

CEMP-EE Engineer Regulation 1110-3-1300	Department of the Army U.S. Army Corps of Engineers Washington, DC 20314-1000	ER 1110-3-1300 26 August 1999
	Engineering and Design MILITARY PROGRAMS COST ENGINEERING	
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CEMP-EE

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
Washington, D.C. 20314-1000

ER 1110-3-1300

Regulation
No. 1110-3-1300

26 August 1999

Engineering and Design
MILITARY PROGRAMS COST ENGINEERING

1. Purpose. This regulation prescribes U.S. Army Corps of Engineers (USACE) cost engineering policies, requirements, and procedures for Military Programs. It provides guidance in the development and submission of cost estimates used in the Military Construction (MILCON) programs. In addition, it prescribes procedures for reporting project data and cost estimates based on contract awards for MILCON projects.

2. Applicability. This regulation applies to HQUSACE elements and USACE commands having cost engineering responsibilities for MILCON and support-for-others projects.

3. Distribution Statement. This regulation is approved for public release; distribution is unlimited.

4. References.

- a. Public Law 97-214, Military Codification Act.
- b. FAR 25-300, FAR 36.203, DFAR 225.3, EFAR 36.203, and EFAR 36.205-100.
- c. DODI 7060.2, Balance of Payment Program - Accounting, Reporting, Estimating, and Establishing Targets.
- d. DFAS-IN Regulation 37-1, Finance and Accounting Policy Implementation.
- e. AR 25-55, Department of Army Freedom of Information Act Program.
- f. AR 415-15, Army Military Construction Program Development and Execution.
- g. DA Pamphlet 415-28, Guide to Army Real Property Category Codes.
- h. TM 5-800-4, Programming Cost Estimates for Military Construction.

This regulation supersedes ER 1110-3-1300, dated 30 July 1993.

- i. TI 802-01, Code 3 Design with Parametric Estimating.
- j. ER 5-1-11, Program and Project Management.
- k. ER 37-345-10, Accounting and Reporting - Military Activities.
- l. ER 1110-1-1300, Cost Engineering Policy and General Requirements.
- m. EI 01D010, Construction Cost Estimates.

5. Policy. In addition to the guidance in ER 1110-1-1300, construction cost estimates for MILCON and support-for-others projects will be prepared in accordance with the referenced publications and this regulation.

6. General. MILCON and support-for-others construction is regulated by public law. Every MILCON project must be specifically authorized and appropriated in MILCON legislation or performed under special authority (e.g., 10 USC 2803, 10 USC 2854). The Military Construction Codification Act (PL 97-214, originally dated 12 July 1982), unified and codified the statutory limitations for the MILCON process; the Act is amended annually in the MILCON Authorization Act.

7. Project Development.

a. The typical military project begins when a requirement for new construction, alteration, addition, or conversion of a facility is identified at a military installation. This project requirement and programmed cost are justified on a Department of Defense (DD) Form 1391 prepared by the installation. The DD Form 1391 is reviewed and approved at different levels within the Department of Defense agencies and submitted to Congress for construction authorization and appropriation. Requirements for support-for-others projects are normally described in the scope of services or memorandum of agreement.

b. The development of a project is a continuous process and will impact project cost as the scope of work is being defined. Development of accurate estimates is essential to the successful completion of the project. The participation of Cost Engineering personnel in all phases of project development is essential in achieving a quality project cost estimate.

8. Authority. The authority for preparing construction cost estimates for a military project is described in AR 415-15.

9. Costs of Project. In addition to the requirements described

in ER 1110-1-1300 and referenced regulations, construction cost estimates for MILCON and support-for-others projects will be prepared in accordance with this regulation. Cost accounting will be in accordance with the provisions of ER 37-345-10. The costs listed in subparagraphs a, b, c, d, and e below will be charged against construction authorizations and will be included in Current Working Estimates (CWE). The cost of the "free issue" material, labor, and equipment must be included in the project cost as indicated in subparagraph 8c below. Costs will include:

a. The contract cost, if work is performed by contract. The cost of plant, labor, and materials, if work is performed using government plant and government hired labor.

b. Any other costs authorized by directive to be charged to construction as a funded cost. Such costs are installation costs for equipment in place to be furnished by the using service or other agency, and the cost of government furnished materials or equipment (GFM or GFE) purchased with the project funds and furnished to the contractor.

c. The cost of materials, labor, and equipment (including cost for installed building equipment and equipment in place) will be included in the project cost, if the DD Form 1391 indicates the value of such materials, labor, or equipment. In this case, "free issue" will be separately accounted as unfunded cost. Costs of "free issue" labor and construction equipment will be determined as follows:

(1) Defense Finance and Accounting Service Center, Indianapolis, IN (DFAS-IN) publishes the Army Composite Standard Rates for the troop labor and in accordance with DFAS-IN Regulation 37-1. The rates and daily/hourly computation factors are on the World Wide Web (www.dtic.mil/comptroller/rates).

(2) Rental value of "free issue" construction equipment, including government-owned construction equipment and troop construction equipment will be determined in accordance with the latest regulation.

d. Construction contingency. Construction contingency is defined as an allowance for unforeseen occurrences at the time of contract award. It is an allowance against unanticipated condition that cannot be determined from the available data during engineering and design. This allowance is for unforeseeable conditions such as unexpected subsoil conditions, underground utility lines, or other unforeseen problems at the time of contract award. It is not an allowance for omissions or errors. The contingency rates are stated in paragraph 13c.

e. Supervision and Administration (S&A), as defined in ER 37-345-10, the uniform Corps-wide rate applies to each project type. For types of projects excluded from the uniform Corps-wide S&A rates, the rates will be established based on an expected cost. S&A rates are shown in paragraph 13d.

10. Cost Estimates.

a. Except for real estate estimates, two types of cost estimates are used in military construction, Current Working Estimate (CWE) and Government Estimate (GE). The CWE is defined as the latest construction cost estimate, which includes the estimated contract cost, construction contingency, and S&A costs. The cost for "Engineering during Construction (EDC)" will be funded from the project construction contingency. The GE is defined as construction cost estimate prepared by the government for cost control and bid evaluation. The GE includes contract cost, contract modification costs; but GE does not include construction contingency and S&A costs. The term "fair and reasonable cost estimate" is used when referring to the GE.

b. District cost engineers will prepare estimates for the projects designed by USACE. For projects designed by others, district cost engineers will review and revise the estimates prepared by the others as necessary. The estimates will be prepared based on the approved DD Form 1391 and conditions prescribed by design and construction directives or project management plans (PMP) and construction program preparation instructions. PMP requirements are specified in ER 5-1-11.

c. Cost estimates should be based on the latest design data. In the absence of such data, and before the Code 3 or concept design completion, empirical cost data from TM 5-800-4 or parametric cost models, local historical cost, or empirical cost data from commercial sources may be used. Lump sum costing is discouraged. If lump sum cost is used, it must be justified and pricing methodology fully documented.

11. Current Working Estimates (CWE) and Codes. The cost information is obtained from various sources depending upon the stage of the design and contract award process. A coding system has been devised to report the CWE by placing the code letter in parentheses after the CWE figure. The Codes for various stages of design and contract award are as follows:

a. Code A - Less than concept design completed, including parametric cost estimates for the Army MILCON budget purpose, when applicable.

b. Code B - Concept (35%) design completed. This is a

concept design control estimate (also called "budget CWE").

c. Code C - Final design working drawings and specifications are in progress or completed. Each estimate will be dated to show when it is made or revised.

d. Code D - Bids opened and the lowest bidder determined.

e. Code E - Construction contract award cost data.

f. Code F - Construction 100% complete.

g. When reporting the estimated cost for which no design has been accomplished, annotate "\$xx,xxx.xx (A). Similarly, an estimate made after the construction contract was awarded, annotate "\$xx,xxx.xx (E).

h. Each estimate will be dated when it is completed or revised.

i. The parametric cost estimates for projects with Code 3 design directive or concept (35%) design estimates are used to develop budget costs for project authorization and appropriation by Congress. The importance of firm project scope and accuracy of the estimate cannot be overemphasized, because when the project is authorized and appropriated by Congress, the scope and cost become fixed.

12. Computer Software for Cost Estimates. The current version of the Micro Computer Aided Cost Estimating System (MACES), PC-Cost or approved parametric estimating tools will be used to prepare CWE and Government Estimates.

13. Preparation of CWE. CWE will include the items listed in subparagraphs a, b, c, and d below. If a portion of the project is to be done by a future contract or by other means and is withheld from the final design, the cost of this work will be included in the CWE. This allowance will be calculated as if the work were a separate project, with amounts for the items listed in subparagraphs a, b, c, and d below. The items to be included in CWE are:

a. Estimated or actual contract cost, including contractor's overhead and profit, cost of labor, materials, and plant if performed by government plant and hired labor. The estimated contract cost will be obtained as follows:

(1) When Code 3 or concept design has not been accomplished or cost data for the locality is unavailable, the cost data in TM 5-800-4 or parametric cost models will be used as a guide in

estimating the costs. If a standard design is used and cost data for that design are available, the cost data should be adjusted accordingly. (Code A, when items b, c, and d below are added.)

(2) After concept design has been started or completed, the estimated contract cost will be based upon this work which should be updated as required. (Code B, if concept design is completed and items b, c, and d below are added.)

(3) When final working drawings and specifications have been started or completed, the final design estimate, Code C, will be prepared using the latest version of MCACES with the Tri-Service approved work breakdown structure. Engineering Instructions (EI) 01D010 illustrates the format required for summarization of contract direct costs, indirect costs, profit, bond, and other contract requirements for CWE and government estimates. (Code C, where items b, c, and d below are added to CWEs.)

(4) After bid opening, the bid submitted by the successful bidder will be used as the contract cost. (Code D, when items c and d below are added.)

(5) After the award of a contract, the contract price adjusted to include modifications or change orders, if any, will be used as the contract cost. (Code E or F, when items c and d are included.)

b. Cost growth due to economic factors. The Code A, Code B, and Code C estimates will include the cost growth to the midpoint of construction as prescribed in TM 5-800-4 or as directed otherwise. The CWE for Code C and GE should include analyses for cost growth for scheduled (or actual):

(1) Prices based on delivery dates to the site for materials and equipment to be installed.

(2) Labor and construction equipment costs in compliance with the construction schedule.

c. Construction contingencies will be added to the estimated contract cost referred to in paragraph 10a above in the following amounts:

(1) The construction contingency for military construction projects will be 5 percent unless otherwise justified.

(2) After opening of bids, the construction contingency may be adjusted in accordance with the provision of AR 415-15.

d. Supervision and Administration (S&A). CWE will include

an allowance for S&A. The S&A rates will be in accordance with latest HQDA/USACE guidance. The current approved rates for military construction projects are 5.7 percent for Continental United States (CONUS) and 6.5 percent for Outside Continental United States (OCONUS).

14. Submission of CWE. The ENG Form 3086, Current Working Estimates for Budget Purposes, will be used for reporting for budgetary CWE. The CWE will be submitted to HQUSACE (CEMP-EE) electronically via the ENG Form 3086 Module of the DD 1391 Processor in the Army Programming Administration and Execution (PAX) System or other approved reporting tool. As required by AR 415-15, the budgetary CWE based on Code A, parametric, or Code B, concept design will be submitted by 1 July of the design year.

a. The Cost Engineering office of the design district will prepare CWE in a format as outlined in Appendix A.

b. CWE for budget reporting will be prepared using the ENG Form 3086 Module, PC-Cost, or other approved software. The CWE will consist of Primary Facility, Supporting Facility, Information Systems and Anti-terrorism/Force Protection, when required. Each cost item should be developed based on the latest design information. For medical projects, see Technical Instructions for Medical Design Standards. Instructions for preparation of ENG Form 3086 are described in Appendix A.

c. Budgetary estimates will be approved by the Chief of Cost Engineering of the design district before the reporting.

15. CWE for Control Purposes.

a. CWE will be used as a working tool to analyze costs and to control design decisions in constructing the project within the approved funds and scope. This is called a "control estimate." Control estimates are required for projects following the normal design process of parametric or concept through final design. The schedule for control estimate submittals should be included in the Architect-Engineer (A-E) contract.

b. OCONUS projects will include International Balance of Payment (IBOP) analysis under normal or revised procedures. Estimates will not include the IBOP statement but the documentation will be retained at the district. The projects will be evaluated for IBOP impact in accordance with DODI 7060.2; Federal Acquisition Regulation (FAR) 25-300; and Defense Acquisition Regulation (DFAR) 225.3.

c. Control estimates will be prepared in accordance with EI 01D010 requirements. Unit price or parametric estimates may be

used instead of separate estimates for materials, labor, and equipment in Code A and Code B estimates. Code C estimates will be prepared in accordance with EI 01D010 and will separately price materials, labor, equipment, indirect costs, and other required project markups.

d. The final design control estimate (Code C) will be prepared if the government was bidding in competition with experienced and well-equipped contractors. The control estimates will be based on the most recent and complete design information and will reflect the local labor situation and material prices anticipated. The designing office should identify the control estimates by date of preparation and by date of revision to clarify the estimates are based on the latest design data, drawings and specifications.

e. The design district cost engineer will review the final design control estimate to make sure that the project can be constructed within the allotted funds. If the review shows that the project cannot be constructed within allotted funds, the cost engineer must immediately notify the project manager who will inform HQUSACE (CEMP-MA, or others), the MACOM, and the using service before the project is advertised. The project manager will coordinate and resolve the funding problems so that the project can be awarded and constructed within the allotted funds.

f. When more than six months of time has elapsed between design completion and project advertising, the final design CWE will be updated in preparation of the Government Estimate. The updating will be accomplished based on the latest published unit prices or latest quotations for materials, labor, construction equipment, and cost growth factors.

g. Final design control estimates that have been revised to reflect the final drawings and specifications will be used as the basis for the Government Estimates.

16. Changes to CWE.

a. The cost engineer of the design district will inform the project manager immediately for any changes to the CWE.

b. Changes to CWE will be documented and fully described in the estimate.

c. Chief cost engineer of the design district will review and approve the changes before submission or release.

17. A-E Estimates.

a. When it is necessary to use the services of Architect-Engineer (A-E) firms for preparation of cost estimates, firms competent in cost engineering will perform such services.

b. When an A-E prepares an ENG Form 3086 or Government Estimate, the design district cost engineer will review the cost estimate. This is to insure the estimate agrees with the scope of work of the DD Form 1391 or memorandum of agreement for the project. Any revision to the DD Form 1391 scope or abnormal cost items must be explained in the ENG Form 3086.

c. A-E estimates will be reviewed and validated by the design district cost engineers to insure that they comply with the USACE latest cost engineering guidelines and regulations before release or reporting.

18. Government Estimates. FAR 36.203 requires that every Government Estimate be prepared as if government were competing for the award. Government Estimates are used to evaluate bids, to analyze contractor proposals during negotiations, and to serve as a guide in establishing a schedule of payments.

a. Government Estimates will not include construction contingencies or S&A. Each Government Estimate will be dated and signed by the district commander or a representative authorized for that purpose.

b. Government Estimates for negotiated contracts and change orders or supplemental agreements may be changed when an error is discovered, when additional information is received, or when site conditions or construction schedules are changed.

c. Government Estimates will not be changed after the bid opening without written approval from the Contracting Officer.

d. Approval authority for revision to the Government Estimate remains with the original estimate approving official or the contracting officer. Revisions to the estimate must be indicated, dated, justified, and approved. Circumstances causing any change will be fully documented.

e. Awards of contracts in excess of 15 percent over the Government Estimate will be subject to approval by the District Commander in accordance with EFAR 36.205-100.

19. Safeguarding of Estimates. In addition to the requirements in ER 1110-1-1300 and other reference regulations, access to the estimates during preparation, before bid opening or conclusion of negotiations, will be limited to persons whose duties require such knowledge. The Government Estimates will be designated "For

Official Use Only" unless the security regulations require other classification. When the "For Official Use Only" designation is used, only the sheet(s) of the estimate which shows conclusive information on prices will be marked. The "For Official Use Only" markings will be removed after bids are read and awarded, or award of a negotiated contract (FAR 36.203(c)).

20. Cost Data Report.

a. The cost engineering element at the district will prepare and submit a complete construction cost data for the Historical Analysis Generator (HAG) to HQUSACE (CEMP-EE) in accordance with the instructions described in Appendix B.

b. The Chief, Cost Engineering, of the design district will review and approve the cost data. Where another military service is the constructing agency for a project designed by a USACE district, the design district will collect the data from the constructing agency and report the data to HQUSACE (CEMP-EE).

c. The HAG data will be prepared in the latest version of HAG software and submitted on a disk or by Email to HQUSACE (CEMP-EE) within 30 days after award of a contract.


21. Use of Cost Data.

a. The Cost/Systems Engineering Branch (CEMP-EE), Engineering and Construction Division, Directorate of Military Programs, HQUSACE, will review, analyze, consolidate, and manage the USACE-wide cost data.

b. The HAG cost data will be available to all USACE elements and other services. Upon approval by the Tri-Service Cost Engineering Committee and the Office of the Secretary of Defense, these cost data will be used to formulate and update the Department of Defense Military Construction Pricing Guide and Table I, Cost Estimate-Military Construction in TM 5-800-4.

FOR THE COMMANDER:

2 Appendices
App A - Preparation of
ENG Form 3086
App B - Preparation of
HAG Cost Data


RUSSELL L. FUHRMAN
Major General, USA
Chief of Staff

APPENDIX A

ENG FORM 3086

A-1. Preparation of ENG Form 3086.

a. The design district must have access to the project's DD Form 1391 to prepare an electronic ENG Form 3086. Instructions to access the Programming, Administration, and Execution System's (PAX) DD Form 1391 Processor System are provided in the PAX users manual.

b. Because the ENG Form 3086 is used to report the CWE for budget purpose, the format of the ENG Form 3086 is structured similar to the DD Form 1391. Items of work will be entered in the same order as shown in the attached sample DD Form 1391. A sample ENG Form 3086 showing the required information is also attached.

A-2. Instructions for ENG Form 3086.

a. Primary facilities such as buildings should be identified by description and category code conforming to DA Pamphlet 415-28. The estimated cost for primary should include costs within the five-foot line of the exterior walls. The breakdown of major construction costs to include general construction, plumbing, heating and ventilating, air conditioning, electrical, installed equipment, information systems, other items included in the DD Form 1391, and the design directive. Unusual foundations such as drilled piers, piles, mat foundation, or spread footing in addition to normal foundation requirements should be shown separately under the primary facility costs. Costs for Anti-Terrorism/Force Protection, if required, should be also shown separately under the primary facility.

b. Supporting facilities include all remaining construction costs outside the primary facilities. The costs for supporting facilities begin outside the five-foot line from the exterior walls. Supporting facilities should have sufficient descriptions and quantities to establish their costs. Supporting facilities for a typical building should include:

(1) Electrical Service - power source, distribution system, and exterior lighting.

(2) Water, Sewer, & Gas - supply and distribution system, and sanitary collection and disposal sewage system.

(3) Steam and Hot & Chilled Water - distribution system.

(4) Paving, Walks, Curbs & Gutters - roads, streets, parking areas, and shoulders (include type and thickness of surface, base, sub-base, and width for roads and streets). Walks, including type and thickness of paving, and curbs and gutters.

(5) Storm Drainage - storm drainage collection system including size and type of pipe, depth of trench, type of backfill, bracing, etc.

(6) Site Improvements - clearing, borrow, cut and fill materials, rough grade, fine grade, topsoil, seeding, landscaping, and demolition with qualitative and quantitative description.

(7) Information System - a complete and integrated premises distribution system (voice, video, data, and imagery) in accordance with TI-800-01, Design Criteria and Information Infrastructure Architecture (13A) Design and Implementation Guide.

(8) Anti-Terrorism/Force Protection - requirements for outside of the building should be identified.

(9) Others - such as as-built and operation and maintenance manuals (if applicable).

c. Information Systems (IS) costs for primary and supporting facilities shown on the DD Form 1391 are based on information from Section 17 of the DD Form 1391.

(1) The initial cost estimate for IS requirements is prepared by either the Installation's Directorate of Information Management (DOIM) office, or the U.S. Army Information Systems Engineering Command (USAISEC), or others. This estimate is then entered into Section 17 of the DD Form 1391 by the installation. The MACOM's DOIM office and USAISEC are responsible for review and validation of IS cost.

(2) Section 17 contains three types of funds - MCA construction funds (CONF), Information System Command funds (ISCF), and proponent funds (PF). CONF are shown in DD Form 1391 under primary and support facilities, and ISCF and PF items are included in the installed equipment - other appropriation.

(3) Where the USACE district is responsible for designing the telecommunication systems, the costs for information systems must be coordinated with the Installation DOIM or USAISEC to ensure accuracy of the requirements and cost estimate. When design is less than 35% complete, use the IS costs of Section 17 in the DD

Form 1391.

(4) Where USAISEC or DOIM is responsible for design of telecommunication systems and development of building information systems costs, the cost estimate must be reviewed and validated before incorporating it to the overall project estimate.

d. Category "E" Equipment (Cat "E") costs for medical projects shown in DD Forms 1391 are developed by the using service and the Defense Medical Facilities Office (DMFO). Cat "E" equipment is government furnished and contractor installed. Costs should be verified to ensure that the costs are properly adjusted for cost growth and installation.

e. The current working estimate will be broken down into the items listed in subparagraphs (1) through (5) below and entered in the same order identical to the DD Form 1391 breakdown or as shown in the example.

(1) The estimated contract cost, or equivalent if work is to be performed by government plant and hired labor. (Sum of all items in subparagraph b above.)

(2) Construction contingency (shown as a separate percentage and amount).

(3) Supervision and Administration (S&A) (shown as a separate percentage and amount).

(4) Estimated project cost. (Sum of (1), (2), and (3) above and Cat "E" equipment shown as a separate entry.)

(5) Cost growth applied in subparagraph (1) above; identify indexes and calculations as shown in the example.

f. Any factor, which causes costs to be unusually high or low should be explained in the "Explanation of Data Development" or "Comment" blocks on ENG Form 3086. Examples of factors causing high costs are:

(1) Presence of rock in areas to be excavated or graded, presence of water in excavations, necessity to excavate for foundations or utilities to considerable depths, and unfavorable weather conditions which limit construction period.

(2) Abnormally high costs due to remoteness of the installation from labor market and material source.

(3) Scope and design criteria changes. Scope variation and design criteria changes must be fully explained. Indicate if

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changes were due to user requests or regulatory/statutory changes.

2001	99999 S	REVISION DATE: 01 MAR 1999
ARMY	MCA (AS OF 03/09/1999 AT 08:41:30)	09 OCT 1996
	LAF=1.23	UM=E
Fort Sample		
California	Whole Barracks Complex Renewal	
22696A	721 11	99999 31,000
PRIMARY FACILITY		
Barracks	m2	8,696 1,738 (15,116)
Soldier Community Building	m2	2,070 1,776 (3,677)
Company Operations Facility	m2	2,900 1,600 (4,640)
IDS Installation	LS	(15)
Anti-Terrorism/Force Protection	LS	(550)
Building Information Systems	LS	-- -- (470)
SUPPORTING FACILITIES		
Electric Service	LS	-- -- (405)
Water, Sewer, Gas	LS	-- -- (563)
Paving, Walks, Curbs And Gutters	LS	-- -- (928)
Storm Drainage	LS	-- -- (99)
Site Imp(794) Demo(99)	LS	-- -- (893)
Information Systems	LS	-- -- (223)
Anti-Terrorism/Force Protection	LS	(68)
ESTIMATED CONTRACT COST		27,647
CONTINGENCY PERCENT (5.00%)		1,382
SUBTOTAL		<u>29,029</u>
SUPERVISION, INSPECTION & OVERHEAD (5.70%)		1,655
TOTAL REQUEST		<u>30,684</u>
TOTAL REQUEST (ROUNDED)		31,000
INSTALLED EQT-OTHER APPROPRIATIONS		(126)

Construct a "1+1" standard-design enlisted barracks. Work includes living/sleeping rooms with semi-private bath and walk-in closets, a soldier community building with laundry room, day room, mailroom, storage, and physical equipment exercise space, and company operations facilities with installed intrusion detection systems. Supporting facilities include utilities; electric service; security lighting; fire protection and alarm systems; paving, walks, curbs and gutters; parking; picnic and recreational area; information systems, and site improvements. Heating and cooling will be provided by a multi-staged heating and cooling system that will allow small package units to come on line as heating, ventilation and air conditioning (HVAC) requirements increase. A ground source heat pump system will be considered as an alternative. Demolish four existing buildings (500 m2). Anti-Terrorism/Force Protection measurements are required for this complex.

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2001 99999 S REVISION DATE: 01 MAR 1999

ARMY MCA (AS OF 03/09/1999 AT 08:41:30) 09 OCT 1996
LAF=1.23 UM=E

Fort Sample
California

Whole Barracks Complex Renewal 99999

11. REQ: 1,423 PN ADQT: 1,138 PN SUBSTD: NONE

PROJECT:

Construct a "1+1" standard-design enlisted barracks to meet the Whole Barracks Renewal Program Standard. Construct a multi-level Soldier Community Building and Company Operations Facilities. (Current Mission)

REQUIREMENT:

In order to meet the requirements of the Volunteer Army (VOLAR) standard of 1+1 Sleeping arrangements the installation will be required to nearly double their barracks space. The downsizing of the Army has not affected Fort Irwin. If anything the installation has and is growing since its reactivation in 1981. The post must remove all of its Korean War vintage (wood) facilities and that includes gang style latrine barracks. The project is required to provide adequate housing for 252 E1-E4, and 24 E5-E6, (intended utilization) with a maximum utilization of 300 personnel. This requirement exists due to the post being 35 miles from the nearest town, Barstow, which has a population of 18,000. The re-stationing of additional troops at Fort Irwin for the brigade operations function of the National Training Center, fewer married enlisted soldiers, and lack of adequate permanent barracks on-post for single soldiers, makes this barracks project necessary. Currently the post is scheduled to receive 189 more personnel from Fort Hood when the 699th DS Maintenance Co arrives in 1998. The existing deficit will grow even more with their arrival.

CURRENT SITUATION:

The existing barracks are currently assigned as 4-man modules due to the lack of barracks space. Soldiers cannot be assigned in accordance with the new 1+1 standard due to a lack of barracks facilities. Existing barracks cannot be renovated as there is no excess space to move the troops to during renovation. For the post to meet 1+1 standards with existing facilities renovation of Korean vintage wood facilities with gang latrines would be required. Storage for the soldiers is near non-existing.

IMPACT IF NOT PROVIDED:

If this project is not provided, Fort Irwin will not be able to meet the Army's assignment policy for 2+2 barracks. There are no existing facilities to house displaced soldiers. These 2+2 barracks would have to remain as 4-person modules versus 2-person modules currently authorized by assignment policy. The nearest town is 35 miles away with minimal public transportation that does not support current work schedules. To achieve the 1+1 standard the post would be required to renovate Korean War vintage facilities that have asbestos exterior and gang latrines.

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Fort Sample
California

Whole Barracks Complex Renewal 99999

ADDITIONAL:

This project has been coordinated with the installation physical security plan, and all required physical security measures are included. Also, all required anti-terrorism/force protection measures are included. This project complies with the scope and design criteria of DOD 4270.1-M, Construction Criteria, that were in effect 1 January 1987, as implemented by the Army's Architectural and Engineering Instructions (AEI), Design Criteria, dated 3 July 1994. A parametric cost estimate based on a pre-concept (parametric) design will be used to develop this budget estimate.

/S/ David J. Jones
LTC
Garrison Commander

ESTIMATED CONSTRUCTION START:	APR 2001	INDEX: 2124
ESTIMATED MIDPOINT OF CONSTRUCTION:	APR 2002	INDEX: 2160
ESTIMATED CONSTRUCTION COMPLETION:	APR 2003	INDEX: 219

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LAF=1.23 UM=E

Fort Sample
California

Whole Barracks Complex Renewal 48527

	U/M	Qty	Unit Cost	Cost (\$000)
2.A PRIMARY FACILITY.				
2.A1 GENERAL.				
1.0) 72111 Barracks	m2	8,696	1,738	(15,116)
2.0) 72111 Soldier Community Building	m2	2,070	1,776	(3,677)
3.0) 14185 Company Operations Facilities	m2	2,900	1,600	(4,640)
4.0) 88040 IDS Installation	LS			(15)
5.0) 88041 Anti-Terrorism/Force Protection	LS			(550)
1) 88041 Fragment Retention Film, 7mm	m2	2,300	81.00	186
2) 88041 Fixed Bollards	EA	800	455.00	364
2.A2 INFORMATION SYSTEMS.				
1.0) 80800 Building Information Systems	LS	--	--	(470)
2.B SUPPORTING FACILITIES.				
2.B1 Electric Service				
1) 81242 Power Dist Cable	m	304.80	103.94	32
2) 81230 Ext Lights	m	914.40	107.28	98
3) 81360 Transformers	EA	3	18,397	55
4) 81242 Secondary Wiring	m	609.60	97.24	59
5) 81242 Energy Mgt Sys Wiring	LS	--	--	8
6) 81242 Power Ducts	m	1,219	117.36	143
7) 81242 Cable Vault	EA	2	5,000	10
2.B2 Water, Sewer, Gas				
1) 84210 8" Water Main	m	1,067	234.71	250
2) 84210 RO Main	m	304.80	117.36	36
3) 83210 Sewer Main	m	548.64	184.42	101
4) 83210 Sewer Manholes	EA	5	511.02	3
5) 83150 Sewer Lift Station	EA	1	153,305	153
6) 89240 Fire Hydrants	EA	10	1,942	19
2.B4 Paving, Walks, Curbs And Gutters				
1) 85210 Parking	m2	7,943	98.43	782
2) 85210 Roads	m2	1,338	98.07	131
3) 85210 Sidewalks	m2	278.71	55.00	15
2.B5 Storm Drainage				
1) 87110 Storm Drainage	m	548.64	180.45	99
2.B6 Site Improvement/Demolition				
1) 93220 Site Clearing & grubbing	LS	--	--	(893)
2) 93310 Demolish 4 Buildings D	m2	500.19	198.06	99
3) 93410 Grading	m2	16,723	5.38	90
4) 93410 Fine Grading	m2	16,723	1.91	32
5) 93410 Excavation Basement	m3	8,487	19.62	167
6) 93410 Compaction	m2	16,723	9.57	160
7) 93220 Landscape	LS	--	--	293
2.B7 Information Systems				
1) 80800 Information Systems	LS	--	--	(223)
2.B8 ANTI-TERRORISM/FORCE PROTECTION				
1) 88042 Security Lighting	EA	20.00	950.00	19
2) 88042 Concrete Barriers	m	250.00	115.00	29
3) 88042 Landscaping	LS			20

FY 2001 CURRENT WORKING ESTIMATES FOR BUDGET PURPOSES PG 1

DD1391 FORM: 99999 DATE REVISED: DATE PRINTED:
 PERM PROJNO: 99999 DATE LAST SUBMITTED: RFC DATE:
 Fort Sample Whole Barracks Complex Renewal
 California ACF = 1.23 TYPE OF CONSTRUCTION: Permanent

BASIS OF ESTIMATE: NAME AND ADDRESS OF A-E:
 Parametric Estimates Good Fellow Associate
 STATUS OF DESIGN: Ocean View Drive
 CONCEPT 0.00% FINAL 15.00% Los Angeles, CA

PREP BY: Dow Jones APP BY:
 OFF: CESPK-ED-C PH: (916)557-9999 OFF: PH:

CONST CAT CODE	DESCRIPTION	UOM	QUANTITY	UNIT COST	TOTAL COST (\$000)

PRIMARY FACILITIES					24465
72111	Barracks	m2	8,696	1,738.00	(15114)
	Substructure	m2	8,696	69.52	604.5
	Superstructure	m2	8,696	208.56	1813.6
	Exterior Closure	m2	8,696	243.32	2115.9
	Roofing	m2	8,696	69.52	604.5
	Interior Construction	m2	8,696	278.08	2418.2
	Interior Finishes	m2	8,696	260.70	2267.0
	Plumbing	m2	8,696	173.80	1511.4
	HAVC	m2	8,696	226.94	1973.5
	Fire Protection System	m2	8,696	17.38	151.1
	Interior Electrical Power	m2	8,696	138.04	1200.4
	Other Electrical Systems	m2	8,696	52.14	453.4
72111	Soldier Community Building	m2	2,070	1,776.00	(3676)
	Substructure	m2	2,070	71.04	147.0
	Superstructure	m2	2,070	213.12	441.2
	Exterior Closure	m2	2,070	248.64	514.7
	Roofing	m2	2,070	71.04	147.0
	Interior Construction	m2	2,070	284.16	588.2
	Interior Finishes	m2	2,070	266.40	551.4
	Plumbing	m2	2,070	177.60	367.6
	HAVC	m2	2,070	230.88	477.9
	Fire Protection System	m2	2,070	17.76	36.8
	Interior Electrical Power	m2	2,070	142.08	294.1
	Other Electrical Systems	m2	2,070	53.28	110.3
14185	Company Operations Facilities	m2	2,900	1,600.00	(4640)
	Substructure	m2	2,900	64.00	185.6
	Superstructure	m2	2,900	192.00	556.8
	Exterior Closure	m2	2,900	224.00	649.6
	Roofing	m2	2,900	64.00	185.6
	Interior Construction	m2	2,900	256.00	742.4
	Interior Finishes	m2	2,900	240.00	696.0

ELECTRONIC ENG FORM 3086

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26 Aug 99

FY 2001 CURRENT WORKING ESTIMATES FOR BUDGET PURPOSES PG 2

DD1391 FORM: 99999 DATE PRINTED: 04/05/1999
 PERM PROJNO: 99999 DATE REVISED: 04/05/1999
 Fort Sample Whole Barracks Complex Renewal
 California ACF = 1.23 TYPE OF CONSTRUCTION: Permanent

CONST CAT CODE	DESCRIPTION	UOM	QUANTITY	UNIT COST	TOTAL COST (\$000)

PRIMARY FACILITIES (CONT'T)					
14185	Company Operations Facilities (CON'T)				
	Plumbing	m2	2,900	160.00	464.0
	HAVC	m2	2,900	208.00	603.2
	Fire Protection System	m2	2,900	16.00	46.4
	Interior Electrical Power	m2	2,900	128.00	371.2
	Other Electrical Systems	m2	2,900	48.00	139.2
88040	IDS Installation	LS			(15)
	IDS Installation	LS			15.0
88041	Antiterrorism/Force Protection	LS			(550)
	Fragment Retention Film, 7mm	m2	2,300	81.00	186.0
	Fixed Bollard	EA	800	455.00	364.0
80800	Building Information Systems	LS			(470)
SUPPORT FACILITIES					3179
	Electric Service	LS			(405)
	Power Dist Cable	m	304.80	103.94	31.7
	Ext Lights	m	914.40	107.28	98.1
	Transformers	EA	3.00	18396.54	55.2
	Secondary Wiring	m	609.60	97.24	59.3
	Energy Mgt Sys Wiring	LS			8.0
	Power Ducts	m	1,219	117.36	143.1
	Cable Vault	EA	2.00	5000.00	10.0
	Water, Sewer, Gas	LS			(563)
	8" Water Main	m	1,067	234.71	250.4
	RO Main	m	304.80	117.36	35.8
	Sewer Main	m	548.64	184.42	101.2
	Sewer Manholes	EA	5.00	511.02	2.6
	Sewer Lift Station	EA	1.00	153304.50	153.3
	Fire Hydrants	EA	10.00	1941.86	19.4
	Steam and/or Chilled Water Distr	LS			(0)
	Paving, Walks, Curbs and Gutters	LS			(928)
	Parking	m2	7,943	98.43	781.9
	Roads	m2	1,338	98.07	131.2
	Sidewalks	m2	278.71	55.00	15.3
	Storm Drainage	LS			(99)
	Storm Drainage	m	548.64	180.45	99.0

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FY 2001 CURRENT WORKING ESTIMATES FOR BUDGET PURPOSES PG 3

DD1391 FORM: 99999 DATE PRINTED: 04/05/1999
 PERM PROJNO: 99999 DATE REVISED: 04/05/1999
 Fort Sample Whole Barracks Complex Renewal

California ACF = 1.23 TYPE OF CONSTRUCTION: Permanent

CONST CAT CODE	DESCRIPTION	UOM	QUANTITY	UNIT COST	TOTAL COST (\$000)
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Support Facility (Continued)

	Site Imp(794)/Demo(99)	LS			(893)
	Site Clearing & Grubbing	LS			52.0
	Landscape	LS			293.0
	Demo Bldgs 468,470,472,480 D	m2	500.19	198.06	99.1
	Grading	m2	16,723	5.38	90.0
	Fine Grading	m2	16,723	1.91	32.0
	Excavation Basement	m3	8,487	19.62	166.5
	Compaction	m2	16,723	9.57	160.0
80800	Information Systems	LS			(223)
	Information Systems	LS			222.6
88042	Anti-Terrorism/Force Protection	LS			(68)
	Security Lighting	EA	20.00	950.00	19
	Concrete Barriers	m	250.00	115.00	29
	Landscaping	LS			20
	Other	LS			(0)

ESTIMATED CONTRACT COST	27644
CONTINGENCIES 5.0%	1382
SUBTOTAL	29026
SIOH 5.7%	1654
PROJECT COST	30680
PROJECT COST (ROUNDED)	31000

INSTALLED EQUIPMENT (126)

DESIGN COST

COST GROWTH

COST BASE OF ESTIMATE	1 Apr 1999
CONSTRUCTION START DATE	1 Apr 2001
CONSTRUCTION MIDPOINT	1 Apr 2002
CONSTRUCTION COMPLETE	1 Apr 2003

1 Apr 2002	2160	
-----	=	----- = 1.033
1 Apr 1999	2090	

CURRENCY EXCHANGE RATE = 1.00 U.S. DOL

EXPLANATION OF DATA DEVELOPMENT

ELECTRONIC ENG FORM 3086

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26 Aug 99

FY 2001 CURRENT WORKING ESTIMATES FOR BUDGET PURPOSES PG 4

DD1391 FORM: 99999 DATE PRINTED: 04/05/1999
PERM PROJNO: 99999 DATE REVISED: 04/05/1999
Fort Sample Whole Barracks Complex Renewal

California ACF = 1.23 TYPE OF CONSTRUCTION: Permanent

COMMENYS

REVIEW AGENCY:

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APPENDIX B

COST DATA REPORT

B-1. Preparation and Submission of Award Cost Data.

a. The awarded construction cost information shall be reported using the latest version of Historical Analysis Generator (HAG). Instructions for data input requirements and reporting of awarded construction cost information are provided in the PC HAG user manual.

b. The costs to be reported will be contract cost only. Do not include construction contingencies and S&A.

c. The cost data report shall be reviewed and approved by the Chief of the Cost Engineering of the design district before release.

d. The award cost data will be submitted on a disk or by e-mail within thirty days after award of the contract to HQUSACE (CEMP-EE).

B-2. Reports Required.

a. Buildings. Reports will be submitted for all new buildings and facilities including additions to existing buildings and facilities whether they are funded by appropriated or nonappropriated funds.

b. Liquid-fuel dispensing and storage facilities (Category Codes 120 and 410). Reports will be submitted for liquid-fuel dispensing and storage projects when the contract award amount exceeds \$200,000.

c. Paving (Category Codes 110 and 850). Reports will be submitted for paving projects where the contract exceeds 5,000 SY (4,200 M²). Separate reports are required for flexible pavement or rigid pavement when the contract award exceeds 5,000 SY (4,200 M²).