

DEPARTMENT OF THE ARMY
Corps of Engineers, Omaha District
106 S 15th Street
Omaha, Nebraska 68102-1618

OM 415-1-10

CENWO-CD-C

Memorandum
No. 415-1-10

30 May 2001

Construction
SUPERVISION AND ADMINISTRATION (S&A) "AT-COST" BUDGET ESTIMATES

History. This establishes a new Omaha District procedure for preparing and recording budget estimates for construction supervision and administration (S&A) services on a job order (*at-cost*) basis.

Summary. This memorandum establishes procedures for the development and recording of construction S&A *at-cost* services job order budget estimates. It specifically applies to construction S&A services on customer projects where the S&A charges to the customer are on an actual cost (job order cost accounting) basis. The estimating methodologies may also be applied to develop individual job order type S&A budget estimates for construction jobs involving other customer accounting schemes such as *flat rate* (process cost accounting). The ordinary scope of S&A services included is full service construction contract management involving construction quality management and contract administration. This procedure provides consistent, comparable and conservative budget estimating and uniform recording of S&A services job order budget estimates.

1. **Purpose.** This memorandum establishes procedures, which outline fundamental methodologies and responsibilities for estimating and recording construction S&A services budget estimates. The objective is to provide affordable S&A budget estimates that meet quality, safety, administrative, and fiscal considerations as well as customer expectations for each specific individual job.
2. **Applicability.** This memorandum applies to the Omaha District and its respective offices and personnel involved in construction management execution and overall project management.
3. **References.** This memorandum uses existing regulations and local guidance as the basis for its contents. The following regulations and guidance are referenced:
 - a. ER 415-1-16, (Draft) Fiscal Management of Construction, 16 September 1999.
 - b. NWDR 415-1-2, Construction, Supervision and Administration (S&A) Regionalization, 20 October 2000.
 - c. ER 37-345-10, Accounting and Reporting of Military Activities, March 1969.

d. Project Management Plan, S&A Pilot Study, 26 February 2001.
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e. Memorandum CELRD-PM/CELRD-ET, dated 31 January 2000 (modified 14 March 2001), SUBJECT: Supervision and Administration (S&A), Engineering During Construction (EDC), Post-Award Activities and Commissioning Activities - MILCON Programs.

4. Policy and Objectives. It is standard policy that S&A *at-cost* services job order budget estimates will be performed within the context of the project management business process (PMBP) and be led by the project manager (PM).

5. Responsibilities. The PM, with the project delivery team (PDT), is responsible for developing and maintaining the S&A *at-cost* services job order budget estimate and obtaining customer approval. The PM is also responsible for monitoring the actual expenses vs. the current budget throughout the life of the project. Each office involved in S&A services is responsible for developing an organizational level budget estimate for a job. The functional chief is responsible to approve the combined estimate of S&A services for the department.

FOR THE COMMANDER:

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BRYAN S. VULCAN
LTC, EN
Deputy Commander

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Construction
SUPERVISION AND ADMINISTRATION (S&A) "AT-COST" BUDGET ESTIMATES

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APPENDIX A

FUNDAMENTALS AND GUIDELINES FOR PREPARING AND RECORDING S&A SERVICES BUDGET ESTIMATES FOR PROJECTS EXEMPT FROM FLAT RATE (*AT-COST* JOBS)

Summary. This Appendix defines fundamental procedures to develop and record a construction S&A services job order budget estimate. Individual job order budget estimates are required on customer projects that are exempt from *flat rate* S&A (charged to the customer on an *at-cost* basis). As a fundamental part of the project management business process (PMBP), the project manager (PM) leads the project delivery team (PDT) in the development and budgeting of all project related costs. This is common practice for construction programs exempt from flat rate S&A such as Civil Works (CG & O&M), Support for Others (SFO) and Military At-Cost (NAF, Housing).

1. **Project Management.** The PM is responsible for an approved budget, maintaining a current estimate and monitoring actual S&A costs during the life of the project.

a. **Budgeting.** The PM should include specifics related to construction S&A services in the project management plan (PMP). It should include the geographic district responsible for the performance of supervision and administration and the method of customer billing/cost accounting (flat rate/process cost accounting or at-cost/job order cost accounting). The PM will specifically lead the PDT in the identification of scope of the specific construction job and in the development and customer approval of the S&A services job order budget estimate. The S&A budget estimate shall be approved and funded prior to award of the construction contract.

b. **Funding.** The PM shall maintain a current estimate and track and compare actual monthly S&A costs against the estimate and approved budget during the life of the project. The PM shall obtain customer approval and funding for a revised S&A budget amount, if there is a significant change in the current estimate from the current approved budget amount.

2. **Functional Management.** The functional chief is responsible for the organization's estimate of S&A services and for monitoring its organizational costs and taking appropriate corrective action to control costs within budget.

a. **Estimating.** The functional chief for each organization preparing an estimate of S&A services shall verify the level of effort and accuracy of the detailed cost and pricing data used in the estimate and work with the PM to assure estimates do not delay contract award.

b. Cost Control and Monitoring. The functional chief for each organization incurring S&A costs shall monitor labor cost, progress, and other costs against the approved budget; identify significant variances; and take corrective action as appropriate to perform S&A services within budget or obtain a revised approved budget.

3. Budget Estimate Preparation and Format. Estimates for construction S&A services shall be prepared using current detailed cost and pricing data (current labor rates with corresponding current labor multipliers or current estimates of costs for an activity) and cover the full job scope and duration. The estimate format shall be segregated and subtotaled for each major organizational element (field - normally area - office, construction district office, and other district offices).

a. Estimate Preparation. Budget estimates for S&A services shall be prepared using traditional detailed estimating techniques that include line listings of item, quantity, unit, unit price and amount. The items used in the estimate work breakdown structure may be developed using either asset-based tasks (job position type - such as resident engineer, vehicles, travel, etc.) or activity-based tasks (field office quality assurance, safety, mod processing, contractor payments, etc.) based on the developer's discretion. The preferred methodology for cost of living adjustments (COLA) is a separate task item.

b. Format. A separate estimate shall be prepared for each major organizational element performing S&A services. A responsible person shall be identified for each major organizational estimate. It is recommended that major organization segments prepare initial estimates using the S&A Project System (SAPS) to facilitate standard work breakdowns and current detailed cost data. However, estimates may be initially developed independently with varying work breakdown structures as appropriate for the job and subsequently entered into SAPS. Individual organizational estimates shall be combined into an overall integrated estimate for the entire job over its life cycle. Further estimate breakdown requirements shall generally be met by applying percentages to the overall job estimate instead of developing multiple estimates within the job order estimate. For example, requirements for segregation of the estimate for multiple projects funding shall generally be met by applying a percentage split to the overall estimate. Similarly, requirements for segregation by fiscal year, expenditure plans by month, etc., shall also generally be met by applying a percentage split, or other rationale to the overall estimate.

4. Formal Estimating Tools and Recording Standard. The Supervision and Administration Project System (SAPS) is the designated management information system (MIS) for consolidated recording and internal reporting of approved S&A budget estimates. It is also the recommended tool for the initial development of S&A estimates, but other tools may be used to develop initial estimates at the developer's discretion.

a. Supervision and Administration Project System (SAPS). Approved S&A services job order budget estimates for each major organizational element shall be recorded in SAPS. A job is defined as a combination of a contract and project. Therefore, the S&A budget estimate shall be recorded against the construction contract / project “job”. The recorded approved budget estimate shall at least detail the estimate breakdown for each major organization. See Figure A-1 for standard format of estimates generated and recorded in SAPS. Revised approved budget estimates shall also be recorded in SAPS.

b. Initial Estimate Development and Tools. Each organization responsible for developing the initial draft estimate of S&A services may use whatever means is convenient for them as long as it meets the requirement for current detail cost and pricing, work breakdown, and formatting standards. See Figure A-2 for a sample of an initial field office S&A services estimate. Initial field office estimates shall be approved by the functional organization chief (Area Engineer) and forwarded to Construction Division, CENWO-CD-Q for consolidation with other construction office estimates. The combined estimate of S&A services within the construction function will be approved by the construction chief, or designated individual prior to forwarding to the PM. The PM will include estimates of S&A costs involving other offices as appropriate. Upon final consolidation and approval, the overall estimate shall be provided to Construction Division, CENWO-CD-C for official filing and recording in SAPS.

c. Cost Tracking and Cost and Comparison. SAPS has a module that will provide managers with an automated means to compare the official budget for the job against the actual cumulative costs incurred on the job. Tracking and monitoring of costs by fiscal year is not required on an individual job order level. When this is desired for other reasons, special reports from the Corps of Engineers Finance and Accounting System (CEFMS) may be executed.

d. Access to SAPS. Omaha District personnel desiring access to SAPS shall complete an information security access form and forward to CENWO-IM, database administrator. No additional hardware is required. Software requirements are web browser with a current version Java script file initiator (J-initiator).

5. Customized Budget Estimates. It may be appropriate or necessary to modify standard format S&A services budget estimates before presenting them to the customer or other internal personnel. In such cases, these estimates should be prepared as subsidiary estimates using automated spreadsheets or other convenient tools. See Figure A-3 for an example of a customized estimate.

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 APP A
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04/17/01 A-Z BUILD -- Zorinsky Building Renovation -- Omaha, NE -- Z-Building Renovation -- Fort

Budget Item	Quantity	Unit	Rate	Amount
Area Engineer	208	Hrs	100	20,729
	208	Hrs	100	20,729
	156	Hrs	100	15,547
			Item Total	57,006
Civil Engineer	208	Hrs	73	15,176
	208	Hrs	73	15,176
	156	Hrs	73	11,382
			Item Total	41,733
Electrical Tech	416	Hrs	63	26,021
	416	Hrs	63	26,021
	312	Hrs	63	19,516
			Item Total	71,557
GSA Vehicle	12	Each	165	1,980
	12	Each	165	1,980
	9	Each	165	1,485
			Item Total	5,445
General Admin	1	LS	23,000	23,000
	1	LS	23,000	23,000
	1	LS	17,250	17,250
			Item Total	63,250
Mech Engineer	416	Hrs	77	32,028
	416	Hrs	77	32,028
	312	Hrs	77	24,021
			Item Total	88,077
Military Officer	1,738	Hrs	50	86,900
			Item Total	86,900
Mod Admin	120	Hrs	60	7,159
	120	Hrs	60	7,159
	90	Hrs	60	5,369
			Item Total	19,688
Pay Admin	30	Hrs	40	1,199
	30	Hrs	40	1,199
	23	Hrs	40	919
			Item Total	3,318
QA Con Rep	1,768	Hrs	63	110,588
	1,768	Hrs	63	110,588
	1,326	Hrs	63	82,941
			Item Total	304,118
QA Testing	24	Each	1,000	24,000
				Item Total
			Budget Totals	765,091

Figure A-1

04/17/01 A-Z BUILD -- Zorinsky Building Renovation -- Omaha, NE -- Z-Building Renovation -- CD Di

Budget Item	Quantity	Unit	Rate	Amount
Civil Engineer	160	Hrs	95	15,200
	160	Hrs	95	15,200
	120	Hrs	95	11,400
			Item Total	41,800
General Admin	60	Hrs	40	2,400
	60	Hrs	40	2,400
	45	Hrs	40	1,800
			Item Total	6,600
Pay Admin	30	Hrs	53	1,593
	30	Hrs	53	1,593
	30	Hrs	53	1,593
			Item Total	4,778
Project Engineer	240	Hrs	77	18,478
	240	Hrs	77	18,478
	180	Hrs	77	13,858
			Item Total	50,813
Budget Totals				103,992

Sample

Figure A-1 (Cont.)

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Contract Information

Contract A-Z BUILD -- Zorinsky Building Renovation -- Omaha, NE

Project Z-Building Renovation

Milestone	Due	Days	Organization	Name	Budget
Completion Date	09/30/2002	531	Fort Crook	Schmidt, Steven R	765,091
			CD District	Mcfaul, James L	103,992
			PM	Hodges, Jay D	0
				Total	869,083

Sample

**Z-Building Renovation
 Estimated Admin Cost
 Estimated Contract Duration
 - 3 yrs**

Discipline	Grade	Effective Rate	Hours	Total (1)
Project Eng	GS/12-8	\$85.00	2080	\$176,800.00
Construction Rep	GS/12-6	\$72.00	2080	\$149,760.00
Captain		\$100.00	2080	\$208,000.00
Mechanical Eng	GS/12-9	\$83.00	416	\$34,528.00
Elect Eng Tech	GS/11-8	\$67.00	416	\$27,872.00
Civ Eng	GS/12-7	\$79.00	208	\$16,432.00
Payment Clerk	GS/7-6	\$43.00	30	\$1,290.00
Mod Tech	GS/11-4	\$63.00	120	\$7,560.00
Area Engineer	GM/14-6	\$107.00	208	<u>\$22,256.00</u>
Total Salary:				\$644,498.00
YR 1 Salary: \$644,498.00				
YR 2 Salary: \$667,055.00 (2)				
YR 3 Salary: \$690,402.00 (2)				
Total 3 yr Salary: \$2,001,955.00				
Misc Expenses				
GSA Vehicle Rental		\$165.00	36 Month	\$5,940.00

Figure A-2

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Contracts=	Abatement & Demo Contr.			Renovation Contract				Warranty Admin				
Phase=	Abatement		Demolition	Renovation								
Phase Date=	June'01 - Oct'01		Oct-Dec '01	Jan'02 to Jan'04				Jan'04 to Jan'05		Project Total per Discipline	Labor Rates	
Fiscal Year=	FY'01		FY'02		FY'03		FY'04		FY'04/05			
Description	Hours	Amount	Hours	Amount	Hours	Amount	Hours	Amount	Hrs	Amt	\$/hr	
LABOR COSTS												
FT. CROOK LABOR												
On-site team:												
Project Engineer	590	\$ 46,622	1768	\$ 139,707	1768	\$ 139,707	450	\$ 35,559	65	\$ 5,136	366,732	79.02
Asbestos Inspector (CE)	400	25,116	300	18,837		-		-			43,953	62.79
Construction Rep(s) (QA)	190	11,885	1768	110,588	2868	179,393	884	55,294			357,161	62.55
Military Officer	0	-	1470	55,860	300	11,400	0	-			67,260	38.00
Area Office Support Team												
Area Engineer	70	\$ 6,976	208	\$ 20,729	208	\$ 20,729	55	\$ 5,481			53,916	99.66
Pay Admin	12	480	36	1,439	36	1,439	25	999			4,357	39.97
Mod Admin	50	2,983	160	9,546	160	9,546	60	3,580			25,654	59.66
Civil Engineer	70	5,107	208	15,176	208	15,176	50	3,648			39,107	72.96
Mechanical Engineer	75	5,774	440	33,876	455	35,030	275	21,172	105	\$ 8,084	103,937	76.99
Electrical Tech	75	4,691	440	27,522	455	28,460	275	17,201	85	5,317	83,192	62.55
DISTRICT LABOR												
CD Support												
Supervision/oversight	50	\$ 4,750	100	\$ 9,500	100	\$ 9,500	25	\$ 2,375			26,125	95.00
Clerical support	30	1,200	60	2,400	60	2,400		1,800			7,800	40.00
Scheduling support (NAS)	0	-	140	10,079	70	5,039		1,440			16,558	71.99
CABr Support												
Pay Admin	10	\$ 531	18	\$ 822	10	\$ 452	10	\$ 531			2,973	53.09
Mod Admin	30	1,822	60	3,644	60	3,644	55	3,347			12,476	60.86
		-		-		-		0			0	
QA Support												
Civil Engineer	20	1,546	50	3,850	50	3,850	15	1,155			10,394	76.99
Mech/Elect Engineer	16	1,200	52	3,900	52	3,900	104	7,800			16,800	75.00
		-		-		0		0			0	
PM Support												
Program Analyst	80	\$ 4,861	120	\$ 7,291	100	\$ 6,076	100	\$ 6,076			24,304	60.76
		-		0		0		0			0	
Labor subtotal		\$ 125,541		\$ 474,906		\$ 476,253		\$ 167,459		\$ 18,537		
COLA increases		\$ -		\$ 16,622		\$ 33,814		\$ 18,086		\$ 2,725		
LABOR TOTAL		\$ 125,541		\$ 491,528		\$ 510,067		\$ 185,544		\$ 21,262	\$ 1,333,942	

Figure A-3

APPENDIX B

FUNDAMENTALS AND GUIDELINES FOR PREPARING AND RECORDING S&A SERVICES BUDGET ESTIMATES FOR JOBS SUBJECT TO FLAT RATE UNDER THE HQ USACE S&A PILOT STUDY

Summary. Many of the fundamentals and guidelines outlined in Appendix A may also be applied to S&A services level-of-effort estimates for construction contracts subject to *flat rate* S&A. The calculated *flat rate* S&A amount is budgeted in the current working estimate (CWE) on customer projects subject to *flat rate*. The project budget CWE for S&A is based on a percentage times the current contract cost and other miscellaneous costs subject to S&A. Costs are collected and the customer is billed on a process cost accounting (*flat rate*) basis - as opposed to an *at-cost*, job order basis. While not mandatory, even on construction projects subject to *flat rate*, the development and recording of a job order type budget estimate are recommended for internal management purposes to help determine and manage the level of effort on the job.

Special Considerations for HQ USACE S&A Pilot Study. The Omaha District is part of a select team of Districts that is participating in a pilot study to more accurately identify the individual job costs for S&A on projects subject to flat rate S&A. To do this, it is necessary to budget and cost S&A on these projects as if it were being performed on an *at-cost* (job order cost accounting) basis. The S&A Pilot Study includes a requirement that the Project Manager, with the PDT, be responsible for developing and maintaining the S&A budget for selected test projects and for monitoring the actual expenses vs. the current budget throughout the life of the project. Specifically, the S&A Pilot Study PMP states the following in paragraph 7e:

“As a part of this study Project Managers at the test Districts will estimate the S&A budgets and track expenses against those estimates. All projects awarded after 01 September 2000 or any project awarded prior to 01 September 2000 that extends beyond 30 September 2001 will be included in this study. The PM, in cooperation with the construction and engineering team members, shall prepare a budget for all S&A and DDC project expenses and shall review the actual vs. budgeted expenses on at least a monthly basis.”

Given this, for the test period, project managers will be responsible to lead their PDT in the development of individual job order level budget estimates for S&A services for each project on their construction jobs. While the fundamentals are the same as *at-cost*, samples of S&A budget estimates for a construction job subject to *flat rate* S&A are shown in Figures B-1 and B-2.

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Budget

Contract DACA45-01-R-0005 -- FPTA Phase 3 -- Minot AFB, ND
Project DERP AF - FPTA Phase 3, Minot AFB, ND

Organization	Name	Budget
Black Hills	Mailander, Mark A	294,675
CD District	Mcfaul, James L	40,970
PM		9,400
	Total:	345,045
	Total:	345,045

Figure B-1

03/26/01

DACA45-01-R-0005 -- FPTA Phase 3 -- Minot AFB, ND -- DERP AF - FPTA Phase 3, Minot AFB, ND -- CD District

Budget Item	Quantity	Unit	Rate	Amount
Civil Engineer	40	Hrs	92	3,672
			Item Total	3,672
Civil Engineer	160	Hrs	76	12,184
			Item Total	12,184
Civil Engineer	100	Hrs	72	7,216
			Item Total	7,216
Civil Tech	8	Hrs	126	1,048
			Item Total	1,048
General Admin	1	LS	1,000	1,000
			Item Total	1,000
General Admin	1	LS	1,500	1,500
			Item Total	1,500
Mod Admin	25	Each	250	6,250
			Item Total	6,250
Pay Admin	36	Each	75	2,700
			Item Total	2,700
Site Visits	3	Each	1,800	5,400
			Item Total	5,400
			Budget Totals	40,970

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DACA45-01-R-0005 -- FPTA Phase 3 -- Minot AFB, ND -- DERP AF - FPTA Phase 3, Minot AFB, ND -- PM

Budget Item	Quantity	Unit	Rate	Amount
Civil Engineer	50	Hrs	78	3,880
			Item Total	3,880
Program Analyst	100	Hrs	55	5,520
			Item Total	5,520
			Budget Totals	9,400

Figure B-1 (Cont.)

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DACA45-01-R-0005 -- FPTA Phase 3 -- Minot AFB, ND -- DERP AF - FPTA Phase 3, Minot AFB, ND --
 Black Hills

Budget Item	Quantity	Unit	Rate	Amount
Civil Engineer	3,120	Hrs	62	193,783
			Item Total	193,783
Civil Engineer	240	Hrs	93	22,313
			Item Total	22,313
GSA Usage Fee			3,450	3,450
			Item Total	3,450
General Admin	1	LS	16,322	16,322
			Item Total	16,322
Office Engineering	240	Hrs	74	17,794
			Item Total	17,794
Per Diem	45	Day	85	3,825
			Item Total	3,825
Resident Engr	400	Hrs	93	37,188
			Item Total	37,188
			Budget Totals	294,675

Figure B-1 (Cont.)
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BLACK HILLS AREA CONSTRUCTION MANAGEMENT BUDGET

Fire Trainer Area Clean-up Ph III, Minot AFB
 (Mar 01 - Aug 03)

02/21/2001

GS-13 Resident Engineer (Civil)	\$118,813	*	10 weeks / 52	\$ 22,849
GS-11 Civil Engineer (on site)	\$79,396		1.5 year	\$ 119,094
GS-13 Chief Tech Branch (Civil)	\$118,813	*	6 weeks / 52	\$ 13,709
GS-12 Civil Engineer (CA)	\$94,778	*	6 weeks / 52	<u>\$10,936</u>
				Subtotal <u>\$166,588</u>
G&A OH (25.3%)				\$42,147
Departmental OH (38%)				<u>\$63,303</u>
				Subtotal <u>\$272,038</u>
2002 & 2003 COLA Increases (6%)				<u>\$16,322</u>
				Total <u>\$288,360</u>
TDY Per Diem \$85/Day * 45 man days				\$3,825
Mileage Government Vehicle 10,000 * .345				<u>\$3,450</u>
				<u>\$7,275</u>

Black Hills Area Total \$295,635

Sample