



US Army Corps  
of Engineers  
Sacramento District

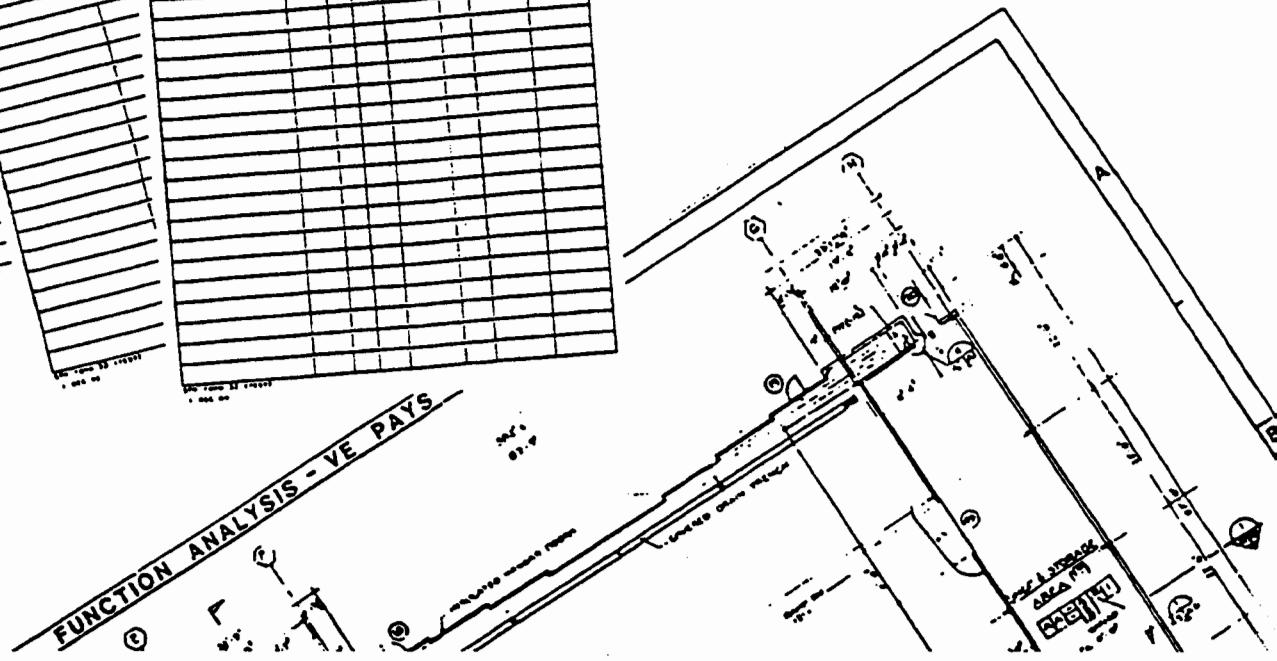
A-E Guide

Vol 2

# Cost Estimating

Three stacked "CONSTRUCTION COST ESTIMATE" forms. Each form has fields for Project Name, Description, Type of Estimate, and various cost breakdown categories like Direct Labor, Equipment, Materials, etc. The forms are oriented at different angles.

M-CACES



## **A-E COST ENGINEERING GUIDE**

### **VOLUME 2**

#### **FOREWORD**

This Guide provides general instructions and required procedures for Architect-Engineers (A-E) in the preparation of military **CURRENT WORKING ESTIMATES (CWE)** for U.S. Army Corps of Engineers, Sacramento District. This Guide is applicable when referenced in the A-E's contract document. In the event of conflict between this Guide and the A-E's contract document, the contract document shall take precedence.

All paragraphs within this guide are applicable to both Army and Air Force Projects unless directed or stated otherwise by the Corps of Engineers Cost Engineering Branch.

DATE OF PRINTING  
1 OCT 1992

## TYPES OF COST ESTIMATES

### Design Estimates

- a. Code A - Budget Estimates
- b. Code B - Concept & Preliminary Estimates
- c. Code C - Final Estimates

*Note: Design Cost Estimates for hospital projects*

*Submittals I and II are equivalent to Code A Cost Estimates*

*Submittals III and IV are equivalent to Code B Cost Estimates*

*Submittals V and VI are equivalent to Code C Cost Estimates*

## COST ENGINEER

The preparer of the cost estimate must possess a working knowledge of construction, be able to make professional determinations based on experience, and be capable of applying sound judgment on construction methodology in relationship to cost. The A-E may choose to hire the services of outside estimating consultants if the firm is not adequately staffed to prepare the required cost estimate.

## METHOD OF PREPARATION - MCACES GOLD

MCACES GOLD is a construction estimating software program. MCACES GOLD runs on IBM PC's, PS/2's, and 100% compatibles under DOS Version 3.3 or higher. MCACES GOLD requires 512 K free memory and 30 Megabytes of hard disk storage. The printer can be either dot matrix or laser. The printer must be capable of printing in landscape mode at 256 characters per line.

The Sacramento District Cost Engineering Branch suggests that if the A-E is not familiar with MCACES GOLD, **allow one full working day** for personnel from Sacramento District Cost Engineering Branch to meet with the A-E's cost estimating personnel in the introduction of using MCACES GOLD. The meeting place can be either at the District's office or at the A-E's office.

The A-E shall discuss the organization and format of the cost estimate (such as "Bid Item" schedule) with personnel from Sacramento District Cost Engineering Branch before starting any estimate.

### CURRENT WORKING ESTIMATE (CWE)

The CWE is the total cost of the project including Contingencies During Construction, and Supervision & Administration costs. The percentages are applied after the "Total Contract Cost". The percentages to be used shall be as follows:

#### Military Construction Projects (MILCON FUNDED)

Contingencies During Construction - 5%  
Supervision & Administration - 6%

#### Operations and Maintenance Projects (O&M FUNDED)

Contingencies During Construction - 10%  
Supervision & Administration - 7.5%

### GOVERNMENT FURNISHED ITEMS

The Government will furnish the A-E with the following items (if applicable) when the contract has been awarded and the SOFTWARE USER AGREEMENT (*see Appendix A*) has been signed & returned to Sacramento District Cost Engineering Branch:

1. Unit Price Book (UPB) - to be returned
2. MCACES GOLD Military Project Templates
4. MCACES GOLD Users Manual - to be returned
5. MCACES GOLD Software & Database - to be returned
6. Current Davis-Bacon wage rates for the project site
7. Tri-Service Military Construction Program escalation index
8. Project estimate information form

### REVIEW SUBMITTAL REQUIREMENTS (for each review stage)

The A-E will submit the cost estimate concurrently with each design review submittal, but bound under a separate cover, printed on 8-1/2" x 11" paper in landscape mode. The number of hard copies to be submitted shall be as shown in the A-E's scope of work.

The A-E shall also submit one bound hard copy of all supporting backup data sheets such as quantity takeoff worksheets and quotation records (*see Appendix C*) to Sacramento District Cost Engineering Branch only. The backup data sheets do not need to be printed with the cost estimate for general distribution.

The A-E shall also send one complete estimate project database files on

5-1/4" or 3-1/2" IBM compatible MS-DOS floppy disk(s) to Sacramento District Cost Engineering Branch only.

#### BACKCHECK REVIEW SUBMITTAL REQUIREMENTS

The A-E shall also submit a backcheck cost estimate for resolution of, and compliance with all estimating review comments. The estimate shall not be considered acceptable until all comments are resolved.

#### CODE A ESTIMATE

The A-E shall prepare a Code A (CWE) cost estimate when required by the scope of work. The Code A estimate is a general (order of magnitude) cost estimate based upon limited project information and normally corresponds to a 5% to 25% completion level of project design.

The Code A cost estimate shall be prepared by using the Parametric Cost Estimate (PCE) and MCACES GOLD computer software programs unless otherwise directed by the A-E's scope of work or by Sacramento District Cost Engineering Branch. The PCE shall be prepared by a "joint tasking" effort between the A-E and Sacramento District Cost Engineering Branch. Upon the A-E's Notice to Proceed ( NTP ) for the subject project, a scheduled working meeting time will be established for this "joint tasking". The PCE shall be prepared in the Sacramento District's office using Government's computer equipment and available software. The A-E's project designer will participate in the "joint tasking" meeting, **normally one full day of work**, at the Sacramento District's office. Contact with additional A-E representatives may be required by telephone during the scheduled working meeting. Prior to the "joint tasking" meeting the A-E will be required to fill out the project estimate information form upon which the PCE will be based. The Project Definition package will need to be essentially complete. The A-E is responsible to provide quantitative information on the project's technical, functional, and design requirements.

If a Parametric Cost Estimate method is not required, the format of the estimate shall be by the unit cost method. The unit costs shall reflect the complete direct current cost of work - direct cost being plant, labor, material, waste allowance, subcontractor's markups, sales tax, etc. The prime contractor's markups and escalation shall be applied separately. The structure and organization of the estimate shall be as directed by Sacramento District Cost Engineering Branch.

#### CODE B ESTIMATE

The A-E shall prepare a Code B (CWE) cost estimate when required by the scope of work. The Code B estimate is a concept or preliminary cost estimate and normally corresponds to a 35% completion level of project design.

The Code B estimate must be prepared in the Corps of Engineers Work Breakdown Structure (WBS). The Cost Engineering Branch will supply a

project file template with the WBS ready to be used with the MCACES GOLD software. This project file template structure may not be altered without prior approval or direction from the Cost Engineering Branch.

For the Code B estimate, Design Contingencies shall be applied. This is necessary to reflect the incompleteness of the project at this design stage. Use 5 percent for new facility construction and 10 percent for remodel of existing facilities and HTRW projects.

Detailed estimate line items - A detailed breakdown of the work tasks shall be listed and described. Quantities shall be provided for each task based to the maximum extent possible from takeoffs as shown on the design drawings. Quantities not determined from the drawings shall be based on assumptions to assure an adequate overall estimate. The level of task breakdown required shall be as itemized in the MCACES GOLD Unit Price Book (UPB) database, using the UPB tasks listed. The UPB is also not site or project specific; therefore, the user shall make any necessary labor productivity and material adjustments for each task item. If the tasks are not in the UPB, the user will be required to create and develop those tasks. Inputting of grouped tasks, lumped sum quantity, unit pricing, or quotes that fail to provide a detailed cost breakdown is not acceptable.

#### CODE C ESTIMATE

The A-E shall prepare a Code C (CWE) cost estimate when required by the scope of work. The Code C estimate is a final cost estimate and normally corresponds to a 90% to 95% completion level of project design. The preparation and format of a Code C estimate is the same as that from a Code B estimate except for the following item. Design contingencies shall not be applied on the Code C estimate since the design is considered complete without any major unknowns at this stage.

## **APPENDIX**

- A** SOFTWARE USER AGREEMENT
- B** ESTIMATE COVER SIGN OFF SHEET & PROJECT SUMMARY SHEET
- C** QUOTATION RECORD
- D** SAMPLE CODE A (CWE) COST ESTIMATE, PARAMETRIC
- E** SAMPLE CODE A (CWE) COST ESTIMATE, NON-PARAMETRIC
- F** SAMPLE CODE B OR CODE C (CWE) COST ESTIMATE
- G** DESCRIPTIONS OF PROJECT FILE TEMPLATES
- H** WORK BREAKDOWN STRUCTURE

**APPENDIX A**

SOFTWARE USER AGREEMENT FOR "COMPOSER GOLD" M-CACES EDITION  
and/or CURRENT SACRAMENTO DISTRICT UNIT PRICE DATABASES

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INSTRUCTIONS: The undersigned shall read, agree to abide by the following conditions, sign, date, and immediately return this agreement to COST ENGINEERING BRANCH.

Sacramento District hereby provides the "Composer Gold" M-CACES Edition estimating software, "Users Manual" and/or the current Sacramento District Unit Price Databases to be used in the preparation of construction cost estimates for the following project:

Project Name : \_\_\_\_\_

\_\_\_\_\_

Project Location : \_\_\_\_\_

Project # : \_\_\_\_\_

Spec # : \_\_\_\_\_

With the acceptance of the software "Composer Gold" M-CACES Edition, and/or the UPB/CSI Database, the undersigned agrees to uphold the following license agreements:

1. You may use the program, documentation and databases with the above referenced project only. You may not provide the program, documentation or databases to others except for the use on above referenced project. To do this, you may make only as many copies as necessary to complete the project. You must reproduce and include the copyright notice on the backup copy. Upon completion of said contract all backup copies shall be destroyed. All databases provided are "FOR OFFICIAL USE ONLY" and shall be protected as such. Upon completion of said project the program, documentation and/or Sacramento District databases shall be returned to:

U.S. Army Corps of Engineers  
Sacramento District  
Cost Engineering Branch  
Sacramento, California

YOU MAY NOT USE, COPY, MODIFY, OR TRANSFER THE PROGRAM, DATABASES, OR DOCUMENTATION, OR ANY COPY, EXCEPT AS EXPRESSLY PROVIDED IN THIS AGREEMENT.

2. ACKNOWLEDGMENT: I THE UNDERSIGNED, AS AN OFFICIAL REPRESENTATIVE OF THE CONTRACTOR OF SAID PROJECT ACKNOWLEDGE THAT I HAVE READ THIS AGREEMENT, UNDERSTAND IT, AND AGREE TO BE BOUND BY ITS TERMS AND CONDITIONS.

Arch-Engr Firm: \_\_\_\_\_

Address : \_\_\_\_\_

\_\_\_\_\_

Print Name : \_\_\_\_\_ Phone # \_\_\_\_\_

Signed : \_\_\_\_\_ Date \_\_\_\_\_

## **APPENDIX B**

### **ESTIMATE COVER SIGN OFF SHEET & PROJECT SUMMARY SHEET**

The total contract cost (including any escalation cost) for the Building Cost(s), Site & Utilities Cost(s), Sub-Allotment Cost(s), Additive Cost(s), and Option Cost(s) are to be "hand" carried forward to this sheet from the MCACES GOLD summary sheet. This project summary sheet form will automatically be printed when "Run Reports" is chosen on MCACES GOLD.

Current Working Estimate (CWE) - The CWE is developed by carrying forward the same percentages for Contingencies During Construction, and Supervision & Administration that were used in MCACES GOLD.

Show Funding Information - The Programmed Amount (PA), 90% Programmed Amount, and Midpoint of Construction shall be stated. The A-E may obtain the PA information from the Corps of Engineers' Project Manager.

All total costs shall be rounded to the nearest hundred dollar.

The completed Project Summary Sheet shall be placed right after the Cover Sign Off Sheet. See next page for an example of a cover sheet.



**US Army Corps  
of Engineers**  
Sacramento District

## **Estimate Cover Sign-Off Sheet**

**Project Title:** DENTAL CLINIC

**Project Location:** MATHER AIR FORCE BASE, CALIFORNIA

**Specification No.:** 6113

**Project No.:** PN 0167

To the best of my knowledge the integrity of this estimate has been maintained in full compliance with AR 340-17, "FOR OFFICIAL USE ONLY."

This inclosed submittal conforms to the A-E's scope of work and the Cost Estimating Guide, Military, Sacramento District Corps of Engineers.

**Architect-Engineer (A-E) Firm:**

McKEE & DAY  
1234 Capitol Mall  
Anytown, CA 95814

**Phone No.**

(916) 440-2512

**Responsible A-E Representative:**

DAVID MCKEE

**Phone No.**

(916)440-2512

## APPENDIX C

### QUOTATION RECORD

Quotations may be obtained by written or telephone method. Background information shall include the company's name, phone number with area code, and person contacted. The quote information shall be obtained from local suppliers (within the reasonable vicinity of the project site), subcontractors or other sources that may reasonably be expected to engage in the construction of the project. Reference books, estimating manuals, Corps of Engineers Unit Price Book, and other general reference guides are not acceptable sources for quotes.

Backup quotation records shall be submitted on:

- a. Major Mechanical and Electrical Equipment such as Transformers, Switch Gear, Refrigeration Equipment, Air Handling Devices, Boilers, Pumps, etc.
- b. Special System and Items such as Energy Monitoring Control Systems (EMCS), Fire Suppression System, Cranes, Elevators, Special Doors, Tempest Rooms, Computer Floors, etc.
- c. Major Materials Used in Construction such as Ready-Mix Concrete, Sand, Aggregate, Gravel, Asphaltic Concrete, Masonry Block, Roofing Materials, Large Pipe, etc.
- d. Special Construction such as Pre-engineered Buildings, Material Handling Systems, Storage Tanks, etc.
- e. Special HTRW Items

QUOTATION RECORD		DATE PREPARED		SHEET OF	
PROJECT		BASIS FOR ESTIMATE			
LOCATION		<input type="checkbox"/> CODE A (No design completed) <input type="checkbox"/> CODE B (Preliminary design) <input type="checkbox"/> CODE C (Final design) <input type="checkbox"/> OTHER (Specify) _____			
ARCHITECT ENGINEER					
SPEC NO.		ESTIMATOR		CHECKED BY	
QUANTITY	DESCRIPTION			COSTS	
COMPANY/SUPPLIER			ADDRESS (CITY)		
PHONE NO.		FTS NO.		PERSON CALLED	
FURNISHED ONLY (FOB) <input type="checkbox"/>	TERMS AND/OR DISCOUNTS	SHIPPING WEIGHT:	FREIGHT INCLUDED YES <input type="checkbox"/> NO <input type="checkbox"/>	TAX INCLUDED YES <input type="checkbox"/> NO <input type="checkbox"/>	QUOTED PRICE GOOD DAYS _____ DATE _____
FURNISHED & DELIVERED <input type="checkbox"/>					
FURNISHED & INSTALLED <input type="checkbox"/>					
REMARKS:					
RECEIVED BY: _____					

## **APPENDIX D**

### **SAMPLE CODE A (CWE) COST ESTIMATE, PARAMETRIC**

This cost estimate is only an example. The intent and purpose of this example cost estimate is to show the results of a Code A (CWE) Parametric Cost Estimate. Items used within this estimate are illustrative only and do not necessarily reflect an actual project.

Wed 26 Aug 1992

U.S. Army Corps of Engineers  
PROJECT PARSAM: TRACES Parametric Building - Child Center  
CHILD DEVELOPMENT CENTER

TIME 15:07:12

TITLE PAGE 1

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TRACES Parametric Building  
Child Center

Air Force Base, CA

Designed By: Principle Designer's Name  
Estimated By: Cost Engineer's Name

Prepared By: Architect-Engineer's Name

Date: 09/01/92  
Est Construction Time: 360 Days

M C A C E S   G O L D   E D I T I O N  
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992  
by Building Systems Design, Inc.  
Release 5.20J

Wed 26 Aug 1992

U.S. Army Corps of Engineers  
 PROJECT PARSAM: TRACES Parametric Building - Child Center  
 CHILD DEVELOPMENT CENTER  
 \*\* PROJECT OWNER SUMMARY - LEVEL 1 \*\*

TIME 15:07:12

SUMMARY PAGE 1

		QUANTITY UOM	CONTRACT	OTHER	ESCALATN	OWN FURN	CONTINGN	SIOH	TOTAL COST	UNIT COST
B001	Child Care Building	36300.00 SF	4,335,797	0	274,537	0	230,517	290,451	5,131,302	141.36
B002	Cold Storage Building	112.00 SF	15,083	0	955	0	802	1,010	17,851	159.38
B003	CCTV System		250,731	0	15,876	0	13,330	16,796	296,733	
C001	Site & Utilities		512,990	0	32,482	0	27,274	34,365	607,110	
C002	Play Ground Area		268,747	0	17,017	0	14,288	18,003	318,055	
TRACES Parametric Building			5,383,347	0	340,867	0	286,211	360,626	6,371,051	

Wed 26 Aug 1992

U.S. Army Corps of Engineers  
 PROJECT PARSAM: TRACES Parametric Building - Child Center  
 CHILD DEVELOPMENT CENTER  
 \*\* PROJECT OWNER SUMMARY - LEVEL 2 \*\*

TIME 15:07:12

SUMMARY PAGE 2

		QUANTITY UOM	CONTRACT	OTHER	ESCALATN	OWN FURN	CONTINGN	SIOH	TOTAL COST	UNIT COST
<hr/>										
B001	Child Care Building									
B001-01	SUBSTRUCTURE	202,731	0	12,837	0	10,778	13,581	239,927		
B001-02	SUPERSTRUCTURE	450,758	0	28,541	0	23,965	30,196	533,460		
B001-03	EXTERIOR CLOSURE	515,827	0	32,662	0	27,424	34,555	610,468		
B001-04	ROOFING	244,059	0	15,454	0	12,976	16,349	288,838		
B001-05	INTERIOR CONSTRUCTION	588,695	0	37,275	0	31,299	39,436	696,706		
B001-06	INTERIOR FINISHES	396,457	0	25,103	0	21,078	26,558	469,196		
B001-08	PLUMBING	322,302	0	20,408	0	17,136	21,591	381,436		
B001-09	H.V.A.C.	675,061	0	42,744	0	35,890	45,222	798,917		
B001-10	FIRE PROTECTION SYSTEMS	108,346	0	6,860	0	5,760	7,258	128,224		
B001-11	ELECTRICAL POWER AND LIGHTING	439,479	0	27,827	0	23,365	29,440	520,111		
B001-12	ELECTRICAL SYSTEMS	136,118	0	8,619	0	7,237	9,118	161,092		
B001-13	EQUIPMENT	140,151	0	8,874	0	7,451	9,389	165,865		
B001-14	FURNISHINGS	115,813	0	7,333	0	6,157	7,758	137,062		
	Child Care Building	36300.00 SF	4,335,797	0	274,537	0	230,517	290,451	5,131,302	141.36
B002	Cold Storage Building									
B002-15	Special Construction	15,083	0	955	0	802	1,010	17,851		
	Cold Storage Building	112.00 SF	15,083	0	955	0	802	1,010	17,851	159.38
B003	CCTV System									
B003-12	Electrical Systems	250,731	0	15,876	0	13,330	16,796	296,733		
	CCTV System	250,731	0	15,876	0	13,330	16,796	296,733		
C001	Site & Utilities									
C001-17	Site Preparation	90,876	0	5,754	0	4,832	6,088	107,549		
C001-18	Site Improvements	246,444	0	15,605	0	13,102	16,509	291,659		
C001-19	Site Civil/Mechanical	30,039	0	1,902	0	1,597	2,012	35,550		
C001-20	Site Electrical Utilities	145,631	0	9,221	0	7,743	9,756	172,351		
	Site & Utilities	512,990	0	32,482	0	27,274	34,365	607,110		
C002	Play Ground Area									
C002-17	Site Preparation	3,790	0	240	0	202	254	4,486		
C002-18	Site Improvements	264,957	0	16,777	0	14,087	17,749	313,569		
	Play Ground Area	268,747	0	17,017	0	14,288	18,003	318,055		
	TRACES Parametric Building	5,383,347	0	340,867	0	286,211	360,626	6,371,051		

Wed 26 Aug 1992

U.S. Army Corps of Engineers  
 PROJECT PARSAM: TRACES Parametric Building - Child Center  
 CHILD DEVELOPMENT CENTER  
 \*\* PROJECT OWNER SUMMARY - LEVEL 3 \*\*

TIME 15:07:12

SUMMARY PAGE 3

		QUANTITY	UOM	CONTRACT	OTHER	ESCALATN	OWN FURN	CONTINGN	SIOH	TOTAL COST	UNIT COST
<hr/>											
B001	Child Care Building										
B001-01	SUBSTRUCTURE										
B001-0101	STANDARD FOUNDATION	90,428		0	5,726	0	4,808	6,058	107,019		
B001-0103	SLAB ON GRADE	112,303		0	7,111	0	5,971	7,523	132,908		
	SUBSTRUCTURE	202,731		0	12,837	0	10,778	13,581	239,927		
B001-02	SUPERSTRUCTURE										
B001-0202	ROOF CONSTRUCTION	450,758		0	28,541	0	23,965	30,196	533,460		
	SUPERSTRUCTURE	450,758		0	28,541	0	23,965	30,196	533,460		
B001-03	EXTERIOR CLOSURE										
B001-0301	EXTERIOR WALLS	440,328		0	27,881	0	23,410	29,497	521,117		
B001-0302	EXTERIOR DOORS	53,253		0	3,372	0	2,831	3,567	63,024		
B001-0303	EXTERIOR WINDOWS	22,246		0	1,409	0	1,183	1,490	26,328		
	EXTERIOR CLOSURE	515,827		0	32,662	0	27,424	34,555	610,468		
B001-04	ROOFING										
B001-0401	ROOFING	244,059		0	15,454	0	12,976	16,349	288,838		
	ROOFING	244,059		0	15,454	0	12,976	16,349	288,838		
B001-05	INTERIOR CONSTRUCTION										
B001-0501	PARTITIONS	266,347		0	16,865	0	14,161	17,842	315,214		
B001-0502	INTERIOR DOORS	147,229		0	9,322	0	7,828	9,863	174,242		
B001-0503	INTERIOR WINDOWS	48,983		0	3,102	0	2,604	3,281	57,971		
B001-0504	INTERIOR SPECIALTIES	74,383		0	4,710	0	3,955	4,983	88,030		
B001-0505	CASEWORK	51,753		0	3,277	0	2,752	3,467	61,249		
	INTERIOR CONSTRUCTION	588,695		0	37,275	0	31,299	39,436	696,706		
B001-06	INTERIOR FINISHES										
B001-0601	WALL FINISHES	206,106		0	13,050	0	10,958	13,807	243,921		
B001-0602	FLOORING & FLOOR FINISHES	104,332		0	6,606	0	5,547	6,989	123,474		
B001-0603	CEILING & CEILING FINISHES	86,019		0	5,447	0	4,573	5,762	101,801		

Wed 26 Aug 1992

**U.S. Army Corps of Engineers**  
**PROJECT PARSAM: TRACES Parametric Building - Child Center**  
**CHILD DEVELOPMENT CENTER**  
**\*\* PROJECT OWNER SUMMARY - LEVEL 3 \*\***

TIME 15:07:12

SUMMARY PAGE 4

Wed 26 Aug 1992

U.S. Army Corps of Engineers  
 PROJECT PARSAM: TRACES Parametric Building - Child Center  
 CHILD DEVELOPMENT CENTER  
 \*\* PROJECT OWNER SUMMARY - LEVEL 3 \*\*

TIME 15:07:12

SUMMARY PAGE 5

		QUANTITY UOM	CONTRACT	OTHER	ESCALATN	OWN FURN	CONTINGN	SIOH	TOTAL COST	UNIT COST
B001-1301	FIXED & MOVEABLE EQUIPMENT		140,151	0	8,874	0	7,451	9,389	165,865	
	EQUIPMENT		140,151	0	8,874	0	7,451	9,389	165,865	
B001-14	FURNISHINGS									
B001-1401	FURNISHINGS		115,813	0	7,333	0	6,157	7,758	137,062	
	FURNISHINGS		115,813	0	7,333	0	6,157	7,758	137,062	
B001-15	SPECIAL CONSTRUCTION									
	Child Care Building	36300.00 SF	4,335,797	0	274,537	0	230,517	290,451	5,131,302	141.36
B002	Cold Storage Building									
B002-15	Special Construction									
B002-1503	Special Purpose Rooms	112.00 SF	15,083	0	955	0	802	1,010	17,851	159.38
	Special Construction		15,083	0	955	0	802	1,010	17,851	
	Cold Storage Building	112.00 SF	15,083	0	955	0	802	1,010	17,851	159.38
B003	CCTV System									
B003-12	Electrical Systems									
B003-1201	Communication, Security and		250,731	0	15,876	0	13,330	16,796	296,733	
	Electrical Systems		250,731	0	15,876	0	13,330	16,796	296,733	
	CCTV System		250,731	0	15,876	0	13,330	16,796	296,733	
C001	SITE & UTILITIES									
C001-17	Site Preparation									
C001-1701	Site Clearing		70,386	0	4,457	0	3,742	4,715	83,300	
C001-1703	Site Earthwork		20,490	0	1,297	0	1,089	1,373	24,249	
	Site Preparation		90,876	0	5,754	0	4,832	6,088	107,549	

Wed 26 Aug 1992

U.S. Army Corps of Engineers  
 PROJECT PARSAM: TRACES Parametric Building - Child Center  
 CHILD DEVELOPMENT CENTER  
 \*\* PROJECT OWNER SUMMARY - LEVEL 3 \*\*

TIME 15:07:12

SUMMARY PAGE 6

		QUANTITY	UOM	CONTRACT	OTHER	ESCALATN	OWN FURN	CONTINGN	SIOH	TOTAL COST	UNIT COST
<b>C001-18 Site Improvements</b>											
C001-1801	Parking Lots	90,121		0	5,706	0	4,791	6,037		106,655	
C001-1802	Walks, Steps, Ramps & Terraces	6,881		0	436	0	366	461		8,143	
C001-1804	Site Development	74,630		0	4,725	0	3,968	4,999		88,322	
C001-1805	Landscaping	74,812		0	4,737	0	3,977	5,012		88,538	
	<b>Site Improvements</b>	<b>246,444</b>		<b>0</b>	<b>15,605</b>	<b>0</b>	<b>13,102</b>	<b>16,509</b>		<b>291,659</b>	
<b>C001-19 Site Civil/Mechanical</b>											
C001-1901	Water Systems	22,006		0	1,393	0	1,170	1,474		26,043	
C001-1902	Sanitary Sewer Systems	5,513		0	349	0	293	369		6,525	
C001-1907	Gas Distribution Systems	2,520		0	160	0	134	169		2,982	
	<b>Site Civil/Mechanical</b>	<b>30,039</b>		<b>0</b>	<b>1,902</b>	<b>0</b>	<b>1,597</b>	<b>2,012</b>		<b>35,550</b>	
<b>C001-20 Site Electrical Utilities</b>											
C001-2002	Exterior Electrical Distribution	67,921		0	4,301	0	3,611	4,550		80,382	
C001-2003	Exterior Lighting	33,139		0	2,098	0	1,762	2,220		39,220	
C001-2004	Exterior Communications & Alarm	33,508		0	2,122	0	1,781	2,245		39,656	
C001-2005	Exterior Security Sensors & TV	11,064		0	701	0	588	741		13,093	
	<b>Site Electrical Utilities</b>	<b>145,631</b>		<b>0</b>	<b>9,221</b>	<b>0</b>	<b>7,743</b>	<b>9,756</b>		<b>172,351</b>	
	<b>Site &amp; Utilities</b>	<b>512,990</b>		<b>0</b>	<b>32,482</b>	<b>0</b>	<b>27,274</b>	<b>34,365</b>		<b>607,110</b>	
<b>C002 Play Ground Area</b>											
<b>C002-17 Site Preparation</b>											
C002-1701	Site Clearing	3,558		0	225	0	189	238		4,210	
C002-1703	Site Earthwork	233		0	15	0	12	16		275	
	<b>Site Preparation</b>	<b>3,790</b>		<b>0</b>	<b>240</b>	<b>0</b>	<b>202</b>	<b>254</b>		<b>4,486</b>	
<b>C002-18 Site Improvements</b>											
C002-1802	Walks, Steps, Ramps & Terraces	7,659		0	485	0	407	513		9,064	
C002-1804	Site Development	221,950		0	14,054	0	11,800	14,868		262,672	
C002-1805	Landscaping	35,348		0	2,238	0	1,879	2,368		41,834	
	<b>Site Improvements</b>	<b>264,957</b>		<b>0</b>	<b>16,777</b>	<b>0</b>	<b>14,087</b>	<b>17,749</b>		<b>313,569</b>	
	<b>Play Ground Area</b>	<b>268,747</b>		<b>0</b>	<b>17,017</b>	<b>0</b>	<b>14,288</b>	<b>18,003</b>		<b>318,055</b>	

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PROJECT PARSAM: TRACES Parametric Building - Child Center  
CHILD DEVELOPMENT CENTER  
\*\* PROJECT OWNER SUMMARY - LEVEL 3 \*\*

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	QUANTITY UOM	CONTRACT	OTHER	ESCALATN	OWN FURN	CONTINGN	SIOH	TOTAL COST	UNIT COST
TRACES Parametric Building	5,383,347	0	340,867	0	286,211	360,626	6,371,051		

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 PROJECT PARSAM: TRACES Parametric Building - Child Center  
 CHILD DEVELOPMENT CENTER  
 \*\* PROJECT INDIRECT SUMMARY - LEVEL 1 \*\*

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		QUANTITY UOM	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
B001	Child Care Building	36300.00 SF	3,744,684	224,681	119,081	204,422	42,929	4,335,797	119.44
B002	Cold Storage Building	112.00 SF	13,027	782	414	711	149	15,083	134.67
B003	CCTV System		216,548	12,993	6,886	11,821	2,482	250,731	
C001	Site & Utilities		443,052	26,583	14,089	24,186	5,079	512,990	
C002	Play Ground Area		232,108	13,926	7,381	12,671	2,661	268,747	
<b>TRACES Parametric Building</b>			<b>4,649,419</b>	<b>278,965</b>	<b>147,852</b>	<b>253,812</b>	<b>53,300</b>	<b>5,383,347</b>	
Escalation to Midpoint of Constr.								340,867	
<b>SUBTOTAL</b>								<b>5,724,214</b>	
Contingencies During Construction								286,211	
<b>SUBTOTAL</b>								<b>6,010,425</b>	
Supervision & Administration								360,626	
<b>TOTAL INCL OWNER COSTS</b>								<b>6,371,051</b>	

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U.S. Army Corps of Engineers  
 PROJECT PARSAM: TRACES Parametric Building - Child Center  
 CHILD DEVELOPMENT CENTER  
 \*\* PROJECT INDIRECT SUMMARY - LEVEL 2 \*\*

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		QUANTITY UOM	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
<b>B001 Child Care Building</b>									
B001-01	SUBSTRUCTURE		175,092	10,506	5,568	9,558	2,007	202,731	
B001-02	SUPERSTRUCTURE		389,304	23,358	12,380	21,252	4,463	450,758	
B001-03	EXTERIOR CLOSURE		445,503	26,730	14,167	24,320	5,107	515,827	
B001-04	ROOFING		210,786	12,667	6,703	11,507	2,416	244,059	
B001-05	INTERIOR CONSTRUCTION		508,437	30,506	16,168	27,756	5,829	588,695	
B001-06	INTERIOR FINISHES		342,407	20,544	10,889	18,692	3,925	396,457	
B001-08	PLUMBING		278,362	16,702	8,852	15,196	3,191	322,302	
B001-09	H.V.A.C.		583,028	34,982	18,540	31,827	6,684	675,061	
B001-10	FIRE PROTECTION SYSTEMS		93,575	5,614	2,976	5,108	1,073	108,346	
B001-11	ELECTRICAL POWER AND LIGHTING		379,563	22,774	12,070	20,720	4,351	439,479	
B001-12	ELECTRICAL SYSTEMS		117,561	7,054	3,738	6,418	1,348	136,118	
B001-13	EQUIPMENT		121,044	7,263	3,849	6,608	1,388	140,151	
B001-14	FURNISHINGS		100,024	6,001	3,181	5,460	1,147	115,813	
<b>Child Care Building</b>		36300.00 SF	3,744,684	224,681	119,081	204,422	42,929	4,335,797	119.44
<b>B002 Cold Storage Building</b>									
B002-15	Special Construction		13,027	782	414	711	149	15,083	
<b>Cold Storage Building</b>		112.00 SF	13,027	782	414	711	149	15,083	134.67
<b>B003 CCTV System</b>									
B003-12	Electrical Systems		216,548	12,993	6,886	11,821	2,482	250,731	
<b>CCTV System</b>			216,548	12,993	6,886	11,821	2,482	250,731	
<b>C001 Site &amp; Utilities</b>									
C001-17	Site Preparation		78,487	4,709	2,496	4,285	900	90,876	
C001-18	Site Improvements		212,845	12,771	6,768	11,619	2,440	246,444	
C001-19	Site Civil/Mechanical		25,943	1,557	825	1,416	297	30,039	
C001-20	Site Electrical Utilities		125,777	7,547	4,000	6,866	1,442	145,631	
<b>Site &amp; Utilities</b>			443,052	26,583	14,089	24,186	5,079	512,990	
<b>C002 Play Ground Area</b>									
C002-17	Site Preparation		3,274	196	104	179	38	3,790	
C002-18	Site Improvements		228,834	13,730	7,277	12,492	2,623	264,957	
<b>Play Ground Area</b>			232,108	13,926	7,381	12,671	2,661	268,747	
<b>TRACES Parametric Building</b>			4,649,419	278,965	147,852	253,812	53,300	5,383,347	

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**U.S. Army Corps of Engineers**  
**PROJECT PARSAM: TRACES Parametric Building - Child Center**  
**CHILD DEVELOPMENT CENTER**  
**\*\* PROJECT INDIRECT SUMMARY - LEVEL 2 \*\***

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	QUANTITY UOM	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
<b>Escalation to Midpoint of Constr.</b>							<b>340,867</b>	
<b>SUBTOTAL</b>							<b>5,724,214</b>	
<b>Contingencies During Construction</b>							<b>286,211</b>	
<b>SUBTOTAL</b>							<b>6,010,425</b>	
<b>Supervision &amp; Administration</b>							<b>360,626</b>	
<b>TOTAL INCL OWNER COSTS</b>							<b>6,371,051</b>	

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 PROJECT PARSAM: TRACES Parametric Building - Child Center  
 CHILD DEVELOPMENT CENTER  
 \*\* PROJECT INDIRECT SUMMARY - LEVEL 3 \*\*

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		QUANTITY UOM	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
<b>B001 Child Care Building</b>									
<b>B001-01 SUBSTRUCTURE</b>									
B001-0101	STANDARD FOUNDATION		78,100	4,686	2,484	4,263	895	90,428	
B001-0103	SLAB ON GRADE		96,992	5,820	3,084	5,295	1,112	112,303	
	SUBSTRUCTURE		175,092	10,506	5,568	9,558	2,007	202,731	
<b>B001-02 SUPERSTRUCTURE</b>									
B001-0202	ROOF CONSTRUCTION		389,304	23,358	12,380	21,252	4,463	450,758	
	SUPERSTRUCTURE		389,304	23,358	12,380	21,252	4,463	450,758	
<b>B001-03 EXTERIOR CLOSURE</b>									
B001-0301	EXTERIOR WALLS		380,297	22,818	12,093	20,760	4,360	440,328	
B001-0302	EXTERIOR DOORS		45,993	2,760	1,463	2,511	527	53,253	
B001-0303	EXTERIOR WINDOWS		19,213	1,153	611	1,049	220	22,246	
	EXTERIOR CLOSURE		445,503	26,730	14,167	24,320	5,107	515,827	
<b>B001-04 ROOFING</b>									
B001-0401	ROOFING		210,786	12,647	6,703	11,507	2,416	244,059	
	ROOFING		210,786	12,647	6,703	11,507	2,416	244,059	
<b>B001-05 INTERIOR CONSTRUCTION</b>									
B001-0501	PARTITIONS		230,035	13,802	7,315	12,558	2,637	266,347	
B001-0502	INTERIOR DOORS		127,157	7,629	4,044	6,942	1,458	147,229	
B001-0503	INTERIOR WINDOWS		42,305	2,538	1,345	2,309	485	48,983	
B001-0504	INTERIOR SPECIALTIES		64,242	3,855	2,043	3,507	736	74,383	
B001-0505	CASEWORK		44,698	2,682	1,421	2,440	512	51,753	
	INTERIOR CONSTRUCTION		508,437	30,506	16,168	27,756	5,829	588,695	
<b>B001-06 INTERIOR FINISHES</b>									
B001-0601	WALL FINISHES		178,007	10,680	5,661	9,717	2,041	206,106	
B001-0602	FLOORING & FLOOR FINISHES		90,108	5,406	2,865	4,919	1,033	104,332	
B001-0603	CEILING & CEILING FINISHES		74,292	4,458	2,362	4,056	852	86,019	

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**PROJECT PARSAK: TRACES Parametric Building - Child Center**  
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**\*\* PROJECT INDIRECT SUMMARY - LEVEL 3 \*\***

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U.S. Army Corps of Engineers  
 PROJECT PARSAM: TRACES Parametric Building - Child Center  
 CHILD DEVELOPMENT CENTER  
 \*\* PROJECT INDIRECT SUMMARY - LEVEL 3 \*\*

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		QUANTITY UOM	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
B001-1301	FIXED & MOVEABLE EQUIPMENT		121,044	7,263	3,849	6,608	1,388	140,151	
	EQUIPMENT		121,044	7,263	3,849	6,608	1,388	140,151	
B001-14	FURNISHINGS								
B001-1401	FURNISHINGS		100,024	6,001	3,181	5,460	1,147	115,813	
	FURNISHINGS		100,024	6,001	3,181	5,460	1,147	115,813	
B001-15	SPECIAL CONSTRUCTION								
	Child Care Building	36300.00 SF	3,744,684	224,681	119,081	204,422	42,929	4,335,797	119.44
B002	Cold Storage Building								
B002-15	Special Construction								
B002-1503	Special Purpose Rooms	112.00 SF	13,027	782	414	711	149	15,083	134.67
	Special Construction		13,027	782	414	711	149	15,083	
	Cold Storage Building	112.00 SF	13,027	782	414	711	149	15,083	134.67
B003	CCTV System								
B003-12	Electrical Systems								
B003-1201	Communication, Security and		216,548	12,993	6,886	11,821	2,482	250,731	
	Electrical Systems		216,548	12,993	6,886	11,821	2,482	250,731	
	CCTV System		216,548	12,993	6,886	11,821	2,482	250,731	
C001	Site & Utilities								
C001-17	Site Preparation								
C001-1701	Site Clearing		60,790	3,647	1,933	3,319	697	70,386	
C001-1703	Site Earthwork		17,696	1,062	563	966	203	20,490	
	Site Preparation		78,487	4,709	2,496	4,285	900	90,876	

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 PROJECT PARSAM: TRACES Parametric Building - Child Center  
 CHILD DEVELOPMENT CENTER  
 \*\* PROJECT INDIRECT SUMMARY - LEVEL 3 \*\*

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		QUANTITY UOM	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
<b>C001-18 Site Improvements</b>									
C001-1801	Parking Lots	77,834	4,670	2,475	4,249	892	90,121		
C001-1802	Walks, Steps, Ramps & Terraces	5,943	357	189	324	68	6,881		
C001-1804	Site Development	64,455	3,867	2,050	3,519	739	74,630		
C001-1805	Landscaping	64,613	3,877	2,055	3,527	741	74,812		
	<b>Site Improvements</b>	<b>212,845</b>	<b>12,771</b>	<b>6,768</b>	<b>11,619</b>	<b>2,440</b>	<b>246,444</b>		
<b>C001-19 Site Civil/Mechanical</b>									
C001-1901	Water Systems	19,006	1,140	604	1,038	218	22,006		
C001-1902	Sanitary Sewer Systems	4,762	286	151	260	55	5,513		
C001-1907	Gas Distribution Systems	2,176	131	69	119	25	2,520		
	<b>Site Civil/Mechanical</b>	<b>25,943</b>	<b>1,557</b>	<b>825</b>	<b>1,416</b>	<b>297</b>	<b>30,039</b>		
<b>C001-20 Site Electrical Utilities</b>									
C001-2002	Exterior Electrical Distribution	58,661	3,520	1,865	3,202	672	67,921		
C001-2003	Exterior Lighting	28,621	1,717	910	1,562	328	33,139		
C001-2004	Exterior Communications & Alarm	28,940	1,736	920	1,580	332	33,508		
C001-2005	Exterior Security Sensors & TV	9,555	573	304	522	110	11,064		
	<b>Site Electrical Utilities</b>	<b>125,777</b>	<b>7,547</b>	<b>4,000</b>	<b>6,866</b>	<b>1,442</b>	<b>145,631</b>		
	<b>Site &amp; Utilities</b>	<b>443,052</b>	<b>26,583</b>	<b>14,089</b>	<b>24,186</b>	<b>5,079</b>	<b>512,990</b>		
<b>C002 Play Ground Area</b>									
<b>C002-17 Site Preparation</b>									
C002-1701	Site Clearing	3,073	184	98	168	35	3,558		
C002-1703	Site Earthwork	201	12	6	11	2	233		
	<b>Site Preparation</b>	<b>3,274</b>	<b>196</b>	<b>104</b>	<b>179</b>	<b>38</b>	<b>3,790</b>		
<b>C002-18 Site Improvements</b>									
C002-1802	Walks, Steps, Ramps & Terraces	6,614	397	210	361	76	7,659		
C002-1804	Site Development	191,691	11,501	6,096	10,464	2,198	221,950		
C002-1805	Landscaping	30,529	1,832	971	1,667	350	35,348		
	<b>Site Improvements</b>	<b>228,834</b>	<b>13,730</b>	<b>7,277</b>	<b>12,492</b>	<b>2,623</b>	<b>264,957</b>		
	<b>Play Ground Area</b>	<b>232,108</b>	<b>13,926</b>	<b>7,381</b>	<b>12,671</b>	<b>2,661</b>	<b>268,747</b>		

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PROJECT PARSAM: TRACES Parametric Building - Child Center  
CHILD DEVELOPMENT CENTER  
\*\* PROJECT INDIRECT SUMMARY - LEVEL 3 \*\*

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	QUANTITY	UOM	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
TRACES Parametric Building Escalation to Midpoint of Constr.	4,649,419		278,965	147,852	253,812	53,300	5,383,347		
								340,867	
SUBTOTAL Contingencies During Construction							5,724,214		
							286,211		
SUBTOTAL Supervision & Administration							6,010,425		
							360,626		
<b>TOTAL INCL OWNER COSTS</b>							<b>6,371,051</b>		

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 PROJECT PARSAM: TRACES Parametric Building - Child Center  
 CHILD DEVELOPMENT CENTER  
 \*\* PROJECT DIRECT SUMMARY - LEVEL 1 \*\*

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		QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT COST
B001	Child Care Building	36300.00	SF	45,164	1,735,712	37,525	1,971,447	0	3,744,684	103.16
B002	Cold Storage Building	112.00	SF	107	3,799	104	9,125	0	13,027	116.31
B003	CCTV System			967	31,731	375	184,441	0	216,548	
C001	Site & Utilities			5,155	163,724	18,047	261,282	0	443,052	
C002	Play Ground Area			1,903	63,899	7,608	160,600	0	232,108	
	TRACES Parametric Building Prime's Field Overhead (Gen. Req)			53,296	1,998,864	63,659	2,586,895	0	4,649,419 278,965	
	SUBTOTAL Prime's Home Office Overhead								4,928,384 147,852	
	SUBTOTAL Prime Contractor's Profit								5,076,235 253,812	
	SUBTOTAL Prime Contractor's Bond								5,330,047 53,300	
	TOTAL INCL INDIRECTS Escalation to Midpoint of Constr.								5,383,347 340,867	
	SUBTOTAL Contingencies During Construction								5,724,214 286,211	
	SUBTOTAL Supervision & Administration								6,010,425 360,626	
	TOTAL INCL OWNER COSTS								6,371,051	

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 PROJECT PARSAM: TRACES Parametric Building - Child Center  
 CHILD DEVELOPMENT CENTER  
 \*\* PROJECT DIRECT SUMMARY - LEVEL 2 \*\*

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		QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT COST
<b>B001 Child Care Building</b>										
B001-01	SUBSTRUCTURE	3,279		104,176	4,390	66,526		0	175,092	
B001-02	SUPERSTRUCTURE	2,831		107,736	12,629	268,940		0	389,304	
B001-03	EXTERIOR CLOSURE	9,752		300,036	2,537	142,930		0	445,503	
B001-04	ROOFING	1,379		55,711	5,133	149,941		0	210,786	
B001-05	INTERIOR CONSTRUCTION	6,665		230,332	2,096	276,009		0	508,437	
B001-06	INTERIOR FINISHES	6,037		207,570	1,934	132,902		0	342,407	
B001-08	PLUMBING	3,609		152,494	2,201	123,667		0	278,362	
B001-09	H.V.A.C.	6,126		253,404	3,041	326,582		0	583,028	
B001-10	FIRE PROTECTION SYSTEMS	387		15,789	1,680	76,105		0	93,575	
B001-11	ELECTRICAL POWER AND LIGHTING	4,176		219,730	1,354	158,480		0	379,563	
B001-12	ELECTRICAL SYSTEMS	526		75,036	390	42,135		0	117,561	
B001-13	EQUIPMENT	199		8,382	71	112,591		0	121,044	
B001-14	FURNISHINGS	0		5,315	68	94,641		0	100,024	
<b>Child Care Building</b>		36300.00	SF	45,164	1,735,712	37,525	1,971,447	0	3,744,684	103.16
<b>B002 Cold Storage Building</b>										
B002-15	Special Construction	107		3,799	104	9,125		0	13,027	
<b>Cold Storage Building</b>		112.00	SF	107	3,799	104	9,125	0	13,027	116.31
<b>B003 CCTV System</b>										
B003-12	Electrical Systems	967		31,731	375	184,441		0	216,548	
<b>CCTV System</b>		967		31,731	375	184,441		0	216,548	
<b>C001 Site &amp; Utilities</b>										
C001-17	Site Preparation	640		23,070	5,644	49,773		0	78,487	
C001-18	Site Improvements	2,727		81,563	9,307	121,975		0	212,845	
C001-19	Site Civil/Mechanical	333		12,721	1,464	11,758		0	25,943	
C001-20	Site Electrical Utilities	1,455		46,369	1,632	77,775		0	125,777	
<b>Site &amp; Utilities</b>		5,155		163,724	18,047	261,282		0	443,052	
<b>C002 Play Ground Area</b>										
C002-17	Site Preparation	42		1,711	1,446	117		0	3,274	
C002-18	Site Improvements	1,861		62,189	6,163	160,483		0	228,834	
<b>Play Ground Area</b>		1,903		63,899	7,608	160,600		0	232,108	
<b>TRACES Parametric Building</b>		53,296		1,998,864	63,659	2,586,895		0	4,649,419	

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**U.S. Army Corps of Engineers**  
**PROJECT PARSAM: TRACES Parametric Building - Child Center**  
**CHILD DEVELOPMENT CENTER**  
**\*\* PROJECT DIRECT SUMMARY - LEVEL 2 \*\***

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	QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT COST
Prime's Field Overhead (Gen Req)								278,965	
SUBTOTAL								4,928,384	
Prime's Home Office Overhead								147,852	
SUBTOTAL								5,076,235	
Prime Contractor's Profit								253,812	
SUBTOTAL								5,330,047	
Prime Contractor's Bond								53,300	
TOTAL INCL INDIRECTS								5,383,347	
Escalation to Midpoint of Constr.								340,867	
SUBTOTAL								5,724,214	
Contingencies During Construction								286,211	
SUBTOTAL								6,010,425	
Supervision & Administration								360,626	
TOTAL INCL OWNER COSTS								6,371,051	

Wed 26 Aug 1992

U.S. Army Corps of Engineers  
 PROJECT PARSAM: TRACES Parametric Building - Child Center  
 CHILD DEVELOPMENT CENTER  
 \*\* PROJECT DIRECT SUMMARY - LEVEL 3 \*\*

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		QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT COST
<hr/>										
B001	Child Care Building									
B001-01	SUBSTRUCTURE									
B001-0101	STANDARD FOUNDATION	1,715		52,360	726	25,014	0	78,100		
B001-0103	SLAB ON GRADE	1,564		51,816	3,664	41,512	0	96,992		
	SUBSTRUCTURE	3,279		104,176	4,390	66,526	0	175,092		
B001-02	SUPERSTRUCTURE									
B001-0202	ROOF CONSTRUCTION	2,831		107,736	12,629	268,940	0	389,304		
	SUPERSTRUCTURE	2,831		107,736	12,629	268,940	0	389,304		
B001-03	EXTERIOR CLOSURE									
B001-0301	EXTERIOR WALLS	8,907		272,510	2,293	105,493	0	380,297		
B001-0302	EXTERIOR DOORS	613		20,169	213	25,611	0	45,993		
B001-0303	EXTERIOR WINDOWS	233		7,358	30	11,826	0	19,213		
	EXTERIOR CLOSURE	9,752		300,036	2,537	142,930	0	445,503		
B001-04	ROOFING									
B001-0401	ROOFING	1,579		55,711	5,133	149,941	0	210,786		
	ROOFING	1,579		55,711	5,133	149,941	0	210,786		
B001-05	INTERIOR CONSTRUCTION									
B001-0501	PARTITIONS	3,784		118,218	1,133	110,684	0	230,035		
B001-0502	INTERIOR DOORS	1,767		57,725	651	68,781	0	127,157		
B001-0503	INTERIOR WINDOWS	520		19,025	92	23,189	0	42,305		
B001-0504	INTERIOR SPECIALTIES	0		16,405	0	47,837	0	64,242		
B001-0505	CASEWORK	593		18,958	221	25,518	0	44,698		
	INTERIOR CONSTRUCTION	6,665		230,332	2,096	276,009	0	508,437		
B001-06	INTERIOR FINISHES									
B001-0601	WALL FINISHES	3,508		121,404	1,226	55,377	0	178,007		
B001-0602	FLOORING & FLOOR FINISHES	966		36,294	224	53,590	0	90,108		
B001-0603	CEILING & CEILING FINISHES	1,562		49,873	483	23,936	0	74,292		

Wed 26 Aug 1992

**U.S. Army Corps of Engineers**  
**PROJECT PARSA: TRACES Parametric Building - Child Center**  
**CHILD DEVELOPMENT CENTER**  
**\*\* PROJECT DIRECT SUMMARY - LEVEL 3 \*\***

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U.S. Army Corps of Engineers  
 PROJECT PARSAM: TRACES Parametric Building - Child Center  
 CHILD DEVELOPMENT CENTER  
 \*\* PROJECT DIRECT SUMMARY - LEVEL 3 \*\*

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		QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT COST
B001-1301	FIXED & MOVEABLE EQUIPMENT	199		8,382	71	112,591		0	121,044	
	EQUIPMENT	199		8,382	71	112,591		0	121,044	
B001-14	FURNISHINGS									
B001-1401	FURNISHINGS	0		5,315	68	94,641		0	100,024	
	FURNISHINGS	0		5,315	68	94,641		0	100,024	
B001-15	SPECIAL CONSTRUCTION									
	Child Care Building	36300.00	SF	45,164	1,735,712	37,525	1,971,447		0	3,744,684
B002	Cold Storage Building									
B002-15	Special Construction									
B002-1503	Special Purpose Rooms	112.00	SF	107	3,799	104	9,125	0	13,027	116.31
	Special Construction	107		3,799	104	9,125		0	13,027	
	Cold Storage Building	112.00	SF	107	3,799	104	9,125	0	13,027	116.31
B003	CCTV System									
B003-12	Electrical Systems									
B003-1201	Communication, Security and	967		31,731	375	184,441		0	216,548	
	Electrical Systems	967		31,731	375	184,441		0	216,548	
	CCTV System	967		31,731	375	184,441		0	216,548	
C001	SITE & UTILITIES									
C001-17	Site Preparation									
C001-1701	Site Clearing	422		15,061	4,039	41,690		0	60,790	
C001-1703	Site Earthwork	218		8,009	1,604	8,083		0	17,696	
	Site Preparation	640		23,070	5,644	49,773		0	78,487	

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 PROJECT PARSAM: TRACES Parametric Building - Child Center  
 CHILD DEVELOPMENT CENTER  
 \*\* PROJECT DIRECT SUMMARY - LEVEL 3 \*\*

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		QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT COST
<hr/>										
C001-18	Site Improvements									
C001-1801	Parking Lots	556		18,000	4,413	55,421	0	0	77,834	
C001-1802	Walks, Steps, Ramps & Terraces	85		2,585	141	3,216	0	0	5,943	
C001-1804	Site Development	716		21,604	4,001	38,850	0	0	64,455	
C001-1805	Landscaping	1,370		39,373	752	24,487	0	0	64,613	
	Site Improvements	2,727		81,563	9,307	121,975	0	0	212,845	
C001-19	Site Civil/Mechanical									
C001-1901	Water Systems	247		9,561	983	8,461	0	0	19,006	
C001-1902	Sanitary Sewer Systems	53		1,954	285	2,522	0	0	4,762	
C001-1907	Gas Distribution Systems	34		1,206	196	775	0	0	2,176	
	Site Civil/Mechanical	333		12,721	1,464	11,758	0	0	25,943	
C001-20	Site Electrical Utilities									
C001-2002	Exterior Electrical Distribution	411		13,703	673	44,285	0	0	58,661	
C001-2003	Exterior Lighting	232		7,541	568	20,512	0	0	28,621	
C001-2004	Exterior Communications & Alarm	660		20,142	98	8,700	0	0	28,940	
C001-2005	Exterior Security Sensors & TV	152		4,984	293	4,278	0	0	9,555	
	Site Electrical Utilities	1,455		46,369	1,632	77,775	0	0	125,777	
	Site & Utilities	5,155		163,724	18,047	261,282	0	0	443,052	
C002	Play Ground Area									
C002-17	Site Preparation									
C002-1701	Site Clearing	40		1,639	1,434	0	0	0	3,073	
C002-1703	Site Earthwork	2		72	12	117	0	0	201	
	Site Preparation	42		1,711	1,446	117	0	0	3,274	
C002-18	Site Improvements									
C002-1802	Walks, Steps, Ramps & Terraces	85		2,877	157	3,580	0	0	6,614	
C002-1804	Site Development	1,414		47,381	5,341	138,969	0	0	191,691	
C002-1805	Landscaping	362		11,930	664	17,935	0	0	30,529	
	Site Improvements	1,861		62,189	6,163	160,483	0	0	228,834	
	Play Ground Area	1,903		63,899	7,608	160,600	0	0	232,108	

Wed 26 Aug 1992

**U.S. Army Corps of Engineers**  
**PROJECT PARSAM: TRACES Parametric Building - Child Center**  
**CHILD DEVELOPMENT CENTER**  
**\*\* PROJECT DIRECT SUMMARY - LEVEL 3 \*\***

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SUMMARY PAGE 23

	QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT COST
TRACES Parametric Building Prime's Field Overhead (Gen Req)	53,296		1,998,864	63,659	2,586,895		0	4,669,419	
								278,965	
SUBTOTAL Prime's Home Office Overhead								4,928,384	
								147,852	
SUBTOTAL Prime Contractor's Profit								5,076,235	
								253,812	
SUBTOTAL Prime Contractor's Bond								5,330,047	
								53,300	
TOTAL INCL INDIRECTS Escalation to Midpoint of Constr.								5,383,347	
								340,867	
SUBTOTAL Contingencies During Construction								5,724,214	
								286,211	
SUBTOTAL Supervision & Administration								6,010,425	
								360,626	
TOTAL INCL OWNER COSTS								6,371,051	

Wed 26 Aug 1992  
ERROR REPORT

U.S. Army Corps of Engineers  
PROJECT PARSAM: TRACES Parametric Building - Child Center  
CHILD DEVELOPMENT CENTER

TIME 15:07:12  
ERROR PAGE 1

No errors detected..

\* \* \* END OF ERROR REPORT \* \* \*

Wed 26 Aug 1992

U.S. Army Corps of Engineers  
PROJECT PARSAM: TRACES Parametric Building - Child Center  
CHILD DEVELOPMENT CENTER

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No Detailed Estimate...

No Backup Reports...

\* \* \* END TABLE OF CONTENTS \* \* \*

## **APPENDIX E**

### **SAMPLE CODE A (CWE) COST ESTIMATE, non-PARAMETRIC**

This cost estimate is only an example. The intent and purpose of this example cost estimate is to show the results of an acceptable format for MCACES GOLD Code A (CWE) non-parametric cost estimate. Items used within this estimate are illustrative only and do not necessarily reflect an actual project.

Tue 27 Oct 1992

U.S. Army Corps of Engineers  
PROJECT SAMPL1: REMODEL DENTAL CLINIC  
NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )

TIME 14:43:13

TITLE PAGE 1

-----  
REMODEL DENTAL CLINIC  
SACRAMENTO DISTRICT

Designed By:  
Estimated By:

Prepared By:

Date: 27 Oct 1992  
Est Construction Time: 365 Days

M C A C E S   G O L D   E D I T I O N  
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992  
by Building Systems Design, Inc.  
Release 5.20J

Tue 27 Oct 1992

PROJECT NOTES

U.S. Army Corps of Engineers  
PROJECT SAMPL1: REMODEL DENTAL CLINIC  
NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )

TIME 14:43:13

TITLE PAGE 2

U.S. ARMY ENGINEER DISTRICT, SACRAMENTO  
CORPS OF ENGINEERS

SUMMARY SHEET

SPEC NO: HXXX  
DATE: 27 OCT 1992  
EST BY: J. ESTIMATOR  
CODE: A

REMODEL DENTAL CLINIC  
FT. -----, CALIFORNIA

BUILDING COST ( Incl. Escalation )

1. REMODEL DENTAL CLINIC, COMPLETE . . . . . \$ 1,523,900

Total Buildings . . . . . \$ 1,523,900

2. SITE & UTILITIES ( Incl. Escalation ) . . . . . 260,100

HTRW ( Incl. Escalation ) . . . . . -

Total Contract Cost . . . . . \$ 1,784,000

Contingencies During Construction ( 5 % ) . . . . . 89,200

Subtotal . . . . . \$ 1,873,200

Supervision & Administration ( 6 % ) . . . . . 112,400

Total Construction . . . . . \$ 1,985,600

SUB ALLOTMENT . . . . . -

Total CWE Without Additives / Options . . . . . \$ 1,985,600

Tue 27 Oct 1992

U.S. Army Corps of Engineers  
PROJECT SAMPL1: REMODEL DENTAL CLINIC  
NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )

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PROJECT NOTES

TITLE PAGE 3

ADDITIVE ITEMS

1	.....	\$ 0
2	.....	\$ 0
3	.....	\$ 0
Total Additives Contract Cost.		\$ 0
Contingencies During Construction . .( 5 % )		\$ 0
Subtotal		\$ 0
Supervision & Administration. . . .( 6 % )		\$ 0
Total Additives CWE		\$ 0

OPTION ITEMS

1	.....	\$ 0
2	.....	\$ 0
3	.....	\$ 0
Total Options Contract Cost		\$ 0
Contingencies During Construction . .( 5 % )		\$ 0
Subtotal		\$ 0
Supervision & Administration. . . .( 6 % )		\$ 0
Total Options CWE		\$ 0

Total CWE Including All Additives / Options . . . . \$ 1,985,600

---

Programmed Amount	.....	\$ 2,300,000
90% Programmed Amount	.....	\$ 2,070,000

Based on Midpoint of Construction During 11<sup>th</sup> Month, Calendar Year, 1993

Tue 27 Oct 1992

U.S. Army Corps of Engineers  
PROJECT SAMPL1: REMODEL DENTAL CLINIC  
NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )

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No Backup Reports...

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SUMMARY PAGE 1  
  
U.S. Army Corps of Engineers  
PROJECT SAMPL1: REMODEL DENTAL CLINIC  
NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
\*\* PROJECT OWNER SUMMARY - LEVEL 2 \*\*

	QUANTITY UOM	CONTRACT COST	OTHER	ESCALATN	OWN FURN	CONTINGN	S1OH	TOTAL COST	UNIT COST
<b>C Primary Facilities</b>									
C.01	REMODEL DENTAL CLINIC	1,475,213	0	48,695	0	76,195	96,006	1,696,110	
	Primary Facilities	1,475,213	0	48,695	0	76,195	96,006	1,696,110	
<b>D Support Facilities</b>									
D.01	Site ( WBS )	1.00 EA	251,745	0	8,310	0	13,003	16,383	289,441
	Support Facilities		251,745	0	8,310	0	13,003	16,383	289,441
	REMODEL DENTAL CLINIC	1,726,958	0	57,005	0	89,198	112,390	1,985,550	

LABOR ID: MARCHE EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPPB ID: MECH92

Tue 27 Oct 1992

U.S. Army Corps of Engineers  
 PROJECT SAMPL1: REMODEL DENTAL CLINIC  
 NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
 \*\* PROJECT OWNER SUMMARY - LEVEL 3 \*\*

TIME 14:43:13

SUMMARY PAGE 2

	QUANTITY UOM	CONTRACT COST	OTHER	ESCALATN	OWN FURN	CONTINGN	SIOH	TOTAL COST	UNIT COST
<b>C Primary Facilities</b>									
<b>C.01 REMODEL DENTAL CLINIC</b>									
C.01.01 Substructure	12630.00 SF	143,126	0	4,724	0	7,393	9,315	164,557	13.03
C.01.02 Superstructure	12630.00 SF	97,769	0	3,227	0	5,050	6,363	112,409	8.90
C.01.03 Exterior Closure	6300.00 SF	124,938	0	4,124	0	6,453	8,131	143,645	22.80
C.01.04 Roofing	13730.00 SF	60,074	0	1,983	0	3,103	3,910	69,069	5.03
C.01.05 Interior Construction	12630.00 SF	178,958	0	5,907	0	9,243	11,647	205,755	16.29
C.01.06 Interior Finishes	12630.00 SF	85,017	0	2,806	0	4,391	5,533	97,747	7.74
C.01.08 Plumbing	60.00 EA	236,272	0	7,799	0	12,204	15,376	271,651	4527.52
C.01.09 HVAC	300.00 MBH	227,356	0	7,505	0	11,743	14,796	261,400	871.33
C.01.10 Fire Protection Systems	12630.00 SF	24,965	0	824	0	1,289	1,625	28,703	2.27
C.01.11 Electric Power And Lighting	1.00 AMP	258,451	0	8,531	0	13,349	16,820	297,151	297150.68
C.01.12 Electrical Systems	12630.00 SF	33,657	0	1,111	0	1,738	2,190	38,696	3.06
C.01.16 Selective Building		4,632	0	153	0	239	301	5,326	
REMODEL DENTAL CLINIC		1,475,213	0	48,695	0	76,195	96,006	1,696,110	
Primary Facilities		1,475,213	0	48,695	0	76,195	96,006	1,696,110	
<b>D Support Facilities</b>									
<b>D.01 Site ( WBS )</b>									
D.01.17 Site Preparation	2.50 AC	65,730	0	2,170	0	3,395	4,278	75,573	30229.12
D.01.18 Site Improvements	3800.00 SY	133,750	0	4,415	0	6,908	8,704	153,778	40.47
D.01.19 Site Civil/Mechanical Utilit	1.00 EA	35,211	0	1,162	0	1,819	2,291	40,483	40482.91
D.01.20 Site Electrical Utilities	1.00 EA	17,054	0	563	0	881	1,110	19,607	19607.22
Site ( WBS )	1.00 EA	251,745	0	8,310	0	13,003	16,383	289,441	289440.70
Support Facilities		251,745	0	8,310	0	13,003	16,383	289,441	
REMODEL DENTAL CLINIC		1,726,958	0	57,005	0	89,198	112,390	1,985,550	

Tue 27 Oct 1992

U.S. Army Corps of Engineers  
 PROJECT SAMPL1: REMODEL DENTAL CLINIC  
 NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
 \*\* PROJECT OWNER SUMMARY - LEVEL 4 \*\*

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SUMMARY PAGE 3

	QUANTITY UOM	CONTRACT COST	OTHER	ESCALATN	OWN FURN	CONTINGN	SIOH	TOTAL COST	UNIT COST
C Primary Facilities									
C.01 REMODEL DENTAL CLINIC									
C.01.01 Substructure									
Substructure	12630.00 SF	143,126	0	4,724	0	7,393	9,315	164,557	13.03
C.01.02 Superstructure									
Superstructure	12630.00 SF	97,769	0	3,227	0	5,050	6,363	112,409	8.90
C.01.03 Exterior Closure									
Exterior Closure	6300.00 SF	124,938	0	4,124	0	6,453	8,131	143,645	22.80
C.01.04 Roofing									
Roofing	13730.00 SF	60,074	0	1,983	0	3,103	3,910	69,069	5.03
C.01.05 Interior Construction									
Interior Construction	12630.00 SF	178,958	0	5,907	0	9,243	11,647	205,755	16.29
C.01.06 Interior Finishes									
Interior Finishes	12630.00 SF	85,017	0	2,806	0	4,391	5,533	97,747	7.74
C.01.08 Plumbing									
Plumbing	60.00 EA	236,272	0	7,799	0	12,204	15,376	271,651	4527.52
C.01.09 HVAC									
HVAC	300.00 MBH	227,356	0	7,505	0	11,743	14,796	261,400	871.33

LABOR ID: MARCHE EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPB ID: MECH92

Tue 27 Oct 1992

U.S. Army Corps of Engineers  
PROJECT SAMPL1: REMODEL DENTAL CLINIC  
NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
\*\* PROJECT OWNER SUMMARY - LEVEL 4 \*\*

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SUMMARY PAGE 4

	QUANTITY UOM	CONTRACT COST	OTHER	ESCALATN	OWN FURN	CONTINGN	SIOH	TOTAL COST	UNIT COST
<b>C.01.10 Fire Protection Systems</b>									
Fire Protection Systems	12630.00 SF	24,965	0	824	0	1,289	1,625	28,703	2.27
<b>C.01.11 Electric Power And Lighting</b>									
Electric Power And Lighti	1.00 AMP	258,451	0	8,531	0	13,349	16,820	297,151	297150.68
<b>C.01.12 Electrical Systems</b>									
Electrical Systems	12630.00 SF	33,657	0	1,111	0	1,738	2,190	38,696	3.06
<b>C.01.16 Selective Building</b>									
Selective Building		4,632	0	153	0	239	301	5,326	
REMODEL DENTAL CLINIC		1,475,213	0	48,695	0	76,195	96,006	1,696,110	
Primary Facilities		1,475,213	0	48,695	0	76,195	96,006	1,696,110	
<b>D Support Facilities</b>									
<b>D.01 Site ( WBS )</b>									
<b>D.01.17 Site Preparation</b>									
D.01.17.01 Site Clearing	2.50 AC	3,029	0	100	0	156	197	3,483	1393.07
D.01.17.02 Site Demolition & Relocat	152.00 SY	59,753	0	1,972	0	3,086	3,889	68,700	451.98
D.01.17.03 Site Earthwork	200.00 CY	2,948	0	197	0	152	192	3,390	16.95
Site Preparation	2.50 AC	65,730	0	2,170	0	3,395	4,278	75,573	30229.12
<b>D.01.18 Site Improvements</b>									
D.01.18.01 Roadways	800.00 SY	26,185	0	864	0	1,352	1,704	30,106	37.63
D.01.18.02 Parking Lots	50.00 SPA	50,822	0	1,678	0	2,625	3,307	58,431	1168.63
D.01.18.03 Walks, Steps, Ramps & Ter	1880.00 SF	6,616	0	218	0	342	431	7,606	4.05
D.01.18.04 Site Development	1.00 EA	22,624	0	747	0	1,169	1,472	26,012	26011.75
D.01.18.05 Landscaping	3200.00 SY	27,504	0	908	0	1,421	1,790	31,623	9.88
Site Improvements	3800.00 SY	133,750	0	4,415	0	6,908	8,704	153,778	40.47

LABOR ID: MARCHE EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPB ID: MECH92

Tue 27 Oct 1992

U.S. Army Corps of Engineers  
 PROJECT SAMPL1: REMODEL DENTAL CLINIC  
 NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
 \*\* PROJECT OWNER SUMMARY - LEVEL 4 \*\*

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SUMMARY PAGE 5

	QUANTITY UOM	CONTRACT COST	OTHER	ESCALATN	OWN FURN	CONTINGN	SIOH	TOTAL COST	UNIT COST
<b>D.01.19 Site Civil/Mechanical Utilit</b>									
D.01.19.01 Water Supply & Distributi	1140.00 LF	31,012	0	1,024	0	1,602	2,018	35,656	31.28
D.01.19.02 Sanitary Sewer Systems	300.00 LF	4,199	0	139	0	217	273	4,827	16.09
Site Civil/Mechanical Utli	1.00 EA	35,211	0	1,162	0	1,819	2,291	40,483	40482.91
<b>D.01.20 Site Electrical Utilities</b>									
D.01.20.02 Exterior Electrical Distr	600.00 LF	17,054	0	563	0	881	1,110	19,607	32.68
Site Electrical Utilities	1.00 EA	17,054	0	563	0	881	1,110	19,607	19607.22
Site ( WBS )	1.00 EA	251,745	0	8,310	0	13,003	16,383	289,441	289440.70
Support Facilities		251,745	0	8,310	0	13,003	16,383	289,441	
REMODEL DENTAL CLINIC		1,726,958	0	57,005	0	89,198	112,390	1,985,550	

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U.S. Army Corps of Engineers  
 PROJECT SAMPL1: REMODEL DENTAL CLINIC  
 NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
 \*\* PROJECT INDIRECT SUMMARY - LEVEL 2 \*\*

SUMMARY PAGE 6

	QUANTITY UOM	TOTAL DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
<b>C Primary Facilities</b>								
C.01 REMODEL DENTAL CLINIC		1,301,789	0	26,036	132,782	14,606	1,475,213	
Primary Facilities		1,301,789	0	26,036	132,782	14,606	1,475,213	
<b>D Support Facilities</b>								
D.01 Site ( WBS )	1.00 EA	222,150	0	4,443	22,659	2,493	251,745	251744.78
Support Facilities		222,150	0	4,443	22,659	2,493	251,745	
REMODEL DENTAL CLINIC ESCALATION, MID POINT OF CONSTRUCTION		1,523,939	0	30,479	155,442	17,099	1,726,958 57,005	
SUBTOTAL CONTINGENCIES DURING CONSTRUCTION							1,783,963 89,198	
SUBTOTAL CORPS SUPERVISION & ADMINISTRATION							1,873,161 112,390	
TOTAL INCL OWNER COSTS							1,985,550	

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U.S. Army Corps of Engineers  
 PROJECT SAMPL1: REMODEL DENTAL CLINIC  
 NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
 \*\* PROJECT INDIRECT SUMMARY - LEVEL 3 \*\*

SUMMARY PAGE 7

	QUANTITY UOM	TOTAL	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
<b>C Primary Facilities</b>									
<b>C.01 REMODEL DENTAL CLINIC</b>									
C.01.01 Substructure	12630.00 SF	126,300	0	2,526	12,883	1,417		143,126	11.33
C.01.02 Superstructure	12630.00 SF	86,276	0	1,726	8,800	968		97,769	7.74
C.01.03 Exterior Closure	6300.00 SF	110,250	0	2,205	11,246	1,237		124,938	19.83
C.01.04 Roofing	13730.00 SF	53,012	0	1,060	5,407	595		60,074	4.38
C.01.05 Interior Construction	12630.00 SF	157,920	0	3,158	16,108	1,772		178,958	14.17
C.01.06 Interior Finishes	12630.00 SF	75,022	0	1,500	7,652	842		85,017	6.73
C.01.08 Plumbing	60.00 EA	208,496	0	4,170	21,267	2,339		236,272	3937.87
C.01.09 HVAC	300.00 MBH	200,628	0	4,013	20,464	2,251		227,356	757.85
C.01.10 Fire Protection Systems	12630.00 SF	22,030	0	441	2,247	247		24,965	1.98
C.01.11 Electric Power And Lighting	1.00 AMP	228,067	0	4,561	23,263	2,559		258,451	258450.64
C.01.12 Electrical Systems	12630.00 SF	29,700	0	594	3,029	333		33,657	2.66
C.01.16 Selective Building		4,088	0	82	417	46		4,632	
REMODEL DENTAL CLINIC		1,301,789	0	26,036	132,782	14,606		1,475,213	
Primary Facilities		1,301,789	0	26,036	132,782	14,606		1,475,213	
<b>D Support Facilities</b>									
<b>D.01 Site ( WBS )</b>									
D.01.17 Site Preparation	2.50 AC	58,003	0	1,160	5,916	651		65,730	26292.17
D.01.18 Site Improvements	3800.00 SY	118,027	0	2,361	12,039	1,324		133,750	35.20
D.01.19 Site Civil/Mechanical Utilities	1.00 EA	31,071	0	621	3,169	349		35,211	35210.54
D.01.20 Site Electrical Utilities	1.00 EA	15,049	0	301	1,535	169		17,054	17053.63
Site ( WBS )	1.00 EA	222,150	0	4,443	22,659	2,493		251,745	251744.78
Support Facilities		222,150	0	4,443	22,659	2,493		251,745	
REMODEL DENTAL CLINIC ESCALATION, MID POINT OF CONSTRUCTION		1,523,939	0	30,479	155,442	17,099		1,726,958	
SUBTOTAL CONTINGENCIES DURING CONSTRUCTION								57,005	
SUBTOTAL CORPS SUPERVISION & ADMINISTRATION								1,783,963	
TOTAL INCL OWNER COSTS								89,198	
								1,873,161	
								112,390	
								1,985,550	

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U.S. Army Corps of Engineers  
 PROJECT SAMPL1: REMODEL DENTAL CLINIC  
 NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
 \*\* PROJECT INDIRECT SUMMARY - LEVEL 4 \*\*

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	QUANTITY UOM	TOTAL DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
C Primary Facilities								
C.01 REMODEL DENTAL CLINIC								
C.01.01 Substructure								
Substructure	12630.00 SF	126,300	0	2,526	12,883	1,417	143,126	11.33
C.01.02 Superstructure								
Superstructure	12630.00 SF	86,276	0	1,726	8,800	968	97,769	7.74
C.01.03 Exterior Closure								
Exterior Closure	6300.00 SF	110,250	0	2,205	11,246	1,237	124,938	19.83
C.01.04 Roofing								
Roofing	13730.00 SF	53,012	0	1,060	5,407	595	60,074	4.38
C.01.05 Interior Construction								
Interior Construction	12630.00 SF	157,920	0	3,158	16,108	1,772	178,958	14.17
C.01.06 Interior Finishes								
Interior Finishes	12630.00 SF	75,022	0	1,500	7,652	842	85,017	6.73
C.01.08 Plumbing								
Plumbing	60.00 EA	208,496	0	4,170	21,267	2,339	236,272	3937.87
C.01.09 HVAC								
HVAC	300.00 MBH	200,628	0	4,013	20,464	2,251	227,356	757.85

LABOR ID: MARCHE EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPB ID: MECH92

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 PROJECT SAMPL1: REMODEL DENTAL CLINIC  
 NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
 \*\* PROJECT INDIRECT SUMMARY - LEVEL 4 \*\*

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	QUANTITY UOM	TOTAL	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
<hr/>									
C.01.10 Fire Protection Systems									
Fire Protection Systems	12630.00 SF	22,030	0	441	2,247	247		24,965	1.98
<hr/>									
C.01.11 Electric Power And Lighting									
Electric Power And Lighting	1.00 AMP	228,067	0	4,561	23,263	2,559		258,451	258450.64
<hr/>									
C.01.12 Electrical Systems									
Electrical Systems	12630.00 SF	29,700	0	594	3,029	333		33,657	2.66
<hr/>									
C.01.16 Selective Building									
Selective Building		4,088	0	82	417	46		4,632	
REMODEL DENTAL CLINIC		1,301,789	0	26,036	132,782	14,606		1,475,213	
Primary Facilities		1,301,789	0	26,036	132,782	14,606		1,475,213	
<hr/>									
D Support Facilities									
D.01 Site ( WBS )									
<hr/>									
D.01.17 Site Preparation									
D.01.17.01 Site Clearing	2.50 AC	2,673	0	.53	273	30		3,029	1211.64
D.01.17.02 Site Demolition & Relocation	152.00 SY	52,729	0	1,055	5,378	592		59,753	393.11
D.01.17.03 Site Earthwork	200.00 CY	2,602	0	52	265	29		2,948	14.74
Site Preparation	2.50 AC	58,003	0	1,160	5,916	651		65,730	26292.17
<hr/>									
D.01.18 Site Improvements									
D.01.18.01 Roadways	800.00 SY	23,107	0	462	2,357	259		26,185	32.73
D.01.18.02 Parking Lots	50.00 SPA	44,847	0	897	4,574	503		50,822	1016.43
D.01.18.03 Walks, Steps, Ramps & Terraces	1880.00 SF	5,838	0	117	595	66		6,616	3.52
D.01.18.04 Site Development	1.00 EA	19,964	0	399	2,036	224		22,624	22624.06
D.01.18.05 Landscaping	3200.00 SY	24,271	0	485	2,476	272		27,504	8.60
Site Improvements	3800.00 SY	118,027	0	2,361	12,039	1,324		133,750	35.20

LABOR ID: MARCHE EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPB ID: MECH92

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U.S. Army Corps of Engineers  
 PROJECT SAMPL1: REMODEL DENTAL CLINIC  
 NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
 \*\* PROJECT INDIRECT SUMMARY - LEVEL 4 \*\*

SUMMARY PAGE 10

	QUANTITY UOM	TOTAL DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
<hr/>								
D.01.19 Site Civil/Mechanical Utilities								
D.01.19.01 Water Supply & Distribution	1140.00 LF	27,366	0	547	2,791	307	31,012	27.20
D.01.19.02 Sanitary Sewer Systems	300.00 LF	3,705	0	74	378	42	4,199	14.00
Site Civil/Mechanical Utilities	1.00 EA	31,071	0	621	3,169	349	35,211	35210.54
<hr/>								
D.01.20 Site Electrical Utilities								
D.01.20.02 Exterior Electrical Distribution	600.00 LF	15,049	0	301	1,535	169	17,054	28.42
Site Electrical Utilities	1.00 EA	15,049	0	301	1,535	169	17,054	17053.63
Site ( WBS )	1.00 EA	222,150	0	4,443	22,659	2,493	251,745	251744.78
Support Facilities		222,150	0	4,443	22,659	2,493	251,745	
REMODEL DENTAL CLINIC ESCALATION, MID POINT OF CONSTRUCTION		1,523,939	0	30,479	155,442	17,099	1,726,958 57,005	
SUBTOTAL CONTINGENCIES DURING CONSTRUCTION							1,783,963 89,198	
SUBTOTAL CORPS SUPERVISION & ADMINISTRATION							1,873,161 112,390	
TOTAL INCL OWNER COSTS							1,985,550	

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 PROJECT SAMPL1: REMODEL DENTAL CLINIC  
 NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
 \*\* PROJECT DIRECT SUMMARY - LEVEL 2 \*\*

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	QUANTITY UOM	UNIT COST	TOTAL COST
<b>C Primary Facilities</b>			
C.01 REMODEL DENTAL CLINIC			1,301,789
Primary Facilities			1,301,789
<b>D Support Facilities</b>			
D.01 SITE ( WBS )	1.00 EA	222149.96	222,150
Support Facilities			222,150
REMODEL DENTAL CLINIC			1,523,939
PRIME CONTRACTOR HOME OFFICE OVERHEAD			30,479
SUBTOTAL			1,554,418
PRIME CONTRACTOR PROFIT			155,442
SUBTOTAL			1,709,860
PRIME CONTRACTOR BOND			17,099
TOTAL INCL INDIRECTS			1,726,958
ESCALATION, MID POINT OF CONSTRUCTION			57,005
SUBTOTAL			1,783,963
CONTINGENCIES DURING CONSTRUCTION			89,198
SUBTOTAL			1,873,161
CORPS SUPERVISION & ADMINISTRATION			112,390
TOTAL INCL OWNER COSTS			1,985,550

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U.S. Army Corps of Engineers  
 PROJECT SAMPL1: REMODEL DENTAL CLINIC  
 NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
 \*\* PROJECT DIRECT SUMMARY - LEVEL 3 \*\*

SUMMARY PAGE 12

	QUANTITY UOM	UNIT COST	TOTAL COST
<b>C Primary Facilities</b>			
<b>C.01 REMODEL DENTAL CLINIC</b>			
C.01.01 Substructure	12630.00 SF	10.00	126,300
C.01.02 Superstructure	12630.00 SF	6.83	86,276
C.01.03 Exterior Closure	6300.00 SF	17.50	110,250
C.01.04 Roofing	13730.00 SF	3.86	53,012
C.01.05 Interior Construction	12630.00 SF	12.50	157,920
C.01.06 Interior Finishes	12630.00 SF	5.94	75,022
C.01.08 Plumbing	60.00 EA	3474.94	208,496
C.01.09 HVAC	300.00 MBH	668.76	200,628
C.01.10 Fire Protection Systems	12630.00 SF	1.74	22,030
C.01.11 Electric Power And Lighting	1.00 AMP	228067.49	228,067
C.01.12 Electrical Systems	12630.00 SF	2.35	29,700
C.01.16 Selective Building			4,088
<b>REMODEL DENTAL CLINIC</b>			
<b>Primary Facilities</b>			
<b>D Support Facilities</b>			
<b>D.01 Site ( WBS )</b>			
D.01.17 Site Preparation	2.50 AC	23201.29	58,003
D.01.18 Site Improvements	3800.00 SY	31.06	118,027
D.01.19 Site Civil/Mechanical Utilities	1.00 EA	31071.23	31,071
D.01.20 Site Electrical Utilities	1.00 EA	15048.83	15,049
<b>Site ( WBS )</b>			
<b>Support Facilities</b>			
<b>REMODEL DENTAL CLINIC</b>			
<b>PRIME CONTRACTOR HOME OFFICE OVERHEAD</b>			
<b>SUBTOTAL</b>			
<b>PRIME CONTRACTOR PROFIT</b>			
<b>SUBTOTAL</b>			
<b>PRIME CONTRACTOR BOND</b>			
<b>TOTAL INCL INDIRECTS</b>			
<b>ESCALATION, MID POINT OF CONSTRUCTION</b>			
<b>SUBTOTAL</b>			
<b>CONTINGENCIES DURING CONSTRUCTION</b>			

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U.S. Army Corps of Engineers  
PROJECT SAMPL1: REMODEL DENTAL CLINIC  
NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
\*\* PROJECT DIRECT SUMMARY - LEVEL 3 \*\*

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SUMMARY PAGE 13

	QUANTITY UOM	UNIT COST	TOTAL COST
SUBTOTAL			1,873,161
CORPS SUPERVISION & ADMINISTRATION			112,390
TOTAL INCL OWNER COSTS			1,985,550

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U.S. Army Corps of Engineers  
 PROJECT SAMPL1: REMODEL DENTAL CLINIC  
 NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
 \*\* PROJECT DIRECT SUMMARY - LEVEL 4 \*\*

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SUMMARY PAGE 14

		QUANTITY UOM	UNIT COST	TOTAL COST
C Primary Facilities				
C.01 REMODEL DENTAL CLINIC				
C.01.01 Substructure				
Substructure	12630.00 SF	10.00	126,300	
C.01.02 Superstructure				
Superstructure	12630.00 SF	6.83	86,276	
C.01.03 Exterior Closure				
Exterior Closure	6300.00 SF	17.50	110,250	
C.01.04 Roofing				
Roofing	13730.00 SF	3.86	53,012	
C.01.05 Interior Construction				
Interior Construction	12630.00 SF	12.50	157,920	
C.01.06 Interior Finishes				
Interior Finishes	12630.00 SF	5.94	75,022	
C.01.08 Plumbing				
Plumbing	60.00 EA	3474.94	208,496	
C.01.09 HVAC				
HVAC	300.00 MBH	668.76	200,628	

LABOR ID: MARCHE EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPB ID: MECH92

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PROJECT SAMPL1: REMODEL DENTAL CLINIC  
NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
\*\* PROJECT DIRECT SUMMARY - LEVEL 4 \*\*

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SUMMARY PAGE 15

		QUANTITY UOM	UNIT COST	TOTAL COST
C.01.10	Fire Protection Systems			
	Fire Protection Systems	12630.00 SF	1.74	22,030
C.01.11	Electric Power And Lighting			
	Electric Power And Lighting	1.00 AMP	228067.49	228,067
C.01.12	Electrical Systems			
	Electrical Systems	12630.00 SF	2.35	29,700
C.01.16	Selective Building			
	Selective Building			4,088
	REMODEL DENTAL CLINIC			1,301,789
	Primary Facilities			1,301,789
D	Support Facilities			
D.01	Site ( WBS )			
D.01.17	Site Preparation			
D.01.17.01	Site Clearing	2.50 AC	1069.20	2,673
D.01.17.02	Site Demolition & Relocation	152.00 SY	346.90	52,729
D.01.17.03	Site Earthwork	200.00 CY	13.01	2,602
	Site Preparation	2.50 AC	23201.29	58,003
D.01.18	Site Improvements			
D.01.18.01	Roadways	800.00 SY	28.88	23,107
D.01.18.02	Parking Lots	50.00 SPA	896.94	44,847
D.01.18.03	Walks, Steps, Ramps & Terraces	1880.00 SF	3.11	5,838
D.01.18.04	Site Development	1.00 EA	19964.40	19,964
D.01.18.05	Landscaping	3200.00 SY	7.58	24,271
	Site Improvements	3800.00 SY	31.06	118,027

LABOR ID: MARCHE EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPB ID: MECH92

		QUANTITY UOM	UNIT COST	TOTAL COST
D.01.19	Site Civil/Mechanical Utilities			
D.01.19.01	Water Supply & Distribution	1140.00 LF	24.01	27,366
D.01.19.02	Sanitary Sewer Systems	300.00 LF	12.35	3,705
	Site Civil/Mechanical Utilities	1.00 EA	31071.23	31,071
D.01.20	site Electrical Utilities			
D.01.20.02	Exterior Electrical Distribution	600.00 LF	25.08	15,049
	Site Electrical Utilities	1.00 EA	15048.83	15,049
	Site ( WBS )	1.00 EA	222149.96	222,150
	Support Facilities			222,150
	REMODEL DENTAL CLINIC PRIME CONTRACTOR HOME OFFICE OVERHEAD			
	SUBTOTAL			1,523,939
	PRIME CONTRACTOR PROFIT			30,479
	SUBTOTAL			1,554,418
	PRIME CONTRACTOR BOND			155,442
	TOTAL INCL INDIRECTS ESCALATION, MID POINT OF CONSTRUCTION			1,709,860
	SUBTOTAL			17,099
	CONTINGENCIES DURING CONSTRUCTION			1,726,958
	SUBTOTAL			57,005
	CORPS SUPERVISION & ADMINISTRATION			1,783,963
	TOTAL INCL OWNER COSTS :			89,198
				1,873,161
				112,390
				1,985,550

Tue 27 Oct 1992

DETAILED ESTIMATE

U.S. Army Corps of Engineers  
PROJECT SAMPL1: REMODEL DENTAL CLINIC  
NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
C. Primary Facilities

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DETAIL PAGE 1

REMODEL DENTAL CLINIC		QUANTITY UOM	UNIT COST	TOTAL COST
<b>Primary Facilities</b>				
<b>REMODEL DENTAL CLINIC</b>				
Substructure	Substructure	12630 SF	10.00	126,300
Superstructure	Structural frame	12630 SF	6.83	86,276
Exterior Closure	Exterior walls	6300.00 SF	17.50	110,250
Roofing	Roofing	13730 SF	3.86	53,012
Interior Construction	Interior Walls Specialties	13820 SF 1.00 LS	6.00 75000.00	82,920 75,000
Interior Finishes	Interior Finishes	12630 SF	5.94	75,022
Plumbing	PLUMBING SYSTEM COMPLETE	12630 SF	16.51	208,496
HVAC	HVAC SYSTEM COMPLETE	12630 SF	15.89	200,628
Fire Protection Systems	FIRE PROTECTION SYSTEM COMPLETE	12630 SF	1.74	22,030
Electric Power And Lighting	POWER & LIGHTING COMPLETE	12630 SF	18.06	228,067
Electrical Systems	SPECIAL ELECTRICAL	1.00 LS	29700.00	29,700
Selective Building Demolition	Demo 8" Concrete Block Partition (20cm) Thick Demo Drywall & Stud Partition Mtl/Wood Stud w/Drywall 2 Sides Demo Ceramic Tile Floor Demo Built-Up Roofing	500.00 SF 1000.00 SF 500.00 SF 20.00 SQ	1.58 1.35 0.98 72.91	790 1,349 490 1,458
	REMODEL DENTAL CLINIC			1,301,789
	Primary Facilities			1,301,789

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## DETAILED ESTIMATE

U.S. Army Corps of Engineers  
PROJECT SAMPL1: REMODEL DENTAL CLINIC  
NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
D. Support Facilities

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DETAIL PAGE 2

Site ( WBS )		QUANTITY UOM	UNIT COST	TOTAL COST
<b>Support Facilities</b>				
<b>Site ( WBS )</b>				
<b>Site Preparation</b>				
<b>Site Clearing</b>	Site Clearing Light Brush and Grass	2.50 AC	1069.20	2,673
<b>Site Demolition &amp; Relocation</b>	Demo 6" Concrete Pavement w/reinforcement Saw Cut Mesh Reinf Concrete Slab per Inch of Depth Demo Bituminous Roads remove Paving and Base Course Site Demolition - Building	152.00 SY 100.00 LF 350.00 SY 12000 SF	8.71 1.32 3.93 4.16	1,324 132 1,376 49,896
<b>Site Earthwork</b>	Cut and Fill Excavate and Disposal Rough Grading	200.00 CY 170.00 CY 800.00 SY	4.75 3.56 1.31	950 606 1,045
<b>Site Improvements</b>				
<b>Roadways</b>	Roadway Paving - Bituminous Curb and Gutters Service Access Driveway - bituminous	800.00 SY 500.00 LF 300.00 SY	14.85 14.26 13.66	11,880 7,128 4,099
<b>Parking Lots</b>	Parking for 50 Vehicles Concrete Curbing Wheel Stops	3000.00 SY 250.00 LF 50.00 EA	13.66 9.50 29.70	40,986 2,376 1,485
<b>Walks, Steps, Ramps &amp; Terraces</b>	P.C.C. Sidewalks 4" P.C.C. Equipment Pads	1880.00 SF 600.00 SF	2.14 3.03	4,020 1,818
<b>Site Development</b>	Fences and Gates Retaining Wall - CMU Exterior Furnishings Signage Guard Rails Traffic Signage Concrete Bollards	100.00 LF 800.00 SF 1.00 LS 1.00 LS 60.00 LF 10.00 EA 10.00 EA	15.44 13.50 2500.00 1500.00 22.00 80.00 150.00	1,544 10,800 2,500 1,500 1,320 800 1,500

LABOR ID: MARCHE EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPB ID: MECH92

Tue 27 Oct 1992

## DETAILED ESTIMATE

U.S. Army Corps of Engineers  
PROJECT SAMPL1: REMODEL DENTAL CLINIC  
NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
D. Support Facilities

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DETAIL PAGE 3

Site ( WBS )		QUANTITY UOM	UNIT COST	TOTAL COST
Landscaping				
	Sprinkler Irrigation	3200.00 SY	4.75	15,206
	Lawn & Ground Cover	3200.00 SY	1.78	5,702
	Trees	15.00 EA	118.80	1,782
	Shrubs	35.00 EA	45.14	1,580
Site Civil/Mechanical Utilities				
Water Supply & Distribution				
	1 In (25Mm) Dia.	340.00 LF	3.78	1,287
	3 In (76Mm) Dia.	410.00 LF	24.41	10,009
	4 In (100Mm) Dia.	390.00 LF	28.63	11,167
	3 In (76Mm) Dia.	6.00 EA	193.88	1,163
	4 In (100Mm) Dia.	6.00 EA	287.96	1,728
	Anchor, Concrete	4.00 EA	78.14	313
	Excavation, backfill & compaction complete	340.00 LF	5.00	1,700
Sanitary Sewer Systems				
	4 In (100Mm) Dia.	300.00 LF	3.32	995
	4 In	1.00 EA	78.25	78
	8 In	1.00 EA	165.94	166
	Trench, 2-1/2 CY Hyd Excavator 113 CY/Hr (86M3)/Hr	65.00 CY	1.81	118
	Trim Bottom of Excavation hand Labor	300.00 SF	0.59	177
	Foundation Backfill, Hand Labor 6" Lift Without Compaction	65.00 CY	24.47	1,591
	Compact Backfill w/Air Tamper Around Structures and Trenches	65.00 CY	8.94	581
Site Electrical Utilities				
Exterior Electrical Distribution				
	1 In PVC Conduit W/Coupling	200.00 LF	1.68	337
	1 In PVC Elbow	4.00 EA	10.00	40
	4 In PVC Conduit W/Couplings	400.00 LF	7.16	2,863
	4 In PVC Elbows	6.00 EA	34.69	208
	4 In Base Spacers - Average 4 Wide	25.00 EA	7.20	180
	No. 10 Awg - Type Thw Insulation	1.50 MLF	377.61	566
	No 4/0 Type Thwn	0.50 MLF	1987.47	994
	350 Mcm-Type Thwn	0.90 MLF	3559.35	3,203
	3 Ea - Lighting Arresters, 15 Kv	3.00 EA	367.50	1,103
	300 Kva	1.00 EA	567.95	568
	Underground Marking Tape - 6 In (15Cm) Wide	350.00 LF	0.34	121
	40 Ampere, 8.3 Kv	3.00 EA	258.57	776
	House Keeping Pads	3.00 EA	986.61	2,960

LABOR ID: MARCHE EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPB ID: MECH92

Tue 27 Oct 1992

DETAILED ESTIMATE

U.S. Army Corps of Engineers  
PROJECT SAMPL1: REMODEL DENTAL CLINIC  
NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )  
D. Support Facilities

TIME 14:43:13

DETAIL PAGE 4

Site ( WBS )	QUANTITY UOM	UNIT COST	TOTAL COST
Current Transformers With Compartment 1000 Amp - 1500 Amps	3.00 EA	376.95	1,131
Site ( WBS )	1.00 EA	222149.96	222,150
Support Facilities			222,150
REMODEL DENTAL CLINIC			1,523,939

Tue 27 Oct 1992

ERROR REPORT

U.S. Army Corps of Engineers  
PROJECT SAMPL1: REMODEL DENTAL CLINIC  
NON PARAMETRIC CODE "A" ESTIMATE ( SAMPLE )

TIME 14:43:13

ERROR PAGE 1

No errors detected...

\* \* \* END OF ERROR REPORT \* \* \*

LABOR ID: MARCHE EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPB ID: MECH92

## **APPENDIX F**

### **SAMPLE CODE B OR CODE C (CWE) COST ESTIMATE**

This cost estimate is only an example. The intent and purpose of this example cost estimate is to show the results of an acceptable format for a MCACES GOLD Code B or Code C (CWE) cost estimate with the Corps of Engineers Work Breakdown Structure. Items used within this estimate are illustrative only and do not necessarily reflect an actual project.

Mon 24 Aug 1992

TIME 10:37:17

U.S. Army Corps of Engineers  
PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
Sample Estimate

TITLE PAGE 1

---

Sample - Instruction Buildings  
Fort -----, California  
Spec # \*\*\*\*  
Code "B" Estimate

Designed By: A-E's Company Name  
Estimated By: Estimator's Name

Prepared By: Estimator's Company Name  
City, State

Date: 08/01/92  
Est Construction Time: 365 Days

M C A C E S   G O L D   E D I T I O N  
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Release 5.20J

Mon 24 Aug 1992

PROJECT NOTES

U.S. Army Corps of Engineers  
PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
Sample Estimate

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TITLE PAGE 2

U.S. ARMY ENGINEER DISTRICT, SACRAMENTO  
CORPS OF ENGINEERS

SUMMARY SHEET

SPEC NO: \*\*\*\*  
DATE: 08/01/92  
EST BY: J. ESTIMATOR  
CODE: B

SAMPLE - INSTRUCTION BUILDINGS  
FORT -----, CALIFORNIA

BUILDING COST

1. INSTRUCTION BLDG ONE. . . . . \$ 2,532,300  
2. INSTRUCTION BLDG TWO. . . . . 2,297,400

Total Buildings . . . . . \$ 4,829,700

SITE & UTILITIES . . . . . 371,000

HTRW . . . . . 0

Total Contract Cost . . . . . \$ 5,200,700

Contingencies During Construction . . (5%) . . . . . 260,000

Subtotal . . . . . \$ 5,460,700

Supervision & Administration . . (6%) . . . . . 327,700

Total Construction . . . . . \$

SUB ALLOTMENT . . . . . 0

Total CWE Without Additives / Options . . . . . \$ 5,788,400

ADDITIVE ITEMS

1 . . . . .  
2 . . . . .  
3 . . . . . 0

Total Additives Contract Cost. . . . . \$

Contingencies During Construction . . ( ) . . . . . 0

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PROJECT NOTES

U.S. Army Corps of Engineers  
PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
Sample Estimate

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TITLE PAGE 3

Subtotal . . . . . \$ 0  
Supervision & Administration. . .( %) . . . . . \$ 0  
Total Additives CWE . . . . . \$ 0

OPTION ITEMS

1 : . . . . . \$ 0  
2 : . . . . . \$ 0  
3 : . . . . . \$ 0

Total Options Contract Cost . . . . . \$ 0  
Contingencies During Construction . .( %) . . . . . \$ 0  
Subtotal . . . . . \$ 0  
Supervision & Administration. . .( %) . . . . . \$ 0  
Total Options CWE . . . . . \$ 0

Total CWE Including All Additives / Options . . . . \$ 5,788,400

Programmed Amount : . . . . . \$ 13,000,000  
90% Programmed Amount : . . . . . \$ 11,700,000

Based on Midpoint of Construction During 8<sup>th</sup> Month, Calendar Year, 19<sup>93</sup>

Mon 24 Aug 1992

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U.S. Army Corps of Engineers  
PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
Sample Estimate

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U.S. Army Corps of Engineers  
 PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
 Sample Estimate  
 \*\* PROJECT OWNER SUMMARY - LEVEL 1 \*\*

SUMMARY PAGE 1

		QUANTITY UOM	CONTRACT	DES CTGY	ESCALATN	OWN FURN	CONTINGN	SIOH	TOTAL COST	UNIT COST
C Primary Facilities		225000.00 SF	4,456,221	222,811	150,689	0	241,486	304,272	5,375,480	23.89
D Support Facilities			342,314	17,116	11,576	0	18,550	23,373	412,929	
Sample - Instruction Buildings			4,798,535	239,927	162,265	0	260,036	327,646	5,788,409	

Mon 24 Aug 1992

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U.S. Army Corps of Engineers  
 PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
 Sample Estimate  
 \*\* PROJECT OWNER SUMMARY - LEVEL 2 \*\*

SUMMARY PAGE 2

		QUANTITY UOM	CONTRACT	DES CTGY	ESCALATN	OWN FURN	CONTINGN	SIOH	TOTAL COST	UNIT COST
<hr/>										
C	Primary Facilities									
C.01	Instruction Bldg One	125000.00 SF	2,336,505	116,825	79,010	0	126,617	159,537	2,818,494	22.55
C.02	Instruction Bldg Two	100000.00 SF	2,119,716	105,986	71,679	0	114,869	144,735	2,556,986	25.57
	Primary Facilities	225000.00 SF	4,456,221	222,811	150,689	0	241,486	304,272	5,375,480	23.89
D	Support Facilities									
D.01	Outside Site & Utilities		342,314	17,116	11,576	0	18,550	23,373	412,929	
	Support Facilities		342,314	17,116	11,576	0	18,550	23,373	412,929	
	Sample - Instruction Buildings		4,798,535	239,927	162,265	0	260,036	327,646	5,788,409	

Mon 24 Aug 1992

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U.S. Army Corps of Engineers  
 PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
 Sample Estimate  
 \*\* PROJECT OWNER SUMMARY - LEVEL 3 \*\*

SUMMARY PAGE 3

		QUANTITY UOM	CONTRACT	DES CTGY	ESCALATN	OWN FURN	CONTINGN	SIOH	TOTAL COST	UNIT COST
<b>C Primary Facilities</b>										
<b>C.01 Instruction Bldg One</b>										
C.01.01 Substructure	68000.00 SF	636,264	31,813	21,516	0	34,480	43,444	767,517	11.29	
C.01.02 Superstructure	57000.00 SF	443,729	22,186	15,005	0	24,046	30,298	535,264	9.39	
C.01.08 Plumbing	185.00 EA	99,379	4,969	3,361	0	5,385	6,786	119,880	648.00	
C.01.10 Fire Protection System	125000.00 SF	272,863	13,643	9,227	0	14,787	18,631	329,151	2.63	
C.01.11 Electric Power And Lighting	125000.00 SF	884,270	44,213	29,902	0	47,919	60,378	1,066,683	8.53	
Instruction Bldg One	125000.00 SF	2,336,505	116,825	79,010	0	126,617	159,537	2,818,494	22.55	
<b>C.02 Instruction Bldg Two</b>										
C.02.03 Exterior Closure	50000.00 SF	552,879	27,644	18,696	0	29,961	37,751	666,931	13.34	
C.02.04 Roofing	67250.00 SF	589,159	29,458	19,923	0	31,927	40,228	710,694	10.57	
C.02.05 Interior Construction	57500.00 SF	157,367	7,868	5,321	0	8,528	10,745	189,830	3.30	
C.02.06 Interior Finishes	57500.00 SF	177,322	8,866	5,996	0	9,609	12,108	213,901	3.72	
C.02.09 HVAC	4000.00 MBH	642,989	32,149	21,743	0	34,844	43,904	775,629	193.91	
Instruction Bldg Two	100000.00 SF	2,119,716	105,986	71,679	0	114,869	144,735	2,556,986	25.57	
Primary Facilities	225000.00 SF	4,456,221	222,811	150,689	0	241,486	304,272	5,375,480	23.89	
<b>D Support Facilities</b>										
<b>D.01 Outside Site &amp; Utilities</b>										
D.01.17 Site Preparation	8.00 AC	11,655	583	394	0	632	796	14,059	1757.35	
D.01.18 Site Improvements	64350.00 SY	191,762	9,588	6,485	0	10,392	13,094	231,320	3.59	
D.01.19 Site Civil/Mechanical Utilities	4.00 EA	49,961	2,498	1,689	0	2,707	3,411	60,267	15066.83	
D.01.20 Site Electrical Utilities	1.00 EA	88,937	4,447	3,007	0	4,820	6,073	107,283	107283.39	
Outside Site & Utilities		342,314	17,116	11,576	0	18,550	23,373	412,929		
Support Facilities		342,314	17,116	11,576	0	18,550	23,373	412,929		
Sample - Instruction Buildings		4,798,535	239,927	162,265	0	260,036	327,646	5,788,409		

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U.S. Army Corps of Engineers  
 PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
 Sample Estimate  
 \*\* PROJECT INDIRECT SUMMARY - LEVEL 1 \*\*

SUMMARY PAGE 4

		5.77%	2%	5%	1%			
	QUANTITY UOM	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
C Primary Facilities	225000.00 SF	3,895,030	224,578	82,392	210,100	44,121	4,456,221	19.81
D Support Facilities		299,205	17,251	6,329	16,139	3,389	342,314	
Sample - Instruction Buildings		4,194,235	241,829	88,721	226,239	47,510	4,798,535	
DESIGN CONTINGENCY							239,927	
SUBTOTAL							5,038,462	
ESCALATN							162,265	
SUBTOTAL							5,200,727	
CONTINGN							260,036	
SUBTOTAL							5,460,763	
SIOH							327,646	
TOTAL INCL OWNER COSTS							5,788,409	

Mon 24 Aug 1992

U.S. Army Corps of Engineers  
 PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
 Sample Estimate  
 \*\* PROJECT INDIRECT SUMMARY - LEVEL 2 \*\*

TIME 10:37:17

SUMMARY PAGE 5

		QUANTITY UOM	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
<b>C Primary Facilities</b>									
C.01	Instruction Bldg One	125000.00 SF	2,042,259	117,752	43,200	110,161	23,134	2,336,505	18.69
C.02	Instruction Bldg Two	100000.00 SF	1,852,771	106,826	39,192	99,939	20,987	2,119,716	21.20
	Primary Facilities	225000.00 SF	3,895,030	224,578	82,392	210,100	44,121	4,456,221	19.81
<b>D Support Facilities</b>									
D.01	Outside Site & Utilities		299,205	17,251	6,329	16,139	3,389	342,314	
	Support Facilities		299,205	17,251	6,329	16,139	3,389	342,314	
	Sample - Instruction Buildings		4,194,235	241,829	88,721	226,239	47,510	4,798,535	
	DESIGN CONTINGENCY							239,927	
	SUBTOTAL							5,038,462	
	ESCALATN							162,265	
	SUBTOTAL							5,200,727	
	CONTINGN							260,036	
	SUBTOTAL							5,460,763	
	SIOH							327,646	
	TOTAL INCL OWNER COSTS							5,788,409	

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U.S. Army Corps of Engineers  
 PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
 Sample Estimate  
 \*\* PROJECT INDIRECT SUMMARY - LEVEL 3 \*\*

SUMMARY PAGE 6

		QUANTITY UOM	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
<b>C Primary Facilities</b>									
<b>C.01 Instruction Bldg One</b>									
C.01.01 Substructure	68000.00 SF	556,136	32,065	11,764	29,998	6,300	636,264	9.36	
C.01.02 Superstructure	57000.00 SF	387,848	22,362	8,204	20,921	4,393	443,729	7.78	
C.01.08 Plumbing	185.00 EA	86,864	5,008	1,837	4,686	984	99,379	537.19	
C.01.10 Fire Protection System	125000.00 SF	238,500	13,751	5,045	12,865	2,702	272,863	2.18	
C.01.11 Electric Power And Lighting	125000.00 SF	772,910	44,564	16,349	41,691	8,755	884,270	7.07	
Instruction Bldg One	125000.00 SF	2,042,259	117,752	43,200	110,161	23,134	2,336,505	18.69	
<b>C.02 Instruction Bldg Two</b>									
C.02.03 Exterior Closure	50000.00 SF	483,253	27,863	10,222	26,067	5,474	552,879	11.06	
C.02.04 Roofing	67250.00 SF	514,963	29,692	10,893	27,777	5,833	589,159	8.76	
C.02.05 Interior Construction	57500.00 SF	137,549	7,931	2,910	7,419	1,558	157,367	2.74	
C.02.06 Interior Finishes	57500.00 SF	154,991	8,936	3,279	8,360	1,756	177,322	3.08	
C.02.09 HVAC	4000.00 MBH	562,015	32,404	11,888	30,315	6,366	642,989	160.75	
Instruction Bldg Two	100000.00 SF	1,852,771	106,826	39,192	99,939	20,987	2,119,716	21.20	
Primary Facilities	225000.00 SF	3,895,030	224,578	82,392	210,100	44,121	4,456,221	19.81	
<b>D Support Facilities</b>									
<b>D.01 Outside Site &amp; Utilities</b>									
D.01.17 Site Preparation	8.00 AC	10,187	587	215	549	115	11,655	1456.83	
D.01.18 Site Improvements	64350.00 SY	167,612	9,664	3,546	9,041	1,899	191,762	2.98	
D.01.19 Site Civil/Mechanical Utilities	4.00 EA	43,669	2,518	924	2,356	495	49,961	12490.26	
D.01.20 Site Electrical Utilities	1.00 EA	77,737	4,482	1,644	4,193	881	88,937	88936.89	
Outside Site & Utilities		299,205	17,251	6,329	16,139	3,389	342,314		
Support Facilities		299,205	17,251	6,329	16,139	3,389	342,314		
Sample - Instruction Buildings DESIGN CONTINGENCY		4,194,235	241,829	88,721	226,239	47,510	4,798,535	239,927	
SUBTOTAL ESCALATN							5,038,462	162,265	
SUBTOTAL CONTINGN							5,200,727	260,036	
SUBTOTAL SIOH							5,460,763	327,646	

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U.S. Army Corps of Engineers  
PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
Sample Estimate  
\*\* PROJECT INDIRECT SUMMARY - LEVEL 3 \*\*

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	QUANTITY UOM	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
TOTAL INCL OWNER COSTS							5,788,409	

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U.S. Army Corps of Engineers  
 PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
 Sample Estimate  
 \*\* CONTRACTOR DIRECT SUMMARY - LEVEL 1 \*\*

SUMMARY PAGE 8

		QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
<hr/>									
<b>C. Primary Facilities</b>									
AA GENERAL/PRIME									
CA Carpeting Sub's markups		1.00	SF	234	6,768	36	28,945	0	35,748
EL Electrical sub's markups		1.00	SF	9,490	336,210	1,462	343,906	0	681,578
GL Glass & Glazing Sub's markups		1.00	SF	750	23,674	100	26,688	0	50,461
GW Gypsum Wallboard Sub's markups		1.00	SF	2,082	68,280	764	21,211	0	90,255
HV HVAC Sub's markups		1.00	SF	8,443	310,519	3,693	181,392	0	495,604
MA Masonry Sub's markups		1.00	SF	5,401	173,764	1,185	91,573	0	266,522
MR Membrane Roofing Sub's markups		1.00	SF	7,411	242,725	4,634	206,753	0	454,112
PL Plumbing Sub's markups		1.00	SF	1,135	42,926	426	33,247	0	76,600
PS Painting Sub's markups		1.00	SF	395	12,171	119	5,064	0	17,354
RF Resilient Flooring Sub's markups		1.00	SF	829	30,159	148	42,115	0	72,422
SI Structural Steel Sub's markups		1.00	SF	1,558	50,451	5,649	215,195	0	271,295
TI Tile Sub's markups		1.00	SF	445	16,176	79	7,387	0	23,642
WW Entrances/Storefronts Sub's mkup		1.00	SF	12	393	4	3,843	0	4,240
<b>Subtotal Subcontract Work</b>		1.00	SF	38,184	1,314,216	18,299	1,207,319	0	2,539,834
Subcontracts Incl Indirect		1.00	SF	43,301	1,490,321	20,751	1,369,100	0	2,880,172
Contractor's Own Work		1.00	SF	11,558	383,173	37,319	355,867	238,500	1,014,858
<b>AA GENERAL/PRIME</b>		1.00	SF	54,859	1,873,494	58,070	1,724,966	238,500	3,895,030
<hr/>									
<b>D. Support Facilities</b>									
AA GENERAL/PRIME									
EL Electrical sub's markups				513	18,158	1,720	48,673	0	68,551
SP Paving, Bituminous Sub's markups				1,559	50,500	15,141	82,165	0	147,806
SS Utility, Sewer Sub's markups				351	11,392	969	6,721	0	19,082
SW Utility, Water Sub's markups				287	9,636	1,622	8,169	0	19,427
<b>Subtotal Subcontract Work</b>				2,712	89,685	19,452	145,729	0	254,866
Subcontracts Incl Indirect				3,075	101,703	22,059	165,256	0	289,018
Contractor's Own Work				237	7,710	2,477	0	0	10,187
<b>AA GENERAL/PRIME</b>				3,312	109,413	24,536	165,256	0	299,205

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U.S. Army Corps of Engineers  
 PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
 Sample Estimate  
 \*\* CONTRACTOR INDIRECT SUMMARY - LEVEL 1 \*\*

SUMMARY PAGE 9

	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
<b>C. Primary Facilities</b>							
AA GENERAL/PRIME							
CA Carpeting Sub's markups	35,748	2,860	0	1,930	0	40,539	0.18
EL Electrical sub's markups	681,578	54,526	0	36,805	0	772,910	3.44
GL Glass & Glazing Sub's markups	50,461	4,037	0	2,725	0	57,223	0.25
GW Gypsum Wallboard Sub's markups	90,255	7,220	0	4,874	0	102,349	0.45
HV HVAC Sub's markups	495,604	39,648	0	26,763	0	562,015	2.50
MA Masonry Sub's markups	266,522	21,322	0	14,392	0	302,236	1.34
MR Membrane Roofing Sub's markups	454,112	36,329	0	24,522	0	514,963	2.29
PL Plumbing Sub's markups	76,600	6,128	0	4,136	0	86,864	0.39
PS Painting Sub's markups	17,354	1,388	0	937	0	19,679	0.09
RF Resilient Flooring Sub's markups	72,422	5,794	0	3,911	0	82,127	0.37
SI Structural Steel Sub's markups	271,295	21,704	0	14,650	0	307,648	1.37
TI Tile Sub's markups	23,642	1,891	0	1,277	0	26,810	0.12
WW Entrances/Storefronts Sub's mkup	4,240	339	0	229	0	4,808	0.02
<b>Subtotal Subcontract Work</b>	<b>2,539,834</b>	<b>203,187</b>	<b>0</b>	<b>137,151</b>	<b>0</b>	<b>2,880,172</b>	<b>12.80</b>
Indirect on Subcontracts	2,880,172	166,064	60,925	155,358	32,625	3,295,144	14.65
Indirect on Own Work	1,014,858	58,514	21,467	54,742	11,496	1,161,077	5.16
<b>AA GENERAL/PRIME</b>	<b>3,895,030</b>	<b>224,578</b>	<b>82,392</b>	<b>210,100</b>	<b>44,121</b>	<b>4,456,221</b>	<b>19.81</b>
<b>D. Support Facilities</b>							
AA GENERAL/PRIME							
EL Electrical sub's markups	68,551	5,484	0	3,702	0	77,737	
SP Paving, Bituminous Sub's markups	147,806	11,825	0	7,982	0	167,612	
SS Utility, Sewer Sub's markups	19,082	1,527	0	1,030	0	21,639	
SW Utility, Water Sub's markups	19,427	1,554	0	1,049	0	22,030	
<b>Subtotal Subcontract Work</b>	<b>254,866</b>	<b>20,389</b>	<b>0</b>	<b>13,763</b>	<b>0</b>	<b>289,018</b>	
Indirect on Subcontracts	289,018	16,664	6,114	15,590	3,274	330,660	
Indirect on Own Work	10,187	587	215	549	115	11,655	
<b>AA GENERAL/PRIME</b>	<b>299,205</b>	<b>17,251</b>	<b>6,329</b>	<b>16,139</b>	<b>3,389</b>	<b>342,314</b>	

Mon 24 Aug 1992

DETAILED ESTIMATE

U.S. Army Corps of Engineers  
 PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
 Sample Estimate  
 Project Distributed Costs

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DETAIL PAGE 1

O.AA. GENERAL/PRIME		QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
<b>O.AA. GENERAL/PRIME</b>												
<b>O.AA. O. Overhead Items - AA</b>												
USR <01041 1001 > SCHEDULE UPDATES (NETWORK ANALYSIS SYSTEM)		11.00	MO	N/A	0.00	0.00	0.00	0.00	0.00	400.00 4,400	400.00 4,400	400.00
USR <01041 1002 > PROJECT MANAGER		6.00	MO	N/A	0.00	0.00	0.00	0.00	0.00	3000.00 18,000	3000.00 18,000	3000.00
USR <01041 1003 > GENERAL SUPERINTENDENT		12.00	MO	N/A	0.00	0.00	0.00	0.00	0.00	2500.00 30,000	2500.00 30,000	2500.00
USR <01041 1004 > ASSISTANT SUPERINTENDENT		12.00	MO	N/A	0.00	0.00	0.00	0.00	0.00	2200.00 26,400	2200.00 26,400	2200.00
USR <01041 1005 > INSURANCE		1.00	LS	N/A	0.00	0.00	0.00	0.00	0.00	2500.00 2,500	2500.00 2,500	2500.00
USR <01051 1001 > FIELD ENGINEER		10.00	MO	N/A	0.00	0.00	0.00	0.00	0.00	2100.00 21,000	2100.00 21,000	2100.00
USR <01051 1002 > PROJECT ENGINEER		12.00	MO	N/A	0.00	0.00	0.00	0.00	0.00	2000.00 24,000	2000.00 24,000	2000.00
USR <01051 1003 > SURVEY/LAYOUT CREW		30.00	DAY	N/A	0.00	0.00	0.00	0.00	0.00	400.00 12,000	400.00 12,000	400.00
USR <01051 1004 > TIMEKEEPER/CLERK		12.00	MO	N/A	0.00	0.00	0.00	0.00	0.00	1500.00 18,000	1500.00 18,000	1500.00
USR <01051 1005 > SECRETARY		12.00	MO	N/A	0.00	0.00	0.00	0.00	0.00	1200.00 14,400	1200.00 14,400	1200.00
USR <01200 1001 > TRAVEL EXPENSE HOME OFFICE PERSONNEL		11.00	MO	N/A	0.00	0.00	0.00	0.00	0.00	300.00 3,300	300.00 3,300	300.00
USR <01400 1001 > QC INSPECTOR		12.00	MO	N/A	0.00	0.00	0.00	0.00	0.00	1800.00 21,600	1800.00 21,600	1800.00
USR <01500 1002 > OFFICE TRAILERS, 2 each		12.00	MO	N/A	0.00	0.00	0.00	0.00	0.00	500.00 6,000	500.00 6,000	500.00
USR <01500 1003 > FENCING @ STORAGE AREA		700.00	LF	N/A	0.00	0.00	0.00	0.00	0.00	3.50 2,450	3.50 2,450	3.50
USR <01500 1004 > OFFICE SUPPLIES		12.00	MO	N/A	0.00	0.00	0.00	0.00	0.00	125.00 1,500	125.00 1,500	125.00
USR <01500 1005 > TEMP POWER		12.00	MO	N/A	0.00	0.00	0.00	0.00	0.00	150.00 1,800	150.00 1,800	150.00

LABOR ID: SACT01 EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPB ID: SAC92A

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DETAILED ESTIMATE

U.S. Army Corps of Engineers  
PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
Sample Estimate  
Project Distributed Costs

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DETAIL PAGE 2

O.AA. GENERAL/PRIME		QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
USR	<01500 1006 > TEMP WATER	12.00	MO	N/A	0.00	0	0.00	0	0.00	50.00	50.00	50.00
USR	<01500 1007 > TEMP TELEPHONE	12.00	MO	N/A	0.00	0	0.00	0	0.00	100.00	100.00	100.00
USR	<01500 1008 > PORTABLE TOILETS, 6 each	12.00	MO	N/A	0.00	0	0.00	0	0.00	240.00	240.00	240.00
USR	<01500 1009 > PROJECT SIGNS	1.00	LS	N/A	0.00	0	0.00	0	0.00	1500.00	1500.00	1500.00
USR	<01600 1002 > STORAGE/TOOL TRAILER, 2 each	10.00	MO	N/A	0.00	0	0.00	0	0.00	200.00	200.00	200.00
USR	<01600 1003 > JOBSITE PICK-UP TRUCKS, 2 each	12.00	MO	N/A	0.00	0	0.00	0	0.00	700.00	700.00	700.00
USR	<01600 1004 > MOB AND DE-MOB	1.00	LS	N/A	0.00	0	0.00	0	0.00	5000.00	5000.00	5000.00
USR	<01660 1001 > TESTING ADJUSTING & BALANCING (miscellaneous items)	1.00	LS	N/A	0.00	0	0.00	0	0.00	2500.00	2500.00	2500.00
USR	<01700 1001 > CONTRACT CLOSEOUT	1.00	MO	N/A	0.00	0	0.00	0	0.00	1500.00	1500.00	1500.00
M USR	<01710 1111 > DEBRIS REMOVAL & DISPOSAL	11.00	MO	N/A	0.00	0	0.00	0	0.00	200.00	200.00	200.00
USR	<01710 1112 > CONTINUOUS CLEANUP	12.00	MO	N/A	0.00	0	0.00	0	0.00	350.00	350.00	350.00
USR	<01710 2111 > FINAL JOB CLEAN-UP	4.00	DAY	N/A	0.00	0	0.00	0	0.00	250.00	250.00	250.00
USR	<01800 1001 > MAINTAIN EXIST HAUL ROUTES	1.00	LS	N/A	0.00	0	0.00	0	0.00	1500.00	1500.00	1500.00
Overhead Items - AA							0	0	0	241,830	241,830	

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## DETAILED ESTIMATE

U.S. Army Corps of Engineers  
 PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California  
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 C. Primary Facilities

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DETAIL PAGE 3

C.01. Instruction Bldg One	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
<b>C. Primary Facilities</b>											
<b>C.01. Instruction Bldg One</b>											
<b>C.01.01. Substructure</b>											
<b>C.01.01.01. Standard Foundations</b>											
<b>C.01.01.01.01. Wall Foundations</b>											
L MIL AA <02221 1102 > Continuous footing excavation	3400.00	CY	CODGD	34.29	0.06 198	2.16 7,347	1.25 4,259	0.00 0	0.00 0	3.41 11,606	3.41
L MIL AA <02222 3401 > Hand trim excavation	1000.00	SF	ULABE	41.75	0.03 30	0.87 867	0.03 34	0.00 0	0.00 0	0.90 901	0.90
B MIL AA <03110 1122 > Formwork	44680	SF	ACARJ	57.14	0.07 3,128	2.23 99,534	0.04 1,827	0.69 31,002	0.00 0	2.96 132,363	2.96
M MIL AA <03210 1003 > Reinforcing steel	42.00	TON	SIWRC	0.31	12.80 538	474.82 19,942	3.02 127	533.75 22,418	0.00 0	1011.59 42,487	1011.59
B MIL AA <03311 1125 > Concrete placement	1445.00	CY	ALABI	11.94	0.67 968	20.74 29,971	7.63 11,030	55.51 80,212	0.00 0	83.88 121,213	83.88
L MIL AA <02222 4102 > Backfill foundation without compaction	1960.00	CY	CODEB	66.73	0.03 59	1.11 2,176	0.58 1,142	0.00 0	0.00 0	1.69 3,318	1.69
L MIL AA <02222 4202 > Compact backfill	1960.00	CY	CLACC	18.75	0.16 314	4.64 9,100	0.14 276	0.00 0	0.00 0	4.78 9,376	4.78
L MIL AA <02225 3102 > Haul excess excavation to waste	1445.00	CY	COETB	20.02	0.05 72	1.69 2,441	1.19 1,714	0.00 0	0.00 0	2.88 4,155	2.88
MIL AA <07160 1001 > Asphalt damp proofing	6.00	CSF	ARFCA	0.83	1.50 9	51.22 307	0.33 2	7.63 46	0.00 0	59.18 355	59.18
Wall Foundations	5600.00	LF			5,315	171,685	20,411	133,678	0	325,773	58.17
<b>C.01.01.01.02. Column Foundations &amp; Pile Caps</b>											
L MIL AA <02225 2111 > Excavation	20.00	CY	CODEO	28.57	0.07 1	2.59 52	1.61 32	0.00 0	0.00 0	4.20 84	4.20
L MIL AA <02222 3401 > Hand trim excavation	50.00	SF	ULABE	41.75	0.03 1	0.87 43	0.03 2	0.00 0	0.00 0	0.90 45	0.90
M MIL AA <03110 1122 > Formwork	150.00	SF	ACARJ	47.50	0.08 13	2.68 402	0.05 7	0.91 136	0.00 0	3.64 545	3.64

LABOR ID: SACT01 EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPB ID: SAC92A

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DETAILED ESTIMATE

**U.S. Army Corps of Engineers**  
**PROJECT SAMPLE: Sample - Instruction Buildings - Fort -----, California**  
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c.01. Instruction Bldg One		QUANTY	UOM	CREW ID	OUTPUT MANHOUR		LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
M MIL AA <03210 1003 > Reinforcing steel		0.20	TON SIWRC	0.31	12.80 3	474.82 95	3.02 1	507.06 101	0.00 0	984.90 197	984.90	
Column Foundations & Pile Caps	5.00	EA			18	592	42	238	0	872	174.30	
Standard Foundations	68000	SF			5,333	172,277	20,453	133,915	0	326,645	4.80	
<b>c.01.01.03. Slab on Grade</b>												
<b>C.01.01.03.01. Standard Slab on Grade</b>												
MIL AA <02210 3201 > Finish grade building pad area	7580.00	SY COFGA	125.00	0.02 121	0.56 4,274	0.23 1,775	0.00 0	0.00 0	0.00 0	0.80 6,049	0.80	
MIL AA <02244 1001 > Soil treatment	68200	SF ULABA	562.50	0.00 150	0.06 4,385	0.00 20	0.01 728	0.00 0	0.00 0	0.08 5,134	0.08	
M MIL AA <02512 1003 > Capillary water barrier 4" compacted thickness	842.00	CY CODEK	62.50	0.10 81	2.97 2,504	0.21 180	17.08 14,381	0.00 0	0.00 0	20.27 17,066	20.27	
USR AA <02240 1003 > Sand 2" layer	421.00	CY CODEK	56.82	0.11 44	3.27 1,377	0.24 99	8.01 3,371	0.00 0	0.00 0	11.51 4,847	11.51	
MIL AA <07111 5003 > 10 Mil polyeth vapor barrier	682.00	CSF ACARA	4.63	0.27 184	8.85 6,035	0.09 64	3.63 2,475	0.00 0	0.00 0	12.57 8,574	12.57	
M MIL AA <03110 1611 > Slab on grade edge form 6" high	1500.00	LF ACARJ	75.00	0.05 80	1.70 2,546	0.03 47	0.51 769	0.00 0	0.00 0	2.24 3,361	2.24	
MIL AA <03251 2001 > Perimeter felt joint, 1/2" x 6"	10000	LF ACARA	46.88	0.03 267	0.87 8,731	0.01 92	0.33 3,309	0.00 0	0.00 0	1.21 12,132	1.21	
M MIL AA <03210 1003 > Reinforcement	31.60	TON SIWRC	0.31	12.80 404	474.82 15,004	3.02 96	507.06 16,023	0.00 0	984.90 31,123	984.90		
B MIL AA <03311 1166 > Concrete placement	1263.00	CY ALABI	15.68	0.51 645	15.80 19,957	5.82 7,345	55.51 70,109	0.00 0	77.13 97,411	77.13		
MIL AA <03311 4105 > Steel trowel finish	68200	SF ACMAC	68.75	0.02 1,091	0.53 36,003	0.02 1,466	0.00 0	0.00 0	0.55 37,469	0.55		
MIL AA <03305 1004 > Sprayed membrane curing compound	682.00	CSF ULABB	11.88	0.21 144	6.10 4,157	0.03 22	3.15 2,148	0.00 0	9.28 6,326	9.28		
Standard Slab on Grade	68000	SF		3,212	104,973	11,205	113,313	0	229,492	3.37		
Slab on Grade	68000	SF		3,212	104,973	11,205	113,313	0	229,492	3.37		

LABOR ID: SACT01 EQUIP ID: SAC92A

Currency in DOLLARS

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DETAILED ESTIMATE

U.S. Army Corps of Engineers  
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DETAIL PAGE 5

C.01. Instruction Bldg One	QUANTITY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST	
Substructure	68000 SF	8,545	277,250	31,658	247,228	0	556,136	8.18	
C.01.02. Superstructure									
C.01.02.01. Floor Construction									
C.01.02.01.01. Structural Frame									
MIL SI <05120 1001 > Wide flange beams and columns	6.00 TON SIWSM	1.08	7.44 45	242.96 1,653	57.04 388	1067.50 7,263	0.00 0	1367.50 9,304	1550.75
M MIL SI <05211 1003 > Long span open web joists	132.00 TON SIWSK	1.63	6.15 812	211.78 31,700	35.32 5,286	800.62 119,844	0.00 0	1047.72 156,831	1188.11
Structural Frame	57000 SF		857	33,353	5,675	127,107	0	166,135	2.91
C.01.02.01.03. Floor Decks and Slabs									
MIL SI <05310 2004 > 3" x 16 Ga metal deck	60180 SF SIWSD	812.50	0.01 668	0.33 22,725	0.01 696	1.71 116,561	0.00 0	2.05 139,982	2.33
USR SI <05300 0001 > Sheet metal edge closure form 12" w/ 2 bends, 18 ga	1500.00 SF SIWSD	406.25	0.02 33	0.67 1,133	0.02 35	0.21 363	0.00 0	0.90 1,531	1.02
MIL AA <03220 1001 > Weld wire fab in slabs, 6x6x#10 21#/CSF, (W 1.4 x W 1.4)	60180 SF SIWRB	437.50	0.01 343	0.21 12,746	0.00 72	0.05 3,212	0.00 0	0.27 16,030	0.27
B MIL AA <03311 1223 > Pour and place elevated concrete slab	742.00 CY ALABI	13.79	0.58 430	17.96 13,325	6.61 4,904	61.91 45,941	0.00 0	86.48 64,169	86.48
Floor Decks and Slabs	57000 SF		1,475	49,929	5,707	166,077	0	221,713	3.89
Floor Construction	57000 SF		2,332	83,282	11,382	293,184	0	387,848	6.80
Superstructure	57000 SF		2,332	83,282	11,382	293,184	0	387,848	6.80
C.01.08. Plumbing									
C.01.08.01. Plumbing Fixtures									
C.01.08.01.01. Waterclosets									
B MIL PL <15450 1111 > Flush Vlv H2O Closet, Floor Mtd Elongated,Vit China w/Siphon Jet	28.00 EA MPLUE	1.25	2.00 56	70.23 2,230	0.75 24	168.13 5,339	0.00 0	239.10 7,592	271.14
USR PL <15450 1142 > Water closet, flush valve, handicap accessible	16.00 EA MPLUE	1.25	2.00 32	70.23 1,274	0.75 14	229.51 4,164	0.00 0	300.48 5,452	340.75

LABOR ID: SACT01 EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPB ID: SAC92A

Mon 24 Aug 1992

## DETAILED ESTIMATE

U.S. Army Corps of Engineers  
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 Sample Estimate  
 C. Primary Facilities

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DETAIL PAGE 6

C.01. Instruction Bldg One	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
Waterclosets	44.00	EA		88	3,504	37	9,503		0	13,044	296.45
C.01.08.01.02. Urinals											
MIL PL <15450 1311 > Washdown, Wall Hung Urinal w/Flush Valve,Vitreous China	22.00	EA	MPLUE	0.59	4.26 94	149.42 3,728	1.59 40	177.62 4,431	0.00 0	328.62 8,198	372.66
Urinals	22.00	EA			94	3,728	40	4,431	0	8,198	372.66
Plumbing Fixtures	185.00	EA		182	7,232	77	13,934		0	21,242	114.82
C.01.08.02. Domestic Water Supply											
C.01.08.02.01. Pipes and Fittings											
B MIL PL <15063 1002 > 1/2" Cu Pipe/Tubing Type L	559.00	LF	MPLUA	31.25	0.04 22	1.57 994	0.02 10	0.59 372	0.00 0	2.17 1,376	2.46
B MIL PL <15063 1003 > 3/4" Cu Pipe/Tubing Type L	1731.00	LF	MPLUA	31.25	0.04 69	1.57 3,079	0.02 30	0.92 1,802	0.00 0	2.50 4,911	2.84
B MIL PL <15063 1022 > 1/2" Copper Tee - Straight Sweat	10.00	EA	MPLUA	2.60	0.48 5	18.83 214	0.18 2	0.25 3	0.00 0	19.26 218	21.84
B MIL PL <15063 1025 > 1-1/4" Copper Tee-Straight Sweat	2.00	EA	MPLUA	1.74	0.72 1	28.24 64	0.27 1	2.78 6	0.00 0	31.28 71	35.47
B MIL PL <15063 1033 > 3/4" Copper Tee-Reducing Sweat	73.00	EA	MPLUA	2.40	0.52 38	20.39 1,688	0.20 16	0.56 46	0.00 0	21.15 1,751	23.98
B MIL PL <15063 1042 > 1/2" 90 Degree Elbow, Copper	189.00	EA	MPLUA	3.91	0.32 60	12.55 2,690	0.12 26	0.14 30	0.00 0	12.81 2,746	14.53
M MIL PL <15063 1083 > 3/4" Straight Copper Coupling	26.00	EA	MPLUA	5.88	0.21 6	8.34 246	0.08 2	0.21 6	0.00 0	8.64 255	9.80
M MIL PL <15063 1114 > 1" Copper Adapter, Male	44.00	EA	MPLUA	7.75	0.16 7	6.33 316	0.06 3	1.30 65	0.00 0	7.69 384	8.72
B MIL PL <15063 1143 > 3/4" Cap, Copper, Sweat	22.00	EA	MPLUA	6.95	0.18 4	7.06 176	0.07 2	0.17 4	0.00 0	7.30 182	8.28
USR PL <15063 1155 > 1-1/2" Dielectric union copper x FIP	8.00	EA	MPLUA	2.50	0.50 4	19.61 178	0.19 2	34.16 310	0.00 0	53.96 490	61.19
Pipes and Fittings	185.00	EA			217	9,645	93	2,644	0	12,383	66.93

LABOR ID: SACT01 EQUIP ID: SAC92A

Currency in DOLLARS

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## DETAILED ESTIMATE

U.S. Army Corps of Engineers  
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 C. Primary Facilities

DETAIL PAGE 7

C.01. Instruction Bldg One	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
<b>C.01.08.02.04. Insulation &amp; Identification</b>											
MIL PL <15042 2001 > 1/2" OD Press-Sensitive Marker Stick-On w/Arrow Tape Over Insul	55.00	EA	MPLUA	3.00	0.42 23	16.34 1,019	0.16 10	2.07 129	0.00 0	18.57 1,158	21.06
MIL PL <15042 2002 > 3/4" OD Press-Sensitive Marker Stick-On w/Arrow Tape Over Insul	173.00	EA	MPLUA	3.00	0.42 72	16.34 3,206	0.16 31	2.07 406	0.00 0	18.57 3,643	21.06
MIL PL <15042 2005 > 1-1/2" OD Press-Sensitive Marker Stick-On w/Arrow Tape Over Insul	72.00	EA	MPLUA	2.38	0.53 38	20.64 1,685	0.20 16	2.07 169	0.00 0	22.91 1,871	25.98
MIL PL <15182 1002 > Fbgs Cover for 3/4"D Pipe, 1"Thk With Fire Retardant Jacket	1750.00	LF	AASBC	38.75	0.06 113	2.76 5,469	0.02 48	0.91 1,801	0.00 0	3.69 7,318	4.18
MIL PL <15182 1007 > Fbgs Cover for 2-1/2"D Pipe, 1"Tk With Fire Retardant Jacket	110.00	LF	AASBC	33.75	0.07 8	3.16 395	0.03 3	1.38 172	0.00 0	4.57 570	5.18
Insulation & Identification	185.00	EA			254	11,774	109	2,677	0	14,560	78.70
<b>C.01.08.02.06. Hangar Assemblies</b>											
<b>C.01.08.02.06.01. 1/2" &amp; 3/4" Hangar Assemblies</b>											
B MIL PL <15094 1014 > 3" Clevis Hanger Type 1	229.00	EA	MPLUB	15.63	0.16 37	5.77 1,500	0.06 15	1.01 263	0.00 0	6.85 1,778	7.77
MIL PL <15094 4001 > 3/8" Threaded Rod	687.00	LF	MPLUA	50.00	0.03 17	0.98 764	0.01 7	0.13 100	0.00 0	1.12 871	1.27
MIL PL <15094 4061 > 3/8" Washer, Flat	687.00	EA	MPLUA	37.50	0.03 23	1.31 1,018	0.01 10	0.03 25	0.00 0	1.35 1,053	1.53
MIL PL <15094 4081 > 3/8" Eye Socket	687.00	EA	MPLUA	37.50	0.03 23	1.31 1,018	0.01 10	0.06 50	0.00 0	1.38 1,078	1.57
MIL PL <15094 5021 > 3/8" "C" Clamp Type 23	229.00	EA	MPLUA	10.00	0.13 29	4.90 1,273	0.05 12	0.65 169	0.00 0	5.60 1,454	6.35
MIL PL <15094 5201 > Pipe Cover Shd, <3-1/2"OD, 16 Ga Shield Type 40	229.00	EA	MPLUA	37.50	0.03 8	1.31 339	0.01 3	4.05 1,051	0.00 0	5.37 1,393	6.08
1/2" & 3/4" Hangar Assemblies	1.00	EA			136	5,913	58	1,658	0	7,629	7628.76
<b>C.01.08.02.06.02. 1-1/2" &amp; 2" Hangar Assemblies</b>											
B MIL PL <15094 1015 > 4" Clevis Hanger Type 1	92.00	EA	MPLUB	15.63	0.16 15	5.77 602	0.06 6	1.26 131	0.00 0	7.09 740	8.04

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C.01. Instruction Bldg One	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
MIL PL <15094 4001 > 3/8" Threaded Rod	276.00	LF	MPLUA	50.00	0.03 7	0.98 307	0.01 3	0.13 40	0.00 0	1.12 350	1.27
MIL PL <15094 4061 > 3/8" Washer, Flat	276.00	EA	MPLUA	37.50	0.03 9	1.31 409	0.01 4	0.03 10	0.00 0	1.35 423	1.53
MIL PL <15094 4081 > 3/8" Eye Socket	276.00	EA	MPLUA	37.50	0.03 9	1.31 409	0.01 4	0.06 20	0.00 0	1.38 433	1.57
MIL PL <15094 5021 > 3/8" "C" Clamp Type 23	92.00	EA	MPLUA	10.00	0.13 12	4.90 511	0.05 5	0.65 68	0.00 0	5.60 584	6.35
MIL PL <15094 5202 > Pipe Cover Shd, 3-1/2"-6"OD, 16 Ga Shield Type 40	92.00	EA	MPLUA	35.00	0.04 3	1.40 146	0.01 1	5.98 624	0.00 0	7.39 771	8.38
1-1/2" & 2" Hanger Assemblies	1.00	EA			55	2,385	23	893	0	3,302	3301.86
Hangar Assemblies	185.00	EA			191	8,298	81	2,551	0	10,931	59.08
Domestic Water Supply	185.00	EA			661	29,718	283	7,872	0	37,873	204.72
<b>C.01.08.03. Sanitary Waste and Vent System</b>											
<b>C.01.08.03.01. Waste Pipe and Fittings</b>											
B MIL PL <15062 4001 > 2" Cast Iron Soil Pipe Without Hangers & Fittings	1395.00	LF	MPLUE	27.78	0.09 126	3.16 4,999	0.03 53	1.80 2,854	0.00 0	5.00 7,906	5.67
B MIL PL <15062 4002 > 3" Cast Iron Soil Pipe Without Hangers & Fittings	159.00	LF	MPLUE	19.23	0.13 21	4.56 823	0.05 9	2.50 450	0.00 0	7.11 1,282	8.06
B MIL PL <15062 4011 > 2" 90 Degree CI Bend, No Hub	37.00	EA	MPLUE	4.17	0.60 22	21.07 884	0.22 9	3.14 132	0.00 0	24.43 1,025	27.71
B MIL PL <15062 4031 > 2" CI Tee, Sanit Straight, No Hub	33.00	EA	MPLUE	2.78	0.90 30	31.60 1,183	0.34 13	3.61 135	0.00 0	35.55 1,330	40.31
B MIL PL <15062 4121 > 2" Cast Iron P-Trap, No Hub	13.00	EA	MPLUE	4.17	0.60 8	21.07 311	0.22 3	3.70 55	0.00 0	25.00 369	28.35
Waste Pipe and Fittings	1.00	EA			206	8,200	87	3,626	0	11,912	11912.18
<b>C.01.08.03.03. Floor Drains</b>											
MIL PL <15421 1002 > Rnd Top Floor Drain w/2" Outlet Satin Bronze, Incl Shower Drains	28.00	EA	MPLUE	1.04	2.41 67	84.61 2,687	0.90 29	91.80 2,915	0.00 0	177.31 5,630	201.07

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C.01. Instruction Bldg One	QUANTITY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST	
Floor Drains	28.00 EA	67	2,687	29	2,915	0	5,630	201.07	
Sanitary Waste and Vent System	200.00 EA	273	10,886	115	6,541	0	17,542	87.71	
<b>C.01.08.05. Plumbing Equipment</b>									
<b>C.01.08.05.01. Domestic Water Equipment</b>									
MIL PL <15425 1003 > 72Gal Comm Water Htr, Gas 327GPH Fast Recovery & GPM/100F Rise	4.00 EA MPLUD	0.26	4.74 19	185.84 843	1.79 8	2062.41 9,355	0.00 0	2250.04 10,206	2551.55
Domestic Water Equipment	1.00 EA		19	843	8	9,355	0	10,206	10206.20
Plumbing Equipment	4.00 EA		19	843	8	9,355	0	10,206	2551.55
Plumbing	185.00 EA		1,135	48,678	484	37,702	0	86,864	469.54
<b>C.01.10. Fire Protection System</b>									
USR AA <15501 0001 > Fire sprinkler protection system (no design at this stage of estimate)	1.00 EA N/A	0.00	0.00 0	0.00 0	0.00 0	238500.00 238,500	238500.00 238,500	238500.00 238,500	
Fire Protection System	125000 SF		0	0	0	0	238,500	238,500	
<b>C.01.11. Electric Power And Lighting</b>									
<b>C.01.11.01. Service and Distribution</b>									
<b>C.01.11.01.03. Main Switchboards</b>									
MIL EL <16470 4124 > 42-48 W Distr Sec,800A Mn Bus,4W Type WRI,600VAC,250VDC	6.00 EA EEELEB	0.09	27.78 167	1045.21 7,112	3.55 24	699.21 4,757	0.00 0	1747.97 11,893	1982.20
Main Switchboards	125000 SF		167	7,112	24	4,757	0	11,893	0.10
<b>C.01.11.01.04. Interior Distrib. Transformers</b>									
MIL EL <16330 2401 > 30 KVA,480 X 208y/120V,Xfrmr 3Ph,60Hz,General Purpose,Dry	6.00 EA EEELEE	0.34	12.01 72	453.33 3,084	9.55 65	1129.14 7,683	0.00 0	1592.02 10,832	1805.35
MIL EL <16330 2408 > 225 KVA,480 X 208y/120V,Xfrmr 3Ph,60Hz,General Purpose,Dry	6.00 EA EEELEE	0.10	40.00 240	1509.49 10,271	31.81 216	5216.68 35,494	0.00 0	6757.97 45,981	7663.54
Interior Distrib. Transformers	125000 SF		312	13,355	281	43,177	0	56,813	0.45

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C.01. Instruction Bldg One	QUANTITY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
<b>C.01.11.01.05. Panels</b>											
M MIL EL <16471 2419 > 225A,w/42-20A Brkr,120/208V,4W 3 Ph Panelboard,Main Brkr,Assemb	76.00	EA	EELEB	0.09	26.88 2,043	1011.49 87,174	3.44 296	1841.44 158,702	0.00 0	2856.37 246,173	3239.12
M MIL EL <16471 2719 > 225A,w/42-20A Brkr,277/480V,3W 3 Ph Panelboard,Main Lugs,Assemb	7.00	EA	EELEB	0.09	27.78 194	1045.21 8,297	3.55 28	2348.50 18,642	0.00 0	3397.26 26,967	3852.49
Panels	125000	SF			2,237	95,471	324	177,345	0	273,141	2.19
<b>C.01.11.01.06. Enclosed Circuit Breakers</b>											
MIL EL <16170 2225 > 600V Non-Fused HD Disc Sw,400 A NEMA 3R,HD Disconnect Switch,3P	4.00	EA	EELEB	0.18	13.89 56	522.60 2,371	1.78 8	785.68 3,564	0.00 0	1310.06 5,942	1485.61
Enclosed Circuit Breakers	125000	SF			56	2,371	8	3,564	0	5,942	0.05
<b>C.01.11.01.08. Feeder Wiring</b>											
B MIL EL <16120 1507 > Feeder from main switchboard MSB w/ conduit and wire	2600.00	LF	EELEF	18640	0.00 1	0.01 25	0.00 0	26.69 78,685	0.00 0	26.70 78,711	30.27
Feeder Wiring	125000	SF			1	25	0	78,685	0	78,711	0.63
Service and Distribution	125000	SF			2,773	118,334	638	307,528	0	426,500	3.41
<b>C.01.11.02. Lighting and Branch Wiring</b>											
<b>C.01.11.02.01. Branch Wiring</b>											
<b>C.01.11.02.01.01. Lighting Branch Wiring</b>											
MIL EL <16111 2301 > 1/2" EMT w/Coupling Instl In Concrete Slab & Masonry	34000	LF	EELEF	83.40	0.06 1,901	1.92 74,058	0.01 289	0.23 9,055	0.00 0	2.16 83,402	2.45
M MIL EL <16120 1201 > #12 AWG Cable-Type THW 600V Cu,Sgl Sol,Pl in Cnd,12'Hgt	102.00	MLF	EELEF	0.77	6.07 619	208.59 24,127	0.81 94	91.80 10,619	0.00 0	301.21 34,840	341.57
Lighting Branch Wiring	125000	SF			2,520	98,186	383	19,674	0	118,243	0.95
<b>C.01.11.02.01.02. Power Branch Wiring</b>											
M MIL EL <16111 2301 > 1/2" EMT w/Coupling Instl In Concrete Slab & Masonry	50000	LF	EELEF	83.40	0.06 2,795	1.92 108,909	0.01 425	0.32 18,158	0.00 0	2.25 127,493	2.55
M MIL EL <16120 1201 > #12 AWG Cable-Type THW 600V Cu,Sgl Sol,Pl in Cnd,12'Hgt	150.00	MLF	EELEF	0.77	6.07 910	208.59 35,481	0.81 139	91.80 15,616	0.00 0	301.21 51,236	341.57

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C.01. Instruction Bldg One	QUANTITY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
Power Branch Wiring	125000	SF		3,705	144,391	564	33,774		0	178,729	1.43
Branch Wiring	125000	SF		6,225	242,576	947	53,448		0	296,971	2.38
C.01.11.02.02. Lighting Equipment											
B MIL EL <16510 2321 > Encl & Gskt, VT, Fluor Fxtr, (232) 4", Surface Or Pendant Mounting (Type 232)	180.00	EA	EELEF	4.66	1.00 180	34.38 7,017	0.13 27	58.71 11,984	0.00 0	93.22 19,029	105.72
MIL EL <16510 5022 > Security HID Fxtr, Ext Wall, 502B 70 Watt High Pressure Sodium	32.00	EA	EELEB	0.66	3.77 121	141.71 5,142	0.48 17	154.62 5,611	0.00 0	296.81 10,771	336.58
MIL EL <16140 2202 > 3-way Sw, 120 V, 20 Amp, Conceal Concealed Devices - Complete	204.00	EA	EELEB	3.75	0.67 136	25.09 5,803	0.09 20	5.40 1,250	0.00 0	30.57 7,072	34.67
B MIL EL <16510 6041 > Exit Sign W/Emer Battery(604A1) Single Face End Mtd	56.00	EA	EELEB	2.50	1.00 56	37.63 2,389	0.13 8	160.13 10,169	0.00 0	197.88 12,566	224.40
Lighting Equipment	125000	SF		493	20,352	73	29,013		0	49,438	0.40
Lighting and Branch Wiring	125000	SF		6,717	262,928	1,020	82,461		0	346,409	2.77
Electric Power And Lighting	125000	SF		9,490	381,262	1,658	389,990		0	772,910	6.18
Instruction Bldg One	125000	SF		21,502	790,473	45,181	968,105	238,500	2,042,259		16.34

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C.02. Instruction Bldg Two	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
<b>C.02. Instruction Bldg Two</b>											
<b>C.02.03. Exterior Closure</b>											
<b>C.02.03.01. Exterior Walls</b>											
<b>C.02.03.01.01. Exterior Skin</b>											
B MIL MA <04220 4013 > 8"x16"x8" Split Face CMU	30830	SF	AMABF	48.18	0.11 3,360	3.45 120,637	0.02 829	1.76 61,580	0.00 0	5.24 183,046	5.94
USR MA <04220 0001 > Soldier and rowlock courses	2000.00	LF	AMABF	27.90	0.19 376	5.96 13,518	0.04 93	2.40 5,447	0.00 0	8.40 19,058	9.53
MIL MA <04160 1004 > Reinforcement	43200	LB	AMABA	100.00	0.01 540	0.42 20,414	0.00 137	0.25 12,028	0.00 0	0.67 32,579	0.75
USR MA <04110 1206 > Grout blocks only at rebars	43200	SF	AMABA	50.00	0.03 1,080	0.83 40,827	0.01 274	0.33 16,212	0.00 0	1.17 57,313	1.33
MIL MA <04190 1001 > Mortar	1800.00	CF	N/A	0.00	0.00 0	0.00 0	0.00 0	2.65 5,404	0.00 0	2.65 5,404	3.00
MIL MA <04110 1401 > Grout Door Frames - 3' x 7' Opng Grout Fill (2.50 CF/SF)	10.00	OPN	AMABD	3.00	0.75 8	23.54 267	0.15 2	5.04 57	0.00 0	28.73 326	32.58
MIL MA <04180 1002 > Masonry control joint	1100.00	LF	AMABA	37.50	0.03 37	1.11 1,386	0.01 9	2.50 3,116	0.00 0	3.62 4,511	4.10
USR PS <07150 1003 > Silicone water repellant on CMU	39530	SF	APTRA	125.00	0.01 395	0.31 13,802	0.00 134	0.13 5,742	0.00 0	0.44 19,679	0.50
Exterior Skin	50000	SF			5,796	210,851	1,478	109,586	0	321,915	6.44
<b>C.02.03.01.02. Insulation and Vapor Barrier</b>											
M MIL AA <07210 1007 > 4" Foil 1 side, R-14 fbgls insul	38530	SF	ACARA	150.00	0.01 320	0.27 10,515	0.00 112	0.19 7,404	0.00 0	0.47 18,030	0.47
Insulation and Vapor Barrier	50000	SF			320	10,515	112	7,404	0	18,030	0.36
<b>C.02.03.01.03. Interior Skin</b>											
L MIL AA <09110 1104 > 4" Metal Framing Stud - 25 Ga (10 cm) w/Tracks & Runners	38530	SF	ALATA	65.00	0.02 740	0.72 27,603	0.01 204	0.21 8,226	0.00 0	0.94 36,033	0.94
L MIL GW <09260 1003 > 5/8" Drywall, one layer on metal studs, including taping	38530	SF	ACARB	135.00	0.02 713	0.61 26,491	0.01 297	0.19 8,396	0.00 0	0.81 35,184	0.91

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C.02. Instruction Bldg Two	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
Interior Skin	50000	SF		1,453	54,094	501	16,622		0	71,217	1.42
Exterior Walls	50000	SF		7,569	275,460	2,091	133,611		0	411,163	8.22
<b>C.02.03.02. Exterior Windows</b>											
<b>C.02.03.02.01. Windows</b>											
M MIL GL <08520 1002 > Aluminum casement windows, fixed standard brush finish, not including glazing	2500.00	SF	AGLAB	25.00	0.10 250	3.16 8,950	0.01 38	4.80 13,619	0.00 0	7.97 22,606	9.04
B MIL GL <08823 1503 > 1" Tinted insulated glazing (2.8-4 6M2)1/4" Lites, 1/2" Air Sp 30 sf (2.8M2) To 50 sf (4.6M2)	2500.00	SF	AGLAB	12.50	0.20 500	6.31 17,897	0.03 76	5.87 16,645	0.00 0	12.21 34,617	13.85
Windows	2500.00	SF		750	26,846	113	30,264		0	57,223	22.89
Exterior Windows	2500.00	SF		750	26,846	113	30,264		0	57,223	22.89
<b>C.02.03.03. Exterior Personnel Doors</b>											
<b>C.02.03.03.01. Glazed Doors</b>											
USR WW <08110 3502 > Pair 3' x 7' aluminum storefront doors with glazing and hardware complete	2.00	PR	ACARB	0.42	6.00 12	196.44 446	2.20 5	1921.50 4,358	0.00 0	2120.14 4,808	2404.24
Glazed Doors	4.00	EA			12	446	5	4,358	0	4,808	1202.12
<b>C.02.03.03.02. Solid Doors</b>											
MIL AA <08110 1004 > 3'x7' 16 ga Steel door frame for 1-3/4" door	10.00	EA	ACARB	0.75	3.33 33	109.14 1,091	1.22 12	73.77 738	0.00 0	184.14 1,841	184.14
MIL AA <08110 3015 > 3'x 7'x 18 ga Metal door (Unrated)	10.00	EA	ACARB	1.13	2.22 22	72.76 728	0.82 8	135.58 1,356	0.00 0	209.16 2,092	209.16
MIL AA <08710 2023 > 4-1/2x4-1/2" Wrought Stl HD Butts Full Mortise, Ball Bearing	15.00	PR	ACARB	4.38	0.57 9	18.71 281	0.21 3	60.42 906	0.00 0	79.34 1,190	79.34
MIL AA <08710 2153 > Entry Lockset F04 Series 1000, BHMA 626	10.00	EA	ACARB	2.50	1.00 10	32.74 327	0.37 4	129.70 1,297	0.00 0	162.81 1,628	162.81
MIL AA <08710 2232 > Surface Mounted HD Door Closer Traditional Parallel Arm,Primed Primed For Paint	10.00	EA	ACARB	1.63	1.54 15	50.37 504	0.56 6	92.87 929	0.00 0	143.81 1,438	143.81

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C.02. Instruction Bldg Two	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST	
MIL AA <08710 2123 > 10"x 34".050 Aluminum Kick Plate w/3 Beveled Edges	10.00	EA	ACARB	3.75	0.67 7	21.83 218	0.24 2	16.89 169	0.00 0	38.96 390	38.96	
MIL AA <08730 1002 > Spring Type Weatherstripping For Metal Doors	10.00	OPN	ACARA	0.35	3.57 36	116.94 1,169	1.23 12	29.80 298	0.00 0	147.97 1,480	147.97	
Solid Doors	26.00	EA				132	4,318	48	5,693	0	10,059	386.87
Exterior Personnel Doors	10.00	EA				144	4,764	53	10,051	0	14,867	1486.71
Exterior Closure	50000	SF				8,463	307,070	2,257	173,926	0	483,253	9.67
<b>C.02.04. Roofing</b>												
<b>C.02.04.01. Roofing</b>												
<b>C.02.04.01.01. Roof Coverings</b>												
M MIL MR <07530 1001 > Elastomeric roof, EPDM-60 mils single-ply membrane, loose laid	67250	SF	ARFCC	112.50	0.06 4,183	2.03 154,559	0.04 3,226	0.85 65,127	0.00 0	222,912	3.31	
Roof Coverings	67250	SF				4,183	154,559	3,226	65,127	0	222,912	3.31
<b>C.02.04.01.02. Traffic Toppings &amp; Paving Membr.</b>												
USR MR <07530 0001 > 1/8" Poly mesh protective fabric membrane installed over epdm	67250	SF	ARFCC	1500.00	0.00 316	0.15 11,592	0.00 244	0.14 10,583	0.00 0	22,419	0.33	
USR MR <07530 0002 > Interlocking concrete pavers installed over mesh fabric - ballast for epdm	67250	SF	ARFCC	233.50	0.03 2,018	0.98 74,469	0.02 1,556	1.17 89,550	0.00 0	2,17 165,575	2.46	
Traffic Toppings & Paving Membr.	67250	SF				2,334	86,061	1,800	100,133	0	187,994	2.80
<b>C.02.04.01.03. Roof Insulation and Fill</b>												
M MIL MR <07213 1004 > 2" Fiberglass, R8.2 Rigid Panels	67250	SF	ARFCA	93.75	0.01 894	0.45 34,630	0.00 229	0.91 69,198	0.00 0	104,057	1.55	
Roof Insulation and Fill	67250	SF				894	34,630	229	69,198	0	104,057	1.55
Roofing	67250	SF				7,411	275,251	5,254	234,458	0	514,963	7.66
Roofing	67250	SF				7,411	275,251	5,254	234,458	0	514,963	7.66

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C.02. Instruction Bldg Two	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
<b>C.02.05. Interior Construction</b>											
<b>C.02.05.01. Partitions</b>											
<b>C.02.05.01.01. Fixed Partitions</b>											
MIL AA <09110 1103 > 3-5/8" Metal studs 16" o.c. w/ tracks and runners, 25 ga	27325	SF	ALATA	50.00	0.03 683	0.93 25,448	0.01 191	0.19 5,250	0.00 0	1.13 30,890	1.13
M MIL AA <07210 1007 > 4" Acoustical insulation	2200.00	SF	ACARA	150.00	0.01 18	0.27 600	0.00 6	0.23 517	0.00 0	0.51 1,123	0.51
L MIL GW <09260 1003 > 5/8" Drywall, one layer on metal studs, one side, including taping	57800	SF	ACARB	125.38	0.02 1,150	0.65 42,794	0.01 478	0.19 12,595	0.00 0	0.85 55,867	0.97
USR GW <09260 0001 > 5/8" Water resistant drywall, including taping	11000	SF	ACARB	125.38	0.02 219	0.65 8,144	0.01 91	0.25 3,063	0.00 0	0.91 11,298	1.03
Fixed Partitions	1.00	SF			2,071	76,987	767	21,424	0	99,178	99178.44
Partitions	1.00	SF			2,071	76,987	767	21,424	0	99,178	99178.44
<b>C.02.05.04. Interior Specialties</b>											
<b>C.02.05.04.02. Toilet and Bath Accessories</b>											
MIL AA <10162 1001 > Porcelain Enamelled ST Partition Floor Mtd w/Door & Side Divider	28.00	EA	ACARB	0.73	3.45 97	112.91 3,161	1.27 35	224.18 6,277	0.00 0	338.35 9,474	338.35
USR AA <10162 1018 > Handicap toilet partition, porcelain enameled steel	16.00	EA	ACARB	0.73	3.45 55	112.91 1,806	1.27 20	346.94 5,551	0.00 0	461.11 7,378	461.11
USR AA <10162 1019 > Urinal screen, wall mounted, porcelain enameled steel	8.00	EA	ACARB	1.00	2.50 20	81.82 655	0.92 7	133.44 1,068	0.00 0	216.17 1,729	216.17
MIL AA <10810 1014 > Surf.Mtd 2 Roll Toil. Paper Hold	44.00	EA	ACARA	3.13	0.40 18	13.10 576	0.14 6	16.01 705	0.00 0	29.25 1,287	29.25
MIL AA <10810 1016 > Surf.Mtd Globe Soap Dispenser	46.00	EA	ACARA	1.88	0.67 31	21.83 1,004	0.23 11	8.21 378	0.00 0	30.27 1,392	30.27
MIL AA <10810 1023 > Surf.Mtd 48" Grab Bar	32.00	EA	ACARA	2.50	0.50 16	16.37 524	0.17 6	42.70 1,366	0.00 0	59.24 1,896	59.24
MIL AA <10820 1001 > Recessed Towel Disp & Receptacle	24.00	EA	ACARA	1.25	1.00 24	32.74 786	0.34 8	178.65 4,288	0.00 0	211.73 5,082	211.73
MIL AA <10820 1006 > Surf.Mtd Sanit. Napkin Dispenser w/Receptor - Free	12.00	EA	ACARA	1.25	1.00 12	32.74 393	0.34 4	200.80 2,410	0.00 0	233.88 2,807	233.88

LABOR ID: SACT01 EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPB ID: SAC92A

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C.02. Instruction Bldg Two	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
USR AA <10820 1010 > Toilet seat cover dispenser	44.00	EA	ACARA	1.25	1.00 44	32.74 1,441	0.34 15	133.44 5,871	0.00 0	166.52 7,327	166.52
Toilet and Bath Accessories	1.00	EA			316	10,346	113	27,912	0	38,371	38371.03
Interior Specialties	1.00	SF			316	10,346	113	27,912	0	38,371	38371.03
Interior Construction	57500	SF			2,386	87,333	880	49,337	0	137,549	2.39
<b>C.02.06. Interior Finishes</b>											
<b>C.02.06.02. Flooring and Floor Finishes</b>											
<b>C.02.06.02.01. Tile Floor Finishes</b>											
MIL TI <09310 1101 > Ceramic floor tile on portland cement base, 4-1/4"x4-1/4"	4000.00	SF	ATIFA	11.24	0.11 445	4.04 18,343	0.02 90	1.85 8,377	0.00 0	5.91 26,810	6.70
Tile Floor Finishes	1.00	SF			445	18,343	90	8,377	0	26,810	26809.91
<b>C.02.06.02.04. Resilient Flooring</b>											
MIL RF <09660 1103 > Solid Color Vinyl Comp Tile 1/8" Thick	42100	SF	ATIFA	67.50	0.02 779	0.67 32,140	0.00 158	0.98 46,887	0.00 0	1.66 79,184	1.88
MIL RF <09660 1221 > 1/8"Vinyl Plastic Base,Gp 2, 4"H All (Except White)	1500.00	LF	ATIFA	37.50	0.03 50	1.21 2,061	0.01 10	0.51 872	0.00 0	1.73 2,943	1.96
Resilient Flooring	1.00	SF			829	34,201	168	47,758	0	82,127	82126.79
<b>C.02.06.02.05. Carpeting</b>											
USR CA <09682 0001 > Carpet tile direct glue down	18700	SF	ULABB	200.00	0.01 234	0.36 7,674	0.00 40	1.55 32,824	0.00 0	1.91 40,539	2.17
Carpeting	1.00	SF			234	7,674	40	32,824	0	40,539	40538.60
<b>C.02.06.02.9X. Other Floor Finishes</b>											
USR AA <12690 0101 > Entrance grid mat, recessed removable grille, carpeted	240.00	SF	ACARA	9.62	0.13 31	4.26 1,022	0.04 11	18.68 4,484	0.00 0	22.98 5,516	22.98
Other Floor Finishes					31	1,022	11	4,484	0	5,516	

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C.02. Instruction Bldg Two		QUANTITY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST	
					1,539	61,240	308	93,443		0	154,991	154991.11	
					57500 SF		1,539	61,240	308	93,443	0	154,991	
<b>C.02.09. HVAC</b>													
<b>C.02.09.04. Distribution Systems</b>													
<b>C.02.09.04.01. Air Distribution, Cooling/Heating</b>													
<b>C.02.09.04.01.01. Equipment</b>													
USR HV <15821 1201 > EF-1 Exhaust fan 1800 cfm		1.00	MSHMD		6.00	219.93 249	2.30 3	854.00 968		0.00 0	1076.24 1,220	1220.45	
MIL HV <15834 1211 > AHU-2 18,500 cfm w/cooling coils		1.00	EA MSPFS		36.00 36	1275.60 1,447	139.42 158	12362.72 14,019		0.00 0	13777.73 15,624	15623.95	
B MIL HV <15834 1213 > AHU-6 25,150 cfm w/cooling coils		1.00	EA MSPFS		40.00 40	1417.33 1,607	154.91 176	17613.75 19,974		0.00 0	19185.99 21,757	21756.91	
USR HV <15821 1201 > RF-5 Return fan 36,000 cfm		1.00	EA MSPFS		14.00 14	496.11 563	54.22 61	10354.75 11,742		0.00 0	10905.08 12,366	12366.36	
Equipment		36.00	MCF			96	3,866	398	46,704		0	50,968	1415.77
<b>C.02.09.04.01.02. Supply &amp; Return Duct</b>													
B MIL HV <15840 1004 > Sht Mtl Duct,Low Press,Shop Fab Galv,Field Assemble & Install		38500 LB	MSHMF		50.00	2,695	105,218	1,249	37,285		0.00 0	3.29 143,752	3.73
M MIL HV <15840 1006 > Sht Mtl Duct,High Press,Shop Fab Galv,Field Assemble & Install		43250 LB	MSHMF		51.25	2,954	115,316	1,368	41,885		0.00 0	3.23 158,569	3.67
M MIL HV <15840 6003 > 6" Dia Flexible Duct, Factory Fab (150mm) Preinsulated		300.00 LF	MSHMC		32.50	21	937	9	0.86 294		0.00 0	3.65 1,241	4.14
MIL HV <15861 1003 > 8" D Radial Opposed Blade Damper (21cm) Rnd,Stl Const,Manual Oper		71.00 EA	MSHMC		5.38	0.42 30	16.66 1,341	0.17 13	10.25 825		0.00 0	27.07 2,180	30.70
M MIL HV <15861 2003 > 15"x15" Rect Opposed Blade Damper Steel Const, Manual Operation		6.00 EA	MSHMC		5.38	0.42 3	16.66 113	0.17 1	29.89 203		0.00 0	46.71 318	52.97
MIL HV <15864 1002 > Fire Dampers		36.00 SF	MSHMA		2.38	0.53 19	20.97 856	0.20 8	23.74 969		0.00 0	44.91 1,833	50.92
MIL HV <15868 1103 > 18"x18" Duct Access Doors Insulated Factory Fabrication		5.00 EA	MSHMC		0.90 5	35.81 203	0.36 2	14.95 85		0.00 0	51.11 290	57.96	

LABOR ID: SACT01 EQUIP ID: SAC92A

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C.02. Instruction Bldg Two	QUANTITY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST	
MIL HV <15190 1003 > 2" Thk Fiberous Glass Blanket With Reinf Foil, 3/4# Density	50730 SF AASBC	70.00	0.04 1,811	1.53 87,759	0.01 777	0.42 23,950	0.00 0	1.96 112,486	2.22
MIL HV <15848 1004 > 1" Fbgs Duct Liner Bd,Shop Instl (25.4mm)Acous Insul,1-1/2# Dens	4600.00 SF MSHMC	21.63	0.10 478	4.14 21,597	0.04 214	1.12 5,847	0.00 0	5.30 27,659	6.01
Supply & Return Duct	36.00 MCF		8,015	333,341	3,642	111,343	0	448,326	12453.51
<b>C.02.09.04.01.03. Air Distribution Components</b>									
MIL HV <15867 6104 > 24"x 24"Egg Crate Ceiling Return Air & Exhaust Grille,Alum Const	3.00 EA MSHMB	3.56	0.70 2	25.73 88	0.27 1	28.82 98	0.00 0	54.82 186	62.16
MIL HV <15872 1009 > 24"x24"Ceil Diffuser w/Perf Face Flush Mount, Alum Const w/Damper <*Mod* 1103 > For Lay-In Mount	270.00 EA MSHMC	2.36	0.95 257	37.90 11,604	0.38 115	112.09 49,027 -14,708	0.00 0	150.36 46,038	170.51
MIL HV <15872 1009 > 24"x24"Ceil Diffuser w/Perf Face Flush Mount, Alum Const w/Damper <*Mod* 1102 > For Surface Mount	15.00 EA MSHMC	2.36	0.95 14	37.90 645	0.38 6	140.91 2,726 -327	0.00 0	179.18 3,048	203.20
MIL HV <15872 2007 > 14"x14"Ceil Diffuser,Louver Face Adj Pat,Surf Mt,Al Cons w/Damper	60.00 EA MSHMC	2.88	0.78 47	31.14 2,119	0.31 21	151.59 10,314	0.00 0	183.04 12,454	207.56
MIL HV <15867 6104 > 24"x 24"Egg Crate Ceiling Return Air & Exhaust Grille,Alum Const	16.00 EA MSHMB	3.56	0.70 11	25.73 467	0.27 5	28.82 523	0.00 0	54.82 995	62.16
Air Distribution Components	36.00 MCF		332	14,921	149	47,651	0	62,721	1742.24
Air Distribution, Cooling/Heating	36.00 MCF		8,443	352,128	4,188	205,698	0	562,015	15611.52
Distribution Systems	4000.00 MBH		8,443	352,128	4,188	205,698	0	562,015	140.50
HVAC	4000.00 MBH		8,443	352,128	4,188	205,698	0	562,015	140.50
Instruction Bldg Two	100000 SF		28,241	1,083,021	12,889	756,862	0	1,852,771	18.53
Primary Facilities	225000 SF		49,743	1,873,494	58,070	1,724,966	238,500	3,895,030	17.31

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D.01. Outside Site & Utilities	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
<hr/>											
<b>D. Support Facilities</b>											
<b>D.01. Outside Site &amp; Utilities</b>											
<b>D.01.17. Site Preparation</b>											
<b>D.01.17.01. SITE CLEARING</b>											
<b>D.01.17.01.05. Grubbing</b>											
MIL AA <02210 1006 > General clear and grub area, 2"	8.00	ACR CODTK	0.62	2.02 16	91.77 734	161.92 1,295	0.00 0	0.00 0	253.70 2,030	253.70	
Grubbing	8.00	AC		16	734	1,295	0	0	2,030	253.70	
Site Clearing	8.00	AC		16	734	1,295	0	0	2,030	253.70	
<b>D.01.17.02. Site Demolition &amp; Relocation</b>											
<b>D.01.17.02.02. Above Ground Site Demolition</b>											
L MIL AA <02112 6001 > Saw Cut Bituminous Paving	1500.00	LF ULABE	25.01	0.05 75	1.45 2,170	0.06 85	0.00 0	0.00 0	1.50 2,255	1.50	
MIL AA <02112 1101 > Demo Bituminous pavement Remove Paving and Base Course	500.00	SY CODEF	55.00	0.08 39	2.68 1,339	0.63 317	0.00 0	0.00 0	3.31 1,656	3.31	
L MIL AA <02112 6005 > Saw Cut Mesh Reinf Concrete Slab	150.00	LF ULABE	10.41	0.12 18	3.48 522	0.14 20	0.00 0	0.00 0	3.61 542	3.61	
L MIL AA <02112 1204 > Demo 4" Sdewlk/Slab on Grade	300.00	SY CODEJ	14.13	0.23 69	7.51 2,254	0.91 274	0.00 0	0.00 0	8.43 2,528	8.43	
Above Ground Site Demolition	800.00	SY		201	6,285	696	0	0	6,981	8.73	
<b>D.01.17.02.04. Debris Disposal</b>											
MIL AA <02225 3106 > Haul, 12 cy truck, 6 miles 40 MPH, 2.1 Cycles/Hr	500.00	CY COEID	24.50	0.04 20	1.38 690	0.97 486	0.00 0	0.00 0	2.35 1,176	2.35	
Debris Disposal	500.00	CY		20	690	486	0	0	1,176	2.35	
Site Demolition & Relocation	1.00	SY		221	6,976	1,182	0	0	8,157	8157.34	
Site Preparation	8.00	AC		237	7,710	2,477	0	0	10,187	1273.36	

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D.01. Outside Site & Utilities		QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
<b>D.01.18. Site Improvements</b>												
<b>D.01.18.02. Parking Lots</b>												
<b>D.01.18.02.01. Bases and Subbases</b>												
MIL SP <02210 2002 > Finish grade parking area Base or Leveling Courses	6.44	MSY COFGA	0.17	12.12 78	427.12 3,117	177.45 1,295	0.00 0	0.00 0	604.57 4,412	685.59		
L MIL SP <02212 1001 > Spread/Compact Subgrade 8" Lift w/300 HP Tractor	2200.00	CY CODTK	200.00	0.01 14	0.28 707	0.50 1,247	0.00 0	0.00 0	0.78 1,954	0.89		
B MIL SP <02240 1001 > Soil Stabil w/Crushed Rock Delivered and Screened, incl compaction	1100.00	CY CODLF	18.00	0.11 122	3.92 4,884	4.38 5,466	7.47 9,321	0.00 0	15.77 19,671	17.88		
M MIL SP <02612 1401 > Bituminous Hot Mix Surf Course 3774#/CY, Ctrl Plant	740.00	TON XASPA	25.00	0.48 355	16.03 13,452	5.03 4,218	30.53 25,620	0.00 0	51.59 43,291	58.50		
USR SP <02612 1406 > Prime Coat MC-70	13.00	TON XASPA	30.00	0.40 5	13.36 197	4.19 62	346.94 5,115	0.00 0	364.49 5,373	413.33		
<b>Bases and Subbases</b>	<b>64350</b>	<b>SY</b>		<b>574</b>	<b>22,357</b>	<b>12,288</b>	<b>40,056</b>	<b>0</b>	<b>74,701</b>	<b>1.16</b>		
<b>D.01.18.02.02. Drains, Curbs &amp; Gutters</b>												
USR SP <02620 0001 > Curb & Gutter,Concrete Placement	2100.00	LF ALABE	26.09	0.23 483	6.81 16,223	0.23 556	8.01 19,066	0.00 0	15.05 35,844	17.07		
B MIL SP <02620 1101 > 6" x 18" Cast In Place Conc Curb	560.00	LF ACARH	14.84	0.20 113	6.38 4,049	0.06 36	4.80 3,051	0.00 0	11.24 7,136	12.74		
<b>Drains, Curbs &amp; Gutters</b>	<b>2660.00</b>	<b>LF</b>		<b>596</b>	<b>20,271</b>	<b>592</b>	<b>22,117</b>	<b>0</b>	<b>42,980</b>	<b>16.16</b>		
<b>D.01.18.02.03. Paved Surfaces</b>												
M MIL SP <02612 1401 > Bituminous Hot Mix Surf Course 3774#/CY, Ctrl Plant	740.00	TON XASPA	25.00	0.48 355	16.03 13,452	5.03 4,218	30.53 25,620	0.00 0	51.59 43,291	58.50		
USR SP <02612 1406 > Prime Coat MC-70	13.00	TON XASPA	30.00	0.40 5	13.36 197	4.19 62	346.94 5,115	0.00 0	364.49 5,373	413.33		
<b>Paved Surfaces</b>	<b>64350</b>	<b>SY</b>		<b>360</b>	<b>13,649</b>	<b>4,280</b>	<b>30,735</b>	<b>0</b>	<b>48,664</b>	<b>0.76</b>		

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D.01. Outside Site & Utilities	QUANTITY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
<b>D.01.18.02.04. Marking &amp; Signage</b>											
MIL SP <02618 2002 > 6" Parking Stall Marking 6"(15cm) Wide Stripe	2400.00	LF	APTRB	375.00	0.01 16	0.21 559	0.00 5	0.03 87	0.00 0	0.24 651	0.27
USR SP <02618 0001 > Handicapped marking	5.00	EA	APTRB	1.01	2.47 12	75.91 430	0.73 4	32.03 182	0.00 0	108.66 616	123.22
Marking & Signage	420.00	SPA			28	989	10	269	0	1,267	3.02
Parking Lots	420.00	SPA			1,559	57,267	17,170	93,176	0	167,612	399.08
Site Improvements	64350	SY			1,559	57,267	17,170	93,176	0	167,612	2.60
<b>D.01.19. Site Civil/Mechanical Utilities</b>											
<b>D.01.19.01. Water Supply &amp; Distribution</b>											
<b>D.01.19.01.02. Potable Water Distribution</b>											
MIL SW <02221 1802 > Trench, Chain Trencher, Med Soil 1' Wide x 4'Deep	600.00	CY	CODBB	34.38	0.04 22	1.41 959	0.39 265	0.00 0	0.00 0	1.80 1,224	2.04
USR SW <02221 8011 > Granular bedding material	215.00	CY	CODBB	22.92	0.05 12	2.11 516	0.58 142	9.07 2,212	0.00 0	11.77 2,870	13.35
B MIL SW <02464 2203 > 8"Dia PVC SDR 18, Class 150 Pipe AWWA, C900	1165.00	LF	XXPLA	34.38	0.16 186	5.43 7,172	0.94 1,247	5.34 7,051	0.00 0	11.71 15,470	13.28
MIL SW <02221 5003 > Backfill Trench w/Sm FEnd Loader Without Compaction	300.00	CY	CODLB	70.00	0.02 6	0.80 272	0.37 124	0.00 0	0.00 0	1.17 397	1.32
MIL SW <02222 4202 > Compact Backfill w/Vib Plate	300.00	CY	CLACC	14.75	0.20 61	5.90 2,008	0.18 61	0.00 0	0.00 0	6.08 2,069	6.90
Potable Water Distribution	1165.00	LF			287	10,927	1,839	9,264	0	22,030	18.91
Water Supply & Distribution	1165.00	LF			287	10,927	1,839	9,264	0	22,030	18.91
<b>D.01.19.02. Sanitary Sewer Systems</b>											
<b>D.01.19.02.01. Sanitary Sewer Piping</b>											
MIL SS <02221 1802 > Trench, Chain Trencher, Med Soil	862.00	CY	CODBB	34.38	0.04 31	1.41 1,378	0.39 381	0.00 0	0.00 0	1.80 1,759	2.04
USR SS <02221 8011 > Granular material	216.00	CY	CODBB	22.92	0.05 12	2.11 518	0.58 143	9.07 2,223	0.00 0	11.77 2,884	13.35

LABOR ID: SACT01 EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPB ID: SAC92A

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D.01. Outside Site & Utilities		QUANTITY	UOM	CREW ID	OUTPUT MANHOUR		LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
USR SS <02464 2222 > 8" PVC SDR 35		1000.00	LF	XPLUC	24.39	0.13 130	4.25 4,816	0.06 65	2.40 2,724	0.00 0	6.71 7,604	7.60
USR SS <02460 2011 > Connect to existing line		1.00	EA	XPLUC	0.53	6.00 6	196.14 222	2.63 3	266.88 303	0.00 0	465.64 528	528.04
MIL SS <02221 5003 > Backfill Trench w/Sm FEnd Loader Without Compaction		550.00	CY	CODLB	70.00	0.02 12	0.80 499	0.37 228	0.00 0	0.00 0	1.17 727	1.32
MIL SS <02222 4202 > Compact Backfill w/Vib Plate		550.00	CY	CLACC	14.75	0.20 112	5.90 3,681	0.18 112	0.00 0	0.00 0	6.08 3,793	6.90
Sanitary Sewer Piping		1000.00	LF			303	11,115	931	5,249	0	17,295	17.30
<b>D.01.19.02.02. Sanitary Sewer Manholes/Cleanout</b>												
USR SS <02464 1011 > Clean outs		2.00	EA	XPLUC	0.50	6.34 13	207.12 470	2.78 6	85.40 194	0.00 0	295.30 670	334.87
M MIL SS <02560 5202 > 4'Dia x 6'Dep Precast Manhole 8" Thick		3.00	EA	CODEJ	0.38	8.67 26	283.11 963	34.35 117	480.37 1,634	0.00 0	797.83 2,714	904.74
MIL SS <02560 4014 > 350# Wtrtght Manhole Frame & Cvr		3.00	EA	CODEJ	0.98	3.33 10	108.89 370	13.21 45	160.13 545	0.00 0	282.22 960	320.04
Sanitary Sewer Manholes/Cleanout		5.00	EA			49	1,803	168	2,373	0	4,344	868.82
Sanitary Sewer Systems		1000.00	LF			351	12,918	1,099	7,622	0	21,639	21.64
Site Civil/Mechanical Utilities		4.00	EA			639	23,845	2,939	16,885	0	43,669	10917.31
<b>D.01.20. Site Electrical Utilities</b>												
<b>D.01.20.02. Exterior Electrical Distribution</b>												
<b>D.01.20.02.01. Transformers</b>												
MIL EL <16330 4118 > 1000 KVA,Pri4160GrdY/-13800V,Sec 480Y/277,480V,3 Ph,Oil Xfrmrr,Pad		1.00	EA	EELEE	0.03	124.24 124	4688.55 5,317	98.79 112	24218.97 27,464	0.00 0	29006.32 32,893	32893.16
Transformers		1.00	KVA			124	5,317	112	27,464	0	32,893	32893.16

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DETAILED ESTIMATE

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D.01. Outside Site & Utilities		QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
<b>D.01.20.02.02. Switches, Controls &amp; Devices</b>												
MIL EL <16470 1205 > 200A Single Unit Branch Ckt Sw 240V,3Ph,Fsbl Sw,Fuses,P/O Sect	1.00 EA	EELEB	0.39	6.46 6	243.07 276	0.83 1	467.56 530	0.00 0	711.46 807	806.80		
Switches, Controls & Devices	1.00 EA			6	276	1	530	0	807	806.80		
<b>D.01.20.02.05. Underground Electric Conductors</b>												
M MIL EL <16120 1515 > 500 MCM-Type THW 600V Cu,Sgl Strd,Pl in Cnd,12'Hg	1.50 MLF	EELEF	0.10	47.79 72	1643.05 2,795	6.42 11	5337.50 9,079	0.00 0	6986.96 11,885	7923.22		
MIL EL <16120 1506 > #1/0 AWG Cable-Type THW 600V Cu,Sgl Strd,Pl in Cnd,12'Hg	0.30 MLF	EELEF	0.21	21.88 7	752.10 256	2.94 1	685.46 233	0.00 0	1440.50 490	1633.53		
MIL EL <16120 3104 > #3/0 AWG Ca,XLP,15KV,Pl in Duct Shielded,Single Cndct,133% Insul	0.50 MLF	EELEJ	0.14	36.63 18	1268.33 719	234.77 133	2711.45 1,537	0.00 0	4214.54 2,390	4779.29		
Underground Electric Conductors	1.00 LF			97	3,770	145	10,850	0	14,765	14764.53		
<b>D.01.20.02.06. Ductbanks,Manholes,Handholes &amp;</b>												
MIL EL <16111 3021 > 4" PVC Sch 40-EB Conduit w/Cplg Direct Burial, Conc Encased-Only	160.00 LF	EELEC	22.63	0.14 23	4.63 840	0.00 0	0.88 159	0.00 0	5.50 999	6.24		
L MIL EL <02221 1802 > Trench, Chain Trencher, Med Soil	45.00 CY	CODBB	20.85	0.06 3	2.32 119	0.64 33	0.00 0	0.00 0	2.97 151	3.36		
USR EL <16111 0001 > Concrete encasement	10.00 CY	ALABI	28.57	0.28 3	8.67 98	3.19 36	61.91 702	0.00 0	73.77 837	83.66		
MIL EL <16411 3002 > Type "g" Std Pwr Only Manhole	1.00 EA	ALABN	0.08	113.33 113	3828.36 4,341	1019.40 1,156	2712.52 3,076	0.00 0	7560.27 8,573	8573.35		
Ductbanks,Manholes,Handholes &	1.00 EA			142	5,398	1,225	3,937	0	10,560	10560.08		
Exterior Electrical Distribution	5000.00 LF			369	14,760	1,483	42,781	0	59,025	11.80		
<b>D.01.20.03. Exterior Lighting</b>												
<b>D.01.20.03.06. Exter Lighting Fixtures &amp; Cntrls</b>												
MIL EL <16510 4013 > Ext Rect HID Fxtr,E&G,(401C) For High Press Sodium,Side Mtd	15.00 EA	EELEK	1.20	5.85 88	201.18 3,422	27.01 459	409.49 6,965	0.00 0	637.68 10,847	723.13		
MIL EL <16522 1101 > Post Top 300W MV Walkway Fxtr	28.00 EA	EELEB	1.34	1.87 52	70.46 2,237	0.24 8	165.89 5,267	0.00 0	236.59 7,512	268.30		

LABOR ID: SACT01 EQUIP ID: SAC92A

Currency in DOLLARS

CREW ID: SAC92A UPB ID: SAC92A

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D.01. Outside Site & Utilities	QUANTITY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
B CIV EL <16523 5001 > 100W Incand Flood Fxtr,WP PAR 38 Swivel Knuckle Mounting	2.00 EA EELEB	1.25 2.00 4	75.25 171	0.26 1	80.06 182	0.00 0	155.57 353	176.41
Exter Lighting Fixtures & Cntrls	1.00 EA		144	5,830	468	12,414	0	18,712 18712.12
Exterior Lighting	67250 SY		144	5,830	468	12,414	0	18,712 0.28
Site Electrical Utilities	1.00 EA		513	20,591	1,951	55,196	0	77,737 77736.69
Outside Site & Utilities			2,949	109,413	24,536	165,256	0	299,205
Support Facilities			2,949	109,413	24,536	165,256	0	299,205
Sample - Instruction Buildings		52,692 1,982,907	82,606	1,890,223	238,500		4,194,235	

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 \*\* LABOR BACKUP \*\*

BACKUP PAGE 1

SRC LABOR ID	DESCRIPTION	BASE	OVERTIME	TXS/INS	FRNG	TRVL	RATE	UOM	UPDATE	**** TOTAL ****	
										DEFAULT	HOURS
MIL B-ASBTSWKR	Asbestos Worker	29.50	0.0%	25.0%	5.74	0.00	42.62	HR	06/22/92	31.81	3866
MIL B-BRKLAYR	Bricklayers	21.55	0.0%	25.0%	6.30	0.00	33.24	HR	06/22/92	29.15	7591
MIL B-BRKLAYRH	Bricklayers Helper	19.77	0.0%	25.0%	4.23	0.00	28.94	HR	06/22/92	25.56	2853
MIL B-CARPENTER	Carpenters	19.73	0.0%	25.0%	7.98	0.00	32.64	HR	06/22/92	29.13	12146
MIL B-CEMFINR	Cement Finishers	20.23	0.0%	25.0%	7.66	0.00	32.95	HR	06/22/92	27.92	2863
MIL B-ELECTRN	Electricians	24.23	0.0%	25.0%	7.24	0.00	37.53	HR	06/22/92	32.01	19714
MIL B-EQOPRCRN	Eq Oper, Crane/Shovl	27.58	0.0%	25.0%	10.76	0.00	45.24	HR	06/22/92	31.28	492
MIL B-EQOPRLT	Eq Oper, Light	22.02	0.0%	25.0%	10.76	0.00	38.29	HR	06/22/92	30.52	325
MIL B-EQOPRMED	Eq Oper, Medium	24.29	0.0%	25.0%	10.76	0.00	41.12	HR	06/22/92	30.98	1230
MIL B-EQOPROIL	Eq Oper, Oilers	19.72	0.0%	25.0%	10.76	0.00	35.41	HR	06/22/92	29.79	11
MIL B-GLAZIER	Glazier	17.83	0.0%	25.0%	9.18	0.00	31.47	HR	06/22/92	30.31	1500
MIL B-LABORER	Laborer/Helper	18.01	0.0%	25.0%	6.34	0.00	28.85	HR	06/22/92	25.63	12590
MIL B-LATHERS	Lathers	25.13	0.0%	25.0%	5.74	0.00	37.15	HR	06/22/92	29.79	2848
MIL B-PAINTORD	Painters, Ordinary	19.96	0.0%	25.0%	5.74	0.00	30.69	HR	06/22/92	27.87	847
MIL B-PLUMBER	Plumbers	24.60	0.0%	25.0%	8.37	0.00	39.12	HR	06/22/92	34.25	1665
MIL B-RODMAN	Rodmen (reinforcing)	20.68	0.0%	25.0%	11.12	0.00	36.97	HR	06/22/92	32.89	2577
MIL B-ROOFER	Roofers, Composition	19.80	0.0%	25.0%	9.21	0.00	33.96	HR	06/22/92	34.18	11118
MIL B-ROOFERH	Roofers Helpers	18.01	0.0%	25.0%	6.34	0.00	28.85	HR	06/22/92	30.07	3722
MIL B-SHTMTLWK	Sheet Metal Workers	23.95	0.0%	25.0%	9.80	0.00	39.74	HR	06/22/92	30.41	9855
MIL B-STM/PIPE	Steam/Pipefitters	24.60	0.0%	25.0%	8.37	0.00	39.12	HR	06/22/92	38.39	120
MIL B-STRSTEEEL	Struct Stl Workers	20.68	0.0%	25.0%	6.30	0.00	32.15	HR	06/22/92	33.72	2290
MIL B-TILELYR	Tile Layers (floor)	24.98	0.0%	25.0%	5.03	0.00	36.26	HR	06/22/92	28.83	2549
MIL B-TRKDVHV	Truck Drivers, Heavy	19.34	0.0%	25.0%	9.64	0.00	33.82	HR	06/22/92	28.42	185
MIL B-WELDERS	Welders, Struct Stl	20.68	0.0%	25.0%	11.12	0.00	36.97	HR	06/22/92	30.97	325
MIL X-EQOPRMED	Outside Equip. Op. Medium	24.29	0.0%	25.0%	10.76	0.00	41.12	HR	06/22/92	29.65	548
MIL X-LABORER	Outside Laborer	18.01	0.0%	25.0%	6.34	0.00	28.85	HR	06/22/92	25.63	1232
MIL X-PLUMBER	Outside Plumber	24.60	0.0%	25.0%	8.37	0.00	39.12	HR	06/22/92	34.25	211
MIL X-TRKDVRHV	Outside Truck Dr. Heavy	19.34	0.0%	25.0%	9.64	0.00	33.82	HR	06/22/92	28.42	120

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ERROR REPORT

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ERROR PAGE 1

No errors detected...

\* \* \* END OF ERROR REPORT \* \* \*

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SETTINGS PAGE 1

## \*\* CONTRACTOR SETTINGS \*\*

	AMOUNT	PCT	PCT S	RISK	DIFF	SIZE	PERIOD	INVEST	ASSIST	SUBCON
<hr/>										
AA GENERAL/PRIME										
OVERHEAD		C								
HOME OFC		P								
PROFIT		P								
BOND		P								
CA Carpeting Sub's markups										
OVERHEAD		P								
HOME OFC		P								
PROFIT		P								
BOND		A								
EL Electrical sub's markups										
OVERHEAD		P								
HOME OFC		P								
PROFIT		P								
BOND		A								
GL Glass & Glazing Sub's markups										
OVERHEAD		P								
HOME OFC		P								
PROFIT		P								
BOND		A								
GW Gypsum Wallboard Sub's markups										
OVERHEAD		P								
HOME OFC		P								
PROFIT		P								
BOND		A								
HV HVAC Sub's markups										
OVERHEAD		P								
HOME OFC		P								
PROFIT		P								
BOND		A								
MA Masonry Sub's markups										
OVERHEAD		P								
HOME OFC		P								
PROFIT		P								
BOND		A								

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SETTINGS PAGE 2

## \*\* CONTRACTOR SETTINGS \*\*

	AMOUNT	PCT	PCT S	RISK	DIFF	SIZE	PERIOD	INVEST	ASSIST	SUBCON
--	--------	-----	-------	------	------	------	--------	--------	--------	--------

## MR Membrane Roofing Sub's markups

OVERHEAD	P	8.00
HOME OFC	P	0.00
PROFIT	P	5.00
BOND	A	0

## PL Plumbing Sub's markups

OVERHEAD	P	8.00
HOME OFC	P	0.00
PROFIT	P	5.00
BOND	A	0

## PS Painting Sub's markups

OVERHEAD	P	8.00
HOME OFC	P	0.00
PROFIT	P	5.00
BOND	A	0

## RF Resilient Flooring Sub's markups

OVERHEAD	P	8.00
HOME OFC	P	0.00
PROFIT	P	5.00
BOND	A	0

## SI Structural Steel Sub's markups

OVERHEAD	P	8.00
HOME OFC	P	0.00
PROFIT	P	5.00
BOND	A	0

## SP Paving, Bituminous Sub's markups

OVERHEAD	P	8.00
HOME OFC	P	0.00
PROFIT	P	5.00
BOND	A	0

## SS Utility, Sewer Sub's markups

OVERHEAD	P	8.00
HOME OFC	P	0.00
PROFIT	P	5.00
BOND	A	0

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SETTINGS PAGE 3

\*\* CONTRACTOR SETTINGS \*\*

	AMOUNT	PCT	PCT S	RISK	DIFF	SIZE	PERIOD	INVEST	ASSIST	SUBCON
--	--------	-----	-------	------	------	------	--------	--------	--------	--------

SW Utility, Water Sub's markups

OVERHEAD	P	8.00
HOME OFC	P	0.00
PROFIT	P	5.00
BOND	A	0

TI Tile Sub's markups

OVERHEAD	P	8.00
HOME OFC	P	0.00
PROFIT	P	5.00
BOND	A	0

WW Entrances/Storefronts Sub's mkup

OVERHEAD	P	8.00
HOME OFC	P	0.00
PROFIT	P	5.00
BOND	A	0

## **APPENDIX G**

**The following project files shall be used as the proper template in the preparation of the estimate:**

1. Filename TEMPL1 - Code A non-parametric non-Arizona project
2. Filename TEMPL2 - Code A non-parametric Arizona project
3. Filename TEMPL3 - Code B or Code C non-Arizona project
4. Filename TEMPL4 - Code B or Code C Arizona project

## **APPENDIX H**

### **WORK BREAKDOWN STRUCTURE**

The Work Breakdown Structure (WBS) is illustrated in the following pages at the third and fourth level. This WBS will provide the format for the preparation of cost estimates.

The hierarchy organization of the WBS:

- I. Scope (level 1)
- II. Facilities (level 2)
- III. System (level 3)
- IV. Subsystem (level 4)
- V. Assembly Category (level 5)
- VI. Assembly (level 6)

4/24/92

## SYSTEM - SUBSYSTEM WORK BREAKDOWN STRUCTURE

<u>SYSTEM</u>	<u>SUBSYSTEM</u>	<u>TITLE</u>	<u>UOM</u>
01		SUBSTRUCTURE	SF
01	01	STANDARD FOUNDATIONS	SF
01	02	SPECIAL FOUNDATION CONDITIONS	SF
01	03	SLAB ON GRADE	SF
01	04	BASEMENT EXCAVATION	CY
01	05	BASEMENT WALLS	SF
02		SUPERSTRUCTURE	SF
02	01	FLOOR CONSTRUCTION	SF
02	02	ROOF CONSTRUCTION	SF
02	03	STAIR CONSTRUCTION	FLT
03		EXTERIOR CLOSURE	SF
03	01	EXTERIOR WALLS	SF
03	02	EXTERIOR WINDOWS	SF
03	03	EXTERIOR PERSONNEL DOORS	EA
03	04	EXTERIOR SPECIALTY DOORS	SF
04		ROOFING	SF
04	01	ROOFING	SF
05		INTERIOR CONSTRUCTION	SF
05	01	PARTITIONS	SF
05	02	INTERIOR PERSONNEL DOORS	LEF
05	03	INTERIOR SPECIALTY DOORS	SF
05	04	INTERIOR SPECIALTIES	SF
05	05	CASEWORK	SF
06		INTERIOR FINISHES	SF
06	01	WALL FINISHES	SF
06	02	FLOORING AND FLOOR FINISHES	SF
06	03	CEILING AND CEILING FINISHES	SF
07		CONVEYING SYSTEMS	STY
07	01	ELEVATORS	STP
07	02	MOVING STAIRS AND WALKS	LF
07	03	MATERIAL HANDLING SYSTEMS	EA
08		PLUMBING	EA
08	01	PLUMBING FIXTURES	EA
08	02	DOMESTIC WATER SUPPLY	EA
08	03	SANITARY WASTE AND VENT SYSTEM	EA
08	04	RAINWATER DRAINAGE SYSTEM	SF
08	05	PLUMBING EQUIPMENT	EA
08	06	SPECIAL PLUMBING SYSTEMS	EA

4/24/92 SYSTEM - SUBSYSTEM WORK BREAKDOWN STRUCTURE

<u>SYSTEM</u>	<u>SUBSYSTEM</u>	<u>TITLE</u>	<u>UOM</u>
09		HVAC	MBH
09	01	ENERGY SUPPLY	MBH
09	02	HEAT GENERATING SYSTEMS	MBH
09	03	COOLING GENERATING SYSTEMS	TON
09	04	DISTRIBUTION SYSTEMS	MBH
09	05	TERMINAL AND PACKAGE UNITS	MBH
09	06	CONTROLS AND INSTRUMENTATION	MBH
09	07	SYSTEMS TESTING AND BALANCING	MBH
09	08	SPECIAL MECHANICAL SYSTEMS	EA
10		FIRE PROTECTION SYSTEMS	SF
10	01	WATER SUPPLY (FIRE PROTECTION)	EA
10	02	SPRINKLERS	EA
10	03	STANDPIPE SYSTEMS	EA
10	04	FIRE EXTINGUISHERS	EA
10	05	SPECIAL FIRE PROTECTION SYSTEMS	EA
11		ELECTRIC POWER AND LIGHTING	AMP.
11	01	SERVICE AND DISTRIBUTION	AMP
11	02	LIGHTING AND BRANCH WIRING	SF
12		ELECTRICAL SYSTEMS	SF
12	01	COMMUNICATION, SECURITY AND ALARM SYSTEMS	SF
12	02	SPECIAL ELECTRICAL SYSTEMS	SF
13		EQUIPMENT	SF
13	01	FIXED AND MOVEABLE EQUIPMENT	SF
14		FURNISHINGS	SF
14	01	FURNISHINGS	SF
15		SPECIAL CONSTRUCTION	SF
15	01	VAULTS	SF
15	02	INTERIOR SWIMMING POOLS	SF
15	03	SPECIAL PURPOSE ROOMS	SF
15	04	PRE-ENGINEERED BUILDINGS	SF
15	05	WASHRACKS	SF
15	06	EXTERIOR UTILITY BUILDINGS	SF
15	9X	OTHER SPECIAL CONSTRUCTION	XX
16		SELECTIVE BUILDING DEMOLITION	LS
16	01	NON-HAZARDOUS SELECTIVE BUILDING DEMOLITION	LS

4/24/92 SYSTEM - SUBSYSTEM WORK BREAKDOWN STRUCTURE

<u>SYSTEM</u>	<u>SUBSYSTEM</u>	<u>TITLE</u>	<u>UOM</u>
16	02	HAZARDOUS SELECTIVE BUILDING DEMOLITION	
16	9X	OTHER SELECTIVE BUILDING DEMOLITION	LS XX
17		SITE PREPARATION	AC
17	01	SITE CLEARING	AC
17	02	SITE DEMOLITION & RELOCATION	SY
17	03	SITE EARTHWORK	CY
17	04	SITE CLEANUP	SY
17	9X	OTHER SITE PREPARATION	XX
18		SITE IMPROVEMENTS	SY
18	01	ROADWAYS	SY
18	02	PARKING LOTS	SPA
18	03	WALKS, STEPS, RAMPS, & TERRACES	SF
18	04	SITE DEVELOPMENT	EA
18	05	LANDSCAPING	SY
18	06	SPECIAL CONSTRUCTION	EA
18	9X	OTHER SITE IMPROVEMENTS	XX
19		SITE CIVIL/MECHANICAL UTILITIES	EA
19	01	WATER SUPPLY & DISTRIBUTION SYSTEMS	
19	02	SANITARY SEWER SYSTEMS	LF
19	03	STORM SEWER SYSTEMS	LF
19	04	INDUSTRIAL WASTE SYSTEMS	LF
19	05	HEATING DISTRIBUTION SYSTEMS	LF
19	06	COOLING DISTRIBUTION SYSTEMS	LF
19	07	NATURAL & PROPANE GAS DISTRIBUTION SYSTEMS	LF
19	08	BUILDING FUEL DISTRIBUTION SYSTEMS	GAL
19	9X	OTHER CIVIL/MECHANICAL UTILITIES	XX
20		SITE ELECTRICAL UTILITIES	EA
20	01	SUBSTATIONS	KVA
20	02	EXTERIOR ELECTRICAL DISTRIBUTION	LF
20	03	EXTERIOR LIGHTING	SY
20	04	EXTERIOR COMMUNICATIONS & ALARM SYSTEMS	LF
20	05	EXTERIOR SECURITY SENSORS & TV MONITORING SYSTEMS	STA
20	06	CATHODIC PROTECTION	LF
20	9X	OTHER ELECTRICAL UTILITIES	XX