James L. Hathaway



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Logistics Management Institute
6400 Goldsboro Road
Bethesda, Maryland 20817-5886

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Improving Distribution of Military
Programs' Technical Criteria
U.S. Army Corps of Engineers

Executive Summary

Headquarters, U.S. Army Corps of Engineers, provides technical criteria to its field activities to ensure that the Corps' design and construction program is based upon the most current and technically acceptable practices available. The criteria are promulgated in a variety of engineering publications distributed to the field activities through the traditional print medium and in some cases through electronic media. Guide specifications are distributed only electronically. The Logistics Management Institute has evaluated the current centralized distribution systems and found they do not consistently deliver engineering publications to the engineers who need the information. While they distribute some information quite effectively, the overall performance of the distribution systems can be improved significantly.

We recommend that for other than bulletins and memorandums, HQUSACE move away from central distribution of printer' copies of engineering publications and distribute them electronically as it does the guide specifications. We have prepared an implementation plan to assist in the transition, which should be completed within a year. When implementation is complete, each division and district office will be able to download newly approved documents to its local system within 10 days of approval. Any hard-copy distribution that may be desired may be printed from the electronic system at the field offices.

For the near term, HQUSACE should continue to distribute bulletins and memorandums in the hard-copy format. Using keyword indexes, USACE should accurately target the distribution lists for these publications to specific offices within each destination matching the subject topic to the recipient. We further recommend that the current practice of distributing printed documents to architects and engineers under contract to the Corps be terminated. Such documents are distributed by electronic media (compact discs) available through subscription to Construction Criteria Base, a commercial service managed by the National Institute of Building Sciences.

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Accession For	
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By	
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A-1	

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CHAPTER 1

Introduction and Background

THE TECHNICAL CRITERIA PROGRAM

The U.S. Army Corps of Engineers is responsible for design and construction of the Army Military Construction program and a major portion of the U.S. Air Force MILCON program. It is also responsible for the design and construction of facilities under other funding sources; for example, those funded from operations and maintenance appropriations or non-appropriated funds (NAF). Such technical criteria as guide specifications and design criteria are an integral element of design and construction. Thus, to ensure that the design and construction program is based upon the most current and technically acceptable practices, available, Headquarters, USACE, has an ongoing program to maintain and update the technical criteria it provides to the field activities. The annual cost of that program is more than \$5 million.

The technical criteria are promulgated in a variety of engineering publications including Corps of Engineers guide specifications, abbreviated guide specifications, engineering manuals, technical manuals, engineering regulations, handbooks, engineering circulars, engineering pamphlets, engineering technical letters, bulletins, memorandums, architect-engineer instructions, and others. Of the 807 engineering documents maintained by HQUSACE Engineering, 467 are specifications and 340 are other engineering publications. At any given time, approximately 218 publications are being reviewed or revised, which is roughly equivalent to the average annual output of document updates in addition to the notices issued for minor refinements to existing specifications. Table 1-1 lists the distribution by type of publication, and Appendix A presents a master list of engineering publications.

THE NEED FOR IMPROVEMENT

Recently, HQUSACE has begun to realize that the most current criteria are not always being utilized. In some cases, those criteria can involve life-safety issues or define requirements that affect significant sums of money and must be acted upon promptly. The Logistics Management Institute was asked to examine the distribution of military programs' technical criteria, determine what improvements were necessary, and recommend appropriate measures. We observed that the distribution systems are quite inconsistent in delivering current technical criteria to the engineers that need to know the information. While some aspects of the systems function very well, some fundamental modifications can be made that will significantly improve performance. The

recommended changes are within the purview of the Military Programs Engineering Division.

Table 1-1.
Engineering Publications by Type

Type	General	Civil	Both	Military	Total	In Process
1. EM		4	11	22	37	(6)
2. EP		5	1	6	12	(4)
3. ER		13	3	17	33	(10)
4. ETL		15	13	61	89	(30)
5. EC		4			4	(1)
6. DG				20	20	0
7. STD			1	2	3	0
8. TM			135		135	(54)
9. HDBK			1		1	(2)
10. STUDY	1				1	(6)
11. DEF				2	2	0
12. AEI					1	0
13. AR	2				2	(1)
14. CEGS				315	315	(77)
15. CEAGS				98	98	(17)
16. OEGS	4				4	
17. MOGS	50				50	
18. CW	1				1	
	58	41	165	543	807	(208)

Note: EM = Engineering Manual; EP = Engineering Pamphlet; ER = Engineering Regulation; ETL = Engineering Technical Letter; EC = Engineering Circular; DG = Design Guide; STD = Standard; TM = Technical Manual; HDBK = Handbook; DEF = Definitive; AEI = Architect-Engineer Instruction; AR = Army Regulation; CEGS = Corps of Engineers Guide Specifications; CEAGS = Corps of Engineers Abbreviated Guide Specifications; OEGS = Overseas Engineering Guide Specification; MOGS

REPORT STRUCTURE

In Chapter 2, we describe how the existing distribution systems work. To do so, we first present electronic distribution data and their components and then information related to printed document distribution. The chapter includes our assessment of the existing systems and our conclusions. The same sequence is followed in Chapters 3 and 4.

In Chapter 3, we present our conclusions and recommendations for changes to improve the performance of the distribution systems, and in Chapter 4, we outline a preliminary implementation plan for the Corps should it decide to adopt our recommendations.

CHAPTER 2

Assessment of Existing Distribution Systems

Corps of Engineers military programs' engineering publications are currently issued and distributed by the Military Programs Engineering Division in three different ways. The guide specifications and the abbreviated guide specifications are published in electronic formats only. Memorandums and bulletins are available in hard copy only and are printed and distributed at Headquarters. The remaining publications (regulations, manuals, pamphlets, circulars, and others) are sent to the Government Printing Office (GPO) for printing and are selectively sent to the National Institute of Building Sciences (NIBS) for inclusion on the Construction Criteria Base (CCB) compact discs (CDs). The *Overseas Engineering Guide Specification* and *Mobilization Guide Specification* are available in printed format only and are not an integral part of the guide specification publishing system.

ELECTRONIC DISTRIBUTION

The Corps publishes some 315 Guide Specifications and 98 Abbreviated Guide Specifications. Those documents are published initially on an electronic bulletin board called SPECINFO and then on CCB CDs. Their publication process may be summarized as follows: The topical experts for the individual specifications, the technical representatives, may be physically located anywhere within USACE activities although many of them are at the Huntsville Division (CEHND). They send their documents to CEHND in electronic format and CEHND sends them to the proponent (HQUSACE) in hard copy for review and approval. Each week, HQUSACE notifies CEHND electronically of the approvals, and the documents are loaded onto SPECINFO, the Corps-wide bulletin board maintained by CEHND. Each quarter, a tape is sent to NIBS for inclusion in the quarterly issuance of the CCB compact discs. Figure 2-1 illustrates this sequence.

The SPECINFO system is a construction information exchange system utilizing IBM or compatible computers with a DOS 3.0 or greater operating system and communication software. It is available to users 24 hours per day, 7 days per week and is openly accessible to specification personnel within the Corps of Engineers for the cost of a telephone call. The system is designed using Mustang software and is structured to keep specification personnel abreast of the

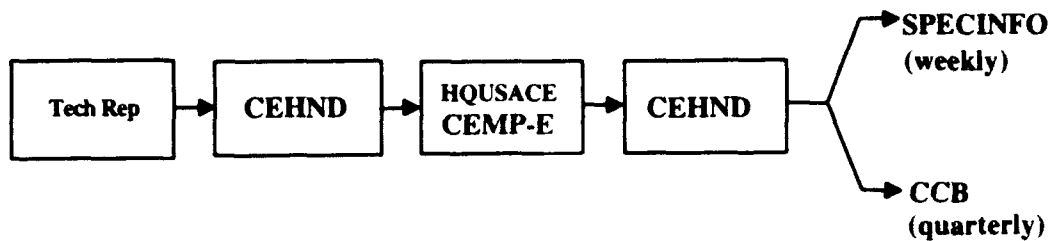


Figure 2-1.
Guide Specification Publication Process

constantly changing construction technology and to encourage feedback from the users.

For ease of use, SPECINFO is menu driven, and a little time spent exploring the menus makes it easy to locate what you want quickly. The system includes text of all CEGS and CEAGS that are not yet on the CCB, including recent revisions and notices. It also lists indexes of ERs, EMs, EPs, ECs, ETLs, and TMs but does not contain their text. Downloading from the system is slow because the 2400-baud modem and the files configuration are not compressed for rapid transmission. Those districts that are using the SPECINFO system regularly have found it to be highly useful and to have the potential for much more extensive application.

The CCB is a commercial compact disc system containing the complete texts of thousands of documents needed for the design and construction of buildings and civil works projects. It is managed by NIBS, which distributes quarterly updates to its 2,000 or more subscribers. The documents on the CCB are provided to NIBS by USACE and some 125 participating Federal agencies, building industry trade associations, professional societies, standards writing organizations, and code bodies. Appendix B presents a list of participating organizations. USACE is now submitting not only all of the CEGS and CEAGS but also Computer Aided Design and Drafting (CADD) symbols and manuals, MCACES GOLD Cost Estimating System, Architect & Engineering Instructions, AEI Design Criteria and Medical Design Standards, Master Planning Instructions, TMs, ECs, EMs, EPs, and ETLs on the CCB. Table 2-1 shows excerpts from the CCB table of contents; a complete list is presented in Appendix C.

The information on the CCB exceeds 1 million pages. Software built into the system provides quick access and processes the information in a matter of seconds. Compact disc read-only memory (CD-ROM) technology uses lasers to inscribe enormous amounts of information, text, graphics, and executable programs, on a compact disc identical in appearance to a music CD. "Read-only memory" means that nothing can be written on the CD after it is produced; it can only be read. A CD reader is used to transfer information from the disc to a

Table 2-1.
Excerpts from CCB Table of Contents

Army Corps of Engineers (COE) Civil Works Guide Specifications
Army COE Military Construction Guide Specifications
Army COE Military Construction Abridged Guide Specifications
Bureau of Reclamation (BREC) Standard Specifications
Department of Defense (DOD) MIL-BUL -35 Matrix of Guide Specifications
Department of Veterans Affairs (VA) Master Specifications
Federal Aviation Administration (FAA) Construction Specifications
Federal Highway Administration (FHWA) Standard Specifications
General Services Administration (GSA) Master Specifications
National Aeronautics and Space Administration (NASA) Detailed Specifications
National Institutes of Health (NIH) Specifications
Naval Facilities Engineering Command (NAVFAC) Guide Specifications
DOE Energy Performance Standards (Title 10, Part 435)
OSHA Safety and Health Regulations for Construction (1926)

personal computer. The CDs can also be used on local area networks (LANs). Figure 2-2 illustrates the CD storage concept.

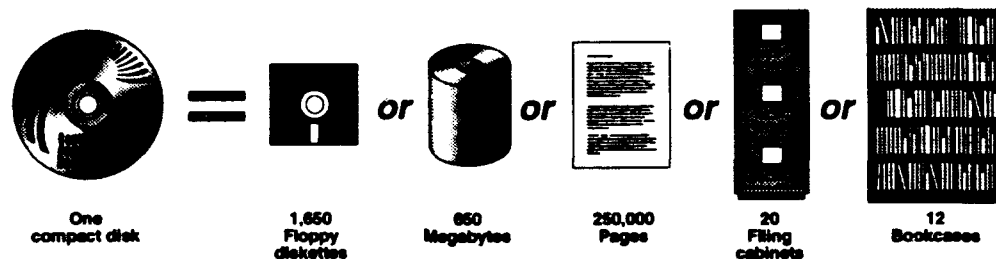


Figure 2-2.
Compact Disc Information Storage Capacity

Today, CDs are used extensively in many commercial engineering applications, but their use in USACE offices appears to be minimal. We found their capability is not fully appreciated nor integrated into office operations and procedures. We also noticed that, although the CCB CDs were available in each of the division and district offices we visited, the equipment to use them was not always easily accessible nor in working order. We also found that CDs were not on local area networks although some districts have plans to add LAN

distribution. We also found that many USACE staff members think of the CCB CDs in the context of specifications only and are not aware of the other USACE documents on them nor of their product information, Federal Military Specifications and Standards, and other relevant building industry information.

PRINTED DOCUMENT DISTRIBUTION

The Corps of Engineers produces some 340 engineering publications other than the guide specification series. The majority of those publications are either EMs, EPs, ERs, ETLs, or TMs. Standard distribution lists (ENG Form 0-2309) have been provided in advance for each publication, and they are used unless the proponent at Headquarters issues a new ENG Form 0-2309 that overrides the standard form for a specific issue of the publication. The standard file copy that is normally the basis for distribution specifies that 20 copies go to each district office, regardless of whether the district has 75 or 550 engineers on its staff. Appendix D shows a sample ENG Form 0-2309.

When a publication is received at the division or district office, a mailroom clerk decides who to distribute the reports to. That decision is typically made on the basis of a predetermined allocation by type of publication and number series. That means, for example, that an Engineering Pamphlet in the #1110 series gets the same distribution whether its subject matter is electromagnetic pulse and Tempest protection or USACE technology transfer systems. The local information management section chief determines how the distribution is actually handled at each location, but the publications are not normally distributed on the basis of content. An alert clerk may, on occasion, recognize a topic and send a copy to an office that he/she thinks may have an interest, but that hit-or-miss procedure is not an adequate basis for consistently delivering technical criteria to the people who should receive the information and have a need to know and utilize it. This untargeted system explains our consistent findings that *some engineering publications are seldom, if ever, seen at the level of project managers, designers, or project engineers, i.e., by the people that need to use the information.* Figure 2-3 illustrates the numbering system used for ECs, EMs, EPs, ERs, and ETLs.

In instances in which a new publication is received at the division or district in a timely manner 6 months or more may elapse before the copy arrives at the project-level desk. That snail's-pace distribution is the result of receiving only a small number of copies of a document that must be distributed to a large number of staff members. And, without a driving reason to expedite review, looking over newly published materials is typically not a high-priority task in the face of the daily pressures of project execution and task assignments. Engineers in the field offices are not sitting around with great anticipation of the next engineering publication from headquarters.

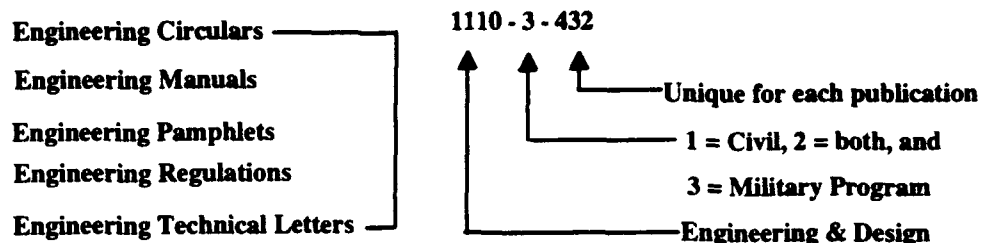


Figure 2-3.
Engineering Publications Numbering System

Individual staff members should keep abreast of a very large amount of technical information in the Military Programs' design and construction arena, and their effort to do so must usually be sandwiched in among their normal assignments. Figure 2-4 shows the typical annual volume of technical criteria published by HQUSACE.

150 + Engineering Publications

60 Technical Manuals

95 Revised Guide Specifications

380 Notices of changes

Figure 2-4.
HQUSACE Annual Volume of Publications

Not only must the staff keep abreast of a tremendous amount of information, it must also keep abreast of many different types of publications. We have found that the availability of multiple types of publications leads to confusion on where to look for certain types of data. For example, most engineers simply don't know the conceptual difference between an EC, EP, or ETL (Appendix G presents a list of the current definitions.) We also discovered that the *Index to Publications*, DA 25-1-1, has not been printed since 1990, and the division and district staffs frequently do not know whether they are using the latest version of any given document. The library staffs seem to be unable to assist in determining the currency of a document or its date of expiration without an updated copy of DA 25-1-1, and they do not seem to know to check the CCB.

Even though new documents are listed in the *EIRS Bulletin*, the Corps has no effective system to inform its employees of new publications. Thus, even when someone tries to be certain of utilizing the most current data, the system does not support them.

While our assessment of the method of preparation and distribution of the CEGS and CEAGS is that it seems efficient, evidence suggests that ample room for improving the current procedures for preparing and distributing other engineering publications. Figure 2-5 illustrates the current sequence for other engineering publications.

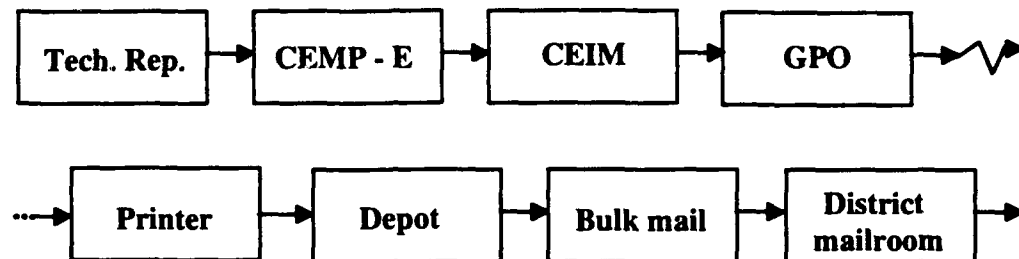


Figure 2-5.
Preparation and Distribution of Other Engineering Publications

The *EIRS Bulletin* (Engineering Improvement Recommendation System) is different from the other printed documents in that it is prepared, printed, and distributed monthly from HQUSACE. The mailing list is far more detailed than the ENG Form 2309 distribution used for other engineering publications. However, only a small number of copies are sent to each engineering office. Unfortunately, the bottom line is still very much the same in that the *bulletins do not consistently reach the intended audience*.

During our review of the *EIRS Bulletin*, we noted that it is not easy to read, nor is it inviting or appealing visually. It is bulky and contains reprinted information or copies of forms that are sometimes poorly reproduced and difficult to read. Thus, the *EIRS Bulletin*, which is intended to get information to staffs quickly, is not going to be at the top of, or perhaps even in, the queue of information competing for a staff member's attention.

DISTRIBUTION TO ARCHITECTS AND ENGINEERS

While examining the distribution of documents from Headquarters to the divisions and districts, we discovered that the district offices maintain a stockroom full of publications that are used to supply architects and engineers under contract to the Corps with documents that are referred to in their contracts

as mandatory references. The documents are, surprisingly, provided to the A-Es at no charge! Although not the focus of our investigation, this practice consumes a significant number of labor hours and also takes precious floor space.

CONCLUSIONS

The current system of electronic distribution for the guide specifications and abbreviated guide specifications works well. The use of the electronic bulletin board, SPECINFO, to provide immediate access to approved specifications, followed by the quarterly updated CCB CDs, is efficient and utilizes contemporary technology in a rational and cost-effective manner. However, the value of this system is not fully appreciated nor utilized, and the necessary LAN or equipment is not always in place. Also, the fact that most engineering publications are being installed on the CCB is not understood.

The distribution of other engineering publications that are printed and distributed through bulk mail is a different matter. Our findings include the following:

- ◆ The same number of publications are sent to the various division and district offices regardless of the size of the office staff.
- ◆ Publications are internally routed at the division and district offices not by the content of the publication but by the type of publication.
- ◆ The several different types of publications are confusing, and the respective purpose of each is not well understood.
- ◆ The annual volume of publications from HQUSACE is somewhat overwhelming to the field staff. Over 95 revised guide specifications, 380 notices of changes to specifications, and over 200 technical manuals and other engineering publications are distributed annually.
- ◆ Field staff find it difficult to determine whether they are using the most current documents.
- ◆ No *effective* system exists for informing employees of the availability of new or recently revised publications. The *EIRS Bulletin* listings are not widely read.
- ◆ The *EIRS Bulletin* does not achieve its intended purpose "to facilitate expedited dissemination of information regarding problems."
- ◆ The process to prepare and distribute other engineering publications goes from the various electronic formats used for preparation to hard copy and back to electronic format for input to the CCB and to CEIM-IP. The process can be very inefficient.

Chapter 3 discusses our conclusions and makes recommendations for improving the system.

CHAPTER 3

Conclusions and Recommendations

Our assessment of the U.S. Army Corps of Engineers publications distribution system leads to the conclusions that *the current system for electronic distribution of guide specifications works well and needs only minor fine-tuning, but the system for distributing the printed technical criteria for military programs needs major improvements. We also conclude that such improvements can be readily achieved, and they are largely within the purview of CEMP-E authority.*

The annual cost of the criteria management and update programs exceeds \$5 million, with another \$1 million spent on printing and distribution. Yet, with all the effort to maintain current data, division and district personnel are not getting the printed information consistently, and many personnel do not appear to know how to seek it out effectively. The printed document distribution system can be characterized as a "pull" system: the information is there, but dedicated effort and perseverance is needed to stay current. Project-oriented engineers are not likely to spend much, if any, time doing so. Also, the current objective to make the publications more user-friendly requires a more focused and determined effort.

ELECTRONIC DISTRIBUTION

The electronic bulletin board, SPECINFO, is the basis of quite a good system for distributing engineering technical documents. It is underutilized, however, and has a far greater potential. Also, the electronic bulletin board contains information that is generally not known to be there, such as the listing of new engineering publications that have been approved. The only weakness we found with the system is the slow file transfer speed, and that speed can be dramatically improved by switching to a modem that is capable of handling 14.4 kilobits per second (KBS) with associated communications software. The Intel 14.4 KBS modem's speed is well within current line transmission capabilities, the cost of the modem is about \$450, and the cost of the communications software is about \$200. The transfer function will be optimized if the other USACE offices install modems with compatible transmission speeds and data compression characteristics. With the data compression feature, information would actually be transmitted at 56 KBS using the 14.4 KBS modems. This change should be done promptly, is independent of any other recommendations, and will greatly enhance the performance of the electronic bulletin board.

In Chapter 2, we discussed the fact that USACE is now loading all relevant engineering publications onto CCB CDs as soon as they are published. The

process of loading the documents onto the CDs would be far more efficient if CEMP-E specified the precise word processing, spreadsheet, and graphics programs and formats to be adhered to in the preparation of all engineering publications. The documents should be prepared electronically by the technical representatives using a consistent protocol. The documents could then be transferred to CEHND and the CCB by simply copying discs rather than by scanning printed copy, as is now frequently done.

In addition to the newly revised or published documents, the existing hard-copy documents are being loaded to the CCB as time and funding permit. At the current pace, the task is expected to be complete by the third quarter of 1993. At that time, the Corps can phase out central printing and distribution of documents and rely on the CDs from the CCB for distribution. That direction is the logical one to pursue since CD distribution and storage is much cheaper than paper or any other medium, including microfiche and tapes. Furthermore, printing, shipping, filing, and storage costs for CDs are all but eliminated, and they contain more information in a more usable form. For those reasons, CD-ROM technology is becoming widespread in virtually every field, particularly where knowledge is a critical commodity: fields such as business, education, law, medicine, and government. It is particularly well suited for the information-intensive field of design and construction and can quickly alleviate distribution problems that USACE is currently experiencing.

In support of the shift to electronic distribution, we recommend that the SPECINFO bulletin board be expanded to include all engineering publications until they are available on the CCB. For example, the expanded bulletin board may be called something like TECHINFO. Upon accessing, the first inquiry to answer would be, "Would you like information on specifications or on other engineering publications?" The specification information should remain organized essentially the same as it is and should continue to be identified as SPECINFO. The engineering publications could be contained in something like ENGPUBS and listed in an index of all nonspecification engineering publications. We propose that ENGPUBS be organized to contain the following:

- ◆ A complete list of all COE military programs publications
- ◆ Abstract, author, and date of issue for each publication
- ◆ Highlights of the new releases since the last issuance of the CCB
- ◆ An executive summary for each new release
- ◆ The full text for each new release
- ◆ A list of expired publications, dates of expiration, and proponent.

A diagram of the bulletin board concept is illustrated in Figure 3-1.

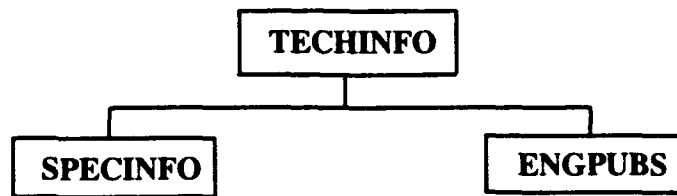


Figure 3-1.
Engineering Technical Information Bulletin Board

For this concept to be effective, however, each division and district office must be properly equipped to utilize the technology. Each office will need to establish a retrieval and distribution protocol that is defined on the basis of all of the technical publications being available electronically. In order to avoid everyone in the local office calling CEHND, we suggest a single section be assigned responsibility for regularly checking the bulletin board. For instance, instead of checking in with the bulletin board only for documents on specifications, that assigned contact could download to the LAN information on all subject publications on ENGPUBS. This information would then need to be circulated to the appropriate parties. It may also need to be purged when the same information is available through the CCB CDs that are updated on the network on a quarterly basis.

With either the bulletin board or the CDs available, division and district offices will be able to print hard copies of any documents desired. Some divisions or district offices may want to establish local distribution of notices announcing the availability of new documents. If they wish to do so and do not have a newsletter format, targeting the notices by keyword linked to specific sections of the organization would be an effective means of specific distribution. For an example of this concept, see Appendix E.

In May 1993, the CCB became available for use in the Windows environment. It can also be loaded onto a network. That means that district offices do not have to have a proliferation of CD readers but can install the CCB discs in a quad reader for \$2,500 with an SCSI (small computer systems interface) and Lotus CD Networker to access them through the network. If they desire to access more than four CDs on the network, custom multiple-drive cabinets for up to 64 drives per cabinet and also jukebox systems are available.

PRINTED DOCUMENT DISTRIBUTION

Since we have recommended the elimination of central hard-copy distribution for the military programs' technical criteria publications, the only remaining product for central hardcopy distribution is the *EIRS Bulletin*. It is part of a system for implementing recommendations from information feedback sources and is used in military construction programs to facilitate *expedited dissemination* of information regarding problems. If the *EIRS Bulletin* is to achieve that objective, we recommend that the distribution be specifically targeted to its intended audience and that it be redesigned to communicate more effectively.

The *EIRS Bulletin* should be addressed to specific recipients designated by each office. The mailing list can be generated based on a draft protocol from CEMP-E that is revised and updated regularly by the local offices. An adequate number of copies should be provided to each office so that the publication is seen by the intended recipients quickly upon its arrival.

We have redesigned the *EIRS Bulletin* to demonstrate a concept of presenting the information in a more interesting way, and a copy is included as Appendix F. We do not recommend an expensive publication but rather an attractive "in-house" document that is effective and can attract the attention of potential readers by quickly communicating the important information. This design, or those similar to it, can readily be created with a modest desktop publishing system and printed at the Pulaski Building in Washington, D.C. Preparation of camera-ready newsletters to be printed in-house is also a function that can be easily and inexpensively subcontracted to one or more well-qualified small businesses.

The document distribution (TMs, ERs, etc.) from the district offices to the architects and engineers that contract with the Corps should be eliminated in its current form. We recommend that the contract clauses not list reference documents without specific merit to the project and that the A-Es be told that the documents are available on the CCB. Some districts are already referring A-Es to the CCB.

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

The electronic distribution system that is used for the guide specifications and abbreviated guide specifications is working well. The file transfer speed between the electronic bulletin board and its users should be increased inexpensively by using compatible 14.4 KBS modems in all offices; that procedure will yield an actual transfer speed of 56 KBS.

We recommend that the printing and distribution of nonspecification engineering publications such as the TMs, ERs, EPs, ETLs, EMs, ECs, ARs, and AEIs be phased out as soon as the existing publications are loaded on the CCB

(third quarter 1993) and that the bulletin board be expanded to encompass all technical criteria documents, not just specifications.

Along a more general mode, we believe that CEMP-E should remain constantly vigilant in striving to improve communication by minimizing the amount of information handled and to simplify the information that it does handle. This effort should include working toward reducing the number of publications in the program to the minimum essential for accomplishing the mission. Equally important would be an effort to refine the documents that are retained to say what they need to say as succinctly and clearly as possible. Also important is the need to introduce the discipline necessary to be consistent in using the correct type of publication for its intended purpose.

CHAPTER 4

Preliminary Implementation Plan

We have organized implementation into tasks dealing with four primary areas: 1. Bulletin Board, 2. Document Preparation, 3. Division & District, and 4. HQ Persistence. We suggest that the goal of implementing the recommendations in this report will be achieved most readily by pursuing all primary tasks in parallel. This implementation plan is quite general and the tasks will require significantly more detailed planning prior to execution, once a decision is made to implement those recommendations.

1. **Bulletin Board.** As discussed in Chapter 3, two action items can and should occur as quickly as possible. First, the Corps should increase the transfer speed capability of SPECINFO. That action basically requires purchasing and installing an Intel 14.4 KBS modem, Procom or similar communications software, and the PK WARE suite of programs: PKZIP for compression, PKUNZIP for extracting, and PKSFX for sending self-extracting files. The second action item is to design and implement expansion of the electronic bulletin board as proposed.

2. **Document Preparation.** The majority of the engineering documents include text, tables, and charts or graphs. This task is to define the word processing, graphics, and spreadsheet formats and stylesheets needed for preparation of all reports in electronic media. The objective is that the files can be transferred and processed efficiently without having spent inordinate amounts of time cleaning up "corrupted" data or scanning hard copy to get it into the bulletin board and CCB systems and without losing quality or detail.

3. **Division & District.** For the electronic distribution system to function efficiently, each office must have the appropriate hardware/software and internal operating protocols. The following subtasks are included:

a. **Hardware/software**

- (1) Assess LAN utilization and characteristics at each site
- (2) Assess equipment utilization and characteristics
- (3) Assess personnel capabilities and the extent of training needed
- (4) Develop acquisition, installation, and training plans
- (5) Do it!

b. Operating protocols

(1) Each office must determine staff responsibilities for accessing the bulletin board and processing the new information.

(2) Care must be taken to inform the people who need to know, and the system for doing this must be designed and implemented. This step will require coordination among engineering, project management, construction, information management, and other divisions/branches/sections as may be appropriate for the given office.

c. Implementation

Implementing this task will require thoughtful planning and aggressive leadership, management, and coordination from Headquarters. Project leaders from each office should be selected to participate in coordinating meetings for each of the task/subtask areas. An information network via the Electronic bulletin board should be established to facilitate sharing lessons learned and offering a mechanism for Q & A.

4. **HQ Persistence.** This task is intended to remind Headquarters that a constant effort is essential in striving to achieve excellence in communication effectiveness, quality, and clarity of the engineering publications. This process is continuing and is an attitude, not merely a once-through review, nor an end in itself. Excellence is a journey, not a destination.

Headquarters should establish periodic (annual) outside reviews. These should be in different forums each time with the aim of obtaining honest evaluation and comment on the communication quality and effectiveness of the publications being produced. The goal of the system should be constant improvement in effectiveness of communication.

We recommend that Headquarters establish a task force to audit all nonspecification engineering publications with the intent of minimizing the total number of publications. The publications should be sorted into four categories: canceled, concepts to be merged into another publication, in need of revision, and acceptable as is until the next scheduled review.

The *EIRS Bulletin* in its current format is not an effective tool for communication. Two attributes must be addressed to improve it: redesign the presentation of the content and improve the targeting of the distribution.

The redesign of the *EIRS Bulletin* should present the information in newsletter format. We have prepared an example and show it as Appendix F. A design concept for the newsletter should be approved and then the decision should be made whether to prepare the camera-ready copy in house or subcontract it. We assume no matter where the newsletter is prepared, it will be printed in house. If the decision is to do the preparation in house, the staff

selected should be experienced in newsletter design and layout. However, even with experience, training for the staff selected may be required.

The *EIRS Bulletin* should be distributed in accordance with a mailing list that is maintained specifically for that purpose. The list should be prepared using organization charts and straw man lists developed for each division and district office. Then, in consultation with each of the offices, a targeted mailing list should be agreed upon. The mailing labels should be addressed to specific office symbols and not to generic "district engineers" with no further detail.

APPENDIX A

**LIST OF U.S. ARMY CORPS OF ENGINEERS
MILITARY PROGRAM PUBLICATIONS**

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS

Desig.	Pub. Number	Pub. Date	Title
EM	1110-1-1807	07/03/90	Standards Manual for USACE CADD System
EM	1110-1-1905	10/30/92	Bearing Capacity of Soils
EM	1110-1-400	07/31/87	Recreation Planning & Design Criteria
EM	1110-1-501	07/23/86	Land Treatment of Municipal Wastewater
EM count = 4			
EM	1110-2-38	05/03/71	Environmental Quality in Design in CW Projects
EM	1110-2-410	12/31/82	Design of Rec Areas and Fac-Access & Circulation
EM	1110-2-501P1	09/29/78	Design of Wastewater Trtmnt Facs Major Systems (Part 1)
EM	1110-2-501P2	09/30/80	Design of Small System Wstwtr Treatment Facs (Part 2)
EM	1110-2-501P3	11/28/80	Dsgn of Wstwtr Facs Capdet Prgm User Guide (Part 3)
EM	1110-2-502	03/25/88	Methodology for Area. Planning St. Documentation
EM	1110-2-502P1	11/28/80	MAPS User's Guide (Part 1)
EM	1110-2-502P2	11/28/80	MAPS Documentation (Part 2)
EM	1110-2-503	01/25/84	Design of Small Water Systems
EM	1110-2-504	11/30/83	Land Treatment Systems Operation & Maintenance
EM	1110-2-505	09/02/86	Gdlns Pre Set of Rem Actn for Hazard Waste Sites
EM count = 11			
EM	1110-3-130	04/09/84	Geometrics for Roads, Streets, Walks, etc. Mob Con
EM	1110-3-131	04/09/84	Flexible Pavements for Roads, Streets, etc. Mob Con
EM	1110-3-132	04/09/84	Rigid Pavements for Roads, Streets, etc. Mob Con
EM	1110-3-135	04/09/84	Standard Practice for Concrete Pavements Mob Con
EM	1110-3-136	04/09/84	Drainage and Erosion Control Mob Con
EM	1110-3-137	04/09/84	Soil Stabilization for Pavements Mob Con
EM	1110-3-138	04/09/84	Pavement Criteria for Seasonal Frost Cond Mob Con
EM	1110-3-141	04/09/94	Airfield Flexible Pavement Mob Con
EM	1110-3-142	04/09/84	Airfield Rigid Pavement Mob Con
EM	1110-3-150	04/09/84	Storage Depots Mob Con
EM	1110-3-152	04/09/84	Railroads Mob Con
EM	1110-3-160	04/09/84	Water Supply General Considerations Mob Con
EM	1110-3-161	04/09/84	Water Supply Water Sources Mob Con
EM	1110-3-162	04/09/84	Water Supply Water Treatment Mob Construction
EM	1110-3-163	04/09/84	Water Supply Water Storage Mob Con
EM	1110-3-164	04/09/84	Water Supply Water Distribution Mob Con
EM	1110-3-166	04/09/84	Water Supply Fire Protection Mob Con
EM	1110-3-172	05/11/84	Domestic Wastewater Treatment Mob Con
EM	1110-3-173	04/09/84	Sanitary & Industrial Wastewater Treatment Mob Con
EM	1110-3-174	04/09/84	Sanitary & Industrial Wastewater Collectn Mob Con

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
EM	1110-3-176	04/09/84	Incinerators Mob Con
EM	1110-3-177	04/09/84	Sanitary Landfill Mob Con
EM count = 22			
EP	1110-1-11	07/15/92	Asbestos Abatement Guideline Detail Sheets
EP	1110-1-5	09/30/86	Index to Pubs Referenced in Guide Specs
EP	415-345-7	06/01/91	Trng & Career Dev Plng for Intern/Intnmediate Arch
EP	5-1-3	01/01/84	Progress Report, Value Engineering Program
EP	715-1-4	06/01/90	Architect-Engineer Contracts
EP count = 5			
EP	1110-2-6	02/01/90	Superfund Management Guide
EP count = 1			
EP	1110-3-2	12/31/90	Electromagnetic Pulse (EMP) & Tempest Prot for Fac
EP	1110-3-3	08/20/92	Origin of Developments for Struc Des of Pavement
EP	1110-3-6	08/14/92	USACE Technology Transfer Systems
EP	1110-345-2	07/14/89	Index of Design Drawings for Military Construction
EP	415-345-7	08/28/87	Aluminum Conductor Instttn & Inspctn Pocket Guide
EP	SP89-229-ED	04/01/89	OCONUS UEMCS Cost Estimating Guide
EP count = 6			
ER	1110-1-260	12/15/81	Fire Protection Policy
ER	1110-1-263	10/01/90	Chem Data Qual Mgmt for Hazard Waste Remed Acts
ER	1110-1-4	07/25/69	Metric System in Corps Documents
ER	1110-345-700	02/19/82	Design Analyses
ER	1110-345-710	04/17/81	Drawings
ER	15-1-25	06/16/86	CE Facilities Standardization Committee
ER	15-1-36	10/15/91	Committee on Cost Engineering
ER	672-1-10	03/01/92	USACE "Landscape Architect of the Year" Award Pgm
ER	672-1-12	10/30/92	USACE "Cost Engineer of the Year" Award Program
ER	672-1-9	11/01/92	USACE "Architect of the Year" Award Program
ER	715-1-10	09/30/88	A-E Responsibility Management Program
ER	715-1-15	02/15/91	Time Standards for the A-E Acquisition Process
ER	715-1-8	09/01/89	A-E Contract Administration Support System
ER count = 13			
ER	1110-2-400	05/31/88	Design of Recreational Sites, etc.
ER	1110-2-500	08/31/86	CE/EPA Superfund Prgm Funding & Report Reqrmnts
ER	1130-2-407	06/10/77	Operating & Testing Potable Water Sys in Com, etc.
ER count = 3			

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
ER	1110-3-104	04/06/67	Family Housing Design
ER	1110-3-107	01/29/88	Design of Military Airfield Pavements
ER	1110-3-108	01/29/88	Evaluation of Military Airfield Pavements
ER	1110-3-109	07/15/92	Corps-Wide Ctrs of Expertise Assigned to MSC/Dist
ER	1110-3-110	08/29/91	Information Systems Design in Support of Mil Con
ER	1110-3-111	03/16/92	Lost Design
ER	1110-34-1	11/30/89	Transportation Sys Mandatory Center of Expertise
ER	1110-345-100	01/17/77	Design Policy for Military Construction
ER	1110-345-122	10/31/89	Interior Design
ER	1110-345-700	02/19/82	Design Analyses
ER	1110-345-701	04/25/74	Struc Found-Airf Helip Pave
ER	1110-345-710	04/17/89	Drawings
ER	1110-345-720	10/31/89	Construction Specifications
ER	1110-345-721	11/30/83	A/E Selection & Dsgn Procedures for Med Facilities
ER	210-3-2	10/01/90	Army Range Program
ER	335-345-1	03/10/72	Report of Costs & Analysis Mil Construction
ER	415-345-42	03/01/84	Cost Cost Estimating & Reserves for Contingencies
ER count = 17			
ETL	1110-1-122	01/10/86	Reliability Evaluation of Water Distribution
ETL	1110-1-125	05/04/84	Guidance for Fuel Resistant Sealers for Pavements
ETL	1110-1-126	01/25/85	Use of Roller Comp Conc for HC
ETL	1110-1-127	08/17/84	Use of Fly Ash in Concrete
ETL	1110-1-129	12/15/85	Use of Engrng Fabrication & Asphalt, Rubber, etc.
ETL	1110-1-134	04/24/87	Energy Eff at Water Supply Pumping Stations
ETL	1110-1-136	07/31/87	Fragment Retention for Glass
ETL	1110-1-137	08/31/92	Rescissions
ETL	1110-1-139	04/23/90	Selecting Asphalt Cements
ETL	1110-1-140	07/01/88	Roadway Pavement Design
ETL	1110-1-141	01/29/88	Thickness of Design of Roller Compacted Concrete
ETL	1110-1-143	03/01/91	Brick Pavement
ETL	1110-1-144	04/14/89	Use of Foamed Asphalt in Base Course Construction
ETL	1110-1-151	11/30/91	Erosion Control to Meet NPDES Requirements
ETL	1110-1-153	03/31/93	Rescissions (of ETLs)
ETL count = 15			
ETL	1110-2-259	04/30/81	Interim Guide on Use of Maps, Computer Prgm, etc.
ETL	1110-2-260	03/12/81	Dual Cropping Proc for Slow Infiltration, etc.
ETL	1110-2-261	02/20/81	Wastewater Management Studies
ETL	1110-2-262	02/27/81	Health Aspects of Land Treatment

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
ETL	1110-2-279	01/31/83	Mods to Maps Comp Prog for Water Coserv Costs
ETL	1110-2-294	02/05/85	Reduction in Water Loss
ETL	1110-2-297	06/20/86	Evaluation of Existing Water Dist Systems
ETL	1110-2-520	01/20/80	Wastewater Management Studies-Pkg Plants
ETL	1110-2-521	04/30/81	Wastewater Mngmt Studies Aquaculture for Ww Treat
ETL	1110-2-522	07/10/81	Wastewater Recycle/Reuse Sys for Recreation Areas
ETL	1110-2-524	01/20/82	Stormwater Runoff from Ovrld Flow Land Treat Sys
ETL	1110-2-526	07/16/82	Crop Mngmnt for Ovrld Flow Land Treatmnt Sys
ETL	1110-2-527	01/25/82	WW Mgmt Stds WW Didinf Mtds for CE Rec Areas
ETL count = 13			
ETL	1110-3-259	01/17/77	28-Chair Dental Clinic Standard Design
ETL	1110-3-310	09/17/79	Use of Precast Concrete Block Pavements
ETL	1110-3-339	02/28/83	Gen Plng/Dsgn Criteria Sanitary Cntrls Swimng Fac
ETL	1110-3-347	11/28/83	Hazardous Transformer Dielectrics
ETL	1110-3-351	05/10/84	State Highway Specs for Airfield Pavements
ETL	1110-3-360	05/15/85	Hazardous Waste Storage Criteria
ETL	1110-3-367	10/20/86	Trace Organic Compounds in Potable Water Supplies
ETL	1110-3-374	03/16/87	Prevention of Nosocomial Infections
ETL	1110-3-379	11/30/87	Compressed Air & Vacuum System
ETL	1110-3-380	01/29/88	Std Distribution of Military Arfld Pavement Dsg
ETL	1110-3-381	01/29/88	Airfield Pavement Design
ETL	1110-3-383	02/19/88	Heat Distribution Systems Outside of Buildings
ETL	1110-3-384	03/04/88	Double-Ended Substations
ETL	1110-3-386	02/26/88	Line Sectionalizer Switches
ETL	1110-3-388	06/30/88	Procedr for Implmt of EMCS Design Criteria
ETL	1110-3-389	06/03/88	Guide for Design & Const Fire Protect & Detect Sys
ETL	1110-3-393	10/28/88	Design of Surfaced Areas
ETL	1110-3-394	09/27/91	Aircraft Characteristics for Airfield-Heliport Des
ETL	1110-3-397	02/24/89	Retrofit Application of Scheduled Maint Fac
ETL	1110-3-399	12/30/88	Data Transmission Media for EMCS & IDS
ETL	1110-3-400	01/31/89	Acquisition of EMCS
ETL	1110-3-403	06/30/89	Elect Power Sys for Non Linear Loads
ETL	1110-3-411	04/26/90	Form Fire Protection Sys for Aircraft in Hangars
ETL	1110-3-412	10/20/89	Transformer Application Guidance
ETL	1110-3-414	03/30/90	EMCS Specs Eval Grp Procedures
ETL	1110-3-415	11/20/89	EMCS Des AE Aecct & Use Std SOW
ETL	1110-3-416	01/30/90	EMCS Design Guidance & Field Survey
ETL	1110-3-417	01/30/90	EMCS Typical Dwgs

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
ETL	1110-3-418	01/30/90	Procedures for Automated Ctrl & Monit Sys
ETL	1110-3-419	02/15/90	Intrusion Detection Systems (IDS)
ETL	1110-3-420	02/28/90	Earth-Covered Magazine Standard Designs
ETL	1110-3-423	01/23/90	National Electrical Code, NFPA No. 70-1990
ETL	1110-3-424	02/23/90	Aviation Lighting for Hot Refueling Facilities
ETL	1110-3-426	03/29/90	Halon Fire Extinguishing Agent & Prot of Elect Eqt
ETL	1110-3-427	03/13/90	Radon Reduction in New Construction
ETL	1110-3-428	03/30/90	EMCS Bldg Preparation
ETL	1110-3-430	09/23/91	Des of Airfield Aircraft Mooring & Grounding Pnts
ETL	1110-3-431	02/27/92	Hospital Helipad Day Marking
ETL	1110-3-432	11/01/91	Exit Signs
ETL	1110-3-433	02/15/92	Fed Info Processing Resources in Mil Con Projects
ETL	1110-3-434	11/30/91	Eval of Exist Struct Subjected to Blast Loading
ETL	1110-3-435	05/01/92	Drainage Layers for Pavements
ETL	1110-3-437	05/18/92	Design of Compass Calibration Pads (CCP)
ETL	1110-3-439	07/02/92	Masonry Veneer/Steel Stud Walls
ETL	1110-3-440	08/20/92	Cathodic Protection
ETL	1110-3-441	08/20/92	Elect Ballasts for Fluorescent Lighting Fixtures
ETL	1110-3-442	08/24/92	Ultraviolet Disinfectn @ Army Wastewtr Treat Facs
ETL	1110-3-444	08/20/92	Air Force Composite Wing Pavement Design
ETL	1110-3-446	08/20/92	Revision of Thrust Block Criteria in TM 5-813-5
ETL	1110-3-448	02/05/93	National Electrical Safety Code, ANSI-C2
ETL	1110-3-449	09/25/92	Airfield Rigid Pavement Evaluation
ETL	1110-3-450	02/15/93	National Electrical Code, NFPA 70-1993
ETL	1110-3-452	12/30/92	Appl of MIL STD 188-125 for C4I Hemp Prot Facs
ETL	1110-3-453	12/20/92	Chain-Link Security Fencing
ETL	1110-9-1/FR	07/30/90	Sulfur Hexafluoride Gas Breakers & Switches
ETL	1110-9-10/FR	01/05/91	Cathodic Protection System Using Ceramic Anodes
ETL	1110-9-11/FR	12/31/90	Computer Prog BIRM for Passive Vehicle Barrier Des
ETL	1110-9-3(FR)	12/11/90	Braced & Moment Resist Frames Subj to Blast Loads
ETL	1110-9-5(FR)	10/05/90	Vault Construction Equivalents
ETL	1110-9-7(FR)	09/12/90	Resp Limits & Shear Design for Weapon Res Slabs
ETL	1110-9-8(FR)	10/22/90	Fire-Retardant Treated Plywood
ETL count = 61			
EC	1110-7-3	03/22/91	Handling Sulfur Hexafluoride Gas & Decomp. Prodt
EC	25-1-186	04/23/93	Rescission (of EP-25-1-5, Index of Guide Specs)

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
EC	25-1-187	04/30/93	Rescission (of EP-672-1-1, COE Des & Envr Awards)
EC	715-1-85	01/30/93	Selection of A-E Contractors
EC count = 4			
STD	000-90-01	11/01/91	Support Dtls for Seismic Prot of Mech & Elect Equip
STD	000-90-02	11/01/91	Support Dtls for Seismic Prot of Mech & Elect Equip
STD count = 2			
AEI		12/09/91	Design Criteria
AEI count = 1			
AR	210-5	06/30/77	Plng Proc for Const Pro in Mat Cap Region
AR	415-17	02/15/80	Cost Estimating for Military Programming
AR count = 2			
CEAGS	01000A	01/01/91	CEAGS General Notes
CEAGS	02110A	02/01/91	Clearing and Grubbing
CEAGS	02210A	09/01/91	Grading and Riprap Placement
CEAGS	02221A	03/01/92	Earthwork for Buildings
CEAGS	02222A	04/01/91	Earthwork for Utilities Systems
CEAGS	02225A	02/01/91	Earthwork for Roadways & Railroads
CEAGS	02233A	01/01/92	Graded-Crushed-Aggregate Base Course
CEAGS	02511A	05/01/91	Concrete Sidewalks
CEAGS	02511B	05/01/91	Concrete Curbs & Gutters
CEAGS	02579A	07/01/91	Surface Patching of Rigid Pavements
CEAGS	02580A	01/01/92	Pavement Markings
CEAGS	02484A	10/01/92	Fuel-Resistant Sealing
CEAGS	02586A	11/01/90	Removal of Pavement Markings
CEAGS	02592A	10/01/92	Field Molded Sealants for Joints in Rigid Pavements
CEAGS	02660A	01/01/91	Water Service Lines
CEAGS	02730A	09/01/90	Sanitary Sewers
CEAGS	02811A	09/01/92	Underground Sprinkler Systems
CEAGS	02831A	10/01/92	Fence, Chain-Link
CEAGS	02831B	10/01/92	Farm Style Fence
CEAGS	02935A	04/01/91	Hydroseeding
CEAGS	02935B	04/01/91	Sod
CEAGS	02950A	02/01/92	Trees, Shrubs, Ground Covers, & Vines
CEAGS	03300A	08/01/90	Concrete for Building Construction
CEAGS	03414A	09/01/92	Precast Roof Decking
CEAGS	05500A	09/01/92	Handrails, Stairs, and Walkways
CEAGS	05500B	09/01/92	Door & Window Guards

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
CEAGS	06100A	09/01/90	Rough Carpentry
CEAGS	06200A	07/01/91	Finish Carpentry
CEAGS	07111A	08/01/91	Elastomeric Membrane Waterproofing
CEAGS	07112A	05/01/91	Bituminous Waterproofing
CEAGS	07140A	10/01/92	Metallic Oxide Waterproofing
CEAGS	07220A	05/01/90	Roof Insulation
CEAGS	07240A	03/01/91	Exterior Insulation and Finish System
CEAGS	07250A	04/01/92	Spray-Applied Fireproofing
CEAGS	07510A	02/01/93	Built-up Roofing
CEAGS	07530A	07/01/90	Elastomeric Roofing (EPDM)
CEAGS	07540A	01/01/92	Elastomeric Roofing, Fluid Applied
CEAGS	07550A	05/01/90	Protected Membrane Roofing
CEAGS	07555A	10/01/92	Polyvinyl Chloride (PVC) Roofing
CEAGS	07600A	05/01/90	Sheet Metalwork, General
CEAGS	07920A	05/01/91	Caulking & Sealants
CEAGS	08110A	09/01/91	Steel Doors & Frames
CEAGS	08120A	09/01/92	Aluminum Doors & Frames
CEAGS	08325A	09/01/92	Cold Storage Doors & Frames
CEAGS	08360A	03/01/92	Sectional Overhead Doors
CEAGS	08510A	05/01/90	Steel Windows
CEAGS	08520A	07/01/90	Aluminum Windows
CEAGS	08610A	08/01/90	Wood Windows
CEAGS	08700A	10/01/92	Builders' Hardware
CEAGS	08810A	05/01/90	Glass and Glazing
CEAGS	09215A	10/01/92	Veneer Plaster
CEAGS	09250A	09/01/91	Gypsum Wallboard
CEAGS	09310A	09/01/91	Ceramic Tile
CEAGS	09510A	07/01/91	Acoustical Ceilings
CEAGS	09560A	10/01/92	Wood Strip Flooring
CEAGS	09570A	05/01/90	Hardwood Parquet Flooring
CEAGS	09650A	05/01/90	Resilient Flooring
CEAGS	09655A	01/01/93	Resilient Athletic Flooring
CEAGS	09680A	07/01/90	Carpet
CEAGS	10800A	09/01/91	Toilet Accessories
CEAGS	10900A	04/01/93	Wardrobes
CEAGS	11211A	06/01/90	Pumps: Water, Centrifugal-Electrical Motor
CEAGS	11310A	02/01/91	Pumps: Sewage and Sludge
CEAGS	11330A	04/01/91	Sewage Bar Screen & Mechanical Shredder
CEAGS	11400A	01/01/92	Food Service Equipment

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
CEAGS	12390A	09/01/91	Kitchen Cabinets
CEAGS	12540A	01/01/93	Window Blinds & Shades
CEAGS	13120A	10/01/91	Metal Buildings
CEAGS	14240A	05/01/90	Elevators, Hydraulic
CEAGS	15250A	06/01/90	Thermal Insulation for Pipe
CEAGS	15250B	06/01/90	Thermal Insulation for Duct
CEAGS	15250C	06/01/90	Thermal Insulation for Mechanical Equipment
CEAGS	15300A	11/01/91	Sprinkler Systems, Fire Protection
CEAGS	15400A	12/01/90	Plumbing, Piping Drainage, Waste, and Vent
CEAGS	15400B	12/01/90	Plumbing, Fixtures
CEAGS	15400C	12/01/90	Plumbing, Water Heaters
CEAGS	15400D	12/01/90	Plumbing, Pumps
CEAGS	15400E	12/01/90	Plumbing, Compressed Air System
CEAGS	15400F	12/01/90	Plumbing, Pressure Piping
CEAGS	15556A	08/01/91	Forced Hot Water Space Heating Equipment
CEAGS	15556B	08/01/91	Pipe for Forced Hot Water Heating Systems
CEAGS	15562A	10/01/91	Central Steam & Hot Water Space Heating Equipment
CEAGS	15562B	10/01/91	Pipe for Central Steam Systems
CEAGS	15566A	01/01/91	Fuel Oil Systems
CEAGS	15566B	02/01/92	Duct Work
CEAGS	15653A	01/01/91	Air-Conditioner, Single Zone, Pkg Unit
CEAGS	15653B	01/01/91	Room Air Conditioners
CEAGS	15653C	11/01/90	Air Conditioner or Heat Pump, Pkg Terminal
CEAGS	15653D	11/01/90	Packaged Unit Heat Pump, Air-to-Air
CEAGS	15895A	03/01/91	Equipment for Air-Supply & Distribution System
CEAGS	15895B	07/01/92	Piping for Air-Conditioning System
CEAGS	16415A	10/01/92	Electrical Work Interior - Motors
CEAGS	16415B	01/01/93	Electrical Work, Interior - Lamps & Lighting
CEAGS	16415C	07/01/92	Electrical Work, Interior - Wiring
CEAGS	16415D	07/01/92	Electrical Work, Interior - Grounding
CEAGS	16415E	07/01/92	Electrical Work, Interior Transformers
CEAGS	16640A	06/01/90	Cathodic Protection System (Sacrificial Anode)
CEAGS	16740A	10/01/92	Telephone System, Pre-wiring
CEAGS count = 98			
CEGS	01000	03/01/91	CEGS General Notes
CEGS	01010	11/01/91	CEGS Organizational Guidance
CEGS	01020	03/01/91	CEGS Template
CEGS	01090	01/01/93	Sources for Reference Publications

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
CEGS	01300	03/01/91	Submittal Descriptions
CEGS	01305	12/01/89	Submittals Procedures
CEGS	01440	01/01/91	Contractor Quality Control
CEGS	02050	09/01/91	Demolition
CEGS	02071	06/01/92	Underground Storage Tank Removal
CEGS	02080	03/01/92	Asbestos Abatement
CEGS	02110	07/01/89	Clearing and Grubbing
CEGS	02158	09/01/91	Slabjacking Rigid Pavements
CEGS	02210	12/01/88	Grading
CEGS	02221	03/01/91	Excavation, Filling, & Backfilling for Buildings
CEGS	02222	07/01/89	Exctvn, Trnchg, & Backfilling for Utilities Systems
CEGS	02225	07/01/89	Earthwork for Roadways, Railroads, & Airfields
CEGS	02232	03/01/89	Select-Material Subbase Course
CEGS	02233	03/01/89	Graded-Crushed-Aggregate Base
CEGS	02234	03/01/89	Subbase Course
CEGS	02235	11/01/88	Limerock Base Course
CEGS	02236	01/01/89	Dry-Bound Macadam Base Course
CEGS	02237	02/01/89	Water-Bound Macadem Base Course
CEGS	02238	02/01/89	Bituminous-Stabilized Base Crse, Sbbase or Sbgrade
CEGS	02239	02/01/89	Portland Cement-Stabilized Base or Subbase Course
CEGS	02240	02/01/89	Lime-Stabilized Base Course, Subbase, or Subgrade
CEGS	02241	04/01/92	Aggregate Base Course
CEGS	02242	03/01/89	Bitum Base Crse for Aflds Helpts & Hvy-dty Pvmnts
CEGS	02243	12/01/92	Drainage Layer
CEGS	02285	09/01/91	Soil Treatment for Subterranean Termite Control
CEGS	02360	01/01/89	Steel H-Piles
CEGS	02361	07/01/89	Round Timber Piles
CEGS	02362	02/01/89	Prestressed Concrete Piling
CEGS	02363	02/01/89	Cast-In-Place Concrete Piles Steel Casing
CEGS	02365	07/01/89	Piling: Composite Wood & Cast-In-Place Concrete
CEGS	02366	07/01/89	Precast Concrete Piling
CEGS	02367	09/01/86	Pressure Injected Concrete Footings
CEGS	02371	07/01/89	Auger-Placed Grout Piles
CEGS	02383	04/01/89	Drilled Foundation Caissons (Piers)
CEGS	02450	12/01/89	Railroads
CEGS	02511	01/01/89	Concrete Sidewalks & Curbs & Gutters
CEGS	02513	10/01/83	Concrete Pvmnts for Rds & Airf
CEGS	02518	05/01/90	Concrete Block Pavements
CEGS	02520	08/01/91	Roller Compacted Concrete (RCC) Pavement

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
CEGS	02530	04/01/89	Playing Surfaces for Outdoor Sports Facilities
CEGS	02546	04/01/89	Aggregate Surface Course
CEGS	02548	04/01/93	Resin Modified Pavement Surfacing Material
CEGS	02551	04/01/89	Bitum Paving for Roads, Strs, & Open Storage Areas
CEGS	02552	02/01/89	Central Plant Cold Mix
CEGS	02553	02/01/89	Bituminous Macadem Wearing Crse (Penetration Meth)
CEGS	02554	03/01/89	Bitumin Road-Mix Surf Crs
CEGS	02555	04/01/89	Bituminous Surface Treatment
CEGS	02556	06/01/91	Asphaltic Bitum. Heavy-Duty Pvmnt. (Plant Hot Mix)
CEGS	02558	01/01/89	Bituminous Tack Coat
CEGS	02559	01/01/89	Bituminous Prime Coat
CEGS	02560	12/01/88	Bituminous Seal Coat, Spray Application
CEGS	02561	10/01/91	Asphalt Slurry Seal
CEGS	02562	07/01/92	Porous Friction Course for Airfields & Roads
CEGS	02563	12/01/88	Recycled Asphalt Concrete
CEGS	02564	03/01/89	Cold Mix Recycling
CEGS	02565	02/01/91	Recycled Asphalt Concrete
CEGS	02579	02/01/89	Patching of Rigid Pavements
CEGS	02580	02/01/91	Pavement Markings
CEGS	02584	02/01/91	Fuel-Resistent Sealing
CEGS	02587	06/01/92	Runway Rubber Removal
CEGS	02590	04/01/90	Grooving for Airfield Pavements
CEGS	02591	03/01/89	Jnt Seal Conc Pvmnt-Rds & Airf
CEGS	02592	04/01/91	Field Molded Sealants for Joints in Rigid Pavmnts
CEGS	02593	04/01/86	Preformed Elastomeric Seals for Concrete Pavement
CEGS	02594	02/01/91	Sealing of Cracks in Bituminous Pavements
CEGS	02596	04/01/89	Heater Planning Bitum Pvts
CEGS	02597	04/01/89	Heater Scarify of Bitum Pvts
CEGS	02598	04/01/89	Cold Milling of Bitum Pvts
CEGS	02599	04/01/89	Bituminous Rejuvenation
CEGS	02660	06/01/92	Water Lines
CEGS	02670	12/01/88	Water Wells
CEGS	02685	02/01/90	Gas Distribution System
CEGS	02695	03/01/89	Preapproved Underground Heat Distribution Systems
CEGS	02696	07/01/90	Heat Distribution Systems in Concrete Trenches
CEGS	02697	05/01/91	Aboveground Heat Distribution System
CEGS	02698	05/01/91	Prefab Underground Heating/Cooling Distrib System
CEGS	02699	07/01/91	Valve Manholes & Piping & Equip. in Valve Manholes
CEGS	02710	02/01/89	Subdrainage System

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
CEGS	02711	04/01/89	Foundation Drainage System
CEGS	02720	06/01/91	Storm-Drainage System
CEGS	02730	06/01/92	Sanitary Sewers
CEGS	02732	06/01/92	Force Mains and Inverted Siphons; Sewer
CEGS	02751	11/01/89	Pneumatic Sewage Ejectors
CEGS	02752	01/01/89	Siphons, Dosing
CEGS	02811	11/01/90	Underground Sprinkler Systems
CEGS	02831	07/01/92	Fence, Chain Link
CEGS	02935	06/01/90	Turf
CEGS	02950	06/01/90	Trees, Shrubs, Ground Covers, & Vines
CEGS	02955	07/01/90	Crownvetch
CEGS	03100	11/01/88	Structural Concrete Formwork
CEGS	03200	11/01/88	Concrete Reinforcement
CEGS	03250	12/01/88	Expansion Jnts, Contraction Jnts, & Water Stops
CEGS	03300	12/01/88	Concrete for Building Construction
CEGS	03330	03/01/89	Cast-In-Place Architectural Concrete
CEGS	03414	03/01/89	Precast Roof Decking
CEGS	03450	11/01/88	Precast Architectural Concrete
CEGS	03510	01/01/89	Roof Decking, Cast-In-Place Low Density Concrete
CEGS	03511	10/01/91	Gypsum Plank Decking (Contractor's Option)
CEGS	03550	03/01/89	Precast/Prestressed Concrete Floor & Roof Units
CEGS	04200	07/01/92	Masonry
CEGS	04255	07/01/92	Nonbearing Masonry Veneer/Steel Stud Walls
CEGS	05055	11/01/88	Welding Structural
CEGS	05061	01/01/89	Ultrasonic Inspection of Weldments
CEGS	05062	12/01/88	Ultrasonic Inspection of Plates
CEGS	05120	04/01/89	Structural Steel
CEGS	05210	11/01/88	Steel Joists
CEGS	05300	10/01/89	Steel Decking
CEGS	05500	01/01/89	Miscellaneous Metal
CEGS	06100	02/01/89	Rough Carpentry
CEGS	06200	02/01/89	Finish Carpentry
CEGS	07111	05/01/90	Elastomeric Membrane Waterproofing
CEGS	07112	12/01/88	Bituminous Waterproofing
CEGS	07140	03/01/89	Metallic Oxide Waterproofing
CEGS	07160	12/01/88	Bituminous Dampproofing
CEGS	07220	11/01/88	Roof Insulation
CEGS	07240	12/01/88	Exterior Insulation and Finish System
CEGS	07250	04/01/92	Spray-Applied Fireproofing

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
CEGS	07270	03/01/93	Firestopping
CEGS	07311	02/01/89	Roofing, Strip Shingles
CEGS	07413	10/01/91	Metal Roofing & Siding
CEGS	07416	10/01/91	Standing Seam Metal Roof System
CEGS	07510	02/01/93	Built-up Roofing
CEGS	07530	12/01/88	Elastomeric Roofing (EPDM)
CEGS	07535	11/01/91	Modified Bitumen Roofing
CEGS	07540	01/01/92	Elastomeric Roofing, Fluid Applied
CEGS	07550	12/01/88	Protected Membrane Roofing
CEGS	07555	01/01/89	Polyvinyl Chloride (PVC) Roofing
CEGS	07600	01/01/89	Sheet Metalwork, General
CEGS	07720	12/01/88	Roof Ventilators, Gravity-Type
CEGS	07920	03/01/89	Caulking and Sealants
CEGS	08110	02/01/89	Steel Doors and Frames
CEGS	08120	05/01/89	Aluminum Doors and Frames
CEGS	08201	03/01/89	Wood Doors
CEGS	08312	03/01/89	Sliding Metal Doors
CEGS	08313	05/01/89	Aluminum Sliding Glass Doors
CEGS	08318	03/01/89	Security-Vault Door
CEGS	08325	03/01/89	Cold Storage Doors & Frames
CEGS	08330	03/01/89	Overhead Coiling Doors
CEGS	08331	04/01/89	Metal Coiling Counter Doors
CEGS	08353	03/01/89	Accordion Drs & Partitions, & Operable Partitions
CEGS	08360	02/01/89	Sectional Overhead Doors
CEGS	08365	04/01/89	Vertical Lift Doors
CEGS	08510	12/01/88	Steel Windows
CEGS	08520	12/01/88	Aluminum Windows
CEGS	08521	04/01/89	Aluminum Environmental Control Windows
CEGS	08610	12/01/89	Wood Windows
CEGS	08615	03/01/89	Clad Wood Windows
CEGS	08620	01/01/89	Polyvinyl Chloride (PVC) Windows
CEGS	08700	10/01/91	Builders' Hardware
CEGS	08701	04/01/89	Hardware: Prison-Locking Devices
CEGS	08810	12/01/88	Glass and Glazing
CEGS	08840	04/01/89	Plastic Glazing
CEGS	08850	07/01/92	Fragment Retention File for Glass
CEGS	09200	11/01/88	Lathing and Plastering
CEGS	09215	03/01/89	Veneer Plaster
CEGS	09225	01/01/89	Stucco

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
CEGS	09250	12/01/88	Gypsum Wallboard
CEGS	09310	04/01/89	Ceramic Tile
CEGS	09411	02/01/89	Bonded Terrazzo
CEGS	09421	03/01/89	Terrazzo Tile
CEGS	09431	04/01/89	Conductive Resinous Terrazzo Flooring
CEGS	09433	01/01/89	Conductive Sparkproof Industrial Resinous Flooring
CEGS	09445	03/01/89	Resinous Terrazzo Flooring
CEGS	09510	01/01/89	Acoustical Treatment
CEGS	09520	10/01/91	Acoustical Wall Treatment
CEGS	09560	04/01/89	Wood Floor Stripping
CEGS	09570	01/01/89	Wood Parquet Flooring
CEGS	09650	11/01/88	Resilient Flooring
CEGS	09655	08/01/89	Resilient Athletic Flooring
CEGS	09675	12/01/88	Conductive Vinyl Flooring
CEGS	09680	07/01/92	Carpet
CEGS	09706	04/01/89	Industrial Resinous Flooring
CEGS	09873	07/01/92	Interior Tank Coating
CEGS	09900	07/01/92	Painting, General
CEGS	09950	01/01/93	Wall Coverings
CEGS	10160	04/01/89	Toilet Partitions
CEGS	10260	04/01/92	Wall and Corner Protection
CEGS	10270	02/01/91	Raised Floor System
CEGS	10430	04/01/89	Exterior Signage
CEGS	10440	04/01/89	Interior Signage
CEGS	10615	12/01/88	Demountable Partitions
CEGS	10800	01/01/90	Toilet Accessories
CEGS	10900	04/01/89	Wardrobes
CEGS	11022	12/01/88	Doors-Fire Insul-Record Vault
CEGS	11140	10/01/92	Fueling System, Service Station Type
CEGS	11162	11/01/88	Loading Dock Leveler
CEGS	11181	02/01/90	Incinerators, General Purpose
CEGS	11182	02/01/89	Incinerators, Medical Wastes
CEGS	11211	12/01/88	Pumps: Water, Centrifugal
CEGS	11212	03/01/89	Pumps: Water, Vertical Turbine
CEGS	11241	12/01/88	Chlorine-Feeding Machines
CEGS	11242	07/01/92	Chemical Feed Systems
CEGS	11250	02/01/89	Water Softeners, Cation-Exchange (Sodium Cycle)
CEGS	11301	11/01/91	Air Stripping Systems
CEGS	11310	11/01/90	Pumps; Sewage & Sludge

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
CEGS	11330	04/01/89	Sewage Bar Screen and Mechanical Shredder
CEGS	11334	01/01/89	Comminuter
CEGS	11350	11/01/89	Sludge-Collecting Equipment
CEGS	11365	06/01/90	Trickling Filter
CEGS	11375	10/01/89	Air Supply & Diffusion Equip. for Sewage Treatment
CEGS	11376	03/01/93	Ultraviolet Disinfection Equipment
CEGS	11380	12/01/89	Sludge-Digestger, Gas, Heating, & Mixing System
CEGS	11390	12/01/89	Prefab Biochemical Wastewater Treatment Plant
CEGS	11391	01/01/89	Continuous Loop Reactor Wastewater Treatment Sys
CEGS	11400	03/01/89	Food Service Equipment
CEGS	11500	02/01/89	Air Pollution Control
CEGS	11710	12/01/88	Warming Cabinets, Sterilizers, & Assoc Equipment
CEGS	12335	05/01/89	Casework for Medical & Dental Facilities
CEGS	12390	11/01/88	Kitchen Cabinets
CEGS	12520	04/01/89	Audiovisual Blinds & Curtains & Lightproof Shades
CEGS	12540	01/01/93	Window Blinds, Shades, & Drapery Hardware
CEGS	12710	04/01/89	Theater Chairs
CEGS	13080	01/01/89	Seismic Protection for Mech, Elec Equipment
CEGS	13090	11/01/88	X-Ray Shielding
CEGS	13120	10/01/91	Standard Metal Building Systems
CEGS	13121	10/01/91	Special Purpose Metal Building Systems
CEGS	13206	12/01/88	Steel Standpipes & Ground Storage Reservoirs
CEGS	13210	01/01/89	Elevated Steel Water Tank
CEGS	13211	07/01/89	Pressure Vessels for Storage of Compressed Gases
CEGS	13234	10/01/89	Cover Floating for Sludge-Digestion Tanks
CEGS	13290	03/01/89	Composting Toilet
CEGS	13600	09/01/90	Solar Water Heating Equipment
CEGS	13810	08/01/92	Energy Monitoring & Control Sys (EMCS) Large/Medium
CEGS	13812	06/01/89	EMCS Small Configuration
CEGS	13813	08/01/89	EMCS Micro System Configuration
CEGS	13814	04/01/89	Building Preparation for EMCS
CEGS	13945	08/01/90	Multi-Bldg Expansion of EMCS
CEGS	13955	04/01/92	Vehicle Barriers
CEGS	13958	10/01/91	Forced Entry Resistant Components
CEGS	13970	07/01/91	Bullet-Resistant Components
CEGS	13976	06/01/91	Self-Acting Blast Valves
CEGS	14210	03/01/90	Elevators, Electric
CEGS	14240	11/01/88	Elevators, Hydraulic
CEGS	14580	03/01/89	Pneumatic Tube System

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
CEGS	14630	05/01/89	Cranes Electric Overhd. Trving., 30 Ton Max
CEGS	15052	12/01/88	Welding Pressure Piping
CEGS	15250	07/01/89	Thermal Insul for Mech Sys
CEGS	15300	01/01/89	Sprinkler System, Fire Protection
CEGS	15320	05/01/92	Fire Pumps
CEGS	15355	07/01/91	Aqueous Film-Forming Foam (AFFF) System
CEGS	15400	10/01/89	Plumbing, General Purpose
CEGS	15405	09/01/89	Plumbing, Hospital
CEGS	15488	01/01/89	Gas Piping Systems
CEGS	15495	03/01/89	Hydraulic Fluid Power Systems
CEGS	15555	06/01/89	Central HTW Generating Plant & Auxiliaries
CEGS	15556	01/01/90	Forced Hot Water Heating Systems
CEGS	15559	03/01/89	Central Steam-Generating System, Coal-Fired
CEGS	15560	07/01/89	Central Steam-Generating System, Oil-Fired
CEGS	15561	06/01/89	Central Steam-Generating System, Gas & Oil
CEGS	15562	07/01/89	Heating & Utilities Systems, Central Steam
CEGS	15565	03/01/89	Heating System; Gas-Fired Heaters
CEGS	15566	02/01/89	Warm Air Heating Systems
CEGS	15569	04/01/91	Water & Steam Heating; Oil, Gas, or Both
CEGS	15650	07/01/92	Central Refrigerated A-C System
CEGS	15652	07/01/89	Cold Storage Refrigeration Systems
CEGS	15653	07/01/89	Air-Conditioning System (Unitary Type)
CEGS	15654	09/01/89	Commissary Refrigeration System
CEGS	15690	12/01/88	Evaporative Cooling Systems
CEGS	15775	07/01/92	Field-Erected Heat Pump System
CEGS	15845	02/01/89	Energy Recovery Systems
CEGS	15846	07/01/90	Heat Recovery Boilers
CEGS	15895	08/01/91	Air Supply and Distribution Sys (for AC Sys)
CEGS	15935	06/01/89	Ventilation & Exhaust Systems
CEGS	15940	06/01/89	O.H. Vehicle Tailpipe & Welding Fume Exhaust Sys.
CEGS	15950	07/01/90	HVAC Control Systems
CEGS	15990	11/01/89	Testing, Adjusting, & Balancing of HVAC Systems
CEGS	15995	01/01/93	Commissioning of HVAC Systems
CEGS	16113	01/01/92	Underfloor Duct System
CEGS	16115	11/01/92	Underfloor Raceway System (Cellular Steel Floor)
CEGS	16224	02/01/89	Stationary Gas Turbine Generators
CEGS	16225	03/01/89	Stationary Steam Turbine Generators
CEGS	16262	04/01/89	Automatic Transfer [& By-pass/Isolation] Switches
CEGS	16263	12/01/90	Diesel-Gen set Stationary 100-2500 KW

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
CEGS	16264	12/01/90	Diesel-Gen Sets Stationary 100-99 KW
CEGS	16311	11/01/92	Main Electric Supply Station & Substation
CEGS	16370	12/01/89	Electrical distribution System, Aerial
CEGS	16375	11/01/92	Electrical Distribution System, Underground
CEGS	16415	12/01/91	Electrical Work Interior
CEGS	16475	01/01/90	Coordinated Power System Protection
CEGS	16505	11/01/91	Exterior Security and CCTV Lighting
CEGS	16525	09/01/92	Helipad Lighting & Visual Navigation Aids
CEGS	16526	09/01/92	Airfield & Heliport Lighting & Visual Navigatn Aids
CEGS	16610	05/01/89	Uninterruptible Power System (UPS)
CEGS	16640	12/01/88	Cathodic Protection System (Sacrificial Anode)
CEGS	16641	02/01/89	Cathodic Protection (Steel Water Tanks)
CEGS	16642	03/01/89	Cathodic Protection System (Impressed Current)
CEGS	16665	07/01/89	Static Electricity Protection System
CEGS	16670	12/01/88	Lightning Protection System
CEGS	16721	11/01/91	Fire Detection & Alarm System
CEGS	16722	06/01/91	Fire Alarm Reporting System, Radio Type
CEGS	16725	04/01/91	Intrusion Detection Systems
CEGS	16740	08/01/92	Telephone System, Small
CEGS	16741	08/01/92	Telephone System, Inside Plant
CEGS	16742	07/01/89	Telephone System, Outside Plant
CEGS	16750	07/01/89	Nurse Call Systems
CEGS	16751	04/01/91	Closed Circuit Television Systems
CEGS	16752	04/01/91	Electronic Entry Control Systems
CEGS	16753	12/01/89	Wireline Data Transmission Media for Security Sys
CEGS	16754	12/01/89	Fiber Optics Data Transmission Media for Sec Sys
CEGS	16755	02/01/92	Radio Paging System
CEGS	16760	06/01/89	Intercommunication System
CEGS	16766	04/01/89	Central Dictation System
CEGS	16770	07/01/89	Radio & Public Address System
CEGS	16781	04/01/89	Master Antenna Television System
CEGS	16790	03/01/89	Stand-Alone One-way Radio Control Sys
CEGS	16792	07/01/89	Wire Line Data Transmission System
CEGS	16794	04/01/91	Coaxial Cable Data Transmission Media
CEGS	16795	09/01/90	Fiber Optics Data Transmission System for EMCS
CEGS	16797	07/01/89	One-Way Radio Control for EMCS
CEGS	16798	03/01/89	Two-Way Radio Data Transmission System
CEGS	16855	12/01/88	Electric Space Heating Equipment
CEGS count = 315			

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
DEF	131-20-01	05/15/87	Information Systems Facility
DEF	141-14-01	02/01/87	Criminal Investigation Field Office
DEF count = 2			
DG	1110-3-106	09/01/76	U.S. Army Service Schools
DG	1110-3-107	09/01/84	Design Guide for U.S. Army Reserve Facilities
DG	1110-3-110	02/01/83	Design Guide for Libraries
DG	1110-3-112	05/01/79	Army Continuing Education System Centers
DG	1110-3-119	03/01/83	Design Guide for Band Training Facilities
DG	1110-3-120	01/01/81	Design Guide for Music & Drama Centers
DG	1110-3-122	12/01/82	Design Guide for Interiors
DG	1110-3-124	08/01/76	Arts & Crafts Centers
DG	1110-3-126	08/01/76	Auto Crafts Centers
DG	1110-3-128	10/01/76	Design Guide for Physical Fitness Facilities
DG	1110-3-132	01/01/76	Recreation Centers
DG	1110-3-134	04/01/75	Officers & Non-Commissioned Officers Clubs
DG	1110-3-136	10/01/85	Interiors of Dining Facilities – Rescinded 30 Mar 90
DG	1110-3-138	12/01/79	Dependent Youth Activity Centers
DG	1110-3-142	12/01/84	Design Guide for Community Activity Centers
DG	1110-3-144	11/01/77	CID Field Offices
DG	1110-3-146	12/01/79	Military Police Facilities
DG	1110-3-150	06/01/78	Interiors of BOQs – Recommended 30 Mar 90
DG	1110-3-170	06/01/86	DG for Ammunition & Explosives Storage Facilities
DG	1110-3-204	04/30/91	Airfields, Pavements, Railrds, Strm Drainage, Earthwork
DG count = 20			
HDBK	MRC-WES 3000	08/01/49	Handbook for Concrete and Cement
HDBK count = 1			
MOGS	02190	06/01/83	Earthwork
MOGS	02221	06/01/83	Exc Trench & Backf for Utili
MOGS	02230	06/01/83	Exc-Prep of Subgrd for Rds., etc.
MOGS	02233	06/01/83	Grded-Crshd-Aggregate Base Cou
MOGS	02234	06/01/83	Subbase Course
MOGS	02235	06/01/83	Limerock Base Course
MOGS	02238	06/01/83	Bitumen-Stabil Base Course
MOGS	02239	06/01/83	Portl Cmnt Stabl Base or Subba
MOGS	02240	06/01/83	Lime-Stab Bse-Subbase or Subgr
MOGS	02360	06/01/83	Steel H-Piles
MOGS	02361	06/01/83	Round Timber Piles

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
MOGS	02365	06/01/83	Piling: Composite Wood & Concre
MOGS	02366	06/01/83	Piling Concrete Precast
MOGS	02370	06/01/83	Water Wells
MOGS	02410	06/01/83	Subdrainage System
MOGS	02430	06/01/83	Storm-Drainage System
MOGS	02444	06/01/83	Fence-Chain Link
MOGS	02450	06/01/83	Concrete Sidewalks Curbs Gutters
MOGS	02515	06/01/83	Concr Pavement for Rds & Airf
MOGS	02530	06/01/83	Play Surf for Outdoor Sports
MOGS	02550	06/01/83	Bituminous Binder & Wear Cour
MOGS	02552	06/01/83	Bituminous Pavement Treatments
MOGS	02556	06/01/83	Bit Intermd Sur Cour Ctrl Pft
MOGS	02575	06/01/83	Resurf of Rgd Pvmnts w Overl
MOGS	02711	06/01/83	Gas Distribution System
MOGS	02713	06/01/83	Water Lines
MOGS	02724	06/01/83	Force Mains Sewer
MOGS	02750	06/01/83	Heat Distribution Systems Outside of Buildings
MOGS	02850	06/01/83	Railroads
MOGS	03302	06/01/83	Concrete
MOGS	05121	06/01/83	Structural Steel
MOGS	05501	06/01/83	Miscellaneous Metal
MOGS	11210	06/01/83	Pump Water Centrifugal
MOGS	11210.1	06/01/83	Pumps Water Vertical Turbine
MOGS	11231	06/01/83	Chlorine-Feeding Machines
MOGS	11231.1	06/01/83	Hypochlorite-Feeding Machines
MOGS	11233	06/01/83	Water Softners Cation-Exchan
MOGS	11302	06/01/83	Ejectors-Sewage Pneumatl
MOGS	11310	06/01/83	Pumps-Sewage & Sludge
MOGS	11360	06/01/83	Sludge-Collecting Equipment
MOGS	11375	06/01/83	Air-Supply & Air-Diffusion Equ
MOGS	11390	06/01/83	Prefab Bio Wastewtr Treat Pl
MOGS	11393	06/01/83	Trickling Filter
MOGS	13412	06/01/83	Elevated Steel Water Tanks
MOGS	13413	06/01/83	Steel Standpipes & Grnd Store
MOGS	16311	06/01/83	Main Electric Supply Station
MOGS	16401	06/01/83	Electrical Distribution System Aerial
MOGS	16402	06/01/83	Electrical Distribution System Underground
MOGS	16640	06/01/83	Cathodic Prot Sys-Sacrif Anode

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
MOGS	16641	06/01/83	Cathodic Protection System Steel Water Tanks
MOGS count = 50			
OEGS	13951	04/01/88	OCONUS Energy Monitoring Control System (EMCS)
OEGS	13952	11/01/90	OCONUS Utility and EMCS for USAREUR Applications
OEGS	16788	04/01/88	DTM-Wire Line OCONUS
OEGS	16799	06/01/88	DTM-RF Carrier OCONUS
OEGS count = 4			
STD	AW 78-24-27	02/02/93	Std Fueling Sys; Abovegrd Vert Stl Tanks
STD count = 1			
TM	5-785-1	07/01/78	Engineering Weather Data
TM	5-800-2	06/12/85	Cost Estimates: Military Construction
TM	5-801-10	04/01/92	Decommissioning of Nuclear Facilities
TM	5-802-1	12/31/86	Economic Studies for Military Construction
TM	5-803-1	06/13/86	Installation Master Planning
TM	5-803-10	04/05/88	Planning & Design of Outdoor Sports Facilities
TM	5-803-11	04/25/88	Children's Play Areas & Equipment
TM	5-803-12	09/03/86	Planning of Outdoor Recreation Areas
TM	5-803-13	08/06/88	Landscape Design & Planting Criteria
TM	5-803-2	06/15/78	Environmtl Protection Plng in the Noise Environment
TM	5-803-4	07/15/83	Planning of Army Aviation Facilities
TM	8-803-5	03/01/81	Installation Design
TM	5-803-7	05/12/81	Airfield & Heliport Planning Criteria
TM	5-803-8	08/26/88	Land Use Planning
TM	5-803-9	04/01/92	Transportation Planning-Installation Master Plan
TM	5-804-2	02/08/92	Water Active Solar Energy Preheat Systems
TM	5-805-12	01/01/90	X-Ray Shielding
TM	5-805-13	12/01/90	Raised Floor Systems
TM	5-805-14	03/31/66	Roofing Design
TM	5-805-3	07/15/81	Roof Decking Systems
TM	5-805-4	12/30/83	Noise & Vibration Control for Mechanical Equipment
TM	5-805-6	01/31/85	Caulking and Sealing
TM	5-805-7	05/20/85	Welding: Design Procedures & Inspection
TM	5-805-8	01/01/92	Builders' Hardware
TM	5-805-9	12/30/83	Power Plant Acoustics
TM	5-807-10	12/01/83	Signage
TM	5-809-1	05/01/92	Structural Design Criteria Loads
TM	5-809-10	10/01/92	Seismic Design for Buildings

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
TM	5-809-10-1	02/27/86	Seismic Design Guidelines for Essential Bldgs
TM	5-809-10-2	09/01/88	Seismic Design Guidelines Upgrading Buildings
TM	5-809-11	06/21/83	Degn Crit Facfts Subject to Typhoons & Hurricanes
TM	5-809-12	08/25/87	Concrete Flr Slabs on Grade Sujctd to Heavy Loads
TM	5-809-2	05/01/92	Structural Design Criteria for Buildings
TM	5-809-3	10/01/92	Masonry Structural Design for Buildings
TM	5-809-4	02/15/83	Stl & Alum Struct Des for Bldgs-Rescission Pending
TM	5-809-5	06/01/83	Wood Structural Des for Bldgs-Rescission Pending
TM	5-809-6	12/01/91	Structural Des Crit: Structures Other than Bldgs
TM	5-809-8	03/05/84	Metal Roofing and Siding-Rescission Pending
TM	5-810-1	06/01/91	Mech. Design: Heatng, Ventilatng, & Air Conditioning
TM	5-810-15	05/07/87	Design of Coal Fired Boiler Plants
TM	5-810-2	12/01/91	High Temperature Water Heating System
TM	5-810-4	01/12/90	Compressed Air
TM	5-810-5	01/12/90	Plumbing
TM	5-810-6	04/01/90	Nonindustrial Gas Piping Systems
TM	5-810-7	07/15/83	High Pressure Gas & Cryogenic Systems
TM	8-811-1	09/12/84	Electric Power Supply & Distribution
TM	5-811-13	08/11/88	Standards & High Efficiency Motors & Controllers
TM	5-811-14	02/01/91	Coordinated Power Systems Protection
TM	5-811-2	09/01/83	Electrical Design-Interior Electrical System
TM	5-811-3	03/29/85	Electrical Design: Lightng & Static Elec Protection
TM	5-811-5	12/01/91	Army Aviation Lighting
TM	5-811-6	01/20/84	Electric Power Plant Design
TM	5-811-7	05/22/85	Electrical Design: Cathodic Protection
TM	5-811-9	04/18/89	Voice Data Telephone Systems
TM	5-812-2	01/15/86	Firestopping
TM	5-813-1	06/04/87	Water Supply: General Considerations
TM	5-813-3	09/16/85	Water Supply: Water Treatment
TM	5-813-4	09/20/85	Water Supply: Water Storage
TM	5-813-5	11/03/86	Water Supply: Water-Distribution Systems
TM	5-813-7	09/02/86	Water Supply for Special Projects
TM	5-813-8	09/15/86	Water Desalination
TM	5-813-9	07/30/87	Water Supply: Pumping Stations
TM	5-813-9	10/01/92	Water Supply: Pumping Stations
TM	5-814-1	03/04/85	Gravity Sewers & Appurtenances
TM	5-814-2	03/15/85	Pumping Stations & Force Mains
TM	5-813-3	05/31/88	Domestic Wastewater Treatment
TM	5-814-5	08/15/83	Sanitary Landfill

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
TM	5-814-7	11/29/84	Hazardous Waste Land Disposal/Land Treatment Facit
TM	5-814-8	04/23/87	Evaluation Criteria Guide for Water Pollution, etc.
TM	5-814-9	02/08/92	Central Vehicle Wash Facilities
TM	5-815-1	05/09/88	Air Pollution Control Systems for Boilers & Incin
TM	5-815-2	01/01/91	Energy Monitoring & Control Systems (EMCS)
TM	5-815-3	07/01/91	HVAC Control Systems
TM	5-818-1	10/21/83	Soils & Geology Procedures for Foundation Dsgn, etc.
TM	5-818-4	06/01/83	Backfill for Subsurface Structures
TM	5-818-5	11/15/83	Dewatering and Groundwater Control
TM	5-818-6	02/27/70	Grouting Methods & Equipment
TM	5-818-7	09/01/83	Foundations in Expansive Soils
TM	5-820-1	08/20/87	Surface Drainage Facilities Airfield & Heliports
TM	5-820-2	03/30/79	Subsurface Drainage Facilities for Airfields
TM	5-820-3	06/01/91	Drainage/Erosion-Contrl Struct, Airflds & Helipts
TM	5-820-4	10/14/83	Drainage for Areas Other than Airfields
TM	5-822-10	08/26/88	Standard Practice for Pavement Recycling
TM	5-822-12	09/01/90	Design of Aggregate Surfaced Roads & Airfields
TM	5-822-2	07/14/87	Geo Des Roads Sts Wks & Open Storage Areas
TM	5-822-5	06/12/92	Pavement Des for Rds Sts Walks & Open Storage Areas
TM	5-822-6	04/01/77	Rigid Pavements Rds Sts Walks & Open Storage Areas
TM	5-822-7	08/16/87	Standard Practice for Concrete Pavements
TM	5-822-8	07/30/87	Bituminous Pavement Standard Practice
TM	5-822-9	01/20/89	Repair Rigid Pvmnts w/Epoxies, Mortars, & Concs
TM	5-823-4	07/07/87	Marking Army Airfields & Heliports
TM	5-824-1	06/12/87	Gen Provisions for Airfield Des - Rescind 5/26/92
TM	5-824-4	06/01/66	Airfields Other than Army: Arfld O&M Facilities
TM	5-825-2	08/01/78	Flexible Pavement Design for Airfields
TM	5-825-2-1	11/01/89	Army Airfields Pavements, Flex (Appendix)
TM	5-825-3	08/11/88	Rigid Pavements for Airfields
TM	5-825-3-1	09/12/88	Rigid Pavement Des for Airfields, Elastic Layered
TM	5-826-1	08/12/88	Army Airfld Pavement: Evaluation Concepts
TM	5-826-2	12/01/90	Airfield Flexible Pavement Evaluation
TM	5-826-3	12/01/90	Airfield Rigid Pavement Evaluation
TM	5-826-4	02/22/80	Army Airfield-Heliport Pavement Reports
TM	5-826-6	07/05/89	Procedures for Affld Pvmnts Condition Surveys
TM	5-830-3	09/30/87	Dust Control for Roads Airflds & Adj Areas
TM	5-840-2	12/01/83	Storage Facilities: Storage Depots
TM	5-841-2	12/01/80	Space Planning Guide TDA Consldtd Maint Facilt
TM	5-842-2	01/20/86	Laundries & Dry Cleaning Plants

U.S. ARMY CORPS OF ENGINEERS MILITARY PROGRAM PUBLICATIONS (continued)

Desig.	Pub. Number	Pub. Date	Title
TM	5-844-1	01/20/92	Courier Station Design
TM	5-848-1	12/14/90	Gas Distribution
TM	5-848-2	01/01/84	Handling of Aircraft & Automotive Fuels
TM	5-848-3	03/01/84	Ground Storage of Coal
TM	5-849-1	05/01/82	Pile Driving Equipment
TM	5-850-1	02/15/83	Engineering & Design of Military Ports
TM	5-850-2	07/01/80	RR Design & Construction at Army & AF Instttns
TM	5-852-1	09/04/87	Arctic & Subarctic Construction: General Provisions
TM	5-852-2	05/01/90	Arctic & Subarctic Const-Site Select & Development
TM	5-852-3	10/29/54	A&S Construction: Runway & Road Design
TM	5-852-4	10/15/83	A&S Construction: Foundations for Structures
TM	5-852-5	08/31/87	Arctic & Subarctic Construction: Utilities
TM	5-852-6	01/25/88	A&S Construction: Calc Methods Depths of Freeze, etc.
TM	5-852-7	04/15/81	Surface Drainage Dsgn Airfields/Helprts in A&S Regns
TM	5-852-8	07/15/63	Arc & Subarc Constr: Terrain Eval - Rescind 5/20/92
TM	5-852-9	03/25/88	Arctic & Subarctic Construction: Buildings
TM	5-853-1	08/15/83	Designing for Security
TM	5-855-1	11/03/86	Fundamentals of Protective Design for Weapons
TM	5-855-4	11/28/86	HVAC of Hardened Installations
TM	5-855-5	02/15/74	Nuclear Electromagnetic Pulse (NEMP) Protection
TM	5-858-1	10/31/83	Resist Nuc Weap Eff-Fac Sys Engineering
TM	5-858-2	07/06/84	Resist Nuc Weap Eff-Weap Effect
TM	5-858-3	07/06/84	Resist Nuc Weap Eff-Structures
TM	5-858-4	06/11/84	Resist Nuc Weap Eff-Shock Sys
TM	5-858-5	12/15/83	Resist Nuc Weap Eff-Air En etc.
TM	5-858-6	08/31/84	Resist Nuc Weap Eff-Hard Verif
TM	5-858-7	10/15/83	Resist Nuc Weap Eff-Facilities Support System
TM	5-858-8	08/14/85	Resist Nuc Weap Eff-Illus Exam
TM	5-886-1	03/30/67	Proced. Foundation Design of Bldgs., etc. Emerg Cons
TM count = 135			
Total count = 807			

APPENDIX B

**FEDERAL AGENCIES, PROFESSIONAL SOCIETIES,
AND ASSOCIATIONS PARTICIPATING IN THE
CONSTRUCTION CRITERIA BASE**

FEDERAL AGENCIES, PROFESSIONAL SOCIETIES, AND ASSOCIATIONS PARTICIPATING IN THE CONSTRUCTION CRITERIA BASE

FEDERAL AGENCIES

The following Federal agencies participate in the CCB by distributing their information through the system and encouraging the use of the CCB in their agencies and the building community:

- Department of Defense
- Naval Facilities Engineering Command
- Army Corps of Engineers
- U.S. Air Force
- General Services Administration
- National Aeronautics and Space Administration
- Department of Veterans Affairs
- Department of Energy
- Federal Aviation Administration
- Federal Highway Administration
- Bureau of Reclamation
- National Institutes of Health
- Occupational Safety and Health Administration

PROFESSIONAL SOCIETIES AND MODEL CODES

The following bodies participate in the CCB by distributing information through the system:

- American Institute of Architects
- Building Officials and Code Administrators International
- International Conference of Building Code Officials
- Southern Building Code Congress International
- International Association of Plumbing and Mechanical Officials
- Western Fire Chiefs Association

ASSOCIATIONS

The following associations have agreed to participate in the the CCB by allowing their referenced standards and documents to be incorporated in the CCB:

- | | |
|--|---|
| • Air Conditioning Contractors of America | • American Institute of Timber Construction |
| • Air Diffusion Council | • American Iron and Steel Institute |
| • Air Movement and Control Association | • American Plywood Association |
| • Aluminum Association | • American Society for Testing and Material |
| • American Association of Nurserymen Inc. | • American Sod Producers Association |
| • American Association of Textile Chemists and Colorists | • American Welding Society |
| • American Concrete Institute | • American Wood-Preservers' Association |
| • American Concrete Pipe Association | • American Wood-Preservers' Bureau |
| • American Gas Association | • Architectural Woodwork Institute |
| • American Institute for Hollow Metal Sections | • The Asphalt Institute |
| • American Institute of Steel Construction | • Asphalt Roofing Manufacturers Association |
| | • Associated Air Balance Council |

ASSOCIATIONS (CONTINUED)

- Association of Home Appliance Manufacturers
- Brick Institute of America
- Building Systems Institute
- California Redwood Association
- Cast Iron Soil Pipe Institute
- Cedar Shake and Shingle Bureau
- Ceilings and Interior Systems Construction Association
- Chain Link Manufacturers Institute
- The Chlorine Institute Inc.
- Compressed Gas Association
- Concrete Plant Manufacturers Bureau
- Concrete Reinforcing Steel Institute
- Conveyor Equipment Manufacturers Association
- Copper Development Association
- Decorative Laminate Products Association
- Diesel Engine Manufacturers Association
- Ductile Iron Pipe Research Association
- Exterior Insulation Manufacturers Association
- Factory Mutual System
- Flat Glass Marketing Association
- Fluid Sealing Association
- Glass Tempering Association
- Gypsum Association
- Hardwood Plywood Manufacturers Association
- Hydronics Institute
- Indiana Limestone Institute of America
- Industrial Gas Cleaning Institute
- Instrument Society of America
- Insulated Steel Door Systems Institute
- International Institute of Ammonia Refrigeration
- International Municipal Signal Association
- Iron and Steel Society
- Joint Industrial Council
- Laminators Safety Glass Association
- Lighting Protection Institute
- Maple Flooring Manufacturers Association
- Mechanical Power Transmission Association
- Metal Building Manufacturer Association
- Metal/Lath Steel Framing Association
- Midwest Insulation Contractors Association
- National Asphalt Pavement Association
- National Association of Architectural Metal Manufacturers
- National Association of Corrosion Engineers
- National Board of Boiler and Pressure Vessel Inspectors
- National Building Granite Quarries Association
- National Cable Television Association Inc.
- National Council on Radiation Protection and Measurements
- National Environmental Balancing Bureau
- National Fluid Power Association
- National Forest Products Association
- National Hardwood Lumber Association
- National Kitchen Cabinet Association
- National Oak Flooring Manufacturers Association
- National Particleboard Association
- National Pest Control Association
- National Ready-Mixed Concrete Association
- National Terrazzo and Mosaic Association Inc.
- National Wood Window and Door Association
- Northeastern Lumber Manufacturers Association
- Pipe Fabrication Institute
- Porcelain Enamel Institute Inc.
- Portland Cement Association
- Public Utilities Commission of California
- Resilient Floor Covering Institute
- Rubber Manufacturers Association
- Safety Glazing Certification Council
- Screen Manufacturers Association Inc.
- Sealant, Waterproofing and Restoration Institute
- Sheet Metal and Air conditioning Contractors National Association
- Single Ply Roofing Institute
- Society of Cable Television Engineers
- Society of the Plastic Industry
- Solar Rating and Certification Corporation
- Southern Cypress Manufacturers Association
- Southern Pine Inspection Bureau
- Steel Door Institute
- Steel Tank Institute
- Steel Window Institute
- Tile Council of America
- Truck Mixer Manufacturers Bureau
- Truss Plate Institute
- Uni-Bell Plastic Pipe Association
- Water Pollution Control Federation
- Water Quality Association
- West Coast Lumber Inspection Bureau
- Western Wood Products Association
- H.P. White Laboratory
- Wood and Synthetic Flooring Institute
- Wood Moulding and Millwork Producers Association
- Woodwork Institute of California

APPENDIX C

**CONSTRUCTION CRITERIA BASE CONTENTS,
FIRST QUARTER 1993**

CONSTRUCTION CRITERIA BASE CONTENTS, FIRST QUARTER 1993

DISC A

Guide Specifications

- Army Corps of Engineers (COE) Civil Works Guide Specifications
- Army COE Military Construction Guide Specifications
- Army COE Military Construction Abridged Guide Specifications
- Bureau of Reclamation (BREC) Guide Specifications
- Department of Defense (DOD) MIL-BUL-35 Matrix of Guide Specifications
- Department of Energy (DOE) General Design Criteria Manual
- Department of Veterans Affairs (VA) Master Specifications
- Federal Aviation Administration (FAA) Construction Specifications
- Federal Highway Administration (FHWA) Standard Specifications
- General Services Administration (GSA) Master Specifications
- GSA Evaluations
- National Aeronautics and Space Administration (NASA) Detailed Specifications
- NASA KSC Local Master Specifications
- NASA ARC Local Master Specifications
- National Institute of Building Sciences (NIBS) Asbestos Specifications
- National Institutes of Health (NIH) Specifications
- Naval Facilities Engineering Command (NAVFAC) Guide Specifications
- NAVFAC Regional Guide Specifications (CHESDIV, LANTDIV, WESTDIV, PACDIV, SOUTHDIV, YOKOSUKA)
- NAVFAC Guide Performance Work Statements
- SPECSINTACT

Regulations

- Architectural and Transportation Barriers Compliance Board (ATBCB) Uniform Federal Accessibility Standards
- America with Disabilities Act (ADA) of 1990
- ADA Accessibility Guidelines for Buildings and Facilities
- Fair Housing Accessibility Guidelines
- DOE Energy Performance Standards (Title 10, Part 435)
- DOE Envelope and Lighting Executable Compliance Programs and Users Manuals
- Environmental Protection Agency (EPA) Asbestos Standards (Title 40, Part 763)
- EPA Hazardous Waste Regulations and Standards (Title 40, Parts 260, 261, 263, 264, 266)
- EPA Underground Storage Tank Regulations (Title 40, Part 280)
- Occupational Safety and Health Administration (OSHA) Safety and Health Standards (1910)
- OSHA Safety and Health Regulations for Construction (1926); Longshoring (1918); Marine Terminals (1917); Shipyard Employment (1915)

Optional

- AIA MASTERSPEC

DISC B

- Referenced Federal/Military Specifications and Standards
- Referenced Private Industry Standards from over 115 organizations
- Single Master Reference (NAVFAC/COE/NASA)
- Mil. Standard 1691E Schedule for Medical/Dental Facilities (with data Base)
- NAVFAC CADD Symbols and Details
- NAVFAC Standard Drawings and Titleblocks
- Army COE CADD Symbols and Manuals
- MCACES GOLD Cost Estimating System
- NAVFAC Cost Estimating System (CES)
- NAVFAC Parametric Facilities Cost Generator
- Tri-Service Automated Cost Engineering System (TRACES)

Optional

- BOCA National Codes
- ICBO/IAPMO/WFCA Uniform Codes
- SBCC Standard Codes

DISC C

- COE Architectural and Engineering Instructions (AEI)
- COE AEI, Design Criteria and Medical Design Standards
- COE Engineering Manuals, Regulations, Technical Letters and Circulars
- COE Technical Manuals
- DOD Criteria
- GSA Design Manuals
- Military Criteria Indexes
- NIBS Directory of On-Line Construction Data Bases
- NIBS Metric Guide for Federal Construction
- NIBS Wood Protection Guidelines
- National Institute of Standards and Technology (NIST) Standards Associations Listing
- U.S. Air Force (AF) Manuals, Procedures, Regulations, Engineering Technical Letters

DISC D

- MIL-HDBK-1021 Airfield Rigid Pavement Design Software (executable)
- NAVFAC Criteria Manuals and Design Policy Letters
- NAVFAC NCEL Abstracts
- NAVFAC Preliminary Hazard Analysis/List
- NAVFAC Publications and Data Base
- NAVFAC Regional A/E Guide
- Value Engineering Reports
- Value Engineering System (executable)
- PRODUCTS ON CCB (Information from Construction Product Manufacturers)

APPENDIX D

PUBLICATIONS INITIAL DISTRIBUTION LIST

100

PUBLICATION NUMBER AND DATE						SUPERSEDES PUBLICATION NUMBER(S)			
PERSON TO CONTACT						DISTRIBUTION / STOCK		FOA.....	
OFFICE SYMBOL		ROOM NUMBER		EXTENSION				NO.....	
								STOCK.....	
								TOTAL.....	
OFFICE SYMBOL	QTY	OFFICE SYMBOL	QTY	OFFICE SYMBOL	QTY	OFFICE SYMBOL	QTY	OFFICE SYMBOL	QTY
CECS-X		CEEC-ZF		CEIM-ZA					
		CEEC-ZO		CEIM-P					
DAEN-ZCM		CEEC-M		CEIM-PD					
		CEEC-P		CEIM-PD (Reports Control)	1				
CEBA		CEEC-C		CEIM-PD (Pub. Control)	3				
		CEEC-CA		CEIM-R					
CECC-A		CEEC-CE		CEIM-S					
CECC-AL	1	CEEC-CF		CEIM-SL	2				
		CEEC-CG							
CECW-B		CEEC-CM		CELD-ZC					
CECW-MA		CEEC-CP		CELD-TT					
CECW-O		CEEC-E	1						
CECW-OE		CEEC-EB	5	CEPA-ZA					
CECW-P		CEEC-EE	1						
CECW-PD		CEEC-EG	1	CEPE-ZA					
CECW-PE		CEEC-EI	1	CEPE-M					
CECW-PF		CEEC-EM	1						
CECW-PM		CEEC-ES	1	CEPM					
CECW-PN		CEEC-ET	1						
CECW-PP		CEEC-S		CEPR-ZA					
CECW-PS		CEMP-EA	5						
CECW-PW		CEEO-ZA		CERD-ZA					
CECW-R		CEMP-ET	2						
		CEHO		CERE-S					
CEDB									
		CEIG		CERM-ZO					
				CERM-B					
				CERM-F					
				CERM-M					
				CERM-S					
				CERM-U					

APPENDIX E

ABBREVIATED KEYWORD INDEX

ABBREVIATED KEYWORD INDEX

KEYWORDS	DISTRIBUTION
Architecture	Architecture Section, Mechanical, Military Cost Engineering, Programs & Project Management, Specifications, Structural
Contracts	Contracts, Program & Project Management, Cost Estimating, PLUS relevant technical groups
Cost Engineering	Cost Estimating, Planning, PLUS relevant technical groups
Drainage	Architecture, Soils, Paving, Environmental Division, Construction Field Support section
Environmental	
Geology	
Grading	
Hydraulics	
Landscape	(THIS WILL BE COMPLETED)
Master Planning	
Mechanical	
Paving	
Photogrammetry	
Plumbing	
Project Management	
Soils	
Structures: Civil	
Structures: Military	
Surveys	
Telecommunications	
Water Management	

Note: One copy of every publication goes to the Chief of Engineering, the Library, and the Records Management Section.

APPENDIX F

**"ENGINEERING IMPROVEMENT RECOMMENDATION
SYSTEM BULLETIN"**

EIRS

Bulletin



Engineering Improvement Recommendation System

No. 92-04

30 April 1992

In this issue...

- 1 Engineering and Design**
- Exterior Insulation and Finish System 1
- 2 Engineering and Design**
- Publications That Govern Engineering and Design 2
- 3 Construction Specifications - SPECSINTACT**
Training 3
- 4 Unaccompanied Enlisted Personnel Housing Criteria - AEI Criteria and DA Facilities Standardization Program Criteria 3**
- 5 Construction Specifications - Guidance for the Preparation of Corps of Engineers Guide Specification (CECS) 4**
- 6 Engineering and Design**
- DA Standard Package for Chapel Family Life Centers - Sound-Deadening Materials in the Activity Room 4
- 7 Recommended Changes to Engineering Documents - ENG Form 3078**
Follow-up Actions 5
- 8 Engineering and Design**
- DA Standard Design Package for Battalion Headquarters 5
- 9 Current Design Criteria - Recently Issued Criteria 6**

Engineering and Design

Exterior Insulation and Finish System:

A *Problem:* Exterior insulation and finish systems (EIFS) provide insulation and a permanent exterior finish for both new and renovated buildings. Use of EIFS has sometimes resulted in increased maintenance costs and extensive repairs because the selected system was not suitable for the required service.

B *Probable Solution:* The following information is provided as an aid in determining which EIFS can provide the particular properties needed for a project:

(1) EIFS systems are available in two classes; PB and PM, as follows:

(a) Class PB systems use relatively thin, flexible, polymeric coatings over molded expanded-polystyrene (MEPS) insulation. The flexible coatings have good impact resistance but may be easily punctured by sharp objects. The MEPS insulation allows moisture vapor migration, which can either ventilate the system beneficially or allow moisture to attack the substrate. The polymeric coat-

ing will deteriorate after prolonged exposure to water. While some PB systems are applied with adhesives, only mechanical fastening is recommended (required for gypsum board, in CECS-07240). Class PB systems are the less expensive and more widely used of the two classes.

(b) Class PM systems use thick, rigid, cementitious coatings over extruded expanded-polystyrene (XEPS) insulation. Class PM systems are usually more expensive, more durable, and heavier than class PB systems. The XEPS insulation resists moisture penetration; this helps to protect the substrate but prevents ventilation of the system. Because of the heavier weight of class PM systems and difficulty in bonding to the smooth XEPS surfaces, class PM systems must be mechanically fastened.

For the Director of Military Programs:

Richard C. Armstrong, P. E.
Chief, Engineering Division
Directorate of Military Programs

Engineering and Design

Publications That Govern Engineering and Design:

A *Problem:* Guidance for engineering and design is provided by numerous types of publications that are not well understood by many designers.

B *Probable Solution:* Publications that are principal sources of engineering and design criteria and information are defined and described below:

ENGINEERING AND DESIGN GUIDANCE PUBLICATIONS

The Corps of Engineers uses many publications to govern engineering and design. The task of finding what is needed can be greatly simplified if one knows where to look and what to expect.

The Department of Defense (DoD), Office of the Deputy Assis-

tant Secretary of Defense for Installations, publishes engineering and design requirements in several types of documents. However, these requirements are usually in the form of broad policy guidance, which has no force or effect on design offices until implemented by the heads of the Military Departments and their subordinate agencies. Therefore, for all practical purposes, design offices are not directly concerned about guidance in DoD documents. A similar situation exists in the implementation of Federal regulations and other extremely-high-level documents containing engineering and design guidance.

The situation with the Department of the Army (DA) gets close to home. DA regulates the publication process of its agencies through a series of DA publica-

tions. The general policy regarding publications and printing within DA is contained in AR-1, *The Army Information Resources Management Program*. More detailed requirements regarding preparation, printing, and distribution of publications are contained in AR 25-30, *The Army Integrated Publishing and Printing Program*.

Over 30 different types of publications are used by the DA, and these publications fall into three categories: Administrative Publications; Doctrinal, Training, and Organizational Publications; and Technical and Equipment Publications. The main DA publications that provide engineering and design guidance are: Army Regulations (AR), DA Circulars (DA CIR), DA Pamphlets (DA PAM), Numbered HQDA Letters, DA Techni-

...continued on page 3

Recent Publication List

Number	Subject	Date
CEGS-02241	Aggregate Base Course	Apr 92
CEGS-07250	Spray-Aided Fireproofing	Apr 92
CEAGS-07250A	Spray-Applied Fireproofing	Apr 92
CEGS-13955	Vehicle Barriers	Apr 92
CE-R-Series	Short -Form Guide Specifications for Army Reserve, CANCELLATION NOTICE	Feb 92
TM 5-801-10	General Design Criteria to Facilitate the Decommissioning of Nuclear Facilities	Apr 92
TM 5-804-2	Domestic and Service Water Active Solar Energy Preheat Systems, CHANGE 1	Feb 92
TM 5-811-5	Army Aviation Lighting	Dec 91
TM 5-814-9	Central Vehicle Wash Facilities, CHANGE 1	Feb 92

Construction Specifications SPECSINTACT Training:

A *Problem:* The need for training in the use of automated systems seems to vary from one organization to another and from one person to another. SPECSINTACT is provided with a comprehensive operations manual, an interactive tutorial program, and "in-process" help screens; and this approach is adequate for many. Others feel that they need formal training in order to properly use SPECSINTACT for the production of project specifications.

B *Probable Solution:* The best way to get training on SPECSINTACT is to sit down and use the system to produce a job. For those who are not quite so brave or may want a fast-track approach to learning SPECSINTACT, formal training is available. This training is provided through the Naval Facilities Engineering Command (NAVFAC) at various locations and at a very reasonable price. You may call Louise McMonegal at NAVFAC (703-325-0450) for more information to enroll in a session. If you have a need for on-site training tailored to fit your local needs, you may want to follow the lead of some other Army offices that have drawn upon the expertise of the NASA contractor that maintains SPECSINTACT. Pat Robinson at EG&G Florida (407-853-5251) can talk to you about on-site training.

Publications That Govern Engineering and Design: (continued)

...continued from page 2

cal Bulletins (TB) and DA Technical Manuals (TM). Proponents of these publications are normally agencies of HQDA agencies that have responsibilities in the same functional areas.

Since DA permits agencies to have parallel publications to address subjects of agency-wide application, the Corps has established Engineer Regulations (ER), Engineer Circulars (EC), Engineer Pamphlets (EP), Engineer Technical Letters (ETL), Engineering Improvement Recommendation System (EIRS) Bulletins, Engineer

Manuals (EM), and special use publications such as guide specifications (CEGS) and design guides (DG).

One of the main differences between similar DA and Corps publications is their applicability; i.e., an Army Regulation is applicable Army-wide and as an Engineer Regulation is applicable Corps-wide. Guide specifications and design guides have no direct counterpart in the DA system but are needed in the conduct of Corps business.

Unaccompanied Enlisted Personnel Housing Criteria AEI Criteria and DA Facilities Standardization Program Criteria:

A *Problem:* There is a conflict between the unaccompanied enlisted personnel housing (UEPH) criteria contained in the current Architectural and Engineering Instructions (AEI), 9 December 1991 and the DA Standard Design Package definitive drawings for UEPH (DEF 721-10-01), June 1989. The DA standard design incorrectly identifies that the mailrooms and Charge-of-Quarters (CQ) areas are allocated to the gross square footage of the company operations facility. The AEI

correctly states that mailrooms and CQ spaces are included in the UEPH gross area.

B *Probable Solution:* Since there is a conflict between the AEI and the definitive drawings (DEF 721-10-01), the AEI will govern. The UEPH definitive drawings will be revised to agree with the AEI. The gross square footage of mailrooms and CQ areas shall be included as part of the UEPH gross area.

APPENDIX G

**TYPES OF U.S. ARMY CORPS OF ENGINEERS
PUBLICATIONS**

TYPES OF U.S. ARMY CORPS OF ENGINEERS PUBLICATIONS

ENGINEER REGULATION (ERS).

ERs contains policies, responsibilities, and procedures of a continuing nature prescribed exclusively for the Corps of Engineers' mission. Its subjects are not covered by Army regulations.

ENGINEER CIRCULARS (ECS).

ECs may contain administrative information parallel to ERs, i.e., be directive in nature, with the difference being that applicability will be transitory. They may remain active for up to 2 years from the date of issue. They must bear an expiration date.

ENGINEER PAMPHLETS (EPS).

EPs contain functional procedures, instructional guidance, and administrative or reference information of a continuing nature.

ENGINEER MANUALS (EMS).

EMs contain technical guidance of a continuing nature concerned primarily with engineering and design projects. They provide criteria, consistent with established practices of contract administration, for the design of facilities for the Corps of Engineers.

ENGINEER OFFICE MEMORANDUMS (OMS).

OMs contain directive and procedural information necessary to carry out specific staffing functions.

ENGINEER TECHNICAL LETTERS (ETLS).

ETLs contain "advance" design, engineering, and construction projects. They are considered intermediary publications that will eventually be republished in more permanent media, such as ERs or EMs. ETLs cannot be used to amend or replace regulations or circulars.

Sources: Draft OM-25-1-51 dated 1 April 1993 and *EIRS Bulletin* 92-04.

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