WATANA DAM/DEVIL CANYON
FEASIBILITY REPORT INDIRECTS

Task 9 - Group 12

BOOK Q

WATANA DAM/DEVIL CANYON
INDIRECTS
FEASIBILITY REPORT

0 0 0 2 3 8

(Q)

UNIT COSTS - BACKUP CALCULATIONS

WATANA DAM/DEVIL CANYON INDIRECTS

FEASIBILITY REPORT

Watana
DEVIL CANYON
Supervision

Staff Mobilization

Staff Vehicles

Misc. Equipment

Consumables

Plant & Utilities

Yard Services

Office Expense

General Expense

Watana/Devil Canyon Comparison

(Q) FEASIBILITY REPORT

WATANA

SUSITNA HYDROELECTRIC PROJECT
FEASIBILITY STUDY ESTIMATE - ACRES AMERICAN
WATANA

date: 17-FEB-82
file: WAIND.DAT;1
page: 1

ITEM	DESCRIPTION	QUANTITY	UNITS	LABOR UNIT PRICE	LABOR AMOUNT	JOB MATERIALS UNIT PRICE	JOB MATERIALS AMOUNT	PERM. MATERIALS UNIT PRICE	PERM. MATERIALS AMOUNT	SUBCONTRACTS UNIT PRICE	SUBCONTRACTS AMOUNT	EQPT. OWNERSHIP UNIT PRICE	EQPT. OWNERSHIP AMOUNT	EQPT. OPERATION UNIT PRICE	EQPT. OPERATION AMOUNT	EQUIV. UNIT PRICE	TOTAL AMOUNT	FACTOR	NEW TOTAL
				$	$ 000	$	$ 000	$	$ 000	$	$ 000	$	$ 000	$	$ 000	$	$ 000		$ 000
	PRODUCTION PLANT																		
					0		0		0		0		0		0		0		
63	MAIN CONSTRUCTION CAMP INDIRECTS																		
.1	MAIN CONSTR CAMP INDIRECTS																		
.11	TEMPORARY CONSTRUCTION																		
	TEMPORARY CONSTRUCTION	1	LS	0	25			0	0			135	34			194	1.55	300	
.12	NON-PRODUCTIVE TIME																		
	NON-PRODUCTIVE TIME	1	LS	217	0			0	0			0	0			217	1.55	336	
.13	UNALLOCABLE JOB COST 4																		
	UNALLOCABLE JOB COST	1	LS	546	0			0	0			39	123			707	1.55	1,096	
.14	CRAFT-INDIRECT JOB COST 4																		
	CRAFT-INDIRECT JOB COST	1	LS	559	60			0	0			0	0			619	1.55	959	
.15	SMALL TOOLS & CONSUMABLES 4																		
	SMALL TOOLS & CONSUMABLES	1	LS	0	1,407			0	0			0	0			1,407	1.55	2,180	
.16	FIELD OFFICE COSTS																		
	FIELD OFFICE COSTS	1	LS	0	422			0	0			0	0			422	1.55	654	
.17	FIELD ADMINISTRATION																		
	FIELD ADMINISTRATION	1	LS	5,895	0			0	0			200	612			6,706	1.55	10,395	
.18	BONDS,INS.,TAXES, & PERMITS 4																		
	BONDS,INS.,TAXES, & PERMITS	1	LS	0	0			0	1,442			0	0			1,442	1.55	2,235	
.19	MECHANICAL SUPPORT																		
	MECHANICAL SUPPORT	1	LS	568	0			0	0			93	127			788	1.55	1,221	
.20	MOBILIZATION & DEMOBILIZATION																		
	MOBILIZATION & DEMOBILIZ.	1	LS																
	TOTAL PROJECT DETAIL			********** 7,784	********** 1,913	**********	********** 0	********** 1,442	********** 467	**********	********** 895	********** 12,501	1.55	********** 19,377					

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MOORE BUSINESS FORMS, INC. HO

SUSITNA HYDROELECTRIC PROJECT
FEASIBILITY STUDY ESTIMATE--ACRES AMERICAN
DEVIL CANYON

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ITEM	DESCRIPTION	QUANTITY	UNITS	LABOR UNIT PRICE	LABOR AMOUNT	JOB MATERIALS UNIT PRICE	JOB MATERIALS AMOUNT	PERM. MATERIALS UNIT PRICE	PERM. MATERIALS AMOUNT	SUBCONTRACTS UNIT PRICE	SUBCONTRACTS AMOUNT	EQPT. OWNERSHIP UNIT PRICE	EQPT. OWNERSHIP AMOUNT	EQPT. OPERATION UNIT PRICE	EQPT. OPERATION AMOUNT	EQUIV. UNIT PRICE	TOTAL AMOUNT	FACTOR	NEW TOTAL
				$	$ 000	$	$ 000	$	$ 000	$	$ 000	$	$ 000	$	$ 000	$	$ 000		$ 000
	PRODUCTION PLANT																		
					0		0		0		0		0		0		0		
63	MAIN CONSTRUCTION CAMP INDIRECTS																		
.1	MAIN CONSTR CAMP INDIRECTS																		
.11	TEMPORARY CONSTRUCTION																		
	TEMPORARY CONSTRUCTION	1	LS	0		25		0		0		75		19			119	1.55	184
.12	NON-PRODUCTIVE TIME																		
	NON-PRODUCTIVE TIME	1	LS	184		0		0		0		0		0			184	1.55	286
.13	UNALLOCABLE JOB COST 4																		
	UNALLOCABLE JOB COST	1	LS	196		0		0		0		14		44			254	1.55	393
.14	CRAFT-INDIRECT JOB COST 4																		
	CRAFT-INDIRECT JOB COST	1	LS	427		20		0		0		0		0			447	1.55	693
.15	SMALL TOOLS & CONSUMABLES 4																		
	SMALL-TOOLS & CONSUMABLES	1	LS	0		1,195		0		0		0		0			1,195	1.55	1,852
.16	FIELD OFFICE COSTS																		
	FIELD OFFICE COSTS	1	LS	0		216		0		0		0		0			216	1.55	334
.17	FIELD ADMINISTRATION																		
	FIELD ADMINISTRATION	1	LS	3,204		0		0		0		87		266			3,556	1.55	5,512
.18	BONDS,INS.,TAXES, & PERMITS 4																		
	BONDS,INS.,TAXES, & PERMITS	1	LS	0		0		0		948		0		0			948	1.55	1,469
.19	MECHANICAL SUPPORT																		
	MECHANICAL SUPPORT	1	LS	460		0		0		0		82		121			663	1.55	1,027
.20	MOBILIZATION & DEMOBILIZATION																		
	MOBILIZATION & DEMOBILIZ.	1	LS	65		0		0		0		0		0			65	1.55	101
	TOTAL PROJECT DETAIL				4,536		1,455		0		948		257		449		7,646	1.55	11,851

MOORE BUSINESS FORMS, INC. HO 11"

SUSITNA HYDROELECTRIC PROJECT - P570009
CONTRACTORS' INDIRECTS
WATANA

date: 31-MAR-82
file: WAIND.DAT;4
page: 1

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$ 000	$ 000	
900	CONTRACTORS' INDIRECTS						
.1	SUPERVISION						
.11	MANAGEMENT						
	MANAGEMENT	45.5	MAN/YR	111,000.00	5,051		
					5,051		
.12	SUPERVISION						
	SUPERVISION	217.4	MAN/YR	92,400.00	20,088		
					20,088		
.13	ENGINEERING						
	ENGINEERING	335.8	MAN/YR	87,600.00	29,416		
					29,416		
.14	OFFICE & CLERICAL						
	OFFICE & CLERICAL	335.1	MAN/YR	34,200.00	11,460		
					11,460		
.15	MISCELLANEOUS						
	MISCELLANEOUS	199.4	MAN/YR	37,000.00	7,378		
					7,378		
					========		
					73,393		
.2	STAFF MOBILIZATION						
.21	SALARIES						
	SALARIES	1	LS	1,430,000.00	1,430		
					1,430		
.22	TRAVEL						
	TRAVEL	1	LS	190,000.00	190		
					190		
.23	FREIGHT						
	FREIGHT	1	LS	480,000.00	480		
					480		
.24	EXPENSE						
	EXPENSE	1	LS	1,250,000.00	1,250		
					1,250		
.25	TURNOVER ALLOWANCE						
	TURNOVER ALLOWANCE	1	LS	4,000,000.00	4,000		
					4,000		
					========		
					7,350		

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$ 000	$ 000	
.3	STAFF VEHICLES						
.31	CARS						
	CARS	96	CAR/YR	7,420.00	712		
					712		
.32	PICK-UP TRUCKS						
	PICK-UP TRUCKS	144	TRK/YR	21,500.00	3,096		
					3,096		
					3,808		
.4	YARD EQUIPMENT						
.41	FORK LIFT TRUCKS						
	FORK LIFT TRUCKS	1	LS	12,000,000.00	12,000		
					12,000		
.42	FLAT BEDS						
	FLAT BEDS	0	LS	0.00	0		IN ABOVE
					0		
.43	TRACTORS						
	TRACTORS	0	LS	0.00	0		IN ABOVE
					0		
.44	WELDING MACHINES						
	WELDING MACHINES	0	LS	0.00	0		IN ABOVE
					0		
.45	PANEL TRUCK						
	PANEL TRUCK	0	LS	0.00	0		IN ABOVE
					0		
.46	OPERATION & REPAIR						
	OPERATION & REPAIR	0	LS	0.00	0		IN ABOVE
					0		
					12,000		
.5	BUILDINGS & SHOPS						
.51	SHOPS						
	SHOPS	100,000	SF	60.00	6,000		
					6,000		

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$ 000	$ 000	
	.52 MAINTENANCE EQUIPMENT						
	MAINTENANCE EQUIPMENT	1	LS	1,500,000.00	1,500		
					1,500		
	.53 OFFICES						
	OFFICES	15,500	SF	115.00	1,783		
					1,783		
	.54 TRAILERS						
	TRAILERS	12	EACH	60,000.00	720		
					720		
	.55 REPAIR & MAINTENANCE						
	REPAIR & MAINTENANCE	8	YEAR	250,000.00	2,000		
					2,000		
					12,003		
.6	CONSUMABLES						
	.61 SMALL TOOLS						
	SMALL TOOLS	1	LS	7,000,000.00	7,000		
					7,000		
	.62 GENERAL CONSUMABLES						
	GENERAL CONSUMABLES	1	LS	4,500,000.00	4,500		
					4,500		
					11,500		
.7	UTILITIES						
	.71 POWER DISTRIBUTION						
	POWER DISTRIBUTION	1	LS	12,300,000.00	12,300		
					12,300		
	.72 LIGHTING						
	LIGHTING	1	LS	7,700,000.00	7,700		
					7,700		
	.73 POTABLE WATER						
	POTABLE WATER	1	LS	500,000.00	500		
					500		
	.74 TELEPHONE						
	TELEPHONE	1	LS	2,000,000.00	2,000		
					2,000		

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$ 000	$ 000	
	.75 TELEX						
	TELEX	1	LS	2,900,000.00	2,900		
					2,900		
	.76 RADIO						
	RADIO	1	LS	100,000.00	100		
					100		
					25,500		
.8	YARD SERVICES						
	.81 BARRIERS & SIGNS						
	BARRIERS & SIGNS	1	LS	5,000,000.00	5,000		
					5,000		
	.82 ROAD MAINTENANCE						
	ROAD MAINTENANCE	0	LS	0.00	0		IN ABOVE
					0		
					5,000		
.9	OFFICE EXPENCE						
	.91 FURNITURE						
	FURNITURE	316	EACH	430.00	136		
					136		
	.92 EQUIPMENT						
	EQUIPMNENT	1	LS	150,000.00	150		
					150		
	.93 ENGINEER'S EQUIPMENT						
	ENGINEERS'S EQUIPMNENT	1	LS	74,000.00	74		
					74		
	.94 REPRODUCTION						
	REPRODUCTION	1	LS	300,000.00	300		
					300		
	.95 SUPPLIES						
	SUPPLIES	1	LS	1,000,000.00	1,000		
					1,000		
	.96 COMPUTER						
	COMPUTER	1	LS	500,000.00	500		
					500		
					2,160		

SUSITNA HYDROELECTRIC PROJECT - P570009
CONTRACTORS' INDIRECTS
WATANA

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ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$ 000	$ 000	
.10	GENERAL EXPENSES						
.101	BONDS						
	BONDS	0	LS	0.00	0		BY OWNER
					0		
.102	INSURANCE DEDUCTABLE						
	INSURANCE DEDUCTABLE	1	LS	1,000,000.00	1,000		
					1,000		
.103	INVENTORY LOSS						
	INVENTORY LOSS	1	LS	3,500,000.00	3,500		
					3,500		
.104	CLEAN-UP						
	CLEAN-UP	1	LS	20,000,000.00	20,000		
					20,000		
.105	DEMOBILIZATION						
	DEMOBILIZATION	1	LS	8,600,000.00	8,600		2% LABOR
					8,600		
.106	INCIDENTAL FREIGHT						
	INCIDENTAL FREIGHT	1	LS	4,600,000.00	4,600		
					4,600		
						37,700	
.11	OFFSITE TRAVEL						
.111	OFFSITE TRAVEL						
	OFFSITE TRAVEL	1	LS	8,200,000.00	8,200		
					8,200		
						8,200	
.12	ON-SITE TRANSPORTATION						
.121	BUS OPERATION						
	BUS OPERATION	1	LS	8,100,000.00	8,100		
					8,100		
						8,100	

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$ 000	$ 000	
.13	VISITORS MEAL ALLOWANCE						
.131	VISITORS MEAL ALLOWANCE						
	VISITORS MEAL ALLOWANCE	1	LS	400,000.00	400		
					400		
					=========		
					400		
.14	SALVAGE						
.141	VEHICLES						
	VEHICLES	1	LS	-5,000,000.00	-5,000		
					-5,000		
.142	MISC EQUIPMENT						
	MISC EQUIPMENT	0	LS	0.00	0		IN ABOVE
					0		
.143	CONSUMABLES						
	CONSUMABLES	0	LS	0.00	0		IN ABOVE
					0		
.144	PLANT						
	PLANT	0	LS	0.00	0		IN ABOVE
					0		
.145	YARD						
	YARD	0	LS	0.00	0		IN ABOVE
					0		
.146	FURNITURE						
	FURNITURE	0	LS	0.00	0		IN ABOVE
					0		
.147	BUILDINGS						
	BUILDINGS	0	LS	0.00	0		IN ABOVE
					0		
.148	MAINTENANCE EQUIPMENT						
	MAINTENANCE EQUIPMENT	0	LS	0.00	0		IN ABOVE
					0		
					=========		
					-5,000		

SUSITNA HYDROELECTRIC PROJECT - F570009
CONTRACTORS' INDIRECTS
WATANA

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ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$ 000	$ 000	
.15	HOME OFFICE SUPPORT						
.151	CONTRACT MANAGERS						
	CONTRACT MANAGERS	1	LS	4,000,000.00	4,000		
					4,000		
.152	PROCUREMENT						
	PROCUREMENT	1	LS	2,000,000.00	2,000		
					2,000		
.153	INDUSTRIAL RELATIONS						
	INDUSTRIAL RELATIONS	1	LS	3,000,000.00	3,000		
					3,000		
.154	SUPPORT PERSONNEL						
	SUPPORT PERSONNEL	1	LS	7,000,000.00	7,000		
					7,000		
.155	TRAVEL						
	TRAVEL	1	LS	700,000.00	700		
					700		
.156	EXPENSE						
	EXPENSE	1	LS	300,000.00	300		
					300		
.157	COMMUNICATIONS						
	COMMUNICATIONS	1	LS	500,000.00	500		
					500		
.158	REPORTS						
	REPORTS	1	LS	200,000.00	200		
					200		
.159	JOB INCENTIVES						
	JOB INCENTIVES	1	LS	1,000,000.00	1,000		
					1,000		
.15A	OFFICE UTILITIES, ETC						
	OFFICE UTILITIES, ETC	1	LS	1,300,000.00	1,300		
					1,300		
					20,000		

SUSITNA HYDROELECTRIC PROJECT - P570009
CONTRACTORS' INDIRECTS
WATANA

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$ 000	$ 000	
.16	FINANCING						
.161	CASH PENETRATION OF PROG. PAYMTS.						45 DAYS
	CASH PENETRATION OF PROGRESS PAYMENTS	1	LS	24,600,000.00	24,600		
					24,600		
.162	"UP-FRONT" INDIRECT EXPENSES						
	"UP-FRONT" INDIRECT EXPENSES	1	LS	8,500,000.00	8,500		
					8,500		
.163	HOLDBACK						15% OF 10% OF
	HOLDBACK	1	LS	116,000,000.00	116,000		CONTRACT VALUE
					116,000		
					149,100		
.19	UNLISTED ITEMS						
.191	UNLISTED ITEMS						
	UNLISTED ITEMS	1	LS	4,610,000.00	4,610		
					4,610		
					4,610		
.20	CONTRACTOR'S FEE						
.201	DIRECTS						
	LABOR	1	LS	50,600,000.00	50,600		
	MATERIAL	1	LS	13,500,000.00	13,500		
	PLANT	1	LS	18,000,000.00	18,000		
					82,100		
.202	INDIRECTS						
	SUPERVISION	1	LS	24,500,000.00	24,500		
	FACILITIES	1	LS	24,400,000.00	24,400		
	HOME OFFICE SUPPORT	1	LS	2,000,000.00	2,000		
					50,900		
					133,000		
	TOTAL PROJECT COST					508,823	

$

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MAR 24 1982

MAR 27 1982

ACRES

ESTIMATE SUMMARY SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA - INDIRECTS APPROVED BY _____

JOB NUMBER DS7009

FILE NUMBER _____

SHEET 4 OF _____

BY D.H. MacDonald DATE _____

CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.1	SUPERVISION					73 380 000	
.2	STAFF MOBILIZATION					7 350 000	
.3	STAFF VEHICLES					3 808 000	
.4	YARD EQUIPMENT					12 000 000	
.5	BUILDINGS SHOPS					12 000 000	
.6	CONSUMABLES					11 500 000	
.7	UTILITIES					25 500 000	
.8	YARD SERVICES					5 000 000	
.9	OFFICE EXPENSE					2 120 160 000	
.10	GENERAL EXPENSE					37 700 000	
.11	OFFSITE TRAVEL					8 200 000	
.12	ON SITE TRANSP.					8 100 000	
.13	VISITOR MEAL ALLOW.					400 000	
.14	SALVAGE					(5 000 000)	
.15	H.O. SUPPORT					20 000 000	
.16	FINANCING					149 100 000	
.19	UNLISTED ITEMS					4 610 000	
.20	CONTRACTOR'S FEE					133 200 000 000	
						508 968 000	

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MAR 2 0 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 1 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.	SUPERVISION						
.11	MANAGEMENT	45.5	M.Y.	111,000	5,050,000		
.12	SUPERVISION	217.4	M.Y	92,400	20,090,000		
.13	ENGINEERING	335.8	M.Y.	87,600	29,420,000		
.14	OFFICE & CLERICAL	335.1	M.Y	34,200	11,460,000		
.15	MISCELLANEOUS	199.4	M.Y	36,900	7,360,000		
		1133.2	M.Y.	31700	/DC	73,380,000	

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87.02.03. Form 134A

MAR 2 6 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA APPROVED BY _____

JOB NUMBER PS70009
FILE NUMBER _____
SHEET 2 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900	STAFF MOBILIZATION						
.21	SALARIES	1	SUM			1,430,000	Same C/O as D.C.
.22	TRAVEL	1	SUM			190,000	
.23	FREIGHT	1	SUM			480,000	
.24	EXPENSE	1	SUM			1,250,000	
.25	TURNOVER ALLOWANCE	1	SUM			4,000,000	
						7,350,000	10% of total 900.1

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07.02.03. Form 134A

MAR 2 6 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 3 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST / UNIT	AMOUNT	TOTALS	REMARKS
900.	STAFF VEHICLES:						
.31	CARS	96	C-Y	7,420	712,000		
.32	PICK UP TRUCKS:	144	T-Y	21,500	3,096,000		
						3,808,000	

C-Y = Car-Years
T-Y = Truck-Years

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87.02.03. Form 134A

MAR 2 3 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 4 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	YARD EQUIPMENT.						
.4	FORKLIFT TRUCKS FLAT BEDS TRACTORS WELDING MACHINES PANEL TRUCK OPERATION & REPAIR	1	SUM			12,000,000	GUESS

MAR 2 - 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 5 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.	BUILDINGS & SHOPS.						
.5	SHOPS	100,000	SF	60.00	6,000,000		
	MAINT. EQUIPMENT	1	SUM		1,500,000		
	OFFICES	15,500	SF	115.00	1,780,000		
	TRAILERS	12	EACH	60,000	720,000		
	REPAIR & MAINTENANCE	8	YR.	250,000	2,000,000		
				242,800 DC		12,000,000	

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87.02.03. Form 134A

MAR 2 6 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 6 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	CONSUMABLES						
.61	GENERAL CONSUMABLES	1	SUM		4,500,000		
.62	SMALL TOOLS	1	SUM		7,000,000		
						11,500,000	

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87.02.03. Form 134A

0 0 0 2 5 8

MAR 2 6 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 7 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900.	UTILITIES.						
.7	POWER DISTRIBUTION	1	SUM		12,300,000		
	LIGHTING	1	SUM		7,700,000		
	POTABLE WATER	1	SUM		500,000		
	TELEPHONE	1	SUM		2,000,000		
	TELEX.	1	SUM		2,900,000		
	RADIO.	1	SUM		100,000		
						25,500,000	

MAR 2 - 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA APPROVED BY _____

JOB NUMBER P570007
FILE NUMBER _____
SHEET 8 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST / UNIT	AMOUNT	TOTALS	REMARKS
900.	YARD SERVICES.						
.81	BARRELS & SIGNS.						
.82	ROAD MAINTENANCE	1	SUM			5,000,000	

STIC 3/30

ESTIMATE SUMMARY

ACRES

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA. APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET 9 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.	OFFICE EXPENSE			431.80 DC			
.1	FURNITURE	316	EA	430.00	136,000		
	EQUIPMENT	1	SUM		150,000		
	ENGR. EQUIPMENT	1	SUM		74,000		
	REPRODUCTION	1	SUM		350,000		
	SUPPLIES	1	SUM		1,000,000		
	COMPUTER	1	SUM		500,000		
						2(120)000	
						2,160,00	

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87.02.03. Form 134A

MAR 2 6 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA APPROVED BY _____

JOB NUMBER P57002.7
FILE NUMBER _____
SHEET 10 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900	GENERAL EXPENSE.						
.10	BONDS	—			—		BY OWNER
	INSURANCE DEDUCTABLES	1	SUM		1,000,000		
	INVENTORY LOSS	1	SUM		3,500,000		
	CLEAN UP	1	SUM		20,000,000		
	DEMOBILIZATION	1	SUM		8,600,000		
	BANKING COST.	—			—		Covered in 900.16
	INCIDENTAL FREIGHT.	1	SUM		4,600,000		
						37,700,000	

MAR 26 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET 11 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900							
.11	OFFSITE TRAVEL	1	SUM		8,200,000	8,200,000	

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87.02.03. Form 134A

MAR 26 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATAWA APPROVED BY _____

JOB NUMBER P57000 2

FILE NUMBER _____

SHEET 12 OF _____

BY D.H. MacDonald DATE _____

CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900							
.12	ON-SITE TRAVEL	1	SUM		8,100,000	8,100,000	
	BL OPER S/A D.C.						

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57.02.03. Form 134A

MAR 26 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 13 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900							
.13	VISITOR'S MEAL ALLOW	1	SUM		100,000	100,000	

29

57. D2. D3. Form 1364

MAR 2 6 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA APPROVED BY _____

JOB NUMBER P5760002
FILE NUMBER _____
SHEET 14 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
700	SALVAGE (INDIRECTS).						
.14	VEHICLES MISC EQUIP. CONSUMABLES PLANT — YARD FURNITURE — BUILDINGS MAINTENANCE EQUIP. —						
		1	SUM			(5,000,000)	CREDIT (GUESS)

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MAR 2 D 1982

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 15 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.	HOME OFFICE SUPPORT.						
.15	CONTRACTS MANAGEMENT.	1	SUM		4,000,000		
	PROCUREMENT				2,000,000		
	INDUSTRIAL RELATIONS				3,000,000		
	SUPPORT PERSONNEL				7,000,000		
	TRAVEL				700,000		
	EXPENSE				300,000		
	COMMUNICATIONS				500,000		
	RENTS				200,000		
	JOB INCENTIVES				1,000,000		
	OFFICE UTILITIES etc				1,300,000		
						20,000,000	

87.02.03. Form 134A

MAR 2 1 198_

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA APPROVED BY _____

JOB NUMBER R5700.2
FILE NUMBER _____
SHEET 16 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	FINANCING						
.16	CASH PENETRATION OF PROG. PAYMTS	1	SUM		24,600,000		45 days
.17	"UP-FRONT" INDIRECT EXPENSES	1	SUM		8,500,000		
.18	HOLDBACK	1	SUM		116,000,000		15% TO MAX. OF 10% OF CONTRACT VALUE.
						149,100,000	

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87.02.03. Form 134A

MAR 27 1982

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA .. APPROVED BY _____

JOB NUMBER PS70009
FILE NUMBER
SHEET 17 OF
BY D.H. MacDonald DATE
CHKD DATE

No.	DESCRIPTION	QUANTITY	UNIT	COST / UNIT	AMOUNT	TOTALS	REMARKS
900							
.19	UNLISTED ITEMS	1	SUM			4,610,000	

MAR 2 6 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT WATANA APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 18 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST / UNIT	AMOUNT	TOTALS	REMARKS
900	CONTRACTORS' FEES.						
.20	DIRECTS:						
	LABOUR	1	SUM		50,600,000		
	MATERIAL				13,500,000		
	PLANT				18,000,000		
	INDIRECTS:						
	SUPERVISION				24,500,000		
	FACILITIES				24,400,000		
	H.O. SUPPORT				2,000,000		
						133,200,000	

WAT. 02-03-1

ACRES

ESTIMATE SUMMARY

CLIENT WAIANA

PROJECT

TYPE OF ESTIMATE

APPROVED BY

JOB NUMBER
FILE NUMBER
SHEET OF
BY DATE
CHKD DATE

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.	SUPERVISION						Superseded
.11	MANAGEMENT	45	M.Y	120,000	5,400,000		
.12	SUPERVISION	267	M.Y	100,000	26,700,000		
.13	ENGINEERING	310	M.Y.	95,000	29,450,000		
.14	OFFICE & CLERICAL	380	M.Y.	77,000	29,260,000		
.15	MISCELLANEOUS	253	M.Y.	72,000	18,190,000		
						109,000,000	

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87.02.03. Form 134A

AGRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	STAFF MOBILIZATION						
.21	SALARIES				3,000,000		
.22	TRAVEL				500,000		
.23	FREIGHT.				400,000		
.24	EXPENSE				700,000		
.25	TURNOVER ALLOWANCE				4400,000.		
						9,000,000	

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87.02.03. Form 184A

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

SHEET ____ OF ____

BY _____ DATE _____

CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.	STAFF VEHICLES.						
.31	CARS	70	C.Y	9677	700,000		
.32	PICK UP TRUCKS.	215	T.Y.	26000	5,600,000		
						6,300,000	

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87.02.03. Form 134A

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

BY _____ DATE _____

CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	YARD EQUIPMENT.						
.4	FORKLIFT TRUCKS FLAT BEDS TRACTORS. WELDING MACHINES PAVER TRUCK OPERATION & REPAIR					12000000	

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.	BUILDINGS & SHOPS.						
	SHOPS	125,000	S.F	107	13,375,000		
	MAINT. EQUIPMENT	1	LOT	-	2,000,000		
	OFFICES	15000	S.F.	146	2,190,000		
	TRAILERS	12	EA	70,000	840,000		
	REPAIR & MAINTENANCE	9	YR.	328000	2955,000		
						21,360,000	

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87.02.03. Form 134A

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	CONSUMABLES.						
.61	GENERAL CONSUMABLES	1	LOT		3,000,000		
.62	SMALL TOOLS.	1	LOT		5,000,000		
						8,000,000	

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST / UNIT	AMOUNT	TOTALS	REMARKS
900.	UTILITIES.						
.7	POWER DISTRIBUTION				13,080,000		
	LIGHTING				8,220,000		
	POTABLE WATER				1,030,000		
	TELEPHONE				2,600,000		
	TELEX.				5,200,000		
	RADIO.				120,000		
						30,250,000	

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87.02.03. Form 154A

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.	YARD SERVICES.						
.81	BARRIERS & SIGNS.	LOT	1	-	120,000		
.82	ROAD MAINTENANCE	108	M	46,400	5,080,000		
						5,200,000	

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87.02.03. Form 184A

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.	OFFICE EXPENSE						
.9	FURNITURE	316	ea	700	221,000		
	EQUIPMENT	LOT	ea		180,000		
	ENGRS. EQUIPMENT	LOT	ea		69,000		
	REPRODUCTION	LOT	ea		300,000		
	SUPPLIES	LOT	ea		1800,000		
	COMPUTER	LOT	ea.		630,000		
						3,200,000	

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.	GENERAL EXPENSE.						
.10	BONDS					-	
	INSURANCE DEDUCTABLES					1,600,000	
	INVENTORY LOSS					5,000,000	
	CLEAN UP					13,300,000	
	DEMOBILIZATION					6,000,000	
	BANKING COSTS					25,200,000	
	INCIDENTAL FREIGHT					5,400,000	
						57,000,000	

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ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900							
.11	OFFSITE TRAVEL	281,000	TR	29.10	8,200,000		
						8,200,000	

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900							
.12	ONSITE TRAVEL				B,200,000		
						B,200,000	

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87.02.03. Form 134A

ESTIMATE SUMMARY

ACRES

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.							
:13	Visitor Mgt. ALL.				400,000		
						400,000	

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87.02.08. Form 134A

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	SALVAGE (INDIRECTS)						
.14	VEHICLES MISC EQUIP. CONSUMABLES PLANT YARD FURNITURE BUILDINGS MAINTENANCE SUM.					10,000,000	

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ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.	Home Office Support.						
	Contracts Managers.				3,900,000		
	Procurement				2,000,000		
	Industrial Relations				3,100,000		
	Support Personnel				7,000,000		
	Travel				700,000		
	Expense				300,000		
	Communications				500,000		
	Safety				200,000		
	Job Incentives				1100,000		
	Office Utilities etc				1700,000		
						20,500,000	

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ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	CONTRACTOR'S FEES.						
		$ X MILLION	%				
.20	DIRECTS:						
	LABOUR	450	10		45,000,000		
	MATERIAL	406	3		12,000,000		
	PLANT.	276	.6		16,000,000		
	INDIRECTS:						
	SUPERVISION	109	20		21,800,000		
	FACILITIES.	333	6.5		21,700,000		
	H.O. SUPPORT.	20.5	10		2,000,000		
						118,500,000	

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
	Contingency					101,890,000	ie ADD 1.890,000 To $750 To .7 190 To .5 890
	$ other Roundup Needed						

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87.02.03. Form 134A

Calculations
SUBJECT

By _____ Date _____ Project No. P5700
Checked _____ Date _____ Calculation No. _____
Page ___ of ____

Rev	By	Checked

— SUSITNA STUDY —

WATANA DAM LOCATION

ESTIMATE OF A CONTRACTORS' INDIRECTS.

Rev	By	Checked

EXPLANATORY NOTE:

- THE ESTIMATE TOTAL, IN CURRENT U.S. DOLLARS @ $ 398 MILLION, WAS DEVELOPED ON THE BASIS OF JUDGEMENT OF SUPERVISORY PERSONNEL AND A PRELIM. SCHEDULE.

- ONLY CIVILS HAVE BEEN CONSIDERED.

Rev	By	Checked

1. D. $\Sigma_{(i)}$

DMFD	W.	508	924	1433
IAV.	W	398	924	1322.
		43%		

D.C.

Calculations
SUBJECT

AFA - WATANA

By IAJ. Date Jan 82
Checked ____ Date ____
Project No. P5700
Calculation No. ____
Page ___ of ___

Rev	By	Checked

W.

CONTRACT PACKAGE No. 8, 9, Total.

| | | |

ACRES

Calculations

SUBJECT

By _____ Date _____ Project No. _____

Checked _____ Date _____ Calculation No. _____

Page ___ of ___

Rev	By	Checked

Contract No	3	7	8	9	DC	W.
H.Y.	64	469	496	114.	1189.	1143
$	4,410,000	32,310,000	34,200,000	7,850,000		

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60.04.03 Form 148B

ACRES

Calculations

SUBJECT

By _____ Date _____ Project No. _____

Checked _____ Date _____ Calculation No. _____

Page ___ of ___

CONTRACT Nº	3		7		8		9	
DURATION	2		8.0		6.5		3.5	
	#	MY	#	MY	#	MY		
RM	1		1		1		1	
AM	1		1		1		1	
FS		(5) 14		(13) 101		(30) 190.5		(7) 22.75
FE	4		9		9		5	
QA	1		1		1		1	
OE	1		1		1		1	
CE	2		2		2		2	
A	1		7		7		1	
T.K.	4		6		6		4	
P	1		1		1		1	
TEL			1		1			
PR.			1		1			
Sec.	1		3		3		1	32.5 113.75
S.	2		2		3		2	
F.A.			2		2			
WH	5		7		7		5	
MM.	1		1		1		1	
		64		469		496		
	32		59		76			

Rev	By	Checked

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60.04.03 Form 148B

ACRES **Calculations**
SUBJECT

By _____ Date 4/4 Project No. _____
Checked _____ Date _____ Calculation No. _____
Page ___ of ___

Rev	By	Checked

W.

CONTRACT C3

	SUPERINTENDENTS (SD)			SUPERVISORS (SP).		
GENERAL	1	x	2			
DEPUTY	1	x	2			
EXCAV.	1	x	1.5	2	x	1.5
CONCRETE	1	x	1.3	2	x	1.3
COFFERDAM.	1	x	1.0	2	x	1.0
	7.0			7.0		Σ 14.0

CONTRACT C7

	SUPERINTENDENTS.						SUPERVISORS.					
	A	B	C	D	E	Σ (M.Y.)	A	B	C	D	E	Σ
GENERAL						8						-
DEPUTY						8						-
EXCAVATION	2.5	2	2.5	1	1	9						18
FILL	4.5	.75		1.5		6.75						13.5
CONCRETE	-		2.5		1	3.5						7.
MECH.	-		2		1	3						6
ELECT.	-		2		1	3						6
ELECTRIC.	-		2		1	3						6
	44.25											56.5

Σ 101

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Calculations
SUBJECT

By _____ Date _____ Project No. _____
Checked _____ Date _____ Calculation No. _____
Page ___ of ___

Rev	By	Checked

W.

CONTRACT CB

	SUPERINTENDENTS I	P	PM	TG	SC	Σ	SUPERVISORS Σ
GENERAL						7.5	
DEPUTY						7.5	
ROCK	1	1.75	1.75	1	1.5	7.0	
CONCRETE	2	2	4	1	1.5	10.5	
CAEP	2	2	4	1	1.5	10.5	
RIGG	1	2			3.5	6.5	
MECH	1	2	4	2		9.0	
ELECT.	1	2	4	2		9.0	
T.C. INST (M)						3.5	
" INST (E)						3.5	
						73.5	117

Σ = 190.5

CONTRACT C9

	Σ	S.P.
GENERAL	3.5	
DEPUTY	3.5	
ELECH. & FILL	1.5	
Concrete	.75	
Mech.	1.5	
Elect.	1.5	
	12.25	10.5

Σ = 22.75

SF

ACRES

Calculations

SUBJECT APA.

By IAJ Date Jan 82

Checked ____ Date ____

Project No. P5700

Calculation No. ____

Page ___ of ___

Rev	By	Checked

STAFF MOBILIZATION

CONTRACT Nº	3	7	8	9
TOTAL STAFF AVE.	32	59	76	32
B-1 PROPORTION FOR D.C. SHEETS.	640,000	1,180,000	1520000	640,000
TO.	(30) 192,000	(210) 2,478,000	(1.95) 2964000	(70) 448,000
	$ 830,000	$ 3660,000	$ 4,480,000	1,090,000

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60.04.03 Form 148B

ACRES

Calculations

SUBJECT APA

By IAJ Date Jan 82 Project No. P5700

Checked ____ Date ____ Calculation No. ____

Page ___ of ___

Rev	By	Checked

w)

STAFF VEHICLES.

CONTRACT No	3	7	8	9			
DURATION	2	8	6.5	3.5			
CAR YEARS	8	32	26	14			
P.U. TRUCKS.							
GEN. SUP.		8	7.5	3.5			
DEP. SUP.		8	7.5	3.5			
MASTER MECH.		8	7.5	3.5			
SUPERINTENDS.		28.25	58.5	5.3			
SUPERVISORS.		~~28.25~~ 37	58.5	5.3			
	13	90	139.5	21.1			
CARS	58,800	235,000	191,000	103,000			
P.U. TRUCKS.	280,200	1942,000	3010,000	455,000			
$	340,000	$ 2,180,000	$ 3,200,000	$ 560,000			
%L ~	1.15	1.01	1.40	1.07			

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60.04.03 Form 148B

ACRES

Calculations

SUBJECT APA

By IAJ Date Jan 82 Project No. P5700

Checked ____ Date ____ Calculation No. ____

Page ___ of ___

Rev	By	Checked

w)

MISC. EQUIPMENT.

CONTRACT NO	3	7	8	9
DURATION	2	8	6.5	3.5
	2,240,000	8968000	7,287,000	3,924,000
REVISE TO 4% LAB.	1,176,000	8,616,000	9,120,000	2,093,000
	1,180,000	8,620,000	9,120,000	2,100,000
	R.O.			

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60.04.03 Form 148B

ACRES

Calculations

SUBJECT APA

By IAV Date Jan 82 Project No. P5700

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4)

BUILDINGS.

CONTRACT No.	3	7	8	9
DURATION	2	8	6.5	3.5
BUILDING AREAS.				
MAIN SHOP	5000	12000	9000	5000
TIME OFFICE	100	200	200	100
WAREHOUSE	2000	10000	10000	2000
TOOL SHOP	200	200	200	200
CARP SHOP	600	2000	2000	600
DRILL SHOP	400	400	600	400
EXPL. MAG.	800	400	1200	400
TOILETS.	400	1600	1600	800
Bld. COST	570,000	1,514,000	1,386,000	590,000
EQUIPMENT COST	198,000	298,000	248,000	198,000
OFFICE COST	198,000	324,000	342,000	198,000
TRAILER COST	60,000	120,000	180,000	60,000
	1,026,000	2,256,000	2156000	1,046,000
REPAIR & MAINT.	103,000	902,000	701,000	183,000
TOTAL.	1,130,000	3,160,000	2,860,000	1,230,000

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SUBJECT

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FIELD OFFICE & TRAILERS.

CONTRACT No	3	7	8	9
AVE. OFF. STAFF	27	46	50	25
AVE SUPER STAFF	5	13	26	7
TOTAL	32	59	76	32
LESS SHIFT SUPERV.	(9)	(16)	(25)	(9)
NET PERSONS OFF.	23	43	51	23
No IN TRAILERS	6	12	18	6
NET SPACE FOR No	17	31	33	17
FIXED AREA	300	300	300	300
AREA FOR PERSONNEL	1020	1860	1980	1020
A) OFFICE AREA ⌀	1320	2160	2280	1320
B) TRAILERS (PLUS)	1	2	3	1
CHECK ⌀ / TOTAL.	60	57	54	60

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Calculations

SUBJECT

APA

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w)

CONSUMABLES

CONTRACT	NO	3	7	8	9
DURATION		2	8	6.5	3.5
$		560,000	4040,000	7,620,000	910,000

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ACRES

Calculations

SUBJECT APA

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b)

PLANT & UTILITIES.

CONTRACT No	3		7		8		9	
DURATION	2		8		6.5		3.5	
	F	M	F	M	F	M	F	M
POWER	200	45	570	45	570	45	200	45
LIGHTING		30		30		60		30
AIR	-	-		16		16		8
WATER	100		291		291		50	
POT WATER		1		2		2		1
TELEPHONE	1	2	1	2	1	2	1	2
TELEX	5	2	5	2	5	2	5	2
FUEL DEPOT	76		76		76		76	
TEMP HEAT.		15		15		15		15
RADIO	6		6		6		6	
SUB. TOTAL	2,668,000		11,701,000		12025000		4664,000	
HEATING FUEL	800,000		8,260,000		6280000		1340,000	
TOTAL	3,470,000		19,960,000		18,300,000		6,000,000	
% ~ L	12		9.3		8.02		11.5	

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ACRES

Calculations

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APA

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w)

Contractors Indirects (Heating).

Contract No	3	7	8	9
Buildings Area	11,100	29,800	27,950 ~~26,600~~	11,100
Rel. to 1.0	0.41	1.11	1.04	0.41
Seasons	2	8	6.5	3.5
Multiplier	0.82	8.88	6.75	1.44
Gallons	508,400	5,506,000	4,185,000	892,800
Cost	$760,000	$8,260,000	$6,280,000	1,340,000

6t

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ACRES

Calculations

SUBJECT

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W)

YARD SERVICES.

9	3.5	8.4	69,000	8,000	3,000	701,000
8	6.5	38.4	3,140,000	25,000	3,000	3,168,000
						3,170,000

CONTRACT NO	3	7			
DURATION	2	8			
TOTAL COST = $ 8,193					
% FEE CONTRACT.	8.5	44.7			
$	700,000	3,660,000			
AND BARRELEER	3,000	30,000			
SIGNS	3,000	3,000			
	706,000	3,693,000			
P.O.	710,000	3,690,000			

ACRES

Calculations

SUBJECT

APA

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w)

CONTRACTORS INDIRECTS (YARD SERVICES)

FROM D.C. EST. COST/YR $ 910,000

∴ FOR 9 YRS = $ 8,190,000

Calculations

SUBJECT APA

By IAN Date Jan '82 Project No. P5700

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OFFICE EXPENSE

9	3.5	113	81	243,000
8	6.5	496	357	1,071,000

Contract No		3		7
Duration		2		8
Staff M.Y.		64		469
Office M.Y.		46		337
Cost	$	138,000		1,011,000

ACRES

Calculations

SUBJECT A.P.A.

By IAJ Date Jan '82 Project No. P5700

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Rev	By	Checked

b) Contractors Indirects { General Expense }

Contract:	3 (2)	7 (8)	8 (6.5)	9 (3.5)
.1 Bonds	286,000	24,500,000	3,075,000	100,000
.2 Insurances	180,000	720,000	585,000	315,000
.3 Inventory Loss	63,000	426,000	506,000	199,000
.4 Incidental freight	194,000	826,000	704,000	368,000
.5 Clean-up	820,000	2,980,000	2,440,000	1,220,000
.6 Demobilization	158,000	1,035,000	1,228,000	320,000
.7 Financing.	698,000	6,543,000	2238000	1,119,000
	2,400,000	~~37,030,000~~	~~10,776,000~~	3,640,000
		47,000,000	19,755,000	

REVISED, AFTER reconciling WITH D.C. Est.

JJS. 26 Jan '82.

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FINANCING.

			3 (2)	7 (8)	8 (6.5)	9 (3.5)
MOBILIZATION FUNDS/D.C.		$	4,100,000	20,000,000	17,000,000	9,000,000
FINANCE COSTS	*		500,000	2,399,000	2,040,000	1,080,000
AVG. PAYMENT.		(%)	2.2	11.500	2.2	.250
3 M. delay/yr			99,000	518,000	99,000	11,000
Ex dur yrs.	*		198,000	4,144,000	198,000	39,000
TOTAL (* + *)			698,000	6,543,000	2,238,000	1119,000

Calculations
SUBJECT

By _____ Date _____ Project No. _____
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Calculations

SUBJECT

APA.

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b)

CONTRACTORS INDIRECTS (LABOUR TRAVEL).

PER D.C. PARAMETER.

AVERAGE TRIPS = 2 × 1400 × 8 × 5

= 112,000 TRIPS.

T.O. = 30,000

SUBS = 18,000

160,000 × 23.00 = $ 3,680,000

DISTRIBUTION.

C 3	160,000
7	1,970,000
8	1,100,000
9	450,000

92

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(iii)

TRANSPORTATION

CONTRACT	3	7	8	9
L $ x 10^6	66	215	228	52
DURATION.	2	8	6.5	3.5
AVE Nº MEN/SHIFT.	165	216	228	92.
PEAK	330	420	456	184
MISC.	30	40	44	16
	360	460	500	200

∴ TOTAL ≅ 1520 MEN PER SHIFT.

200 MEN/HR/BUS = 8 BUSES.

FROM	D.C.	COST	PER YEAR		= $ 920,000
			∴ 8 YRS		= $ 7,360,000
	YR	M/S	#	%	PRORATE $
C 3	2	165	330	8.5	= 626,000
7	8	216	1728	44.7	= 3290,000
8	6.5	228	1482	38.4	= 2826,000
9	3.5	92	322	8.4	= 618,000
			3862	100.0	7,360,000

Calculations

SUBJECT APA

By IAJ Date Jan '82 Project No. P5700

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w.)

CONTRACTORS INDIRECTS. (H.O. SUPPORT).

CONTRACT NO		3	7	8	9
DURATION		(2)	(8)	(6.5)	(3.5)
FIXED		234,000	468,000	468,000	234,000
ANNUAL.		812,000	3248,000	2639,000	1421,000
		1046,000	3716,000	3107,000	1,655,000
CHECK. $/USER.		16,400	7900	6200	14,600
DC/YR.	→	800,000	800,000	1,000,000	1,000,000
Σ.		1,600,000	6,400,000	6,500,000	3,500,000
%/TIC = HOW KNOW		3%	0.5	3.76	5
RAISE TO		3	1	3	3
		$1,600,000	11,000,000	5,200,000	2,100,000?

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Calculations
SUBJECT APA

By IAV Date Jan '82 Project No. P5700
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w)

Contract C3.

Div. 4 Tunnels.

332.2 - 25,916
- 15,722

41,689
10,252
1,365

$M

53,306 ——— (3)

Contract C7.

.3 Main Dam. 822,000
.4 + 45,000
.51 + 27,000
.52 + 116,000
.53 93,000

1,103,000 ——— (7)

Contract C8

.61	Intake	116,000
.7	Surge Ch.	10,700
.8	Tailrace	29,900
.9	Tailrace	17,200

172,800 ——— (8)

Contract C9

(?) Gulch. 70,000 ——— (9)

9

75

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ACRES

Calculations

SUBJECT A/A

By IAJ Date Jan 82 Project No. P5700

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b)

FEES

Contract No	3 (2)	7 (8)	8 (6.5)	9 (3.5)
A) D.C.	5.4		~ 18	~ 8.8
& B) Approx Value	48.5	1040.0	157	? ~~70~~ 65.
%	12%	4%		
=	5,800,000	40,000,000	18,000,000	8,000,000

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60.04.03 Form 148B

(Q) FEASIBILITY REPORT

DEVIL CANYON

SUSITNA HYDROELECTRIC PROJECT - P570009
CONTRACTORS' INDIRECTS
DEVIL CANYON

Date: 31-MAR-82
File: DCIND.DAT
Case: 1

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$ 000	$ 000	
900	CONTRACTORS' INDIRECTS						
.1	SUPERVISION						
.11	MANAGEMENT MANAGEMENT	30.8	MAN/YR	111,000.00	3,419		
					3,419		
.12	SUPERVISION SUPERVISION	141.9	MAN/YR	92,400.00	13,112		
					13,112		
.13	ENGINEERING ENGINEERING	188.4	MAN/YR	87,600.00	16,504		
					16,504		
.14	OFFICE & CLERICAL OFFICE & CLERICAL	228.5	MAN/YR	34,200.00	7,815		
					7,815		
.15	MISCELLANEOUS MISCELLANEOUS	134.6	MAN/YR	37,000.00	4,980		
					4,980		
					=========		
					45,829		
.2	STAFF MOBILIZATION						
.21	SALARIES SALARIES	1	LS	750,000.00	750		
					750		
.22	TRAVEL TRAVEL	1	LS	100,000.00	100		
					100		
.23	FREIGHT FREIGHT	1	LS	250,000.00	250		
					250		
.24	EXPENSE EXPENSE	1	LS	666,000.00	666		
					666		
.25	TURNOVER ALLOWANCE TURNOVER ALLOWANCE	1	LS	2,100,000.00	2,100		
					2,100		
					=========		
					3,866		

SUSITNA HYDROELECTRIC PROJECT - P570009
CONTRACTORS' INDIRECTS
DEVIL CANYON

date: 31-MAR-82
file: DCIND.DAT
page: 2

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$.000	$ 000	
.3	STAFF VEHICLES						
.31	CARS						
	CARS	62	CAR/YR	7,420.00	460		
					460		
.32	PICK-UP TRUCKS						
	PICK-UP TRUCKS	92	TRK/YR	21,500.00	1,978		
					1,978		
					2,438		
.4	YARD EQUIPMENT						
.41	FORK LIFT TRUCKS						
	FORK LIFT TRUCKS	1	LS	8,000,000.00	8,000		
					8,000		
.42	FLAT BEDS						
	FLAT BEDS	0	LS	0.00	0		IN ABOVE
					0		
.43	TRACTORS						
	TRACTORS	0	LS	0.00	0		IN ABOVE
					0		
.44	WELDING MACHINES						
	WELDING MACHINES	0	LS	0.00	0		IN ABOVE
					0		
.45	PANEL TRUCK						
	PANEL TRUCK	0	LS	0.00	0		IN ABOVE
					0		
.46	OPERATION & REPAIR						
	OPERATION & REPAIR	0	LS	0.00	0		IN ABOVE
					0		
					8,000		
.5	BUILDINGS & SHOPS						
.51	SHOPS						
	SHOPS	90,000	SF	60.00	5,400		
					5,400		

SUSITNA HYDROELECTRIC PROJECT - P570009
CONTRACTORS' INDIRECTS
DEVIL CANYON

date: 31-MAR-82
file: DCIND.DAT
page: 3

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$ 000	$ 000	
	.52 MAINTENANCE EQUIPMENT						
	MAINTENANCE EQUIPMENT	1	LS	1,300,000.00	1,300		
					1,300		
	.53 OFFICES						
	OFFICES	13,000	SF	115.00	1,495		
					1,495		
	.54 TRAILERS						
	TRAILERS	10	EACH	60,000.00	600		
					600		
	.55 REPAIR & MAINTENANCE						
	REPAIR & MAINTENANCE	7	YEAR	242,800.00	1,700		
					1,700		
					10,495		
	.6 CONSUMABLES						
	.61 SMALL TOOLS						
	SMALL TOOLS	1	LS	4,230,000.00	4,230		
					4,230		
	.62 GENERAL CONSUMABLES						
	GENERAL CONSUMABLES	1	LS	3,480,000.00	3,480		
					3,480		
					7,710		
	.7 UTILITIES						
	.71 POWER DISTRIBUTION						
	POWER DISTRIBUTION	1	LS	9,600,000.00	9,600		
					9,600		
	.72 LIGHTING						
	LIGHTING	1	LS	6,000,000.00	6,000		
					6,000		
	.73 POTABLE WATER						
	POTABLE WATER	1	LS	400,000.00	400		
					400		
	.74 TELEPHONE						
	TELEPHONE	1	LS	1,600,000.00	1,600		
					1,600		

FOLD LENGTH 12 11 8.5 8 AUTO MANUAL FEED

0 0 0 2 5 8

SUSITNA HYDROELECTRIC PROJECT - P570009
CONTRACTORS' INDIRECTS
DEVIL CANYON

date: 31-MAR-02
file: DCIND.DAT
page: 4

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$ 000	$ 000	
	.75 TELEX						
	TELEX	1	LS	2,800,000.00	2,800		
					2,800		
	.76 RADIO						
	RADIO	1	LS	100,000.00	100		
					100		
					20,500		
	.8 YARD SERVICES						
	.81 BARRIERS & SIGNS						
	BARRIERS & SIGNS	1	LS	3,370,000.00	3,370		
					3,370		
	.82 ROAD MAINTENANCE						
	ROAD MAINTENANCE	0	LS	0.00	0		IN ABOVE
					0		
					3,370		
				430.00	USED FOR WAT		
	.9 OFFICE EXPENCE						
	.91 FURNITURE						
	FURNITURE	220	EACH	~~431.80~~	95		
					75		
	.92 EQUIPMENT						
	EQUIPMNENT	1	LS	80,000.00	80		
					80		
	.93 ENGINEER'S EQUIPMENT						
	ENGINEERS'S EQUIPMNENT	1	LS	35,000.00	35		
					35		
	.94 REPRODUCTION						
	REPRODUCTION	1	LS	150,000.00	150		
					150		
	.95 SUPPLIES						
	SUPPLIES	1	LS	540,000.00	540		
					540		
	.96 COMPUTER						
	COMPUTER	1	LS	300,000.00	300		
					300		
					1,200		

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SUSITNA HYDROELECTRIC PROJECT - P570009
CONTRACTORS' INDIRECTS
DEVIL CANYON

date: 31-MAR-82
file: DCIND.DAT
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ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$ 000	$ 000	
.10	GENERAL EXPENSES						
.101	BONDS						
	BONDS	0	LS	0.00	0		BY OWNER
					0		
.102	INSURANCE DEDUCTABLE						
	INSURANCE DEDUCTABLE	1	LS	360,000.00	360		
					360		
.103	INVENTORY LOSS						
	INVENTORY LOSS	1	LS	1,400,000.00	1,400		
					1,400		
.104	CLEAN-UP						
	CLEAN-UP	1	LS	8,470,000.00	8,470		
					8,470		
.105	DEMOBILIZATION						
	DEMOBILIZATION	1	LS	3,500,000.00	3,500		2% LABOR
					3,500		
.106	INCIDENTAL FREIGHT						
	INCIDENTAL FREIGHT	1	LS	1,900,000.00	1,900		
					1,900		
					=========		
					15,630		
.11	OFFSITE TRAVEL						
.111	OFFSITE TRAVEL						
	OFFSITE TRAVEL	1	LS	3,200,000.00	3,200		
					3,200		
					=========		
					3,200		
.12	ON-SITE TRANSPORTATION						
.121	BUS OPERATION						
	BUS OPERATION	~~5~~ 1	~~BUS/YR~~ LS	~~622,000.00~~ 3110	3,110		
					3,110		
					=========		
					3,110		

SUSITNA HYDROELECTRIC PROJECT - P570009
CONTRACTORS' INDIRECTS
DEVIL CANYON

date: 31-MAR-85
file: DCIND.DAT
page: 6

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$ 000	$ 000	
.13	VISITORS MEAL ALLOWANCE						
.131	VISITORS MEAL ALLOWANCE						
	VISITORS MEAL ALLOWANCE	1	LS	260,000.00	260		
					260		
					=========		
					260		
.14	SALVAGE						
.141	VEHICLES						
	VEHICLES	1	LS	-25,000.00	-25		
					-25		
.142	PLANT						
	PLANT	1	LS	-480,000.00	-480		
					-480		
.143	FURNITURE						
	FURNITURE	1	LS	-80,000.00	-80		
					80		
.144	BUILDINGS						
	BUILDINGS	1	LS	-1,575,000.00	-1,575		
					-1,575		
.145	MAINTENANCE EQUIPMENT						
	MAINTEWNANCE EQUIPMENT	1	LS	-240,000.00	-240		
					-240		
					=========		
					-2,400		
.15	HOME OFFICE SUPPORT						
.151	CONTRACT MANAGERS						
	CONTRACT MANAGERS	1	LS	2,450,000.00	2,450		
					2,450		
.152	PROCUREMENT						
	PROCUREMENT	1	LS	1,320,000.00	1,320		
					1,320		
.153	INDUSTRIAL RELATIONS						
	INDUSTRIAL RELATIONS	1	LS	1,960,000.00	1,960		
					1,960		

SEE MAT

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SUSITNA HYDROELECTRIC PROJECT - P570009
CONTRACTORS' INDIRECTS
DEVIL CANYON

date: 31-MAR-82
file: DCIND.DAT
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ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$ 000	$ 000	
	.154 SUPPORT PERSONNEL						
	SUPPORT PERSONNEL	1	LS	5,720,000.00	5,720		
					5,720		
	.155 TRAVEL						
	TRAVEL	1	LS	410,000.00	410		
					410		
	.156 EXPENSE						
	EXPENSE	1	LS	200,000.00	200		
					200		
	.157 COMMUNICATIONS						
	COMMUNICATIONS	1	LS	330,000.00	330		
					330		
	.158 REPORTS						
	REPORTS	1	LS	120,000.00	120		
					120		
	.159 JOB INCENTIVES						
	JOB INCENTIVES	1	LS	490,000.00	490		
					490		
	.15A OFFICE UTILITIES, ETC						
	OFFICE UTILITIES, ETC	1	LS	900,000.00	900		
					900		
					=========		
					13,900		
	.16 FINANCING						
	.161 CASH PENETRATION OF PROG. PAYMTS.						
	CASH PENETRATION OF PROGRESS PAYMENTS	1	LS	12,190,000.00	12,190		45 DAYS
					12,190		
	.162 "UP-FRONT" INDIRECT EXPENSES						
	"UP-FRONT" INDIRECT EXPENSES	1	LS	14,420,000.00	14,420		
					14,420		
	.163 HOLDBACK						
	HOLDBACK	1	LS	31,710,000.00	31,710		15% OF 10% OF CONTRACT VALUE.
					31,710		
					=========		
					58,320		

2 SP

85

FOLD LENGTH
12
11
8.5
8
AUTO
MANUAL
FEED

SUSITNA HYDROELECTRIC PROJECT - P570009
CONTRACTORS' INDIRECTS
DEVIL CANYON

date: 31-MAR-82
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ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT	TOTAL	REMARKS
				$	$ 000	$ 000	
.19	UNLISTED ITEMS						
.191	UNLISTED ITEMS						
	UNLISTED ITEMS	1	LS	1,000,000.00	1,000		
					1,000		
					1,000		
.20	CONTRACTOR'S FEE						
.201	DIRECTS						
	LABOR	1	LS	24,100,000.00	24,100		
	MATERIAL	1	LS	7,760,000.00	7,760		
	PLANT	1	LS	5,370,000.00	5,370		
					37,230		
.202	INDIRECTS						
	SUPERVISION	1	LS	9,620,000.00	9,620		
	FACILITIES	1	LS	9,180,000.00	9,180		
	HOME OFFICE SUPPORT	1	LS	1,350,000.00	1,350		
					20,150		
					57,380		

TOTAL PROJECT COST
$

253,000

81

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12
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MANUAL
FEED

MAR 1982

MAR 25 1982 AN-ABOD.

ACRES

ESTIMATE SUMMARY <SUMMARY>

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DEVIL CANYON APPROVED BY _____

JOB NUMBER P57009
FILE NUMBER _____
SHEET 1 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900.1	SUPERVISION					45,820,000	
.2	STAFF MOBILIZATION					3,860,000	
.3	STAFF VEHICLES					2,440,000	
.4	YARD EQUIPMENT					8,000,000	
.5	BUILDINGS & SHOPS					10,500,000	
.6	CONSUMABLES					7,710,000	
.7	UTILITIES					20,500,000	
.8	YARD SERVICES					3,370,000	
.9	OFFICE EXPENSE					1,200,000	
.10	GENERAL EXPENSE					15,630,000	
.11	OFFSITE TRAVEL					3,200,000	
.12	ON SITE TRANSPORT.					3,110,000	
.13	VISITORS MEAL ALLOW.					260,000	
.14	SALVAGE					(2,400,00)	CREDIT
.15	H.O. SUPPORT					13,900,000	
.16	FINANCING					58,320,000	
.19	UNLISTED ITEMS					1,000,000	ALLOWANCE
.20	CONTRACTORS FEE					57,380,000	
					$	253,800,000	

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MAR 24 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT D.C. APPROVED BY _____

JOB NUMBER 8570009
FILE NUMBER _____
SHEET 1 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.1	SUPERVISION						
.11	MANAGEMENT	30.8	M.Y.	111,000	3,420,000		
.12	SUPERVISION	141.9	M.Y.	92,400	13,110,000		
.13	ENGINEERING	198.4	M.Y	87,600	16,504,000		
.14	OFFICE & CLERICAL	228.5	M.Y.	34,200	7,810,500		
.15	MISCELLANEOUS	134.6	M.Y	37,000	4,980,000		
						45,824,000	

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ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P5700-7
FILE NUMBER _____
SHEET 2 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900,2	STAFF MOBILIZATION.						
.21	SALARIES	1	SUM	LS	750,000		
.22	TRAVEL	1	SUM	LS	100,000		
.23	FREIGHT	1	SUM	LS	250,000		
.24	EXPENSE	1	SUM	LS	660,000		
.25	TURNOVER ALLOWANCE	1	SUM	LS	2,100,000		ALLOWANCE ON ABOVE ITEMS
						3,860,000	

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MAR 17 1982

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ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 3 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900.	STAFF VEHICLES.						
.31	CARS	62	CAR-YR C.Y.	7,420	460,000		
.32	PICK UP TRUCKS	92	T.Y. TRK/YR	21,500	1,980,000		
						2,440,000	

C.Y. = CAR. YEAR
T.Y. = TRUCK YEAR

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MAR 2 4 1982

ESTIMATE SUMMARY

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CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P57009
FILE NUMBER _____
SHEET 4 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	YARD EQUIPMENT.						
.4	FORK LIFT TRUCKS	1	LS		8 000 000		IN ABOVE
	FLAT BEDS						"
	TRACTOR						"
	WELDING MACHINES.						"
	PANEL TRUCK						"
	OPERATION & REPAIR.						"
		1	LS SUM			8 000 000	

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MAR 2 4 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 5 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST / UNIT	AMOUNT	TOTALS	REMARKS
900.	BUILDINGS & SHOPS.						
.5	SHOPS	90,000	S.F.	60.00	5,400,000		
	MAINT. EQUIPMENT	1	SUM	LS	1,300,000		
	OFFICES	13,000	S.F.	115.00	1,500,000		
	TRAILERS	10	EA.	60,000	600,000		
	REPAIR & MAINTENANCE	7	YR.	242,800	1,700,000		
						10,500,000	

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MAR 24 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER PS70009
FILE NUMBER _____
SHEET 6 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900	CONSUMABLES						
.61	GENERAL CONSUMABLES	1	SUM	LS	3,480,000		
.62	SMALL TOOLS	1	SUM	LS	4,230,000		
						7,710,000	

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MAR 2 1 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER PS700 09
FILE NUMBER _____
SHEET 7 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	UTILITIES						
.7	POWER DISTRIBUTION	1	LS		9,600,000		
	LIGHTING				6,000,000		
	POTABLE WATER				400,000		
	TELEPHONE				1,600,000		
	TELEX				2,800,000		
	RADIO				100,000		
						20,500,000	

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MAR 24 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 8 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.	YARD SERVICES						
.81	BARRIERS & SIGNS	1	LS		3370000		
.82	ROAD MAINTENANCE						IN ABOVE
		1	SUM			3,370,000	

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MAR 24 1982

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 9 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST / UNIT	AMOUNT	TOTALS	REMARKS
900	OFFICE EXPENSE						
.9	FURNITURE	220	EA	431.80	95,000		
	EQUIPMENT	1	SUM	LS	80,000		
	ENGR. EQUIPMENT	1	SUM	LS	35,000		
	REPRODUCTION	1	SUM	LS	150,000		
	SUPPLIES	1	SUM	LS	540,000		
	COMPUTER	1	SUM	LS	300,005		
						1,200,000	

MAR 24 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 16 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.	GENERAL EXPENSE						
.10	BONDS	0		LS	-		BY OWNER
	INSURANCE DEDUCTABLE	1	SUM	LS	360,000		
	INVENTORY LOSS	1	SUM	LS	1,400,000		
	CLEAN UP	1	SUM	LS	8,470,000		
	DEMOBILISATION	1	SUM	LS	3,500,000		2% LABOUR
	~~BARRIER CORP.~~				-		COVERED 900.16/.17/.18
	INCIDENTAL FREIGHT	1	SUM	LS	1,900,000		
						15,630,000	

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MAR 1 1982

ESTIMATE SUMMARY

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CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 11 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST / UNIT	AMOUNT	TOTALS	REMARKS
900							
.11	OFF-SITE TRAVEL	1	SUM	LS		3,200,000	

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MAR 24 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 12 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900							
.12	ON SITE TRANSPORTATION						
	BUS OPERATION	5	BUS/YR B-Y	622,000		3,110,000	
	B.Y. = BUS-YEARS						

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MAR 2 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P570009

FILE NUMBER _____

SHEET 13 OF _____

BY D.H. MacDonald DATE _____

CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900							
.13	Visitors Meal Allowance	1	LS			260,000	

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MAR 2. 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 14 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	SALVAGE (MARKETS)						
.14	VEHICLES	1	SUM	LS	25,000		—
	MISC. EQUIP.				—		
	CONSUMABLES				—		
	PLANT	1	SUM	LS	480,000		—
	YARD				—		
	FURNITURE	1	SUM	LS	80,000		—
	BUILDINGS	1	SUM	LS	1,575,000		
	MAINTENANCE EQUIPMENT	1	SUM	LS	240,000		
						(2,400,000)	CREDIT

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MAR 2 . 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P5700 09
FILE NUMBER _____
SHEET 15 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900.	HOME OFFICE SUPPORT.						
.15	CONTRACT MANAGERS	1	LS ~~SUM~~		2,450,000	+	
	PROCUREMENT				1,320,000	+	
	INDUSTRIAL RELATIONS				1,960,000	+	
	SUPPORT PERSONNEL				5,720,000		
	TRAVEL				410,000	-	
	EXPENSE				200,000	-	
	COMMUNICATIONS				330,000	-	
	REPORTS				120,000	-	
	JOB INCENTIVES				490,000	-	
	OFFICE UTILITIES etc				900,000	-	
						13,900,000	

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ST. TE. TS. Form 1184A

MAR 2 1 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC. APPROVED BY _____

JOB NUMBER P57000 9
FILE NUMBER _____
SHEET 16 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
400.16	FINANCING						
	CASH PENETRATION OF PROG. PAYMTS	1	~~SUM~~	LS	12,190,000		45 days
	"UP-FRONT" INDIRT EXPENSES	1	SUM	LS	14,420,000		
	HOLDBACK	1	SUM	LS	31,710,000		15% to MAX. OF 10% of CONTRACT VALUE.
						58,320,000	

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ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT D.C APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 17 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900							
.19	UNLISTED ITEMS	1	LS			1,000,000	ALLOWANCE

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ESTIMATE SUMMARY

ACRES

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT D.C. APPROVED BY _____

JOB NUMBER P570009
FILE NUMBER _____
SHEET 18 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	CONTRACTOR'S FEE.						
.20	DIRECTS:						
	LABOUR	1	LS		24 100 000		
	MATERIAL	1	LS		7 760 000		
	PLANT	1	LS		5 370 000		
	INDIRECTS						
	SUPERVISION	1	LS		9 620 000		
	FACILITIES	1	LS		9 180 000		
	H.O. SUPPORT	1	LS		1 350 000		
						57,380,000	

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FORM NO. 152 REV. 1

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CONTRACT

	.16 CASH PENETRATION	.17 UP FRONT INDIRECTS	.18 HOLDBACK	.20 CONT FEES
C1	780	440	950	3780
C4	800	360	550	3850
C7	3910	6750	21130	17900
C8	2050	1890	1280	9690 ~~5270~~
C9	3640	4080	5060	17070
C10	1010	900	2740	5090
	12 190	14 420	31 710	57380
			58 320	57380

per attached

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Calculations

SUBJECT: SUMMARY DEVIL CANYON ~~FE~~ FINANCING SUMMARY

JOB NUMBER

FILE NUMBER

SHEET OF

BY DATE 3/31/82

APP DATE

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ACRES

ESTIMATE SUMMARY CONTRACT C1

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P570099
FILE NUMBER _____
SHEET 16 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	FINANCING						
.16	CASH PENETRATION OF PROG. PAYMTS	1	SUM		780,000		45 days
.17	"UP-FRONT" INDIRECT EXPENSES	1	SUM		440,000		
.18	HOLDBACK	1	SUM		950,000		15% to MAX. of 10% of Contract Value.
						2,170,000	

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MAR 1982

ESTIMATE SUMMARY

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CLIENT _____ TYPE OF ESTIMATE _____

PROJECT D.C APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET 17 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900	CONTRACTOR'S FEE.						
		~~X~~ MILLIONS	%				
.20	DIRECTS:						
	LABOUR	1 290	SUM 15		1580 000 ~~30,000,000~~		
	MATERIAL	1 494	SUM 5		510 000 ~~9,700,000~~		
	PLANT	1 62	SUM 10		350 000 ~~6,700,000~~		
	INDIRECTS						
	SUPERVISION	1 60	SUM 20		640 000 ~~12,000,000~~		
	FACILITIES	1 177	SUM 6.5		610 000 ~~11,600,000~~		
	H.O. SUPPORT.	1 17	SUM 10		90 000 1,700,000		
						~~71,700,000~~ 3,780,000	

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MAR 23 1982

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ESTIMATE SUMMARY CONTRACT C4

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P570JJ9
FILE NUMBER _____
SHEET 16 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	FINANCING						
.16	CASH PENETRATION OF PROG. PAYMTS				800,000		45 days
.17	"UP-FRONT" INDIRECT EXPENSES				360,000		
.18	HOLDBACK				550,000		15% to MAX. of 10% of Contract Value.
						1,710,000	

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ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT D.C APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET 17 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900	CONTRACTOR'S FEE.						
		~~$x MILLION~~	~~%~~				
.20	DIRECTS:						
	LABOUR	1 ~~200~~	SUM ~~15~~		1610 000 ~~30,000,000~~		
	MATERIAL	1 ~~194~~	SUM ~~5~~		520 000 ~~9,700,000~~		
	PLANT	1 ~~67~~	SUM ~~10~~		360 000 ~~6,700,000~~		
	INDIRECTS						
	SUPERVISION	1 ~~60~~	SUM ~~20~~		650 000 ~~12,000,000~~		
	FACILITIES	1 ~~177~~	SUM ~~6.5~~		620 000 ~~11,600,000~~		
	H.O. SUPPORT.	1 ~~17~~	SUM ~~10~~		40 000 ~~1,700,000~~		
						~~71,700,000~~ 3,850,000	

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MAR 23 1982

MAR 21 1982

ACRES

ESTIMATE SUMMARY CONTRACT C7

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P57000 4
FILE NUMBER _____
SHEET 16 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST / UNIT	AMOUNT	TOTALS	REMARKS
900	FINANCING						
.16	CASH PENETRATION OF PROG. PAYMTS	1	SUM		3,910,000		45 days
.17	"UP-FRONT" INDIRECT EXPENSES	1	SUM		6,750,000		
.18	HOLDBACK	1	SUM		21,130,000		15% TO MAX. OF 10% OF CONTRACT VALUE.
						31,790,000	

87.02.03. Form 134A

MAR 2 1982

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ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT D.C APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET 17 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900	CONTRACTOR'S FEE.	~~14 Millions~~	%				
.20	DIRECTS:						
	LABOUR	1 ~~200~~	SUM ~~15~~		7590 000 ~~3000000~~		
	MATERIAL	1 ~~144~~	SUM ~~5~~		2 420 000 ~~2700000~~		
	PLANT	1 ~~67~~	SUM ~~10~~		1 670 000 ~~6700000~~		
	INDIRECTS						
	SUPERVISION	1 ~~60~~	SUM ~~20~~		3 000 000 ~~12000000~~		
	FACILITIES	1 ~~177~~	SUM ~~6.5~~		1800 000 ~~4600000~~		
	H.O. SUPPORT	1 ~~17~~	SUM ~~10~~		420 000 ~~1700000~~		
						~~71700000~~ 17,900,000	

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ACRES

ESTIMATE SUMMARY CONTRACT C8

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P57009
FILE NUMBER _____
SHEET 16 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900	FINANCING						
.16	CASH PENETRATION OF PROG. PAYMTS	1	SUM		2,050,000		45 days
.17	"UP-FRONT" INDIRECT EXPENSES	1	SUM		1,890,000		
.18	HOLDBACK	1	SUM		1,280,000		15% TO MAX. OF 10% OF CONTRACT VALUE.
						5,220,000	

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ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT D.C. APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET 17 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	CONTRACTOR'S FEE.	~~4~~ Millions	%				
.20	DIRECTS:						
	LABOUR	1 200	SUM		4 050 000		
			~~75~~		~~3000000~~		
	MATERIAL	1 144	SUM		1 315 000		
			~~5~~		~~9 700 000~~		
	PLANT	1 67	SUM		910 000		
			10		~~6 700 000~~		
	INDIRECTS						
	SUPERVISION	1 60	SUM		1620 000		
			~~20~~		~~12 000 000~~		
	FACILITIES	1 177	SUM		1 570 000		
			6.5		~~11 600 000~~		
	H.O. SUPPORT	1 47	SUM		230 000		
			10		~~4 700 000~~		
						~~71 700 000~~ 9,690,000	

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MAR 23 1982

MAR 21 1982

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ESTIMATE SUMMARY

CONTRACT C9

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P570.09
FILE NUMBER _____
SHEET 16 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900	FINANCING						
.16	CASH PENETRATION OF PROG. PAYMTS	1	SUM		3,640,000		45 days
.17	"UP-FRONT" INDIRECT EXPENSES	1	SUM		4,080,000		
.18	HOLDBACK	1	SUM		5,060,000		15% TO MAX. OF 10% OF CONTRACT VALUE.
						12,780,000	

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MAR 2. 1982

AGRA

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT D.C APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET 17 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST / UNIT	AMOUNT	TOTALS	REMARKS
900	CONTRACTOR'S FEE.						
		$M. MILLIONS	%				
.20	DIRECTS:						
	LABOUR	1 ~~200~~	SUM ~~75~~		7 140 000 ~~30 000 000~~		
	MATERIAL	1 ~~144~~	SUM ~~75~~		2 310 000 ~~9 700 000~~		
	PLANT	1 ~~47~~	SUM 10		1 600 000 ~~6 700 000~~		
	INDIRECTS						
	SUPERVISION	1 ~~60~~	SUM 20		2 860 000 ~~12 000 000~~		
	FACILITIES	1 ~~177~~	SUM ~~65~~		2 763 000 ~~11 600 000~~		
	H.O. SUPPORT	1 ~~47~~	SUM 10		1 00 000 ~~4 700 000~~		
						~~71 700 000~~ 17,670,000	

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MAR 23 1982

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ACRES

ESTIMATE SUMMARY CONTRACT C10

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT DC APPROVED BY _____

JOB NUMBER P57000 9
FILE NUMBER _____
SHEET 16 OF _____
BY D.H. MacDonald DATE _____
CHKD D.H. MacDonald DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST / UNIT	AMOUNT	TOTALS	REMARKS
900	FINANCING						
.16	CASH PENETRATION OF PROG. PAYMTS	1	SUM		1,010,000		45 days
.17	"UP-FRONT" INDIRECT EXPENSES	1	SUM		900,000		
.18	HOLDBACK	1	SUM		2,740,000		15% TO MAX. OF 10% OF CONTRACT VALUE.
						4,650,000	

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ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT D.C APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET 17 OF _____
BY D.H. MacDonald DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900	CONTRACTOR'S FEE.	~~4%~~ 5%	%				
.20	DIRECTS:						
	LABOUR	1 200	SUM		2130 000		
			~~75~~		~~3,000,000~~		
	MATERIAL	1 194	SUM		690 000		
			5		~~8,200,000~~		
	PLANT	1 67	SUM		130 000		
			10		~~6,700,000~~		
	INDIRECTS						
	SUPERVISION	1 60	SUM		850 000		
			~~20~~		~~12,000,000~~		
	FACILITIES	1 177	SUM		820 000		
			6.5		~~11,600,000~~		
	H.O. OVERHEAD	1 17	SUM		120 000		
			~~10~~		~~1,700,000~~		
						~~11,700,000~~	
						5,090,000	

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MAR 16 82

ESTIMATE SUMMARY

ACRES

CLIENT D.C

PROJECT INDIRECTS – CIVIL

TYPE OF ESTIMATE

APPROVED BY

JOB NUMBER

FILE NUMBER

SHEET 1 OF

BY D.H. [illegible] DATE

CHKD DATE

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT $10^c	TOTALS $10^c	REMARKS
900.1	SUPERVISION				47.90		
.2	MOB				4.97		
.3	VEH				2.44		
.4	MISC. EQUIP				8.07		
.5	TEMP BLDG				10.50		
.6	CONSUMABLES				6.70		
.7	UTILITIES				20.60		
.8	YARD SERVICES				3.37		
.9	OFFICE EXP				1.60		
.10	GEN EXP				15.88		
.11	TRAVEL				3.20		
.12	ON-SITE TRANSP.				3.11		
.13	VISITORS MEALS				.26		
.14	SALVAGE				<2.40>		CREDIT
.15	H.W. SUPPORT				13.90		
[illegible]	PENETRATION FINANCE				[redacted]		
[illegible]	INDIRECT FINANCE				[redacted]		
[illegible]	HOLD BACK FINANCE				[redacted]		
.20	FEE				57.40	255.83	

MAR 22 1982

Superceded

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67.02.03. Form 134A

DEVIL CANYON.
CONTRACTOR'S INDIRECTS.

I.A.J. MAR 8 REC'D

		$1000		on spread sheet
FIELD SUPERVISION	1.25 x	47827	59783	60,000
STAFF MOBILIZATION		3986	6228	5,000
VEHICLES		2440	3812	3,000
MISC EQUIPMENT		8050	10062	10,000
TEMPORARY BUILDINGS		10500	13125	13,000
CONSUMABLES		3228	4035	4,000
UTILITIES		20732	25915	26,000
YARD SERVICES		3200	4000	4000
OFFICE EXPENSE		1200	1500	2000
GENERAL EXPENSE		27110	33887	33000
TRAVEL		3200	4000	4000
CAMP MEALS VISITORS		250	312	300
SITE BUS TRANSPORTATION		3110	3887	4000
SALVAGE		(3000)	(3750)	(3000)
H.O. SUPPORT		13900	17375	17000
FEE		57400	71755	71700
		203,133		254,000

$\frac{254,000}{203,133}$ = 1.25 factor for adjustment

To Be Added .16 Penetration Finance
.17 Indirect Finance
.18 Hold Back Finance

$58,370,000 also included in General Expense and must be deducted from that account.

However, Banking Costs in G.E. account is only $13,500,000.

$58,370,000
− 13,500,000
$44,870,000 This amount should be spread over other accounts as a direct percentage. All Estimate Summary Sheets prepared by N. Falls will have to be redone.

R. [illegible]

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C1

ACRES

ESTIMATE SUMMARY

CLIENT DEVIL CANYON

PROJECT

TYPE OF ESTIMATE

APPROVED BY

JOB NUMBER
FILE NUMBER
SHEET OF
BY DATE
CHKD DATE

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	SUPERVISION						
.11	MANAGEMENT	28	M.Y	120,000	3,360,000		
.12	SUPERVISION	131	M.Y	100,000	13,100,000		
.13	ENGINEERING	170	M.Y	95,000	16,150,000		
.14	OFFICE & CLERICAL	228	M.Y	77,000	17,550,000		
.15	MISCELLANEOUS	137	M.Y.	72000	9,840,000		
						60,000,000	

Superceded

MAR 15 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	STAFF MOBILIZATION.						
.21	SALARIES				1,700,000		
.22	TRAVEL				300,000		
.23	FREIGHT				200,000		
.24	EXPENSE				400,000		
.25	TURNOVER ALLOWANCE				2,400,000		
						5,000,000	

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MAR 15 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
900.	STAFF VEHICLES.						
.31	CARS	62	C.Y.	9677	600,000		
.32	PICK UP TRUCKS	92	T.Y.	26000	2400,000		
						3,000,000	

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MAR 15 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	YARD EQUIPMENT.						
.4	FORK LIFT TRUCKS FLAT BEDS TRACTOR WELDING MACHINES. PANEL TRUCK OPERATION & REPAIR.					10,000,000	

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MAR 15 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.	BUILDINGS & SHOPS.						
.5	SHOPS	90,000	S.F	107	6,500,000		
	MAINT. EQUIPMENT	1	LOT	-	1.600.000		
	OFFICES	13,000	S.F	146	1,900,000		
	TRAILERS	10	EA	70,000	700,000		
	REPAIR & MAINTENANCE	7	YR	328,000	2,300,000		
						13,000,000	

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MAR 15 1982

57.02.03. Form 134A

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	CONSUMABLES.						
.61	GENERAL CONSUMABLES	1	LOT		2,000,000		
.62	SMALL TOOLS.	1	LOT		2,000,000		
						4,000,000	

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MAR 15 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	UTILITIES						
.7	POWER DISTRIBUTION				12,000,000		
	LIGHTING				7,500,000		
	POTABLE WATER				500,000		
	TELEPHONE				2,000,000		
	TELEX				3,900,000		
	RADIO				100,000		
						26,000,000	

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MAR 15 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900.	YARD SERVICES.						
.81	BARRIERS & SIGNS.	LOT	1	-	100,000		
.82	ROAD MAINTENANCE	84	M	46,400	3900,000		
						4,000,000	

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MAR 15 1982

ESTIMATE SUMMARY

ACRES

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No..	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	OFFICE EXPENSE						
.9	FURNITURE	228	ea	700	160,000		
	EQUIPMENT	LOT	ea		130,000		
	ENGR. EQUIPMENT	LOT	ea.		60,000		
	REPRODUCTION	LOT	ea		250,000		
	SUPPLIES	LOT	ea		900,000		
	COMPUTER	LOT	ea.		500,000		
						2,000,000	

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MAR 15 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST / UNIT	AMOUNT	TOTALS	REMARKS
900.	GENERAL EXPENSE						
.10	BONDS				-		
	INSURANCE DEDUCTABLE				440,000		
	INVENTORY LOSS				1700,000		
	CLEAN UP				10 600,000		
	DEMOBILISATION				4260,000		
	BANKING COSTS				13500,000		
	INCIDENTAL FREIGHT				2500000		
						33,000,000	

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MAR 15 1982

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900							
.11	OFFSITE TRAVEL	137,000	TR	29.20	4,000,000		
						4,000,000	

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MAR 15 1982

ESTIMATE SUMMARY

ACRES

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900							
.12	ON SITE TRANSPORTATION						
	BUS OPERATION				4,000,000		
						4,000,000	

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MAR 15 1982

ESTIMATE SUMMARY

ACRES

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900							
.13	Visitors Meals Allow.				300,000		
						300,000	

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MAR 15 1982

87.02.03. Form 134A

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	SALVAGE (INDIRECTS)						
.14	VEHICLES				30000		
	MISC. EQUIP.				-		
	CONSUMABLES				-		
	PLANT				600,000		
	YARD				-		
	FURNITURES				100,000		
	BUILDINGS				1,970,000		
	MAINTENANCE EQUIPMENT.				300,000		
						(3,000,000)	

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MAR 15 1982

87.02.03. Form 134A

ACRES

ESTIMATE SUMMARY

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST / UNIT	AMOUNT	TOTALS	REMARKS
900.	HOME OFFICE SUPPORT.						
.15	CONTRACT MANAGERS				3,000,000		
	PROCUREMENT				1,600,000		
	INDUSTRIAL RELATIONS				2,400,000		
	SUPPORT PERSONNEL				7,000,000		
	TRAVEL				500,000		
	EXPENSE				250,000		
	COMMUNICATIONS				400,000		
	REPORTS				150,000		
	JOB INCENTIVES				600,000		
	OFFICE UTILITIES etc.				1100,000		
						17,000,000	

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MAR 15 1982

ESTIMATE SUMMARY

ACRES

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/ UNIT	AMOUNT	TOTALS	REMARKS
900	CONTRACTOR'S FEE.						
		7x MILLIONS.	%				
.20	DIRECTS:						
	LABOUR	200	15		30,000,000		
	MATERIAL	194	5		9,700,000		
	PLANT	67	10		6,700,000		
	INDIRECTS						
	SUPERVISION	60	20		12,000,000		
	FACILITIES	177	6.5		11,600,000		
	H.O. SUPPORT.	17	10		1,700,000		
						71,700,000	

MAR 15 1982

87.02.03. Form 134A

% TOTAL DIRECTS.	LABOUR	JOB MATERIALS	DIRECTS PERM. MATERIALS	EQUIPMENT OWNERSH.	EQUIPMENT OPERATION	TOTAL
13.00	38.09 %	10.31 %	19.24 %	14.63 %	17.73 %	100.00 %
1.08						
0.65						
2.16				% T.I.C.		% DIRECTS.
		DIRECTS				
2.82			LABOUR	24.56		
			MATERIAL	19.06		
0.86			EQUIPMENT	20.86		
					100.00	
5.64		INDIRECTS				
0.86			FIELD	23.12	35.80	
			HOME OFFICE	2.37	3.69	
0.43			FEE	10.03	15.55	
						55.04
7.16				100.00		
0.86						
0.86						
0.07						
<0.65>						
3.69						
16.55						
55.04						

I.A.J. MAR 9 Recd

P5700 - SUSITNA STUDY

DEVIL CANYON - CONTRACTOR'S INDIRECTS.

ITEM No	DESCRIPTION.		$ x 1000	% $ 257M	% DIRECT LABOUR
900.1	FIELD SUPERVISION	47.90	60000	23.35	34.15
.2	STAFF MOBILIZATION	4.97	5000	1.95	2.85
.3	STAFF VEHICLES	2.44	3000	1.17	1.71
.4	YARD EQUIPMENT	8.07	10000	3.89	5.69
.5	BUILDINGS AND SHOPS	10.50	13000	5.06	7.40
.6	CONSUMABLES	6.70	4000	1.55	2.28
.7	UTILITIES	20.60	26000	10.14	14.80
.8	YARD SERVICES	3.37	4000	1.55	2.28
.9	OFFICE FURNISHINGS	1.60	2000	0.78	1.14
.10	GENERAL EXPENSE	15.88	33000	12.84	18.78
.11	OFFSITE TRAVEL	3.20	4000	1.55	2.28
.13	ON SITE TRAVEL	3.11	4000	1.55	2.28
.12	MISC. MEALS ALLOWANCE	.26	300	0.12	0.17
	HAUL ROADS		-	-	-
.14	SALVAGE RECOVERY	2.40	⟨ 3000 ⟩	-	-
.15	HOME OFFICE SUPPORT	13.90	17000	6.61	9.67
.20	CONTRACTOR'S FEE	57.40	71700	27.89	40.81
	TOTAL	202.3	254000	100.00	146.29

If: 1.25

0002588

ACRES

From: Acres Consulting Services Ltd.
5259 Dorchester Road
Niagara Falls, Ontario
L2E 6W1

Date: March 29, 1982

Acres Job No.: P5700.09
AN-AB21

MAR 29 1982

To: Acres American Inc.
Liberty Bank Building
Main at Court
Buffalo, N.Y. 14202

Attention: Jim Plummer

Project: Susitna Hydroelectric Project

Subject: Devil Canyon Indirects

Description/Title	Drawing Number	Revision	No. of Each	Code
ORIGINAL DOCUMENTS Devil Canyon Direct Civil Costs Cash Flow by Contract Devil Canyon (Civil Works) Schedule & Cash Flow Summary Devil Canyon Financing Program Payments with backup Devil Canyon Contractor's Indirects including - - supervision - staff mobilization - staff vehicles - misc. equipment - consumables - plant & utilities - yard services - office expense - general expense Pages 1 to 18 of Watana Indirects Estimate Summary (photocopies)	(Pages 1 to 7)			

Codes
A — For Approval or Comment
B — For Construction
C — For Information
D — Drawings Reviewed, No Comment
E — Amend and Resubmit
F — Rejected. See Comments
G —

Copies Sent To

Yours very truly,

pm for Dave MacDonald

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DOCUMENT TRANSMITTAL

Sign and Return Part 2

60.11.01 FORM 1

MAR 29 1982

D.H. MacDonald MAR 18 1982

ACRES

Calculations

SUBJECT: DEVIL CANYON (CIVIL WORKS)

SCHEDULE & CASH FLOW SUMMARY YEAR

JOB NUMBER P570009.
FILE NUMBER
SHEET OF
BY DATE
APP DATE

LINE NO.	ITEM	DESCRIPTION	1995	1996	1997	1998	1999	2000	2001
1									
2									
3									
4									
5		80 400							
6									
7									
8									
9									
10		60 300							
11									
12									
13									
14									
15		40 200							
16									
17									
18									
19									
20		20 100							
21									
22									
23									
24									
25		0 0							
26									
27									
28									
29									
30									
31									
32									

ANNUAL $ 10^6

CUMULATIVE $ 10^6

ANNUAL

CUMULATIVE

60.04.01 Form 148A

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ACRES

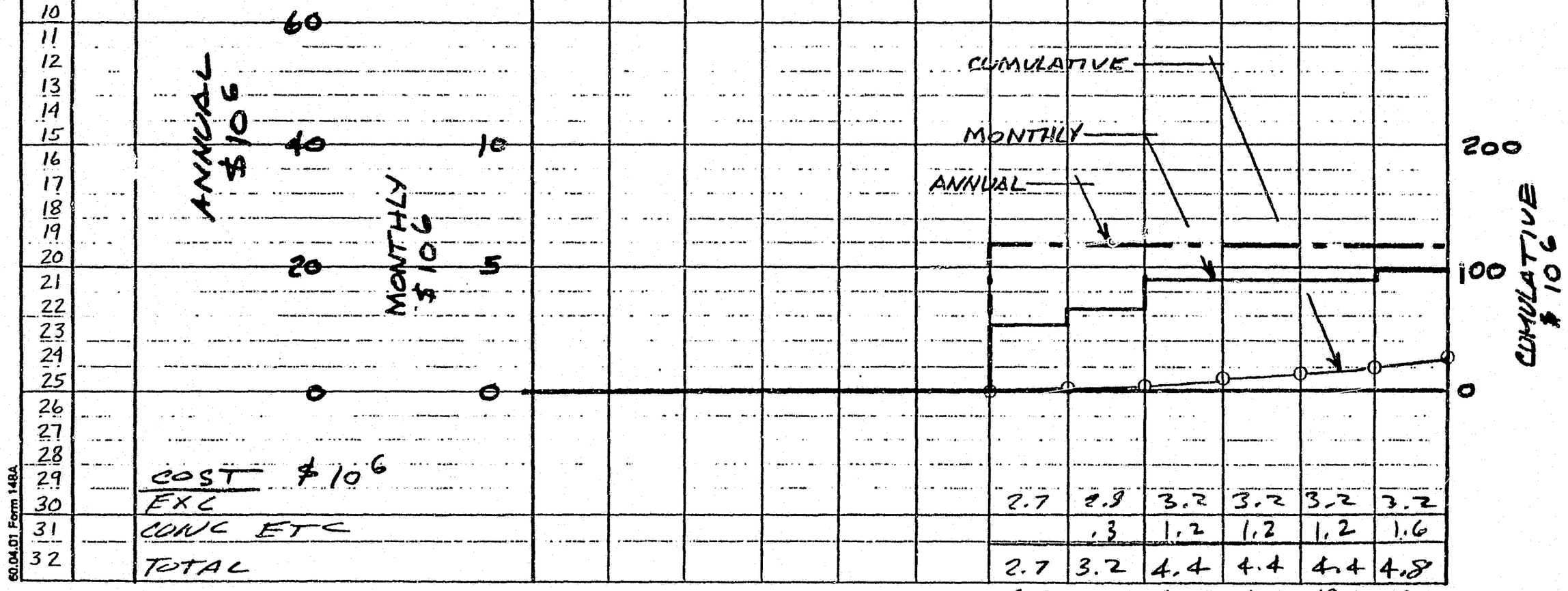
Calculations

SUBJECT: DEVIL CANYON

SCHEDULE & CASH FLOW — YEAR 1995

JOB NUMBER P570009
FILE NUMBER
SHEET 1 OF
BY DATE
APP DATE

LINE No.	ITEM	DESCRIPTION	1995 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1														
2														
3														
4														
5		80												
6														
7														
8														
9														
10		60												
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25		0												
26														
27														
28														
29		COST 10^6												
30		EXC							2.7	2.9	3.2	3.2	3.2	3.2
31		CONC ETC								.3	1.2	1.2	1.2	1.6
32		TOTAL							2.7	3.2	4.4	4.4	4.4	4.8
170		CUM TOTAL							2.7	5.9	10.3	14.7	19.1	23.9



60.04.01 Form 148A

MAR 13 1992

ACRES **Calculations**

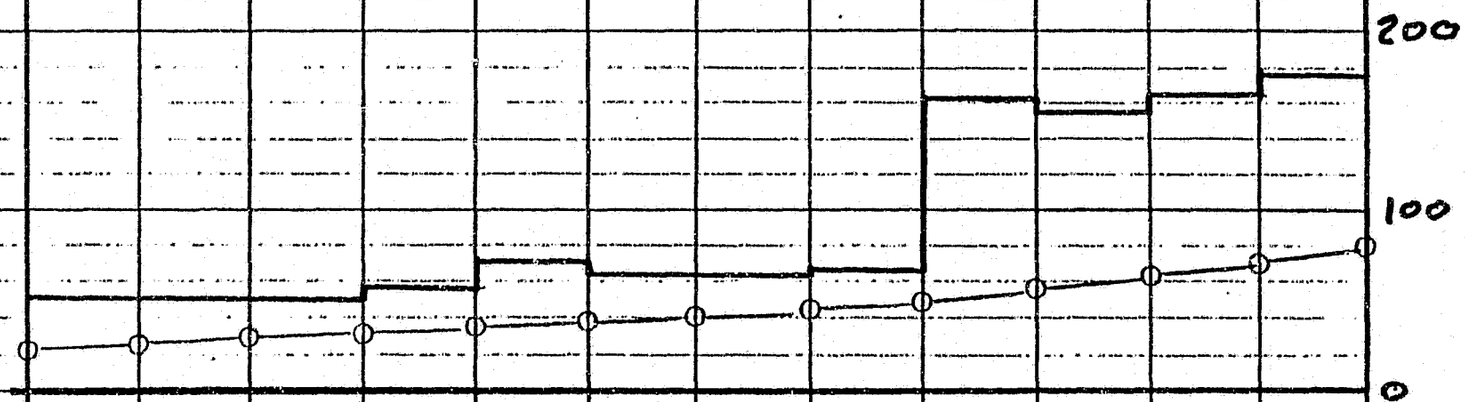
SUBJECT: DEVIL CANYON

SCHEDULE & CASH FLOW

YEAR 1996

JOB NUMBER P570009
FILE NUMBER
SHEET 2 OF
BY DATE
APP DATE

LINE NO.	ITEM	DESCRIPTION	1996 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1														
2														
3														
4														
5														
6														
7														
8														
9														
10		60												
11														
12														
13														
14														
15		40 10												
16														
17														
18														
19														
20		20 5												
21														
22														
23														
24														
25		0 0												
26														
27														
28														
29														
30			1.6	1.6	1.6	1.4	1.4	1.4	1.4	1.5	1.9	3.3	3.5	4.2
31			.9	.9	.9	1.4	2.2	1.7	1.7	1.7	6.2	4.4	4.7	4.5
32			2.5	2.5	2.5	2.8	3.6	3.1	3.1	3.2	8.1	7.7	8.2	8.7
			26.4	28.9	31.4	34.2	37.8	40.9	44.0	47.2	55.3	63.0	71.2	79.9



80.04.01 Form 148A

ACRES

Calculations

SUBJECT: DEVIL CANYON

SCHEDULE & CASH FLOW

YEAR 1997

JOB NUMBER P570009.
FILE NUMBER
SHEET 3 OF
BY DATE
APP DATE

LINE NO.	ITEM	DESCRIPTION	1997 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1														
2														
3														
4														
5		80												
6														
7														
8														
9														
10		60												
11														
12														
13														
14														
15		40 10												
16														
17														
18														
19														
20		20 5												
21														
22														
23														
24														
25		0 0												
26														
27														
28														
29														
30			4.1	4.1	4.1	3.1	4.0	4.0	4.0	4.0	4.8	4.2	4.1	4.1
31			2.3	.3	.2	1.5	4.8	4.8	4.8	4.8	4.8	4.8	6.7	7.0
32			6.4	4.4	4.3	4.6	8.8	8.8	8.8	8.8	9.6	9.0	10.8	11.1
			86.3	90.7	95.0	99.6	108.4	117.2	126.0	134.8	144.4	153.4	164.2	175.3

300
200
100
0

60.04.01 Form 148A

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D.H. MacDonald MAR 13 '92

ACRES

Calculations

SUBJECT: DEVIL CANYON

SCHEDULE 4 CASH FLOW

YEAR 1998

1998

JOB NUMBER P570009
FILE NUMBER
SHEET 4 OF
BY DATE
APP DATE

LINE NO.	ITEM	DESCRIPTION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1														
2														
3														
4														
5		80												
6														
7														
8														
9														
10		60												
11														
12														
13														
14														
15		40 10												
16														
17														
18														
19														
20		20 5												
21														
22														
23														
24														
25		0 0												
26														
27														
28														
29														
30			4.1	3.2	3.3	3.1	2.6	1.0	.8	.2	-	-	1.3	1.3
31			.9	1.2	.5	1.8	7.0	7.3	7.3	7.3	7.6	6.4	6.6	6.5
32			5.0	4.4	3.8	4.9	9.6	8.3	8.1	7.5	7.6	6.4	7.9	7.8
			180.3	184.7	188.5	193.4	203.0	211.3	219.4	226.9	234.5	240.9	248.8	256.6

300
200
100
0

80.04.01 Form 148A

D.H. Howard MAR 13 1982

Calculations

SUBJECT: DEVIL CANYON

SCHEDULE & CASH FLOW YEAR 1999

JOB NUMBER P570009.
FILE NUMBER
SHEET 5 OF
BY DATE
APP DATE

LINE NO.	ITEM	DESCRIPTION	1999 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1														
2														
3														
4														
5		80												
6														
7														
8														
9														
10		60 15												
11														
12														
13														
14														
15														
16		40 10												
17														
18														
19														
20														
21		20 5												
22														
23														
24														
25														
26		0 0												
27														
28														
29														
30			1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
31			.6	-.7	-.7	1.9	6.4	7.4	9.0	9.4	10.3	10.3	7.6	7.4
32			1.9	2.0	2.0	3.2	7.7	8.7	10.3	10.7	11.6	11.6	8.9	8.7
			258.5	260.5	262.5	265.7	273.4	282.1	292.4	303.1	314.7	326.3	335.2	343.9

400
300
200
100
0

60.04.01 Form 148A

147

D.H. Received MAR 13 1992

ACRES

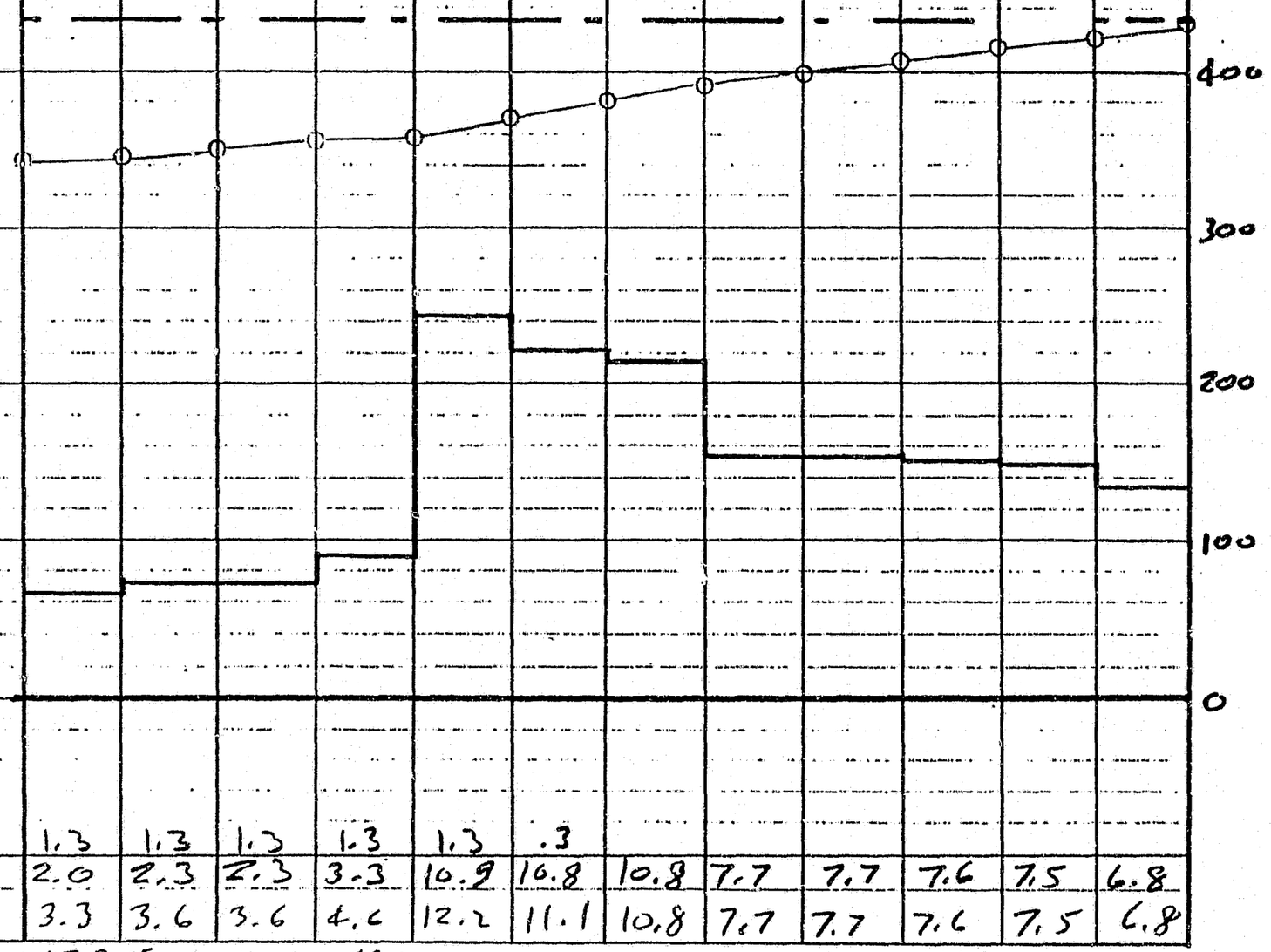
Calculations

SUBJECT: DEVIL CANYON

SCHEDULE & CASH FLOW — YEAR 2000

JOB NUMBER P570009
FILE NUMBER
SHEET 6 OF
BY DATE
APP DATE

LINE NO.	ITEM	DESCRIPTION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1														
2														
3														
4														
5		80												
6														
7														
8														
9														
10		60 15												
11														
12														
13														
14														
15		40 10												
16														
17														
18														
19														
20		20 5												
21														
22														
23														
24														
25		0 0												
26														
27														
28														
29														
30			1.3	1.3	1.3	1.3	1.3	.3						
31			2.0	2.3	2.3	3.3	10.9	10.8	10.8	7.7	7.7	7.6	7.5	6.8
32			3.3	3.6	3.6	4.6	12.2	11.1	10.8	7.7	7.7	7.6	7.5	6.8
			347.2	350.8	354.4	359.0	371.2	382.3	393.1	400.8	408.5	416.1	423.6	430.4



60.04.01 Form 148A

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ACRES **Calculations**

SUBJECT: DEVIL CANYON

SCHEDULE & CASH FLOW

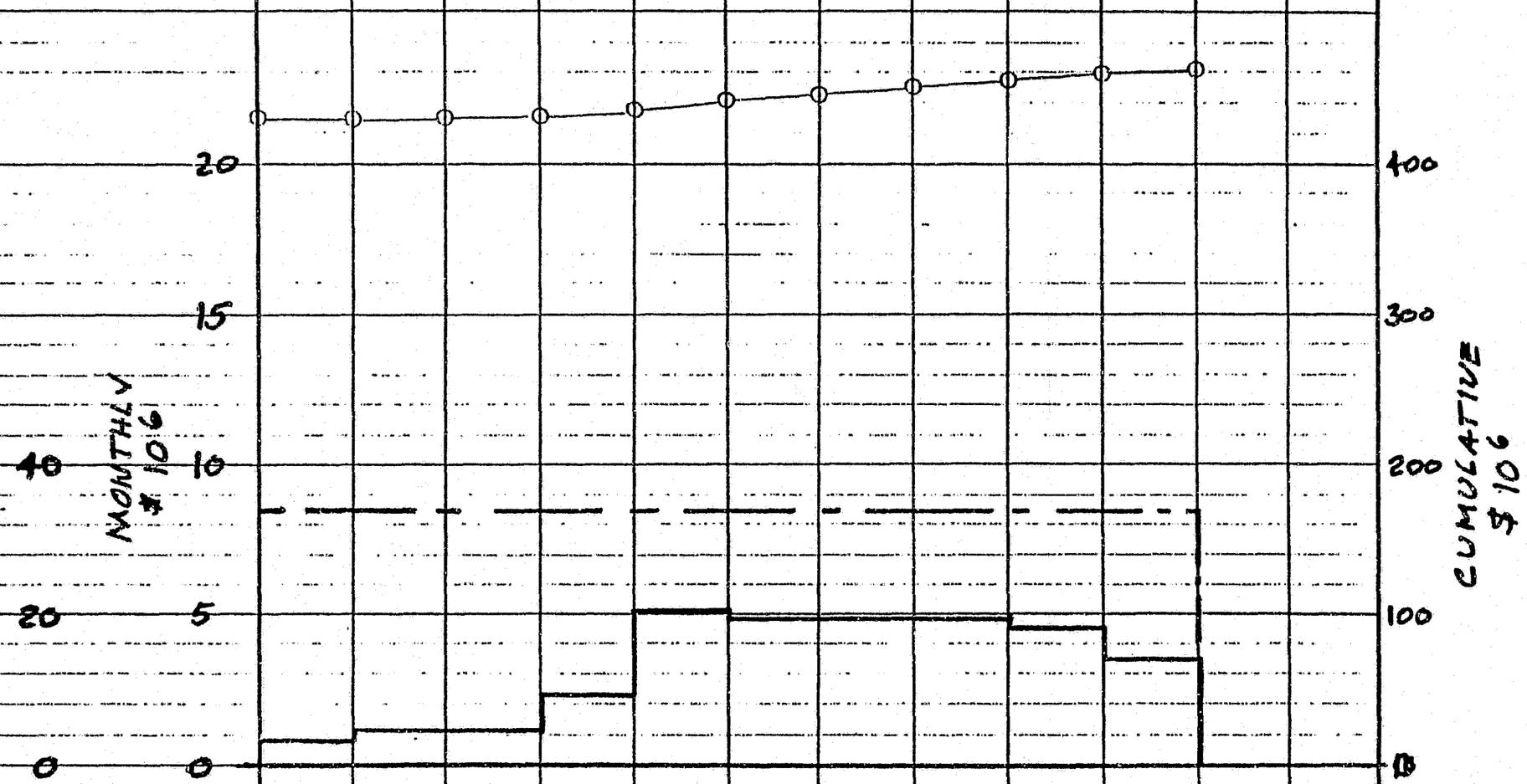
YEAR 2001

JOB NUMBER P570009
FILE NUMBER
SHEET 7 OF
BY DATE
APP DATE

LINE NO.	ITEM	DESCRIPTION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														
29														
30														
31			.9	1.1	1.1	2.3	5.1	4.9	4.9	4.9	4.6	3.5		
32			.9	1.1	1.1	2.3	5.1	4.9	4.9	4.9	4.6	3.5		
			431.3	432.4	433.5	435.8	440.9	445.8	450.7	455.6	460.2	463.7		

MONTHLY $10^6

CUMULATIVE $10^6



60.04.01 Form 148A

MAR 29 1982

ACRES

Calculations

SUBJECT D C

By D.H. MacDonald Date MAR 26 1982 Project No. PS7209

Checked ____ Date ____ Calculation No. ____

Page ___ of ___

FINANCING PROG PAYMTS

Rev	By	Checked

DIRECT COST = $463 M

INDIRECT COST = 196 M

$ 659 M for 45 days at 15 %

$659 $\left(\frac{45}{365}\right)$ .15 = $12.187 M = $12,200,000

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ACRES

Calculations

SUBJECT D.C

INDIRECTS (CIVIL)

By D.H. MacDonald Date MAR 21 1982 Project No. P57000 9

Checked ____ Date ____ Calculation No. ____

Page 1 of ____

	C1 LINE	C1 CUM	C4		C7		C8		C9		C10		LINE TOTAL	CUM TOTAL
900 .1	2.00	2.00	2.50	2.50	15.70	15.70	8.40	8.40	16.20	16.20	3.1	3.1	47.90	47.90
.2	.26 ~~.21~~	~~2.21~~	.23 ~~.26~~	~~2.76~~	1.07 ~~1.60~~	~~17.30~~	.60 ~~.88~~	~~9.28~~	.94 ~~1.70~~	17.90	.55 ~~.32~~	3.42	~~4.97~~	~~52.87~~
.3	.08	2.29	.11	2.87	.87	18.17	.38	9.66	.84	18.74	.16	3.58	2.44	55.31
.4	.83	3.12	.70	3.57	2.20	20.37	1.60	11.26	2.00	20.74	.74	4.32	8.07	63.38
.5	1.10	4.22	1.10	4.67	2.60	22.97	1.40	12.66	2.70	23.44	1.60	5.92	10.50	73.88
.6	.27	4.49	.27	4.94	3.85	26.82	.47	13.13	1.44	24.88	.40	6.32	6.70	80.58
.7	2.10	6.59	1.80	6.74	5.70	32.52	4.00	17.13	5.10	29.98	1.90	8.22	20.60	101.18
.8	.15	6.74	.15	6.89	1.00	33.52	.45	17.58	1.20	31.18	.42	8.64	3.37	104.55
.9	.10	6.84	.10	6.99	.51	34.03	.27	17.85	.48	31.66	.13	8.77	1.60	106.15
.10	1.02	7.86	1.04	8.03	5.09	39.12	2.67	20.52	4.74	36.40	1.31	10.08	15.88	122.03
.11	.20	8.06	.21	8.24	1.02	40.14	.54	21.06	.95	37.35	.26	10.34	3.20	125.23
.12	.20	8.26	.20	8.44	1.00	41.14	.52	21.59	.93	38.28	.26	10.60	3.11	128.34
.13	.01	8.27	.01	8.45	.09	41.23	.06	21.64	.08	38.36	.01	10.61	.26	128.60
.14 <CREDIT>	<.15>	8.12	<.16>	8.29	<.77>	40.46	<.40>	21.24	<.72>	37.64	<.20>	10.41	<2.40>	126.20
.15	.89	9.01	.91	9.20	4.46	44.92	2.34	23.58	4.15	41.79	1.15	11.56	13.90	140.09
.16 PEN FIN	.78	9.79	.80	10.00	3.91	48.83	2.05	25.63	3.64	45.43	1.01	12.57	12.20	152.29
.17 IND FIN	.44	10.23	.36	10.36	6.75	55.58	1.89	27.52	4.08	49.51	.90	13.47	14.42	166.71
.18 HOLD FIN	.95	11.18	.55	10.91	21.13	76.71	1.28	28.80	5.06	54.57	2.74	16.21	31.71	198.42
.20 FEE	3.78	14.96	3.85	14.76	17.90	94.61	9.69	38.49	17.07	71.64	5.09	21.30	57.40	255.82

Rev	By	Checked

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60.04.03 Form 148B

ACRES

Calculations

SUBJECT D.C.

By D.K. MacDonald Date [illegible] Project No. P57000 7

Checked ____ Date ____ Calculation No. ____

Page 2 of ____

FIXED INDIRECTS (CIVIL)

900.x	C1 LINE	C1 CUM	C4		C7		C8		C9		C10		LINE TOTAL	CUM TOTAL
.1	–	–	–	–			–	–	–	–	–	–	–	–
.2 (50%)	.10	.10	.13	.13	.80	.80	.44	.44	.85	.85	.16	.16	2.48	2.48
.3 (100%)	.08	.18	.11	.24	.87	1.67	.38	.82	.84	1.69	.16	.32	2.44	4.92
.4 (100%)	.83	1.01	.70	.94	2.20	3.87	1.60	2.42	2.00	3.69	.74	1.06	8.07	12.99
.5 (80%)	.88	1.89	.88	1.82	2.08	5.95	1.12	3.54	2.16	5.85	1.28	2.34	8.40	21.39
.6 (30%)	.08	1.97	.08	1.90	1.16	7.11	.14	3.68	.43	6.28	.12	2.46	2.01	23.40
.7 (60%)	1.26	3.23	1.08	2.98	3.42	10.53	2.40	6.08	3.06	9.34	1.14	3.60	12.36	35.76
.8 (0)	–	3.23	–	2.98	–	10.53	–	6.08	–	9.34	–	3.60	–	35.76
.9 (15%)	.01	3.24	.02	3.00	.08	10.61	.04	6.12	.07	9.41	.02	3.62	.24	36.00
.10 (0)	–	3.24	–	3.00	–	10.61	–	6.12	–	9.41	–	3.62	–	36.00
.11 (0)	–	3.24	–	3.00	–	10.61	–	6.12	–	9.41	–	3.62	–	36.00
.12 (20%)	.04	3.28	.04	3.04	.20	10.81	.10	6.22	.19	9.60	.05	3.67	.62	36.62
.13 (0)	–	3.28	–	↓	–	↓	–	↓	–	↓	–	↓	–	↓
.14 (0)	–	3.28	–	↓	–	↓	–	↓	–	↓	–	↓	–	↓
.15 (0)	–	3.28	–	3.04	–	10.81	–	6.22	–	9.60	–	3.67	–	36.62

Rev	By	Checked

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60.04.03 Form 148B

ACRES

Calculations

SUBJECT D.C

By E.H. MacDonald Date MAR 2 1 1982

Checked _____ Date _____

Project No. PS70009

Calculation No. _____

Page 3 of ____

FIXED INDIRECTS (CIVIL)

Rev	By	Checked

AMORTIZATION

@ 15% INTEREST

ASSUME FIXED INDIRECTS ARE PAID OUT AT BEGINNING OF CONTRACT & AMORTIZED MONTHLY OVER LIFE OF CONTRACT.

CAPITAL RECOVERY FACTOR = CRF = $\frac{i(1+i)^n}{(1+i)^n - 1}$

n = no. of periods (months)

$i = 15\% \div 12 = 1.25\%$ per month $= 0.0125$

R = Monthly payment = P x CRF

P = Up front fixed indirect expenditure

S = Total P + Interest "I"

CONTR. NO.	"P" AMOUNT $ 10^6	CONTR. DURATION "n" MONTHS	CRF	"R" "P" x "CRF" $ 10^6	"S" n x R $ 10^6	"I" S - P $ 10^6	
C1	3.28	20	.0568	.186	3.72	.44	
C4	3.04	17	.0657	.200	3.40	.36	
C7	10.81	84	.0193	.209	17.56	6.75	
C8	6.72	41	.0313	.210	8.61	1.89	
C9	9.60	60	.0238	.228	13.68	4.08	
C10	3.67	36	.0347	.127	4.57	.90	
	37.12				51.54	14.42	150

60.04.03 Form 148B

ACRES

Calculations

SUBJECT DC

FINANCING OF HOLD BACK.

By D.H. MacDonald Date MAR 21 1982 Project No. PS70009

Checked ____ Date ____ Calculation No. ____

Page 4 of ____

	C1	C4	C7	C8	C9	C10
D	29.8	28.1	214.3	41.26	91.78	51.96
I @ 55%	16.4	15.5	117.9	22.70	50.48	28.58
Σ 708.76	46.2	43.6	332.2	63.96	142.26	80.54
START CONTR	1 JUL 95	1 AUG 95	1 AUG 95	1 AUG 96	1 SEP 96	1 FEB 98
FIND "	1 APR 97	1 FEB 97	1 NOV 01	31 DEC 99	31 AUG 2001	31 MAY 2001
10% OF CONTRACT	4.6	4.4	33.2	6.4	14.2	8.1
CUM. LIMIT @15%	30.7	29.3	221.3	42.7	94.7	54.0
CUM DIR. LIMIT	19.8	18.9	142.8	27.5	61.1	34.8
- Reached at	1 APR 96	1 NOV 96	1 DEC 99	1 AUG 98	1 JAN 2000	1 FEB 2000
Mo. Before	9	16	52	24	41	24
After.	12	2	25	4	8	15
INT Before @15%	.26	.44	10.79	.96	3.64	1.22
After @15%	.69	.11	10.34	.32	1.42	1.52
31.71	.95	.55	21.13	1.28	5.06	2.74

Rev	By	Checked

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ACRES

Calculations

SUBJECT D.C

By D.H. MacDonald Date MAR 25 1982 Project No. P57-0009

Checked ____ Date ____ Calculation No. ____

Page 2 of ____

SUPERVISION: 2nd CUT

CONTRACT DURATION-YR		1 1.67	4 1.42	7 4.50	8 3.17	9 4.00	10 1.50	TOTAL
MGT	NO	1	2	2	2	2	2	11
@$9240	MY	1.67	2.84	9.0	6.34	8.0	3.0	30.85
110,880/MY	$	185,170	314,900	997,920	702,980	887,040	332,640	3,420,650
SUPV	NO	3	4	8	7	16	6	44
@$7700	MY	5.01	5.68	36.0	22.19	64.0	9.0	141.88
92,400	$	462,920	524,830	3,326,400	2,050,360	5,913,600	831,600	13,109,710
ENG	NO	5	8	15	10	14	9	61
@$7300	MY	8.35	11.36	67.5	31.7	56.0	13.5	188.41
87,600	$	731,460	995,140	5,913,000	2,776,920	4,905,600	1,182,600	16,504,720
OFF	NO	3	5	19	14	19	7	67
@$2849	MY	5.01	7.1	85.5	44.38	76.0	10.5	228.49
34,188	$	171,280	242,740	2,923,070	1,517,260	2,598,290	358,970	7,811,610
MISC	NO	7	7	9	7	10	7	47
@$3080	MY	11.69	9.94	40.5	22.19	40.0	10.5	134.82
36,960	$	432,060	367,380	1,496,880	820,140	1,478,400	388,080	4,982,940
	NO	19	26	53	40	61	31	230
	MY	31.73	36.92	238.5	126.8	244.0	46.5	724.45
	$	1,982,890	2,444,990	14,657,270	7,867,660	15,782,930	3,093,890	45,829,630

Rev	By	Checked

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ACRES

Calculations

SUBJECT D.C

By D.H. MacDonald Date MAR 25 1982 Project No. P57000 9

Checked ____ Date ____ Calculation No. ____

Page 3 of ____

SUPERSEDED 19

SEE DWG. NO.

CONTRACT		1	4	7	8	9	10	TOTAL
DURATION YR		1.67	1.42	4.50	3.17	4.00	1.50	
MGT	NO	1	2	2	2	2	2	11
@$9240	MY	1.67	2.84	9.0	6.34	8.0	3.0	30.85
110,880 /MY	$	185,170	314,900	997,920	702,980	887,040	332,640	3,420,650
SUPV	NO	3	4	10	7	16	6	46
@$7700	MY	5.01	5.68	45.0	22.19	64.0	9.0	150.88
92,400	$	462,920	524,830	4,158,000	2,050,360	5,913,600	831,600	13,941,310
ENG	NO	7	10	15	11	16	11	70.0
@$7300	MY	11.69	14.2	67.5	34.87	64.0	16.5	208.76
87,600	$	1,024,040	1,243,920	5,913,000	3,054,610	5,606,400	1,445,400	18,287,370
OFF	NO	4	6	20	14	20	10	74
@$2849	MY	6.68	8.52	90.0	44.38	80.0	15.0	244.58
34,188	$	228,380	291,280	3,076,920	1,517,260	2,735,040	512,820	8,361,700
MISC	NO	7	7	9	7	10	7	47
@$3080	MY	11.69	9.94	40.5	22.19	40.0	10.5	134.82
36,960	$	432,060	367,380	1,496,880	820,140	1,478,400	388,080	4,782,940
	NO	22	29	56	41	64	36	248
	MY	36.74	41.18	252.0	129.97	256.0	54	769.89
	$	2,332,570	2,742,310	15,642,720	8,145,350	16,620,480	3,510,540	48,993,970

Rev	By	Checked

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60.04.03 Form 148g

D. C

82-83-24

CONTRACT NO		1	4	7	8	9	10	
DURATION		1-67	1-42	4.5	3.17	4.0	1-5	
GROUP								
1) REG. MGR }	NO.	1	2	2	2	2	1	~~85,200~~ 110,850 /yr
6) ADMIN MGR }	MTHS	1.67	2.84	9	6.34	8	1.5	
$9240/pm	COST	~~115,110~~ ~~142,284~~ 18[illegible],700	~~195,760~~ ~~241,968~~ 314,900	~~620,352~~ 966,800 997,900	~~437,000~~ 540,168 704,100	551,420 ~~681,600~~ 887,000	~~103,392~~ ~~127,800~~ 166,300	3,255,4[illegible] ~~2,500,620~~ 1,122,400 ~~$70,800~~ /pa
2) FIELD SUPT	NO.	2	3.2	7.6	6.3	14.9	5.9	
$7700 pm	MTHS	3.34	4.54	34.2	19.97	59.6	8.85	
	COST	~~230,220~~ 308,600 ~~236,472~~	~~312,930~~ 419,200 ~~321,432~~	~~2,357,340~~ 3,160,900 3,421,360	~~1,376,492~~ 1,845,200 1,413,672	~~4,108,110~~ 5,507,000 4,249,680	~~610,010~~ 817,700 626,580	12,058,200 ~~9,234,400~~ ~~$57,600~~ ~~$47,200~~ /pa
3) FIELD ENG }	NO.	4	8	13	9	13	9	
Q.A. CHIEF }	MTHS	6.68	11.36	58.5	28.53	52	13.5	
OFF ENG. }	COST	~~460,440~~ 555,200 ~~425,296~~	~~783,020~~ 935,100 ~~716,592~~	~~4,032,390~~ ~~4,241,635~~ 3,934,200	~~1,966,520~~ ~~2,400,200~~ 1,842,212	~~3,584,260~~ ~~4,588,200~~ 3,522,400	~~930,530~~ 1,187,600 ~~907,200~~	14 94[illegible],900 ~~11,462,324~~ 8,834,188 ~~$21,312~~ /pa
COST ENG }	$7300 pm							
4) ACCOUNT. }	NO	3	5	19	14	19	7	
TIME KPR }	MTHS	5.01	7.1	85.5	44.38	76	10.5	
PURCH }	COST	~~345,330~~ 171,300 ~~106,773~~	~~489,390~~ ~~242,298~~ ~~151,315~~	~~5,893,340~~ 2,223,100 1,822,176	~~3,059,020~~ 1,517,300 ~~945,827~~	~~5,238,530~~ ~~2,598,300~~ 1,710,712	~~723,740~~ 358,600 223,776	7,811,700 ~~6,869,579~~ ~~$36,960~~ ~~$84,800~~ /pa 27,720
TEL/TX }								
PRINT RM }								
SECRET. }	2849 pm							
5) SAFETY }	NO.	7	7	9	7	10	7	
W'HOUSE }	MTHS	11.69	9.94	40.5	22.19	40	10.5	
	COST	~~805,770~~ ~~432,100~~ ~~336,672~~	~~685,140~~ ~~367,400~~ ~~286,272~~	~~2,791,580~~ ~~1,496,900~~ 1,166,400	~~1,529,510~~ ~~820,100~~ 639,072	~~2,757,120~~ ~~1,478,100~~ 1,152,200	~~723,740~~ ~~388,100~~ 302,400	~~4,967,900~~ ~~3,882,816~~ 3,737,200
30 @ ~~2210~~ /pm		~~2400~~						
		324,000	275,500	1,122,700	615,100	1,108,800	291,100	~~43,051,705~~ ~~31,954,718~~ 41,809,200

14 TOTAL

∴ Salary = $46,057.5 pa

SUPERSEDED
SEE DWG. No. .....

$12,350 pm-y
$60,254

COST/RS344 = $5744 X 12
= 68,928

	% TOTAL DIRECTS.	LABOUR	JOB MATERIALS	DIRECTS FERM. MATERIALS	EQUIPMENT OWNERSH.	EQUIPMENT OPERATION	TOTAL
15.1	13.00	38.09 %	10.31 %	19.24 %	14.63 %	17.73 %	100.00 %
3.0	1.08						
2.1	0.65				% T.I.C.		% DIRECTS.
6.7	2.16		DIRECTS				
2.9	2.82			LABOUR	24.56.		
				MATERIAL	19.06		
4.4	0.86			EQUIPMENT	20.86		
14.4	5.64		INDIRECTS			100.00	
1.9	0.86			FIELD	23.12	35.80	
.75	0.43			HOME OFFICE	2.37	3.69	
11.6	7.16			FEE	10.03	15.55	55.04
					100.00		
0.95	0.86						
1.97	0.86						
0.06	0.97						
	(0.65.)						
5.82	3.69						
19.22	10.55						
	55.04						

(1) 1.30 FT 10 MIL XEROX BLACK
1.30 - 4 on MACMAK.

FOLD LENGTH 12 11 8.5 8 AUTO MANUAL FEED

MAR 29 1982 I.A.J. MAR 9

P5700 - SUSITNA STUDY
DEVIL CANYON - CONTRACTOR'S INDIRECTS.

ITEM No	DESCRIPTION.	$ x 1000	% $ 25?M	% DIRECT LABOUR
900.1	FIELD SUPERVISION	60000	23.36	34.15
.2	STAFF MOBILIZATION	5000	1.95	2.85
.3	STAFF VEHICLES	3000	1.17	1.71
.4	YARD EQUIPMENT	10000	3.89	5.69
.5	BUILDINGS AND SHOPS	13000	5.06	7.40
.6	CONSUMABLES	4000	1.55	2.28
.7	UTILITIES	26000	10.14	14.80
.8	YARD SERVICES	4000	1.55	2.28
.9	OFFICE FURNISHINGS	2000	0.78	1.14
.10	GENERAL EXPENSE	33000	12.84	18.78
.11	OFFSITE TRAVEL	4000	1.55	2.28
.13	ONSITE TRAVEL	4000	1.55	2.28
.12	MISC. MEALS ALLOWANCE	300	0.12	0.17
	HAUL ROADS	-	-	-
.14	SALVAGE RECOVERY	(3000)		
.15	HOME OFFICE SUPPORT	17000	6.61	9.67
.20	CONTRACTOR'S FEE	71700	27.89	40.81
	TOTAL	254000	100.00	146.29

RETAIN THIS COPY FOR FOLLOW-UP

FROM: I. A. Johnston

DEPARTMENT: Construction

DATE: March 10, 1982

Mr. Jim Plummer - Buffalo

SUBJECT: SUSITNA - P5700
DEVIL CANYON INDIRECTS

MESSAGE

Per your conversation of March 10, please find attached an advanced copy of the indirects.
These are subject to review and approval by Dave MacDonald.

IAJ:aed
encl

for A Dolan
I. A. Johnston

cc - Dave H. MacDonald

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USE LOWER PORTION FOR REPLY

REPLY FROM

DATE

ESTIMATE SUMMARY

ACRES

CLIENT _____ TYPE OF ESTIMATE _____

PROJECT _____ APPROVED BY _____

JOB NUMBER _____
FILE NUMBER _____
SHEET _____ OF _____
BY _____ DATE _____
CHKD _____ DATE _____

No.	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	AMOUNT	TOTALS	REMARKS
	(W)	(DC.)					
	FROM J PLUMMER:						
	M̄	M̄					
	LABOUR 363	176					
	JOB MAT. 88	48					
	PERM MAT. 70	89					
	EQUIP. OWER 276	67					
	EQUIP OPER. 335	82					
	1132	462					
	f 45	55					
IND.	509	254					
	Σ 1641	Σ 716					
	1.466 = 531						

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57.02.03. Form 134A

AB-A

MAR 8 1982
D.H. MacDonald

SUSITNA HYDROELECTRIC PROJECT

Watana & Devil Canyon
Cumulative & Annual Cash Flow

JANUARY 1982 DOLLARS - IN MILLIONS

YEAR	ANNUAL CASH FLOW			CUMULATIVE CASH FLOW		
	WATANA	DEVIL CANYON	COMBINED	WATANA	DEVIL CANYON	COMBINED
1981	28.0		28.0	28.0		28.0
82	13.0		13.0	41.0		41.0
83	45.1		45.1	86.1		86.1
84	82.1		82.1	168.2		168.2
85	227.2		227.2	395.4		395.4
86	294.0		294.0	689.4		689.4
87	296.2		296.2	985.6		985.6
88	348.3		348.3	1333.9		1333.9
89	439.9		439.9	1773.8		1773.8
90	616.6		616.6	2390.4		2390.4
91	597.0		597.0	2987.4		2987.4
92	430.7		430.7	3418.1		3418.1
93	154.7	14.5	169.2	3572.8	14.5	3587.3
94	74.5	42.1	116.6	3647.3	56.6	3703.9
95		73.2	73.2		129.8	3777.1
96		120.5	120.5		250.3	3897.6
97		210.4	210.4		460.7	4108.0
98		292.4	292.4		753.1	4400.4
99		287.1	287.1		1040.2	4687.5
2000		255.3	255.3		1295.5	4942.8
2001		166.5	166.5		1462.0	5109.3
2002		18.0	18.0		1480.0	5127.3
Total	3647.3	1480.0	5127.3			

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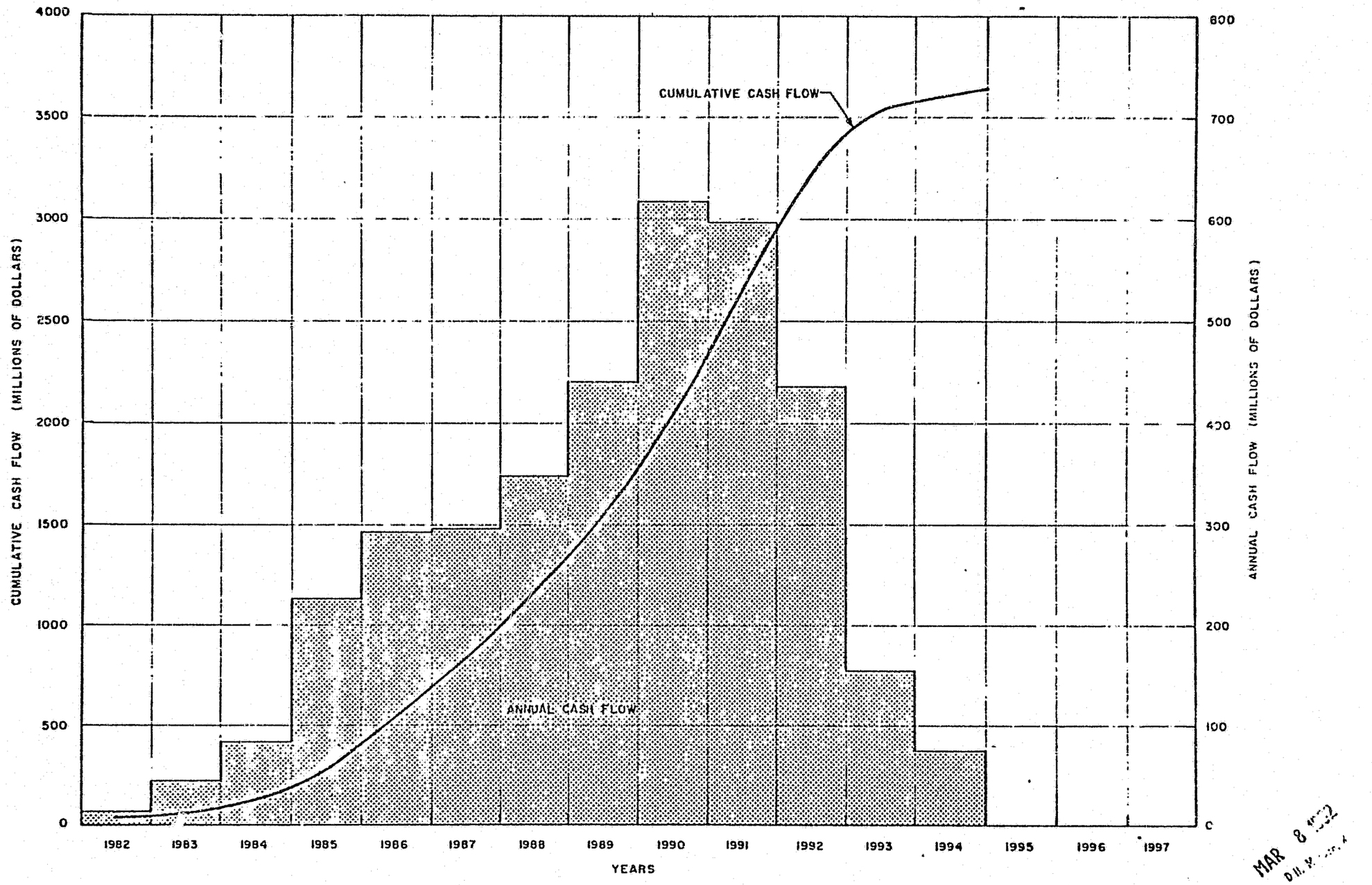

WATANA DEVELOPMENT
CUMULATIVE AND ANNUAL CASH FLOW
JANUARY, 1982 DOLLARS

FIGURE. 16.1

MAR 8 1982

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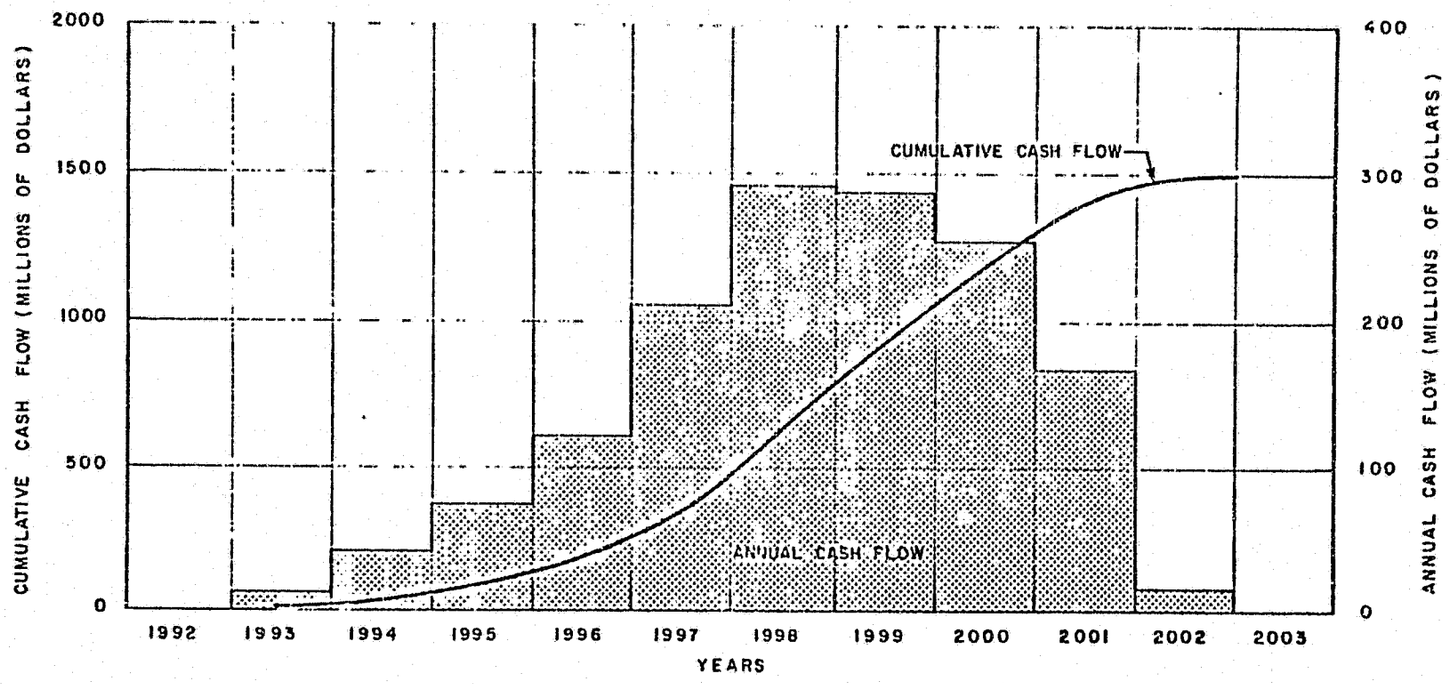
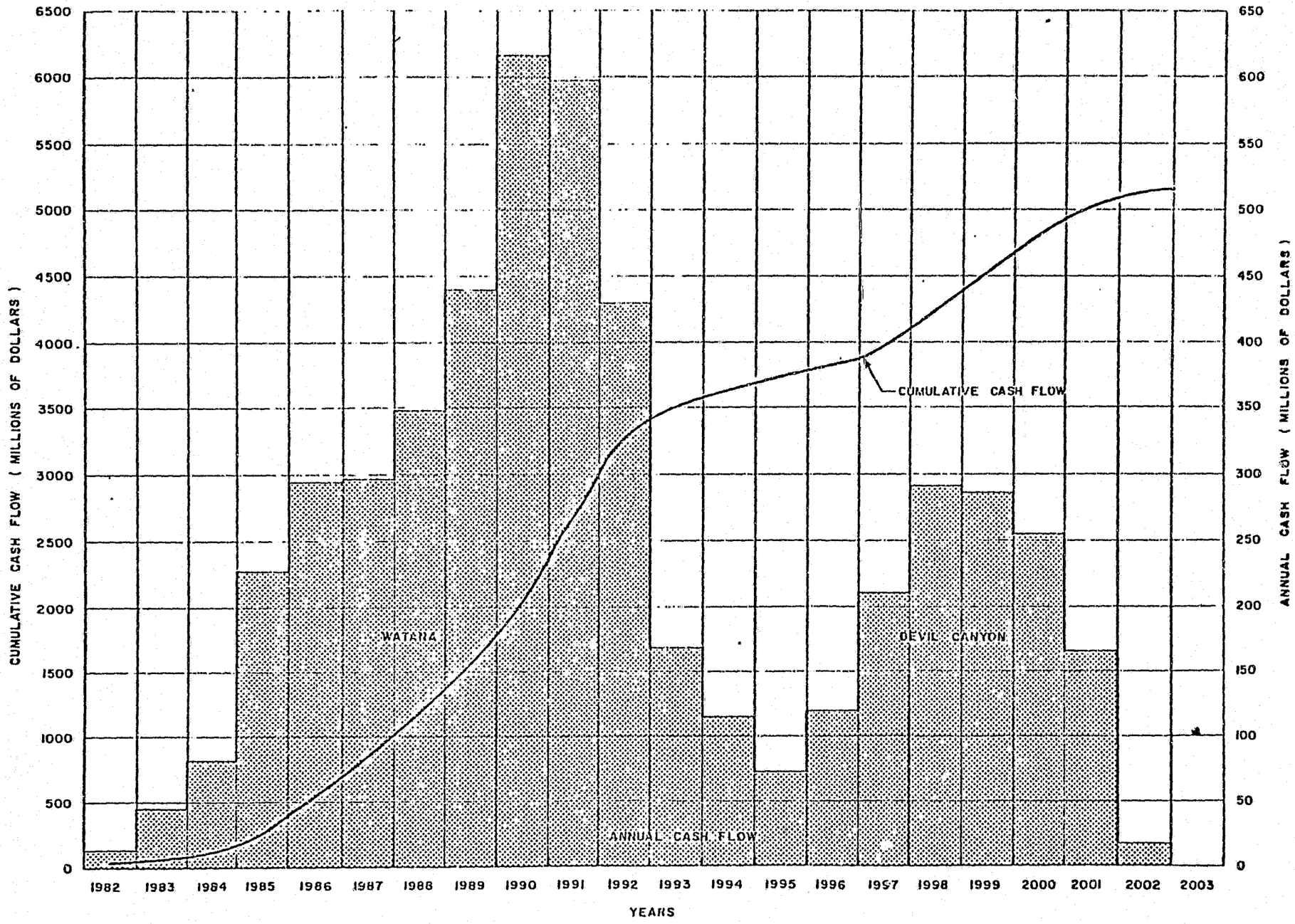
APPENDIX



DEVIL CANYON DEVELOPMENT
CUMULATIVE AND ANNUAL CASH FLOW
JANUARY, 1982 DOLLARS

MAR 8 1982
D.M. N...

FIGURE 16.2



SUSITNA HYDROELECTRIC PROJECT
CUMULATIVE & ANNUAL CASH FLOW ENTIRE PROJECT
JANUARY, 1982 DOLLARS

FIGURE 16 3

MAR 8 1982
P.H. McDonald

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0 0 0 2 5

AGRA

Calculations
SUBJECT

By _____ Date _____
Checked _____ Date _____

Project No. P5700
Calculation No. _____
Page ___ of ___

Rev	By	Checked

SUSITNA STUDY

DEVIL CANYON DAM LOCATION.

ESTIMATE OF CONTRACTOR'S INDIRECTS.

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SUSITNA HYDROELECTRIC PROJECT
DEVIL CANYON
PRELIMINARY LIST OF CONTRACTS

January 8, 1982
AN-AB6

Civil

- C1 Main Access & Site Development
- C2 D/S Bridge
- C3 Batch plant
- C4 Diversion & Cofferdam Dams & Riverbed Excavation
- C5 Cement*
- C6 Reinforcing Steel*
- C7 Main Dam
- C8 Spillway & Intake
- C9 Power Facilities inc.tun.
- C10 Switchyard Site & Saddle Dam & channels
- C11 Transmission Switchyard and Structures
- C12 Substation
- C13 Reservoir Clearing

Mechanical

- M1 Turbines & Governors
- M2 Penstock Valves
- M3 Intake Gates
- M4 Trashracks
- M5 Spillway Gates
- M6 Penstock Liners*
- M7 Draft Tube Gates*
- M8 Powerhouse Cranes
- M9 HVAC System*
- M10 Dewatering System*
- M11 Fire Protection System
- M12 Oil Handling System *
- M13 Compress Air Systems*
- M14 Domestic Water & Sewage Systems*
- M15 Powerhouse Elevator
- M16 Mechanical Installation
- M17 Bulkhead Gates & Stoplogs*
- M18 Machine Shop & Electric Test Equipment*
- M19 Serv.Spillway Valves
- M20 Diversion Gates*

Electrical

- E1 Generators & Exciters
- E2 Generator Step-up Transformer
- E3 Generator Bus*
- E4 Circuit Breaker Cubicles
- E5 CM&R Panels*
- E6 Control Room Equipment*
- E7 Station Services & MCC Equipment*
- E8 Lighting*
- E9 Communications Telemetry & Supervisory Equipment*
- E10 DC & Field Flashing System*
- E11 Fire Detection & Alarm Systems*
- E12 Electrical Installation
- E13 Transmission Line Conductors, Insulation & Hardware*
- E14 Substation Equipment
- E15 345 kV Cable/ Bus*

Support Services

- S1 Catering
- S2 Helicopters
- S3 Fixed Wing Aircraft
- S4 Camp Structures & Services
- S5 Materials & Equipment Handling
- S6 Freight & Personnel Transportation
- S7 Fuel Supply
- S8 Airstrip

Site Surveys & Investigations

- D1 Site Investigations
- D2 Exploratory Adits

*supply only

Note: (1) Certain contracts may be combined to suit schedule and procurement requirements.

(2) Certain mechanical & electrical items may be ordered by material list.

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L.A.J. MAR REC'D

ACCOUNT	DESCRIPTION	PREVIOUS ESTIMATE ON BASIS OF 5 CONTR	6 CONTR.	VARIANCE	EXPLANATION.
1.	SUPERVISION	81,830	86,000	(38173)	SUPERVISORS IN DIRECTS
2.	STAFF MOBILIZATION	9,828	10,600	6614	ONE THIRD OF PERIOD
3.	STAFF VEHICLES	6,820	7,200	4760	SUPERVISORS IN DIRECTS.
4.	MISC. EQUIPMENT	21,823	23,000	(14950)	DUPLICATION WITH DIRECTS SHORTER SCHEDULE
5.	TEMP. BUILDINGS	9,420	10,500	-	
6	CONSUMABLES	14,380	14,800	11572	NOW BASED ON LABOUR
7	UTILITIES	46,990	50,500	(29769)	FUEL BY OWNER SHORTER SCHEDULE
8	YARD SERVICES	6450	7,000	3800	OWNER'S ACCOUNT
9	OFFICE EXPENSE	2558	2,800	1600	DIFFERENT APPROACH SHORTER SCHEDULE
10	GENERAL EXPENSE	37865	30,000	2890	BONDS & INSUR. BY OWNER.
11	TRAVEL, CAMP, SALV.	7075	7275	3715	SHORTER SCH. ON BUS TRANS.
12	H.O. SUPPORT	19000	21600	(7700	DIRECTS NOW AVAILABLE
13.	FEE	62660	68000	10600)	LOWER DIRECTS & INDIRECTS
				136,143	

I.A.J. MAR 8 REC'D

DEVIL CANYON

CONTRACTOR'S INDIRECTS.

@ 55%	on DIRECTS - DESIRED RESULTS	=	$ 254 M
@ 50%	"	=	$ 230
@ 45%	"	=	$ 207

NOTE: THIS ESTIMATE REVISION REDUCES $ 203 M

OR, 44%

L.A.J. MAR 8 Recd

DEVIL CANYON.
CONTRACTOR'S INDIRECTS.

	$ 1000
FIELD SUPERVISION	47827
STAFF MOBILIZATION	3986
VEHICLES	2440
MISC EQUIPMENT	8050
TEMPORARY BUILDINGS	10500
CONSUMABLES	3228
UTILITIES	20732
YARD SERVICES	3200
OFFICE EXPENSE	1200
GENERAL EXPENSE	27110
TRAVEL	3200
CAMP MEALS VISITORS	250
SITE BUS TRANSPORTATION	3110
SALVAGE	(3000)
H.O. SUPPORT	13900
FEE	57400
	203,133

Calculations

SUBJECT APA

By JAJ Date JAN '82 Project No. P5700

Checked ___ Date ___ Calculation No. ___

Page ___ of ___

(DC)

CONTRACTS INDIRECTS (SUMMARY)

INDIRECTS ITEM.	SITE FACILITIES	CONTRACT PACKAGE No. (DC) 4	7	8	9	10		TOTAL (U.S $ x1000)	
YRS DURATION		2	6	3.5	6	3			
AVE. MANPOWER									
~ LAB. CONTENT.									
FIELD SUPERVISION		3.790	25700	11.990	30 500	9.900		81,880	✓
STAFF MOBILIZATION		.780	2490	1526	3722	1310		9.828	✓
VEHICLES Rd.		340	1990	1010	2720	760		6.820	✓
EQUIPMENT		1010	6853	3200	8120	2640		21.823	✓ high
TEMPORARY BUILDINGS		1079	2586	1402	2736	1617		9.420	✓
CONSUMABLES		440	3880	2060	6440	1560		14.330	✓ high
UTILITIES		3470	14510	6160	17000	5850		46.990	22x10⁶ - [illegible] 15x10⁶ - [illegible]
YARD SERVICES		330	2000	900	2380	840		6.450	✓
OFFICE EXPENSE		108	810	389	936	315		2.558	✓
GENERAL EXPENSE		2080	14712	4992	12157	3924		37.865	✓
TRAVEL		160	992	448	1184	416		3.200	
CAMP		21	61	34	61	30		207	
BUS TRANSPORTATION		322	1996	901	2382	837		6.438	
HAUL ROADS.		–	–	–	–	–			
SALVAGE		⟨500⟩	⟨600⟩	⟨500⟩	⟨700⟩	⟨500⟩		⟨2,300⟩	
H.O. SUPPORT		1600	4800	3600	6000	3000		19.000	
FEE		5400	22,600	8820	17,560	8280		62.660	
Σ = 7[illegible] TOTAL	28,000	20,430 ✓	105,380 ✓	46,932 ✓	113,198 ✓	40,779 ✓		354,719 ✓	

Rev	By	Checked

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60.04.03 Form 148B

Estimate Work S

ACRES

JOB No. P570009

SHEET 2 OF

PROJECT SUSITNA

BY MACD

CONTRACT DEVIL CANYON

CKD DATE 82-03-01

DESCRIPTION AND BASIS OF ESTIMATE	EQPT.OPERATION UNIT COST	AMOUNT	Equiv UNIT	TOTAL AMOUNT
	%			
C1 - ROADS (336.1)	33.9	9 322		27 510
C4 - DIVERSION & COFFERDAMS (33	12.3	3 143		25 588
C7 - MAIN DAM (332.3)	13.8	30 057		218 070
C8 - SPILLWAY, INTAKE (332.52,	17.4	7 159		41 256
C9 - POWER FAC. (331.1, 332.7, .8	16.5	15 170		91 736
C10 - S/Y, SADDLE DAM, & EM. S/W (3	29.0	14 681		50 674
C13 - RESERVOIR CLEARING (33	34.4	2 184		6 350
	17.7	81 716		461 184
			D.C-	+61 220
				129

57.02.02 Form 131 A

Estimate Work Sheet

ACRES

ITEM REFERENCE No.

DESCRIPTION

OPERATION No. REF.

DESCRIPTION

JOB No. P570009

SHEET 2 OF

BY MACD

CKD DATE 82-03-01

PROJECT SUSITNA

CONTRACT DEVIL CANYON

DESCRIPTION AND BASIS OF ESTIMATE	QUANTITY	UNIT	LABOR UNIT COST	LABOR AMOUNT	JOB MATERIALS UNIT COST	JOB MATERIALS AMOUNT	PERM. MATERIALS UNIT COST	PERM. MATERIALS AMOUNT	SUBCONTRACTS UNIT COST	SUBCONTRACTS AMOUNT	EQPT. OWNERSHIP UNIT COST	EQPT. OWNERSHIP AMOUNT	EQPT. OPERATION UNIT COST	EQPT. OPERATION AMOUNT	Equiv UNIT	TOTAL AMOUNT
			%		%		%		%		%		%			
C1 – ROADS (336.1)			34.2	9 419	1.7	472		–		–	30.2	8 297	33.9	9 322		27 510
C4 – DIVERSION & COFFERDAMS (332.21, 22, 23)			38.7	9 894	7.8	1 998	31.1	7 969		–	10.1	2 578	12.3	3 143		25 588
C7 – MAIN DAM (332.3)			41.6	90 631	8.6	18 846	24.8	53 975		–	11.3	24 561	13.8	30 057		218 070
C8 – SPILLWAY, INTAKE (332.52, .6)			31.8	13 132	17.0	7 032	19.6	8 069		–	14.2	5 859	17.4	7 159		41 256
C9 – POWER FAC. (331.1, 332.7, .8, .9)			39.4	36 111	12.2	11 246	18.3	16 777		–	13.5	12 425	16.5	15 170		91 736
C10 – S/Y, SADDLE DAM, & EM. S/W (332.4, .53)			29.1	14 741	14.4	7 312	3.9	1 958		–	23.6	11 971	29.0	14 681		50 674
C13 – RESERVOIR CLEARING (332.11)			27.5	1 746	10.0	635		–		–	28.1	1 784	34.4	2 184		6 350
			38.1	175 674	10.3	47 541	19.2	88 748			14.6	67 475	17.7	81 716		461 184

D.C. +61 220

[illegible] = WT 1129

57.02.02 Form 131 A

Estimate Work Sheet

ACRES

ITEM REFERENCE No.

JOB No. P570009

DESCRIPTION

SHEET 1 OF

PROJECT SUSITNA

OPERATION No. REF.

BY MACD

CONTRACT DEVIL CANYON

DESCRIPTION

CKD DATE 82-03-01

DESCRIPTION AND BASIS OF ESTIMATE	QUANTITY	UNIT	LABOR		JOB MATERIALS		PERM.MATERIALS		SUBCONTRACTS		EQPT.OWNERSHIP		EQPT.OPERATION			
			UNIT COST	AMOUNT	UNIT COST	AMOUNT	UNIT COST	AMOUNT	UNIT COST	AMOUNT	UNIT COST	AMOUNT	UNIT COST	AMOUNT	Equiv UNIT	TOTAL AMOUNT
331.				$1000		$1000		$1000		$1000		$1000		$1000		$1000
.1 POWERHOUSE & MISC. STRUCT.			37.2%	18 419		5 337		10 319				5 788		7 075		46 939
less .11C Mechanical				(350)				(1 203)				(48)		(58)		(1 660)
less .13C Mechanical				(250)				(700)				(23)		(28)		(1 000)
less .17C Mechanical				(120)				(320)				(8)		(12)		(460)
				17 699		5 337		8 096		NIL		5 709		6 976		43 819
				40.39%		12.18%		18.48%		-		13.03%		15.92%		100.00%
332																
.11 RESERVOIR CLEARING			27.5%	1 746		635		-		-		1 784		2 184		6 350
.21 DIVERSION TUNNELS			34.3	2 837		1 331		1 417		NIL		1 208		1 474		8 270
.22 & .23. COFFERDAMS				7 057		667		6 552		-		1 370		1 669		17 318
.3 MAIN DAM				90 631		18 846		53 975		-		24 561		30 057		218 070
.4 SADDLE DAM				7 147		1 395		1 072		0		8 638		10 609		30 866
.52 MAIN (CHUTE) SPILLWAY				11 082		5 765		6 765		-		4 841		5 916		34 373
.53 EMERGENCY SPILLWAY				5 594		5 917		886		-		3 333		4 072		19 808
.6 INTAKES				2 050		1 267		1 304		-		1 018		1 243		6 883
.7. SURGE CHAMBER				3 045		818		371		-		1 085		1 326		6 650
.8 PENSTOCKS				7 672		2 398		5 311		-		2 509		3 064		20 953
.9 TAILRACE TUNNEL				7 695		2 693		2 999		-		3 122		3 804		20 314
				148 556		41 732		80 652		NIL		53 469		65 418		389 855
				38.11%		10.70%		20.69%		-		13.72%		16.78%		100.00%
336.1 ROADS				9 419		472		-		-		8 297		9 322		27 510
				34.24%		1.72%		-		-		30.16%		33.88%		100.00%
TOTAL CIVIL DIRECTS				175 674		47 541		88 748				67 475		81 716		461 184 169
				38.09%		10.31%		19.24%				14.63%		17.72%		99.99%

97.02.02 Form 131A

FOLD LENGTH
12
11
8.5
8

AUTO

MANUAL

FEED

Rev	By	Checked

EXPLANATORY NOTE:

- THE ESTIMATE TOTAL, IN CURRENT U.S. DOLLARS @ $ 324 MILLION, WAS DEVELOPED ON A JUDGEMENTAL BASIS WITH THE AID OF A PRELIM. SCHEDULE.

- IT IS DIFFICULT TO RECONCILE WITH WATANA INDIRECTS, DUE TO UNKNOWN LABOUR CONTENT. HOWEVER, STRICTLY ON BASIS OF CONTRACT YEARS THIS DEVIL CANYON VALUE MAYBE HIGH BY $ 30 MILLION.

- ONLY CIVILS HAVE BEEN CONSIDERED.

Calculations

SUBJECT APA

By IAJ Date Jan 82 Project No. P5700

Checked ____ Date ____ Calculation No. ____

Page ___ of ___

Rev | By | Checked

Contractor's Indirects Reconciliation.

Devil Canyon.

CONTRACT	1	4	7	8	9	10
FROM SUMMARY OVERLEAF	28.0	20.43	105.38	46.932	113.198	40.779
LESS H.O & FEE	⟨9.5⟩	⟨7.000⟩	⟨27.400⟩	⟨12.420⟩	⟨23.560⟩	⟨11.280⟩
BASE [illegible]	18.5	13.43	77.98	34.512	89.638	29.499
REV^D	22.8	16.5	95.9	42.5	110.250	36.283

TOTAL DEVIL CANYON

Civil Contractors Indirects = $ 324 MILLION.

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60.04.03 Form 148B

Calculations
SUBJECT
APA

By IAI Date Jan 82
Checked ____ Date ____
Project No. P570-
Calculation No. ____
Page ___ of ___

Rev	By	Checked

Reconciliation:

CHECK FOR "BUST"

DEVIL CANYON			WATANA.	
19.0	(2.77%)	H.O	19.9	(1.59%)
62.6	(9.136%)	FEE	71.8	(5.76%)
685.2		T.I.C.	1245.5	
81.6	(11.90%)	E	91.7	(7.36%)

REVISE TO:

Head Office	2%	=	13.0	19.0
Fee	7%		48.0	62.6
		+ 61 from		81.6

= $ 20.6 Reduction in D.C.

STILL NOT SUFFICIENT ENOUGH a Drop!

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Calculations
SUBJECT APA

By IAJ Date Jan 82 Project No. P5700
Checked ____ Date ____ Calculation No. ____
Page ___ of ____

Rev	By	Checked

RECONCILIATION:

DEVIL CANYON.

	INDIRECTS (35.5)	DIRECTS (64.5)	TOTAL (100%)
		($ 1000)	
IAJ →	354.716	644.484	999.200
		50%	
PREV. EST.	243,427	442,472	685,899.

WATANA

	397.845 ✓	722,855	1,120,700
		55%	
PREV. EST.	442.2	803.3	1,245,500

Totals

354.7 + 397.8 = 752.5

Vs

243.4 + 442.2 = 685.6.

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Calculations

SUBJECT

APA

By IAJ Date Jan '82 Project No. P5700

Checked ____ Date ____ Calculation No. ____

Page ___ of ____

Rev	By	Checked

RECONCILIATION:

CONTRACTORS INDIRECTS.

DAM	1ST. EST.	ADJUSTMENT	REVISED
DEVIL CANYON	354.7	<20 fec + O'HD>	334.7
WATANA	397.8		397.8
			732.5

DESIRED RESULTS: PROBABLY

Devil Canyon	243.0	is factor	= <27% IAJ Est>
Watana	442.0	"	= +10% on IAJ Est.
	685.0		

IAJ Range

	-15%			+15%
DC	284.0	(243.0)	334.7	385.0
Wat.	338.0		397.8 (442)	457.0

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60.04.03 Form 148B

0 0 0 2 5

(Q) FEASIBILITY REPORT

SUPERVISION

L.A.J. MAR 8 RECD
P5700 DC E.

CONTRACT DURATIONS.

C 1 - 20M. = 1.67 Y.

SUPERINTENDENTS

GENERAL	= 1.67
DEPUTY	= 1.67

(3.34)

C 4 - 17M = 1.42 Y

GENERAL	= 17 M.
DEPUTY	= 17
EXCAV.	= 6
CONCRETE	= 6
GATES	= 4
OFFER.	= 5

(4.58)

C 7 - 54M = 4.5Y

D. N.S

GENERAL	/	= 4.5
DEPUTY	/	= 4.5
EXCAV.		= 1.0
CONCRETE	/ /	= 8.0
CARP	/ /	= 8.0
MECH.	/	= 4.0
ELECT	/	= 4.0

(34.0)

L.A.J. MAR 8 RECD

C8 - 38M = 3.17Y

GENERAL	=	3.17	
DEPUTY	=	3.17	
EXCAV. - 22M	=	1.83	+ 1.83
CONCRETE	=	1.50	+ 1.50
MECH	=	1.50	+ 1.50
ELECT	=	1.0	+ 1.00
RIGGING	=	1.0	+ 1.00
			20.0

C9 - 48M = 4.0Y

	PENST.	P.H. (MONTHS)	T.G.	S.C	T.R.			
GEN.						=	4.0	
DEP.						=	4.0	
ROCK	8	12	12	8	16	=	4.7	+ 4.7
CONCR.	20	36	4	4	8	=	6.0	+ 6.0
CARP.	20	36	4	-	-	=	5.0	+ 5.0
MECH.	24	36	-	-	-	=	5.0	+ 5.0
ELECT.	24	36	-	-	-	=	5.0	+ 5.0

59.4

C10 - 18M = 1.5Y

	S.D.	E.S.	BE.			
GEN.				=	1.5	
DEP.				=	1.5	
EXCAV.	6	14		=	1.7	+ 1.7
CONCRETE		8	6	=	1.2	+ 1.2
FILL	-	-	-	=	-	

8.8

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CONTRACT Nº	1	4	7	8	9	10	
DUEATION	# 1.67'	# 1.42'	# 4.5'	# 3.17'	# 4.0'	# 1.5'	
1) RESID. MGR	-	1	1	1	1	-	29.35 M-Y
1) ADMIN MGR	1	1	1	1	1	1	
1) FIELD SUPT.	2	3.2	7.6	6.3	14.9	5.9	F.T.
FIELD ENGR	2	4	9	6	9	6	
2) R.A. CHIEF	-	1	1	1	1	1	170.57 M-Y
OFF. ENGR	1	1	1	1	1	1	
COST ENGR	1	2	2	1	2	1	
ACCOUNTING	1	1	7	5	7	2	
TIME KPR	1	2	6	4	6	2	
4) PURCHASING	-	1	1	1	1	1	228.49 M-Y
TEL/TX	-	-	1	1	1	-	
PRINT SH.	-	-	1	1	1	1	
SECRETARY	1	1	3	2	3	1	
5) SAFETY	2	2	2	2	3	2	134.32 M-Y
W'HOUSE	5	5	7	5	7	5	
NUMBER	17	25.2	50.6	38.3	58.9	29.9	
MAN YRS.	28.4	35.8	227.7	121.4	235.6	44.9	
COST $	1,960,000	2,470,000	15,690,000	8,370,000	16,230,000	3,090,000	= 47,827,000
% 27	20.81	24.96	17.31	63.7	44.9	20.96	= 27.2 %

L.A.J. MAR 8 RECD
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ACRES Calculations

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D.C

FIELD INDIRECTS SUPERVISION SALARIES.

CONTRACT No	4	7	8	9	10
MY.	55	373	174	443	144
AVE PER M.Y. (68900)					
TOTAL.	$ 3,790,000	25,700,000	11,990,000	30,500,000	9,900,000
	1.1	1.6	1.1	1.1	14.7

Σ = $81,850,000

1.6

1.8b

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D.C.

FIELD INDIRECT MAN YEARS.

| | | |

AGRES

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CONTRACT C4

SUPERINTENDENTS

ROADS / GENERAL + DEP.	4 yrs.	
ROCK	3/4 yr	2 x 3/4
CONCRETE	3/4 yr	2 x 3/4
COFFERDAM	1 yr.	2 x 3/4
6.5	4.5 m.yr.	4.5 m.yr. X

SUPERVISORS.

CONTRACT C7

SUPERINTENDENTS

	yrs.		
GENERAL	6	-	
2ND SHIFT DEP.	6	-	
EXCAV. SUPT.	2	2 x 2	4
CARP. SUPT.	6	2 x 6	12
CONCRETE SUPT.	5	2 x 5	10
MECH.	6 ✓	2 x 6	12
ELECT.	6 ✓	2 x 6	12
RIGGING.	5 X	1 x 5	5
	42 m.yr.		55 X

SUPERVISORS.

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D.C

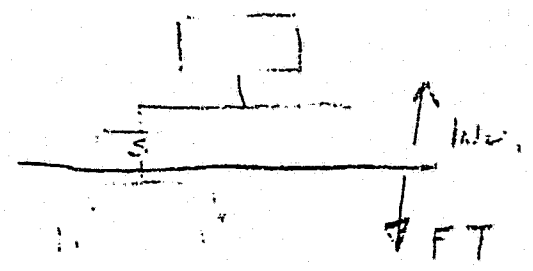
CONTRACT C10

SUPERINTENDENTS

GENERAL	3
DEPUTY	3
EXCAVATION	1
FILL	2
MECH.	3
	12 M.YR.

SUPERVISORS.

	-
2 x 1	= 2
2 x 2	= 4
2 x 3	= 6
	12 MYR



CONTRACT CB

SUPERINTENDENTS

	CHSP.	INTAKE	Σ
GENERAL	4	-	4
DEPUTY	4	-	4
EXCAV.	2.5	1	3.5
CONCRETE	2	1.5	3.5
MECH.	1	1.5	2.5
ELECTR.	1	1.5	2.5
RIGGING.	1	1.5	2.5
			22.5

SUPERVISORS.

	CH.	IN
	2.5 x 2	1 x 2
	2 x 2	1.5 x 2
	1 x 2	1.5 x 2
	1 x 2	1.5 x 2
	1 x 2	1.5 x 2

29

X

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CONTRACT C 9

	SUPERINTENDENTS P	PH	TG	SC.	Σ	SUPERVISORS. P	PH	TG.	SC	Σ.
GENERAL					7					
2ND SHIFT DEP.					7					
ROCK	1.5	2.0	1.0	1.5	6					
CONCRETE	1.0	3.5	0.5	1.5	6.5					
CARP.	2.5	3.5	0.5	1.5	8					
RIGG	2.0			+2.5	4.5					
MECH	2.5	3.5	3.5		9.5					
ELECT	2.5	3.5	3.5		9.5					
T.G. INST (M)					2.5					
" " (E)					2.5					
					63 MAN YRS.					

Σ 98 MYR.

CONTRACT C10

1 - [illegible]

	SUPERINTENDENTS S.D.	E.S.	SY	Σ	SUPERVISORS. Σ
GENERAL				3	
2ND SHIFT DEP.				3	
EXCAV.	1	1	1	3	
CONCRETE	.	1(?)	1	2	
FILL	2	2		4	
MECH.			1	1	
ELECT.			1	1	
				Σ 17 MYR.	

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Σ 22 MYR.

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CONSULTANTS APPROACH

BASE SALARY	3000	
FIELD ALLOWANCE	450	
JOB CONDITIONS	750	
FOOD ALLOWANCE	300	
BURDEN	810	
		5310

ANOTHER APPROACH

FOREMANS RATE	5612		
JOB CONDITIONS	841		
BURDEN	1515		19[illegible]
		7968	

CONTRACTORS APPROACH

FOREMANS RATE	5612		
10% PAY SCALE	561		
OVERTIME PREMIUM	1605		
BURDEN	1666		17.6 [illegible]
		9444	

$\sqrt{\Sigma^2} = \$7.700$

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TYPICAL CONTRACTOR MIX.

? → THIS JOB

JOB MANAGEMENT	1	2	2
JOB SUPERVISION	8	18	29
ENGINEERING	13	30	30
OFFICE	3	7	7
PURCH. & WAREHOUSE	4	9	9
CLERICAL	15	34	23
		100	100

	%WT.	REL. PAY Scale		$/M.	NET (30% BURD)
JOB MGT	2	1.2	× 7700	9240	7100
JOB SUP	29	1.0		7700	5900
ENG	30	.95		7300	5600
OFFICE	7	.60		4620	3500
P & W	9	.40		3080	2400
CLERICAL	23	.30		2310	1776

74.6 × $ 7700 = $ 5744.00

	PAY/JOB HR.
JOB MGT	30.36
JOB SUP.	25.23
ENG	23.95
OFFICE	14.97
P & W	10.26
CLERICAL	7.59

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FIELD SALARIES:

BASED ON AVE. LAB. RATE OF:

5 DAYS @ 9HRS ie 5 x 8 S.T = 40
5 x 1 .5.T = 10
1 DAY @ 9HR ie 1 x 9 DT = 18
68 ie PAY 68 / WORK 54 = 1.26

PAYROLL BURDEN = 1.30

∴ BASE = $ 15.00 x 68 x 1.30 x 4.33 = $
= $ 5741 PER MONTH.

E.M.	+ 10%	8000
A.M.	+ 10%	7300
F.S.	+ 10%	6600
F.E.	+ 5%	6000
ACC	- 10%	5000
T.K.	- 5%	4200
P.	"	4200
NEW.	- 10%	3000

Too Low - S.
Too High - G.

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CONTRACTORS' INDIRECTS.

No	FIELD SUPERVISION	RATE	MONTHS	TOTAL
	RESIDENT MANAGER	8000		
	ADMIN MANAGER	7300		
	FIELD SUPERVISORS	6600		
	FIELD ENGINEERS	6000		
	Q.A. LAB TECH.	5800		
	OFFICE ENGR.	6800		
	COST ENGR	6500		
	ACCOUNTING	5000		
	TIME KEEPING	4200		
	PURCHASING	4200		
	MISC. LABOUR			
	TEL/TEX OPERATOR	3000		
	PRINT ROOM	3000		
	SECRETERY	3500		
	SAFETY MAN	6000		
	FIRST AID MAN	6000		
	WAREHOUSE & YARD REC.	5700		
	MASTER MECHANIC.	6600		
	TOTAL			

MAN MONTHS:

NOTE: INCLUDES PAYROLL FRINGES.

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(Q) FEASIBILITY REPORT

STAFF VEHICLES

000026

MAR 2 4 1982

D.H. MacDonald

2C

ITOB

LOCALS

TRAVEL $100

EXP 200

FRT $300

$600 X110 = $66000

LWR 48'S

TRAVEL 1000

EXP 9000

FRT 3000

13,000 X 71 = $923,000

$989,000

RECAST

LOCAL 48'

TRAVEL: 100X110 + 1000 X 71 = 11,000 + 71,000 = 82,000

EXP = 200X110 + 9000X71 = 22,000 + 639,000 = 661,000

FRT = 300X110 + 3000X71 = 33,000 + 213,000 = 246,000

66,000 + 923,000 = $989,000

Calculations
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D.C.

CONTRACTORS INDIRECTS. (STAFF MOBILIZATION).

Contract No								
Total Staff	10	48	4	4	27	62	7	
Nucleonics (U.S. South)								
Surveyor	4	24	2	2	4	36	4	
Surveyor	3	18	1	1	3	26	3	
Others	3	6	1	1	3	14	1	
	10	48	4	4	10	76	8	
Locals	7	35	3	3	7	55	6	
Mobilize U.S. Hirer	271,800	1,303,200	108,720	108,720	271,800	2,064,240	217,440	
Mobilize Locals	43,000	215,000	17,200	17,200	43,000	335,400	34,400	
Salaries U.S. Hirer (3)	310,000	1,488,000	124,000	124,000	310,000	2,356,000	248,000	
Salaries Locals (1)	244,800	1,175,040	97,920	97,920	244,800	1,859,520	195,840	
	871,600	4,181,280	348,840	348,840	871,600	6,615,160	695,680	
	x 300	x 100	x 400	x 100	x 100	x 100	x 100	
	872,000	1,489,000	994,000	994,000	994,000	994,000	994,000	
	454,000	(100) 2,233,000	(100) 1,194,000	(75)				
	1526,000	3,722,000	2,190,000					

R.O. x 400 x 100

ACRES

Calculations

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CONTRACTOR'S INDIRECTS.

3.0	STAFF MOBILIZATION	FIXED	MOTH	RATE	TOTAL
25	MOVE EFFECTS	2500			
25	STORAGE		12	100	
60	EXTRA BAGGAGE	100#		5	
60	AIR FARE	500			
25	TEMP. ACCOM. EXPENSE		3	3000	
				15,100	377,500
	SALARIES				
25					

(Q) FEASIBILITY REPORT

STAFF MOBILIZATION

PERSONNEL VEHICLES (STAFF).

CONTRACT NO	1	4	7	8	9	10
DURATION	1.67	1.42	4.5	3.17	4.0	1.5
CAES - EM	-	/	/	/	/	-
- AM	/	/	/	/	/	/
- ENG	/	/	/	/	/	/
- PMS.	/	/	/	/	/	/
	5.01	5.68	18	12.68	16.0	4.5
P.U.TR - G.S.	/	/				
- D.S.	/	/				
- OTHER		1.23				
	2.0	3.23	34.0	13.17	33.7	5.9
COST						
- CARS	37,000	42,000	132,000	93,000	118,000	33,000
- TRUCKS	43.000	70,000	734,000	284,000	727,000	127,000
	80,000	112,000	864,000	377,000	845,000	160,000 = ₦2,440,000
% F.S.	4.08	4.53	5.6	4.5	5.2	5.2

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L.A.J. MAR 8 RECD

ACRES

Calculations

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D.C.

CONTRACTOR'S INDIRECTS (VEHICLES).

CONTRACT NO.	4	7	8	9	10
CARS	53,800	176,400	102,900	176,400	88,200
PU TRUCKS	~~208,500~~ 280,540	1,812,700	906,400	2,546,400	668,900
	~~267,300~~	1,989,100	1,009,300	2,722,800	757,100
R.O.	340,000 ~~270,000~~	1,990,000	1,010,000	2,720,000	760,000
% L	1.07	1.16	1.26	1.3	1.15

NOTE: THE L IS APPROXIMATE ONLY.

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ACRES

Calculations

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D.C.

CONTRACTORS INDIRECTS.

PERSONNEL VEHICLES MAN. YRS.

10 3 (X.Y) 12 ≅ 82

3 X 17 (11) X 31 43 ≅ 370

9 2 (X.Y) 24

1 (6) X 63 (49) X 118 142

CONTRACT NO 4 7 8

DURATIONS 2 (X.Y) 6 (X.Y) 3.5 (X.Y)

CADS 2/9 1 1 1

ADD 1 1 1

ENG 1 1 1

PHS 1 1 1

8 24 14

P.V. TRUCKS

MTECH 1 2 X 6 X (3.5) X

GEN. SUP. 1 2

DEP. SUP. 1 2 42 23

SURVEY 3

SURVEYS. 2 (4) X (36) X (15) X

13 84 44.5

42

≅ 21 108 55.5

56

TYE AVE. - 65 Vehicles recycle.

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CONTRACTOR'S INDIRECTS.

1.) STAFF VEHICLES. $ 9000 WAGON.

	FUEL	OIL & GREASE	PARTS	TIRES	LABOUR	
Σ	$ 1000 (1.0)	250 (0.25)	600. (0.60)	400 (0.40)	900 (0.90)	= $ 3150
OWNERSHIP	3 yrs.					= $ 3000
INT.						= $ 1200
						$ 7350

COST/YR.

STAFF FUNCTION V. (VEHICLES).

MANAGER	1	
DEPUTY	1	
ENGR.S	1	
PHS.	1	
	4	= $ 30,000/yr.

3,000 GAL/YR.

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Contractor's Indirect.

2.) Supervisor Vehicles $ 9000 Truck.

FUEL	OIL & GREASE	PARTS	TIRES	LABOUR.
12 GPD	25%		2 SETS	1 HR
@	OF	LOT	PER	PER
1.50	FUEL		YEAR	WK.
		1600	800	

× 330

Σ $ 5940 (0.9) $1490 (0.23) $1600 (0.24) $800 (0.12) $1750 (0.27) = $ 11,580

Ownership $ 147. = $ 10,000

Cost /yr. $ 21,580

2 shifts @ 10 hrs/shift × 330 days = 6600 hrs = $ 3.27/hr.

Operations. (Vehicles)

	A	B	C	D	E	Total
Superintendent. (V)						5
Shift Supervisors. (V)						5
Major Mechanic.						1
						11

TYPICAL

Add 2 for allowance, $ 43,000
Spare $ 30,000
$ 237,000

$ 310,000 per year.

4 ops @ $ 60,000/op.
52,000 gall/yr.

20.

Calculations

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CONTRACTORS' INDIRECTS.

PERSONNEL VEHICLES.

LANDED COST	HRS PER YR	ECON LIFE	DEP.	INT. INS. & TX	FUEL		LUB OIL GR.	REPAIR		TIRES	MISC.	TOTAL
					CONS.	PRICE		PARTS	LAB.			

AVERAGE NUMBER OF VEHICLES =

COST PER YEAR = × HRS @ $ /HR.

=

ADD, FOR HEATER WIRING =

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(Q) FEASIBILITY REPORT

MISC. EQUIPMENT

I.A.J. MAR 8 REC'D

MISC EQUIPMENT.

FROM PREVIOUS ESTIMATE - COST/YR/CONTRACTOR $ 1,121,000

PER REVIEW WITH F. TOTH

DELETE	- FUEL TRUCK	158,000		
	- YARD CRANE	50,000		
	- BOOM TRUCK	23,000		
	- MISC. REPAIR	420,000		(651,000)
ADD	- PANEL TRUCK		25,000	+ 25,000

$ 495,000

: IN TOTAL FOR CONTRACTS.

No	Yrs.	Cost	Total
1	1.67	827,000	
4	1.42	703,000	
7	4.50	2228,000	
8	3.17	1569,000	
9	4.0	1980,000	
10	1.5	743,000	
			$ 8,050,000

ACRES

Calculations

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CONTRACTOR'S INDIRECTS (MISC. EQUIPMENT)

CONTRACT	4	7	8	9	10			
DURATION	2	6	3.5	6	3			
MISC. EQUIPMENT	2,242,000	6726000	3,924,000	6726000	3,363,000	Σ 22,981,000		
Revised @ 0.04 ~ LAB.	$ 1,010,000	$ 6,853,000	$ 3,200,000	$ 8,120,000	$ 2,640,000	Σ 21,823,000		

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ACRES

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DC.

CONTRACTORS INDIRECTS (MINE SERVICE)

PER YEAR PER CONTRACTOR.

ITEM	QUANTITY	HRS	RATE	TOTAL.	
FUEL TRUCK	1	4500	35	158,000	X
YARD CRANE	1	250	200	50,000	X
YARD F.L. TRUCKS	1	1000	30	30,000	
YARD P.U. TRUCKS	2	2000	25	100,000	
FLAT BED	1	250.	60	15,000	
BOOM TRUCK	1	500	45	23,000	X
WELDING MACHINES	2	500	10	10,000	
OPERATION		10,500	30	315,000	
MISC REPAIR LABOUR.				420,000	X
				$ 1,121,000	

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Calculations

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CONTRACTOR'S INDIRECTS.

LABOUR RELATED TO VEHICLE & EQUIPMENT REPAIR AT MAINTENANCE GARAGE AND NOT REFLECTED IN COSTS PER OPERATING HOUR.

TASK	MEN/MONTH.	$
FUEL DEPOT	2	
WASHER STATION	2	
EQUIPMENT RECORDS	2	
MACHINIST	1	
	7 @ $ 60,000 PER YR	= $ 420,000 ✓

MAN MONTHS: 70 PER YEAR.

L.A.J. MAR 8 RECD

CONTRACTOR'S TEMPORARY BUILDINGS.

	1000 $
PREVIOUS FIGURE (TOTAL) IN SUMMARY BY (?) INCORRECT, & ADD FOR CI CONTRACT, SAY,	9420 1079
	10499

THIS AMOUNT COMPRISES:	1000 $	ROUND
SHOPS	5168	5200
MAINTENANCE EQUIPMENT	1338	1300
CONTRACTORS OFFICES	1551	1500
TRAILERS	600	600
MAINTENANCE & REPAIR	1844	1900
	10,501	≅ 10,500

FROM DATA NOW AVAILABLE ON DIRECTS.

TOTAL COST ÷ LABOUR = 6%

NOTE: OFFICES AREAS NOT REDUCED ON ACCOUNT OF SUPERVISORS BEING IN DIRECT ACCOUNTS.

ACRES

Calculations

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DC.

CONTRACTORS INDIRECTS (OTHER BLDGS)

CONTRACT No	4	7	8	9	10
BUILDING AREAS	⌀	⌀	⌀	⌀	⌀
A MAIN. SHOP	5000	9000	5000	9000	9000
D TIME OFFICE	100	200	200	200	200
E WAREHOUSE	2000	10000	2000	10000	2000
F TOOL SHOP	200	200	200	200	200
H CARP SHOP	600	2000	1000	1000	600
J DRILL SHOP	400	400	400	600	600
K EXPL. MAG.	800	400	-	1200	400
L. TOILETS.	400	1200	800	1600	1200
BLD. COST.	570,000	1,294,000	614,000	1,326,000	794,000
EQUIP COST	198,000	248,000	198,000	248,000	248,000
B. OFFICE COST	153,000	327,000	261,000	351,000	306,000
C. TRAILER COST	60,000	120,000	120,000	180,000	60,000
	981,000	1,989,000	1193,000	2105000	1,406,000
REPAIR & MAINT.	98,000	597,000	209,000	631000	211,000
$	1,079,000	2,586,000	1,402,000	2,736,000	1,617,000
Σ AVE / ⌀	97	96.5	111.0	97.9	96.0

Σ = $9,420,000

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D.C.

FIELD INDIRECTS (TEMP. BLDGS)

FIELD OFFICE & TRAILERS.

CONTRACT Nº	4	7	8	9	10
AVE OFF. STAFF	22	46	36	44	35
AVE SUP. STAFF.	5	16	14	30	13
TOTAL	27	62	50	74	48
LESS SHIFT PERS.	<9>	<17>	<13>	<22>	<13>
NET PERSONS OFF.	18	45	37	52	35
Nº IN TRAILERS	6	12	13	18	6
NET SPACE FOR Nº	12	33	24	34	29
FIXED AREA	300	300	300	300	300
AREA FOR PERSONNEL	720	1980	1440	2040	1740
A) OFFICE AREA ⌀	1020	2180	1740	2340	2040
B) TRAILERS (PLUS)	1	2	2	3	1
CHECK ⌀/TOTAL	60	55	59	56	55

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CONTRACTORS INDIRECTS.

6.0	TEMPORARY BUILDINGS	AREA(SF)	UNIT COST	EQUIP.	TOTAL
A	MAINTENANCE GARAGE	9000	60	150,000	
B	OFFICE	2500	150.	-	
C	FIELD TRAILERS.	4 x 400	150.	-	
D	TIME OFFICE	200	200	-	
E	WAREHOUSE	10000	40	20,000	
F	TOOL SHOP	200	150	50,000	
G	FIRST AID	400	200	-	-
H	CARP. SHOP	2000	60	8000	
J	DRILL SHOP	400	60	20000	
K	EXPL. MAGAZINE	400	50	-	
L	TOILETS.	800	100	-	
				E	
	REPAIR AND MAINTENCE				
	WINTERIZATION PERIODS.				
	TOTAL				

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(Q) FEASIBILITY REPORT

CONSUMABLES

L.A.J. MAR 8 RECD

CONTRACTOR'S CONSUMABLES

CONTRACT Nº	LABOUR ($M)	YRS.	CONSUMABLES (2% L)	TOOLS. (0.5% L PER YR)	
1	9419	1.67	188,000 /	79,000 /	= 267,000
4	9894	1.42	198,000 /	70,000 /	= 268,000
7	90631	4.50	1813,000 /	2,039,000 /	= 3,852,000
8	13132	3.17	263,000 /	208,000 /	? = 471,000
9	36111	4.0	722,000 /	722,000 /	= 1444,000
10	14741	1.5	295,000 /	110,000 /	= 405,000
			3,479,000	3,228,000	= 6,707,573.2

GOOF!

Calculations

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CONTRACTOR'S CONSUMABLES.

EXPLANATORY NOTE :

1. WITHOUT "ACTUAL" HISTORICAL DATA, THIS ACCOUNT IS DIFFICULT TO ESTIMATE.

2. TO A CONSIDERABLE EXTENT, THESE CONSUMABLES MIGHT BE INCLUDED IN THE DIRECTS BUT, THEY CANNOT BE IDENTIFIED.

3. THE FIRST APPROACH TAKEN, WAS TO "ALLOW" $ X $ Y PER MONTH. THE RESULTS LOOKED LOW.

4. THE SECOND APPROACH, ASSUMES A CERTAIN LABOUR CONTENT AT MID U.S. CONTINENT LEVELS, AND 5% OF THIS TAKEN FOR CONSUMABLES. IE IN TOTAL ~ $ 14.38M OR $ 2M PER YEAR.

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ACRES **Calculations**

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DC.

CONTRACTORS INDIRECTS. (CONSUMABLES)

	4	7	8	9	10
L/FS	25,266 ??	171,333	80,000	203,000	66,000
IN/IA 50	13 M	86 M	40 M	101 M	33 M
CONS 5% L	650,000	4,300,000	2,000,000	5,050,000	1,650,000
$/YR	325,000	716,000	571,000	841,000	550,000
$/F.S./YR.	59,000	44,000	39,000	31,000	42,000
REVISED TO $40,000 PER F.S./YR.	$ 440,000	$ 3,880,000	$ 2,060,000	$ 6,440,000	$ 1,560,000

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Calculations

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DC.

CONTRACTORS INDIRECTS - CONSUMABLES

| | U.C. | | DAM. | | |

Calculations

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CONTRACTORS INDIRECTS.

7.0	CONSUMABLES.	QUANTITY			TOTAL
.1	HAND TOOLS	LOT			
.2	TRADES RAINGEAR	LOT			
.3	HATS	LOT			
.4	SAFETY GEAR	LOT			
.5	THERMOS.	LOT			
.6	SANITATION SUPPLIES.	LOT			
.7	ANTI - FREEZE	LOT			
.8	SHELVING	LOT			
.9	PORTABLE HEATERS.	LOT			
.10	TARPAULINS.	LOT			
.11	ROD & GAS.	LOT			
.12	TEMP. ENC.. LUMBER.	LOT			
.13	GENERAL HARDWARE.	LOT			
.14	SLINGS. GUYS & TACKLE	LOT			
		E			
	ALLOWANCE FOR ADDITIONAL SEASONS —				
	—				
	SCAFOLDING.				
	TOTAL				

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(Q) FEASIBILITY REPORT

PLANT & UTILITIES

0025

I.A.J. MAR 8 RECD

CONTRACTORS UTILITIES.

NOTE: FUEL AND ENERGY COST BY OWNER.

CONTRACT Nº	MONTHS @ SITE
1	20
4	17
7	54
8	38
9	48
10	18
	195

UTILITY	ESTABLISHMENT COST	MONTHLY COST	TOTAL
POWER	1940,000	45,000	
LIGHTING		30,000	
POT. WATER		2,000	
TELEPHONE	6,000	2,000	
TELEX	30,000	2,000	
RADIO	36,000	-	
TEMP. HT		15,000	
	2,012,000	18,720,000	20,732,000

12% LABOUR - OK.

Calculations
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CONTRACTORS INDIRECTS. (PLANT).

| | | |

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Contractors Indirects (Heating).

Contract No	9	10
Building Area	27950	16,800
Relative to 1.	1.04	0.63
Seasons	6	3
Multiplier	6.24	1.89
Gallons	3,869,000	1,172,000
Cost	$ 5,805,000	$ 1,758,000
P.O.	$ 5,800,000	$ 1,800,000

Contract No	4	7	8
Building Area	11,100	26800	12630
Relative to 1.	.41	1.0	.47
Seasons	2	6	3.5
Multiplier	.82	6.0	1.65
Gallons	510,000	3,720,000	1,023,000
Cost	$ 765,000	$ 5,580,000	$ 1,535,000
P.O.	$ 800,000	$ 5,500,000	$ 1,500,000

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CONTRACTORS INDIRECTS.

B.O	UTILITIES	FIXED	NON	RATE	TOTAL
.1	TEMPORARY POWER	570,000		45,000	
.2	LIGHTING UNITS			30,000	
.3	YARD LIGHTING	-	-	-	(INCL.)
.4	AIR	494,000		40,000	
.5	WATER	291,000		-	
.6	POTABLE WATER	-		2000	
.7	TELEPHONE	500		1750	
.8	TELEX	5000		2000	
.9	RADIO	6000		-	
.10	FUEL DEPOT.	76000		-	
.11	TEMPORARY HEAT			15,000	
.12	STEAM PLANT	380,000		8,000	

WINTERIZATION PERIODS.

ENERGY COST:

HEATING FUEL COST:

TOTAL

NON MONTHS:

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Calculations

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CONTRACTORS INDIRECTS

TEMPORARY POWER.

ITEM	DESCRIPTION	KW	L.F	HRS	K.W.H.
	AIR PLANT				
	WELDING MACHINES				
	SHOPS.				
	WATER PLANT.				
	CRUSHING PLANT				
	BATCH PLANT				
	GARAGE HEAT				
	GARAGE LIGHT				
	OFFICES HEAT				
	OFFICES LIGHT				
	W'HOUSE HEAT				
	W'HOUSE LIGHT				
	YARD LIGHTING				
	TOTAL ENERGY.				

SEE 0[illegible]

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CONTRACTORS INDIRECTS.

TEMPORARY POWER & LIGHTING.

CONNECTED LOAD KW	LOAD f	PER WORKING DAY SHIFT 1	SHIFT 2	BALANCE	IDLE TIME	KWHRS PER WEEK.
1200	0.7	840	350	150	150	
HRS/WEEK		54	54	36	24	
		45,000	19,000	5,000	4,000	73,000

K.W.HRS PER WEEK			TOTAL KWHRS PER YEAR
SUMMER	WINTER	CLOVE	
73,000 x 31	95,000 x 17	8000 x 4	
			4,000,000

ENERGY COST/YEAR = 4,000,000 KWH @ MILLS

= £

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0025

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CONTRACTOR'S INDIRECTS.

TEMPORARY SERVICES:

	LAB.	MAT.	PLANT	TOTAL.
(a) ROADS & YARD LIGHTING	30,000	125,000	15,000	170,000
(b) POWER DISTRIBUTION	60,000	300,000	40,000	400,000

MAINTENANCE PER MONTH:

1 FOREMAN
4 ELECTRICIANS

$ 30,000
MATERIAL 1,000
EQUIPMENT 14,000

$ 45,000

MAN MONTHS: 15 + 60/YEAR.

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CONTRACTOR'S INDIRECTS.

TEMPORARY WATER LINES.

EXCAVATION AND FILL	30,000		
PIPE	18,000		
VALVES	3,000		
TRACING	6,000		
INSULATION	12,000		
EQUIPMENT	18,000		
	87,000	X 3	= $ 261,000

ADD,

PROVISION FOR HOSES. = 30,000

$ 291,000

POTABLE WATER.

ALLOWANCE $ 2000 PER MONTH.

How Months: 20

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CONTRACTORS INDIRECTS.

HEATING ENERGY. (PER YEAR).

TEMPORARY BUILDINGS:

Vol. = 531,000 FT^3

GARAGE LOUVES = 360,000 FT^3

891,000 FT^3

FOR 6000 FT^3, BTU = 80,000

FUEL = 80 × 0.003 × 14,000

= 3400 GALLONS PER YEAR.

∴ FOR BLDGS = $\frac{891,000}{6000}$ × 3400

= 505,000 GALLONS/YEAR.

ADD, ALLOWANCE FOR TEMP. ENCLOSURES etc.

SAY 20%.

TOTAL = 600,000 GALLONS/YR.

ADD, CAR WASH = 20,000

620,000 GALL/YR.

Calculations

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CONTRACTOR'S INDIRECTS.

TEMPORARY HEATING.

	REPAIR PARTS	REPAIR LAB	OPERATION EQUIP.	OPERATION LAB.	MAT.	TOTAL.
CAR WASH HTR.					15,000	
TANKS.					15,000	
INSULATION					7500	
REPAIRS	2500	60,000				
FUEL TRUCK			50,000	30,000		
			PER YEAR.			$ 180,000

NOTE: FUEL DRAWN FROM OWNER'S BULK TERMINAL BY CONTRACTOR'S TRUCK.

How Months: 18 per yr.

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CONTRACTOR'S INDIRECTS.

FUEL STORAGE.

ASSUMPTION: FUEL DELIVERED DAILY BY OWNER'S FLEET FROM OWNERS BULK STORAGE.

DIESEL TANK	$ 30,000
GASOLINE TANK	$ 10,000
PUMPS	$ 9,000
FREIGHT	$ 8,000
INSTALLATION	$ 14,000
	71,000

ADD,

ALLOWANCE FOR ATTENDENTS SHACK	5,000
	$ 76,000

Man Months: 5

231

Calculations

SUBJECT

APA STUDY.

By IAJ Date Nov'82 Project No. P5700.

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CONTRACTORS INDIRECTS.

WINTER STEAM PLANT

ITEM		$
.1	BUILDING (20'x20'x30')	35,000
.2	FOUNDATIONS	6,000
.3	ELECTRIC BOILER	86,000
.4	AUX. FUEL BOILER	38,000
.5	PUMPS AND ANCILLARIES	18,000
.6	PIPE AND VALVES	30,000
.7	ELECTRICAL	42,000
.8	FUEL TANK.	20,000
.9	BUILDING SERVICES.	10,000
	SUB. TOTAL	$ 285,000
.10	DISTRIBUTION PIPING, INSULATION HOSES & VALVES, TRAPS.	$ 95,000
1.)	CAPITAL COST	$ 380,000

2.) OPERATING COST

1 SUPERVISOR

2 SHIFT OPERATORS.

3

PER YEAR	
LABOUR	PARTS etc.
$ 72,000	$ 25,000

Man Months: 12 PER YEAR.

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Calculations

SUBJECT APA STUDY.

By IAV Date Jan '82 Project No. 15700
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CONTRACTOR'S INDIRECTS.

COMPRESSED AIR PLANT.

ITEM	$	
.1 BUILDING (50'x25'x10')	40,000	
.2 FOUNDATIONS	9,000	
.3 COMPRESSORS (SI+IC)	300,000	{ 2 Electric @ 50% Cap 1 Diesel @ 50% Cap
.4 PIPING & VALVES	30,000	
.5 SWITCHGEAR	70,000	
.6 CABLE & WIRE	15,000	
.7 CRANE	5,000	
.8 FUEL TANK	8,000	
.9 MAINTENANCE GEAR	3,000	
SUB TOTAL	$ 480,000	
.10 ADD. BUILDING SERVICES	14,000	
1.) CAPITAL COST	$ 494,000.	

2.) OPERATING COST.

1	SUPERVISOR
2	SHIFT OPERATORS
1	MECHANIC
4	

PER YEAR	
LABOUR	PARTS, OIL etc.
$ 300,000	$ 160,000

NOT INCLUDED:
a) pipeline, b) 4160 KV POWER LINE c) ENERGY COSTS.

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All Months: 48 per year.

(Q) FEASIBILITY REPORT

YARD SERVICES

L.A.J. MAR 8 RECD

CONTRACTOR'S YARD SERVICES

PER F. TOTH & R. TILCHAM B MAC'82. ROAD MAINTENANCE AND SNOW CLEARING OF CONTRACTORS ROADS BY OWNER.

FROM PREVIOUS ESTIMATE :-

. BARRIERS	68,000
SIGNS	18,000
	$86,000

NOTE: THE INTERPRETATION OF THIS IS NOT CLEAR & I SUGGEST THAT THE ACCOUNT ALLOW FOR HALF WHAT I PROPOSED ORIGINALLY, IE

$ 3,200,000

ACRES **Calculations**

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$ ε = 6,450,000

CONTRACTORS INDIRECTS. (YARD SERVICES).

CONTRACT No	4	7	8	9	10
% TO CONTRACT.	5	31	14	37	13
∴ AMOUNT $	320,000	1,980,000	890,000	2,350,000	830,000
BARRIERS, etc	3,000	20,000	9,000	25,000	8,000
SIGNS	3,000	3,000	3,000	3,000	3,000
	326,000	2,003,000	902,000	2378000	841,000
R.O	330,000	2,000,000	900,000	2,380,000	840,000

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CONTRACTOR'S INDIRECTS.

CONTRACTOR'S ROADS.

- MAINTENANCE & SNOW REMOVAL CREW.

ASSUMPTION: ONE SHIFT OPERATION.

	HRS/YR	EST. RATE	TOTAL
GRADER	2400	50	120,000
TRUCKS	4800	70	336,000
ROAD MATERIAL	LOT	-	160,000
SALT	LOT	-	32,000
OPERATORS	7200	30	216,000
LABOURERS	1800	25	45,000
TOOLS			1,000
			$ 910.000

PROPORTION TO CONTRACT PACKAGES, OR ADD TO MAIN CONTRACT?

MAN MONTHS. 36 PER YR.

FOR 7YRS = $ 6,370,000.

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Calculations

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CONTRACTORS INDIRECTS.

9.0	YARD SERVICES	COST/ RENT	M.		TOTAL
.1	SNOW REMOVAL	76,000			
.2	ROAD MAINTENANCE				
.3	YARD PREPARATION				
.4	FENCING				
.5	DRAINAGE				
.6	BARRIERS.				
.7	SIGNS.				3000
	TOTAL				

Man Months:

(Q) FEASIBILITY REPORT

OFFICE EXPENSE

I.A.J. MAR 8 RECD

CONTRACTORS FIELD OFFICE EXPENSE.

ITEM	UNIT	QUANT.	RATE	TOTAL
OFFICE FURNITURE	LOT	220	600.00 ✓	
OFFICE EQUIPMENT	CALC	48	300.00 ✓	
ENGINEERS EQUIP.	CONTR	6	24000. ✓	
XEROX	M	195	300.	
PRINTROOM	M	195	200	
STATIONERY	M	195	100	
COMPUTER	M	195	1000	
RAINGEAR	MEN	220	200	
EMERGENCY LIGHTING	CONTR.	6	4500 ✓	
TYPEWRITERS	12	ea	800.00 ✓	
POSTAGE	M	195	50	
FIRE EXTINGUISHERS	CONTR.	6	4000 ✓	
FILE CABINETS	ea	440	100 ✓	
SECURITY VAULT	CONTR	6	3000 ✓	
KITCHEN	"	6	1000 ✓	
CONFERENCE RM	"	6	4000 ✓	
				809,000
GENERAL MISC.	LOT	195	250	49,000
				858,000
ADD 40% FOR ALASKA CONSTR				342,000
				1,200,000

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D.C.

FIELD INDIRECTS (OFFICE EXPENSE).

CONTRACT No	4	7	8	9	10
INITIAL EXPENSE					
- FURNITURE	18,000	45,000	37,000	52,000	35,000
- OTHER	60,000	60,000	60,000	60,000	60,000
- ANNUAL	28,000	84,000	49,000	84,000	42,000
	106,000	189,000	146,000	196,000	137,000
ADD FOR ALASKA COSTS.	44,000	91,000	74,000	94,000	63,000
$	150,000	280,000	220,000	290,000	200,000
REVISE TO $3000/MY. CHECK: $	108,000	$ 810,000	$ 389,000	$ 936,000	$ 315,000
AVE $ PER IND. PERSON/YR.	2780	753	1257	653	1389.
	4166	1037	1700	929	1904

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CONTRACTOR INDIRECTS.

10.	OFFICE EXPENSE	FIXED	MT.	RATE	TOTAL
.1	STATIONERY	-		500	
.2	PRINTING	6,000		100	
.3	FURNITURE	30,000	-		
.4	EQUIPMENT	15,000	-		
.5	FIRST AID SUPPLIES	4,500	-		
.6	ENGR. SUPPLIES & EQUIP.	24,000		100	
.7	FIRE EXTINGUISHERS	4,000	-		
.8	EMERGENCY LIGHTING	5,600	-		
.9	RAIN GEAR (STAFF).	2,000	-		
.10	POSTAGE	-		50	
.11	MISCELLANEOUS	-		250	
.12	COMPUTER TERMINAL	14,000		200	
		105,000			+ $14,000/yr.
.20	HEATING				
.21	LIGHTING.				
	TOTAL				

X

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(Q) FEASIBILITY REPORT

GENERAL EXPENSE

0 0 0 2 5

CONTRACTOR'S GENERAL EXPENSE

.1	BONDS	-	BY OWNER
.2	INSURANCES (ONLY DEDUCTABLE PROVISION)	-	360,000
.3	INVENTORY LOSS	-	1390,000
.4	INCIDENTAL FREIGHT	-	1930,000
.5	CLEAN UP 5% LABOUR	-	8700,000
.6	DEMOBILIZATION 2% LABOUR	-	3500,000
.7	FINANCING	-	11,230,000
			27,110,000

DURATION OF CONTRACT 6½ YRS.
ESTIMATED COST $714 MILLION.
No OF MONHLY INVOICES 78
AVE VALUE PER MONTH $ 9.16 MILLION
CONTRACTOR'S COST 85%
NET PER MONTH $ 7.78 MILLION.
LOAN RATE 15%
AVE. COST PER 45 DAYS $ 144,000
TIMES NUMBER OF PERIODS x 78 = $ 11,230,000

PREVIOUS "GUESS" $ 10,300,000 (INCL C1).

0 0 0 2 3

CONTRACTOR'S INCIDENTAL FREIGHT.

CONTRACT Nº	1	4	7	8	9	10
DURATION	1.67	1.42	4.5	3.17	4.0	1.5
	.44	.44	1	.47	1.03	.61
FIRST FREIGHT	50,000	50,000	114.000	54.000	118,000	70,000
ANNUAL "	68.000	58.000	185,000	130,000	164.000	62,000
AIR FREIGHT	80,000	68.000	216.000	152,000	192,000	72,000
	198,000	176.000	515,000	336,000	474.000	204,000

TOTAL INCIDENTAL FREIGHT = $ 1,903,000

L.A.J. MAR 8 RECD

ACRES

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A.F.A.

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D.C.

Contractors Indirects. { General Expense }

Contract	4	7	8	9	10	
		6	5.5	6	3	
-1 Bonds	✓ 213,000	4,743,000	814,000	3,294,000	409,000	
-2 Insurances	✓ 180,000	540,000	315,000	540,000	270,000	
-3 Inventory Loss	✓ 60,000	426,000	199,000	506,000	165,000	
-4 Incidental freight	✓ 194,000	648,000	348,000	649,000	311,000	
-5 Clean-up	✓ 810,000	2,245,000	1,360,000	2,240,000	1180,000	
-6 Demobilization	✓ 160,000	1,035,000	484,000	1,228,000	399,000	
-7 Financing. (not equip)	✓ 450,000	3,100,000	1,450,000	3,660,000	1,190,000	
	✓ 2,080,000	✓ 14,712,000	4992,000	✓ 12,157,000	✓ 3,924,000	

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D.C.

BONDS

CONTRACT	D.L. (M)	T.O.C.	ADV.	FIXED	BONDS $x < 5 \times \frac{4}{1000}$ / YR. DUR		$M
4	25	83	40	25	2	+280	= 305
7	171	570	400	25	6		= 9576
8	80	266	100	25	3		= 1165
9	203	676	200	25	6		= 4705
10	66	220	40	25	3.5		= 585

	BOND Σ	REV^D
4	305	213,000
7	9576	6,703,000
8	1165	816,000
9	4705	3,294,000
10	585	409,000

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60.04.03 Form 148B

ACRES

Calculations

SUBJECT

APA

By [signature] Date Jan '82 Project No. P5700

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I.A.J. JAN 25 R...

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CONTRACTOR'S INDIRECTS.

LOSS ON WAREHOUSE & YARD INVENTORY.

	JOB COST	SALVAGE	PLANNED LOSS
FUEL INVENTORY	300,000	100,000	
OILS & GREASES	50,000	10,000	
PARTS.	300,000	150,000	
MISCELLANEOUS.	40,000	4,000	
	690,000	264,000	426,000

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Calculations

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L.A.J. JAN 25 REC'D

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		10	5	44,000	
		9	6	123,000	
				144,000	
				311,000	
		9	6	135,000	
				246,000	
				288,000	
				669,000	
		8	3.5	57,000	
				143,000	
				168,000	
				368,000	

CONTRACT NO: 4 7

DURATION: 2 6

.1 1ST. FREIGHT	16,000	114,000
.2 ANNUAL FREIGHT	82,000	246,000
.3 AIR FREIGHT & EXPEDIT.	96,000	288,000
	194,000	648,000

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Calculations

SUBJECT APA

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I.A.J. JAN 25 [illegible]

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CONTRACTORS INDIRECTS. (IND. FREIGHT)

.1 INITIAL MOBILIZATION

	TONS IN - OUT	RATE/TON	TOTAL
BUILDINGS	200 - 150	160	
UTILITIES	100 - 50	160	
FURNISHINGS	20 - 5	160	
PERSONNEL EFF.	75 - 75	200	

114,000 — (1)

.2 PER YEAR

PART.	12	-
CONSUMABLES	5	-
PERSONNEL EFF.	98	98

41,000/YEAR. — (2)

.3 AIR FREIGHT & EXPRESS.

500 #/MONTH x 12 x 8.00/# ——— 48,000/YR.

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I.A.J. JAN 25 RECD

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CONTRACTOR'S INDIRECTS

AVERAGE VALUE OF BUILDINGS, PLANT & ESTABLISHMENT
NOT ALREADY COVERED

∴ $ 6 MILLION @ $\frac{0.12}{100}$ PER MONTH = $ 7200 / MONTH.

= $ 86,400 / YEAR.

HIGH

USE $ 3 MILLION = $ 45,000 / YEAR.

PROPERTY TAX.

25% × $ 3,000,000 × $\frac{6}{100}$ = $ 45,000 / YEAR.

$ 90,000 / YEAR.

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Calculations
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: CONTRACTOR'S INDIRECTS.

CLEAN - UP.

1. ON-GOING OPERATION ON ANNUAL BASIS. 360,000 ✓

2. FINAL CLEAN-UP OF CONTRACTOR'S AREA. 100,000 ✓

How Many: 15 + 60/YEAR.

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CONTRACTORS INDIRECTS.

DEMOBILIZATION.

		$
1.	DISMANTLING OF: CONSTRUCTION BUILDINGS. UTILITIES AND SERVICES. PLANTS.	240,000
2.	LOADING CRATING FOR SALVAGE:	120,000
	CONTAINERS	5,000
3	TRANFERRING MOBILE PLANT TO RAIL HEAD.	30,000
4.	FREIGHT AND TRAVEL EXPENSE.	640,000
	$	1,035,000 V

Max. Months: 65

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Calculations

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Financing (Cont)

		4	7	8	9	10
Ave Payment	(M)	1.6	5.6	2.8	2.8	.9
3 Months delay.	/YR	72,000	252,000	126,000	126,000	41,000
Ex dur.		144,000	1,512,000	378000	756,000	144,000
MOB (C/F)		500,000	2399,000	1080,000	2040,000	959,000
	$	644,000	3,911,000	1,458,000	2,796,000	1,103,000
R.O.		650,000	4,000,000	1,500,000	2,800,000	1,100,000
f/F.S (*)		.17	.16	.13	.09	.11
Rev. .12.		450,000	3,100,000	1,450,000	3,660,000	1,190,000

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ACRES

Calculations

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FINANCING

CONTRACT		4	7	8	9	10
H.O. SUPPORT		1263	2855	2283	3388	2200
BUILDINGS		981	1989	1193	2105	1406
OFFICE EST.		90	90	90	90	90
SUPER MOB.		1200	1900	1750	2900	1600
VEHICLES		210	1080	560	1420	430
INVENTORY	(?)	150	1000	500	1300	450
BONDS		100	1100	250	660	130
MISC.		300	2000	1000	2600	900
LABOUR.		3000	22000	11000	26000	8800
		7300	34,000	18,600	40,500	16,000
Mean.		4 M	17 M	9 M	20 M	8 M
			20		17	
FINANCING	$	500,000	$ 2,399,000	$ 1,080,000	$ 2,040,000	$ 959,000

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Sunitna Contractor Financing.

Mobilization Cost Outlay to Contractor.

H.O. Support
Buildings
Office Estab.
Supervision Mob.
Vehicles
Inventory
Misc

$ _____

Then Financing.

$ × 8/12 × 18% = —①

Periodic Financing (Excluding Const. Equip)

$$\frac{(T.I.C - 35\%) - \$\ \text{Mobilization}}{\text{No of years} \times 12\ \text{m/yr}} = \text{Ave Payment.}$$

∴ Average Payment for 3 months (3/12) @ 18% =

Times No of years × _____ —②

Total ① + ② _____

Calculations

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CONTRACTORS INDIRECTS.

11.0	GENERAL EXPENSE				TOTAL
.1	BONDS.	$5M $4/1000		25,000	
.2	INSURANCE	$0.10/$100 M. prop. tax. 25% PLANT	6%/100		
.3	FINANCING				
.4	INVENTORY LOSS				
.5	MISCELLANEOUS FREIGHT				
.6	CLEAN-UP				460,000
.7	DEMOBILIZATION.				1,035,000
	TOTAL				

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ACRES

Calculations

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CONTRACTORS INDIRECTS

LABOUR

- TRAVEL TO ALASKA HIRING POINT.
- TRAVEL TO WORK SITE. ✓
- TRAVEL ON ROUTINE TRIPS OUT. ✓
-
-

L.A.J. MAR 8 RECD

ONSITE LABOUR TRANSPORTATION

FROM PREVIOUS ESTIMATE:		REVISION
NUMBER OF BUSES	– 8 PEAK	5 AVERAGE
HRS PER YEAR	– 2500	2080
RATE/HR	– $46	46
No of YRS	– 7	6.5

∴ ON SITE TRANSPORTATION

– $ 3,110,000

ACRES

Calculations

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DC.

CONTRACTORS INDIRECTS.

BUS TRANSPORTATION

NOTE: NO LABOUR FIGURES AVAILABLE.

FROM % OF LAB. NO OF MEN (AVG) PER SHIFT

CONTRACT	4	7	8	9	10
	80	180	140	210	140
PEAK/SHIFT	160	360	280	420	250
MINC.	16	36	28	42	28

TOTAL ≅ 1700 MEN PER SHIFT.

ACRES

Calculations

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WORKERS TRANSPORTATION.

50 MAN SCHOOL BUS, PURCHASED COST $ 40,000
FREIGHT $ 8,000
HEATING $ 2,000
$ 50,000

LIFE 10,000 HRS. NORMAL. 8,000 @ SITE.
HRS/YEAR 2500 = 3 YEARS.

DEPRECIATION 50,000 LESS TIRES $1000
LESS Salvage $5000 PER HR.
= 44,000 / 8000 HRS 5.50

INTEREST & INSURANCE
$= \frac{22\ (4 - .10 \times 2)}{4}$
= 13.93% x $ 50,000/2500 2.80

FUEL 2.00
LUBE .20
REPAIR 3.00
TIRES 1.00
MISC. 1.00

15.50 /HR.
OPERATOR. 30.00
$ 46/HR.

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ACRES

Calculations

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ONE BUS MOVES 50 MEN IN 1/4 HR.

= 200/HR.

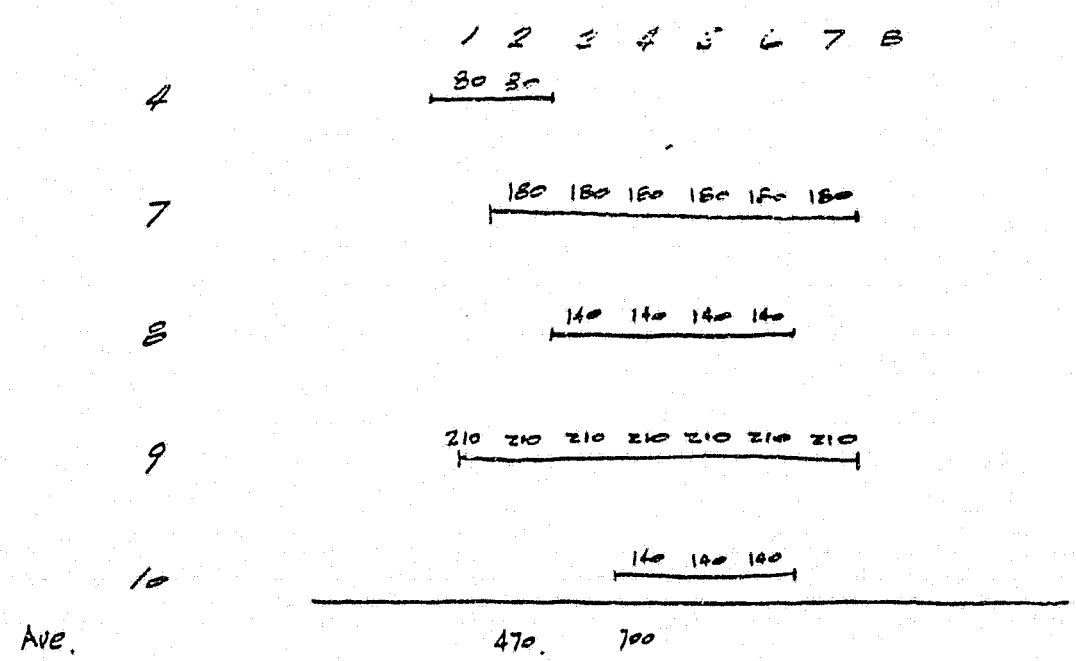
AND 1700 MOVE/SHIFT = 8 BUSES. (PEAK).

∴ COST OF 1 BUS/YR = 2500 × $46 = $ 115,000

FOR 8 BUSES/YR. = $ 920,000

$ 7 YRS = $ 6,440,000

	PRORATE YR	PRORATE M./S.	Σ.	%	$
C4	2	80	160	5	322,000
7	6	180	1080	31	1996,000
8	3.5	140	490	14	901,000
9	6	210	1260	37	2382,000
10	3	140	420	13	837,000
			3410	100	6,438,000



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CONTRACTOR'S INDIRECTS.

TRANSPORTING LABOUR TO SITE.

CYCLE TIME:

	MIN.
LOAD	4
TRAVEL & RETURN	5
DROPS	6
	15

4 PER HR, 2 PER 1/2 HR.
50 MAN BUS, 100 MEN PER 1/2 HR.
AVE 800 MEN PER CONTRACTOR = 8 BUSES

Revised

ASSUMPTION: DOUBLE SHIFT OPERATION.

	HRS/YR	LAB.	EQUIP.	TOTAL
BUSES (8)	12,800	388,000	512,000	$ 900,000

MAN MONTHS: 80 PER YEAR.

247

Calculations

SUBJECT APA.

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DC

CONTRACTORS INDIRECTS (LABOUR TRAVEL)

- LABOUR FROM ALASKA HIRING POINT TO CAMP.

PER R LANG MEMO 20 JAN '82.

- TIME, INCLUDED FOR IN LABOUR RATE.

42 WEEKS ÷ TRIP OUT EVERY = 9.1 5 PER YEAR.

AVERAGE LABOUR FORCE = 2 x 1700 x 6 YRS x 5 TRIPS

= 102,000 TRIPS.

T.O. = 20,000

SUPERVISION = 15,000

137,000

IF, WE RUN A BUS, (OR BUSES). LOW!

50 MEN COSTS 2 x 4 x 46/HR = $ 368

Double IT $ 368

DENVER Extreme $ 54

÷ 50 790 = 15.80 / TRIP.

26

Calculations
SUBJECT

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DC)

LABOUR TRANSPORTATION.

REDUCE THE 50 TO 35 $/TON = $23.00

∴ PROJECT COST = 23 × 137,000

= $ 3,200,000

DISTRIBUTION	%	$
C4	5	160,000
7	31	992,000
8	14	448,000
9	37	1184,000
10	13	416,000

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ACRES

Calculations

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Z.C.

CONTRACTOR'S INDIRECTS (TRAVEL LOST TIME)

CONTRACT NO 4 7 8 9 10

LABOUR:

HIRING TRAVEL TIME

HIRING TRAVEL COST

TRIP OUT TIME

TRIP OUT COST

TRIP OUT XMAS

TRIP OUT COST

TURN-OVER LABOUR

STAFF:

ANNUAL TRIP OUT TO U.S & RETURN.

ALLOW COMP LEAVE

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Calculations

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CONTRACTORS INDIRECTS.

NON PRODUCTIVE LABOUR.

		$
1. LOST TIME ON HIRING.		
- AVERAGE CONTRACTOR 800 MEN @ 1 DAY @ $ 300	=	240,000
- TURNOVER 20%; 160 @ 1 DAY @ $ 300	=	48,000
2. TRIPS OUT PER MONTH		
- 3 LOST DAYS x 9 MONTH @ $ 800 @ 800 MEN	=	6,480,000
3. LOST TIME OF CLOSE-OUT PER SEASON	=	288,000
4. ALLOW STAFF TRIPS OUT 40 MEN	=	400,000
5. COMPASSIONATE LEAVE		
- ALLOW 2%, i.e 17 @ $ 2000	=	34,000
MAN MONTHS: TOTAL.	$	7,490,000

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ACRES

Calculations

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CONTRACTORS INDIRECTS: (MISC. MEALS & BOARD)

CONTRACT No	4	7	8	9	10
MONTHS.	24	72	42	72	36
VISITORS.					
H.O. 3/MONTH x 3 days. =	216	648	378	648	324
EQUIP. REP etc 2 days	48	144	84	144	72
GOV. AGENCY 1x2	48	144	84	144	72
SAFETY 1 PER Q.	6	18	11	18	9
UNION 1 " "	6	18	11	18	9
CLUB AFFILIATION 2x5/YR.	20	60	35	60	30
	344	1032	603	1032	516
REVISE, WITH UNFORESEEN RATE @ $ 55±	380	1100	610	1100	520
$	21,000	61,000	34,000	61,000	30,000

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CONTRACTORS INDIRECTS.

NOTE: NOT INCLUDED

- CAMP CAPITAL COST
- " OPERATING "
- " MAINTENANCE ".

FOOD AND BOARD.

Page #	OPERATION	MAN DAYS WORKING	MAN DAYS CAMP	RATE	TOTAL
	DIRECT LABOUR				
2.	FIELD SUPERVISION.				
3.	INSTALL FIELD FACILITIES				
4.	OPERATE MINC. VEHICLES.				
8.	OPERATE UTILITIES				
9.	YARD SERVICES				
1	VISITORS				
	TOTAL			$	

213

I.A.J. MAR 8 RECD

CONTRACTOR'S HOME OFFICE SUPPORT.

PREVIOUS ESTIMATE "TOTAL"	–	$ 19,000,000
ADD FOR CJ	~	1600,000
		$ 20,600,000

REVISE TO:

ON BASIS OF DIRECTS @ $ 461,000,000

USE 3% = $ 13,900,000

ACRES

Calculations

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DC

CONTRACTORS INDIRECTS (H.O. SUPPORT).

CONTRACT NO	4	7	8	9	10
DURATION	2	6	3.5	6	3
FIXED	234,000	468000	234000	468000	234000
ANNUAL	812,000	2436000	1421000	2436000	1218000
	$ 1,046,000	2904000	1655,000	2904,000	1452,000
CHECK $/MY SUP.	19,000	7800	9500	6600	10,000
% SUP.	27.6	11.3	13.8	9.5	14.7
REVISE TO	$ 1,600,000	4,800,000	3,600,000	6,000,000	3,000,000

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ACRES

Calculations

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$$\frac{4.5}{15} \times \frac{1}{.25} \times .03 = 0'ov.$$

$$= \frac{0.8}{} \quad \frac{3000}{6000}$$

$$= 0.4$$

ACRES

Calculations

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CONTRACTORS INDIRECTS.

	HEAD OFFICE OVERHEAD	RATE	M	EXPENSE	TOTAL
Nº	PERSONNEL (PLANNING).				
1	CONTRACT MGR	5000	6		
2	PROCUREMENT	3000	6		
1	LAB. RELATIONS	3500	3		
1.5	PLANNER	2500	3		
2.0	SUPPORT PERSONNEL	2000	6		
				Σ	112,000
	BURDEN				32,000
	O'HEAD				84,000
	EXPENSE	1000	6		6,000
				Σ	234,000 (FIXED).
	HEAD OFFICE (MONITORING)				
7	FOR 30% OF THEIR TIME	12800	12		154,000
48	TRIPS	1500			72,000
24	EXPENSE	750			18,000
	BONUSES				125,000
	LEGAL SUPPORT				10,000
	AUDIT				10,000
	LICENCES				10,000
	ENTERTAINMENT.				7,000
				+ Σ	406,000 (ANNUAL)

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Calculations

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DC

Contractor Indirects (Salvage on Indirects).

Contract No.	4	7	8	9	10
Vehicles.	30,000	150,000	90,000	240,000	60,000
Misc. Equip.	50,000	125,000	78,000	135,000	44,000
Construction.	5,000	21,000	6000	24,000	7000
Plant	40,000	90,000	30,000	100,000	30,000
Yard Services.	5,000	20,000	9,000	24,000	8,000
Office Furn.	4,000	15,000	12,000	20,000	12,000
Buildings	285,000	129,000	180,000	133,000	300,000
Buildings Equip.	166,000	50,000	80,000	50,000	40,000
	500,000	600,000	500,000	700,000	500,000

27d

I.A.J. MAR 8 RECD

CONTRACTORS FEE.

	$ x M	RATE %
DIRECTS		
- LABOUR	200	15
- MATERIAL	194	5
- PLANT	67	10
INDIRECTS		
- SUPERVISION	48	20
- OTHER	127	5
- H.O. SUPORT.	14	10
	650 M	$ 57,400,000

ie INDIRECTS = 48
127
14
57

246 = 53.3%

Calculations
SUBJECT

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DC

Contractors Fee

Contract No.		4	7	8	9	10	
Σ Ind. (M)		15.370	82.388	38.164	95.154	32.583	
~ Directs.	Case A	24.0	250.0	52,000	72,000	42.000	
	Case B	30.0	170.0	76.	190	64	
					?		
Take Directs @		30.0	200.0	60.0	100.0	60.0	
Ind.		15.0	82.0	38.0	95.0	32.0	
		45.0	282.0	98.0	195.0	92.0	= $712 M
% Fee		13.3	6.4	9.1	9.2	11.4	
Amount/year.		3.0	3.0	3.0	3.0	3.	
Amount		6.0	18.0	9.0	18.0	10.5	
Adjust %		12.0	8.0	9.0	9.0	9.0	
Fee $ =		5,400,000	22,600,000	8820,000	17,560,000	8,280,000	

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Tile Dam Col 7 is too High.

			Supervision @ 15% ave.		Balance (YR)	%	Σ	
1	2	4536	3596	1	2927	1769	8292	8300
2	6	18144	37582	7½	8780	18483	64845	60000
3	3	6300	4095	11	4390	2014	10499	10500
4+6	3.5	8526	10285	4	5122	5058	20465	20000
7,8,9,10	6	18144	10813		8781	5318	24912	30213
	20.5	55650	66371		30,000	32642	129013 ✓	129,013

62642

	Σ	Fixed	S Sp	D.S	N.S	Should be
1	21	12	9	5+3	1 Low	12 + 6 + 4 + 4 + 1 = 27
2	74	15	59	8+25	25 (High)	15 + 8 + 6 + 6 + 1 = 36
3	16	12	4	5	Low.	12 + 6 + 3 + 3 + 1 = 25
x	34	12	22	5+6	6 OK.	12 + 6 + 5 + 5 + 1 = 29
y	22.	12	10	7+5	5 Low	15 + 8 + 6 + 6 + 1 = 36

ACRES

Calculations

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ACRES

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129/243 = (0.53)

		Ind.	C	Directs	Total	Ind. (Net)	(Excl. 20%)	% Directs
1	Diversion	13185	4	23972	37157 ✓	6988	6988 (2)	29.15
2	Main Dam	137,806	7	250549	388355 ✓	73037	73037 (6)	29.15
3	Saddle Dam	15,024	10	27298	42322	7962	7962 (3)	29.15
4	Aux. Spill.	18,570	8	33740	52310	9842		
5	Emer Spill	8,429	10	15317	23746	4467	20,000 (3.5)?	
6	Intakes	10,738	8	19512	30250	5691		
7	Penstocks	7924	9	14398	22322	4199		
8	Power Hs.	19332	9	35123 L	54455	10245	21,026 (6)	
9	Surge Ch.	1674	9	3041	4715	887		
10	Tailrace	10745	9	19522 H	30267	5695		
		243427		442,472	685,899 ✓	129,013 ✓	129,013	
	Fee	Included						

$\Sigma = (D + I) \times 1.20 f.$

$\frac{686}{1.20} = x = 571,582$ [illegible]

$\langle 442,472 \rangle$

129,110

Bye 16.125/yr.

Check 129,110

442,472

571,582

[illegible]

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ACRES **Calculations**
SUBJECT

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AFTER Seismic slide Estimate.

DEVIL CANYON.

.2 DIVERSION & TUNNEL

11	-	4,927
12	-	7633
18	-	1176
21	-	3100
		16,836

COFF	10,418
COFF	9903
	37,157

1.55 D ÷

∴ D = 23972
I = 13185 = 35.5% E

.3 MAIN DAM

15,979	
23,026	
332,830	
2,640	
10,900	
	388,355

D = 250,549
I = 137,806

ACRES **Calculations**
SUBJECT

By _____ Date _____ Project No. _____
Checked _____ Date _____ Calculation No. _____
Page ___ of ____

Rev	By	Checked

.4 Saddle DAM

42,322

D = 27,298
I = 15,024

.5 Aux. Spillway

52,310

D = 33,740
I = 18,570

.5 Emergency Spillway.

23,741

D = 15,317
I = 8429

.6 Intakes

30,250

D = 19512
I = 10,738

284

Rev	By	Checked

.7 Surge Chamber 4715

D = 3041
I = 1674

.8 Penstocks 22,022

D = 1439B
I = 7924

.9 Tailrace 30,267

D = 19,522
I = 10,745

1 Powerhouse

Excavation	26,291
Access Tunnels	5,358
Access Shafts	5,604
	644
	1339
	2717
	3052
	9450
	54,455

D = 35123
I = 19332

285

D.C.

	Contract	4 C&D IN.	7 Main D	8 Intake Spillway	9 Un. Gr.	10 Saddle Dam EM Spill.
(8)	PLANT					
	POWER					
	AIR					
	WATER					
	HEAT					
	STEAM					
	FUEL DEPOT					
(4)	EQUIP					
(5)	- FUEL TR.					
	- OIL LUBE TR					
	- WATER TR					
	- CRANE				✓	
	- MAN HAULS.				✓	
(7)	✓ Consumables.				?	
(9)	Yard Services					
	- Snow Cl					
	- [illegible]					
	- [illegible]					
	- [illegible]					

ACRES

Calculations

SUBJECT

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ACRES

Calculations

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(12) LABOUR

TRIPS OUT

HIRING.

(13) Roads

267

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ACRES

Calculations

SUBJECT D.E.

By _____ Date _____ Project No. D5700-5

Checked _____ Date _____ Calculation No. _____

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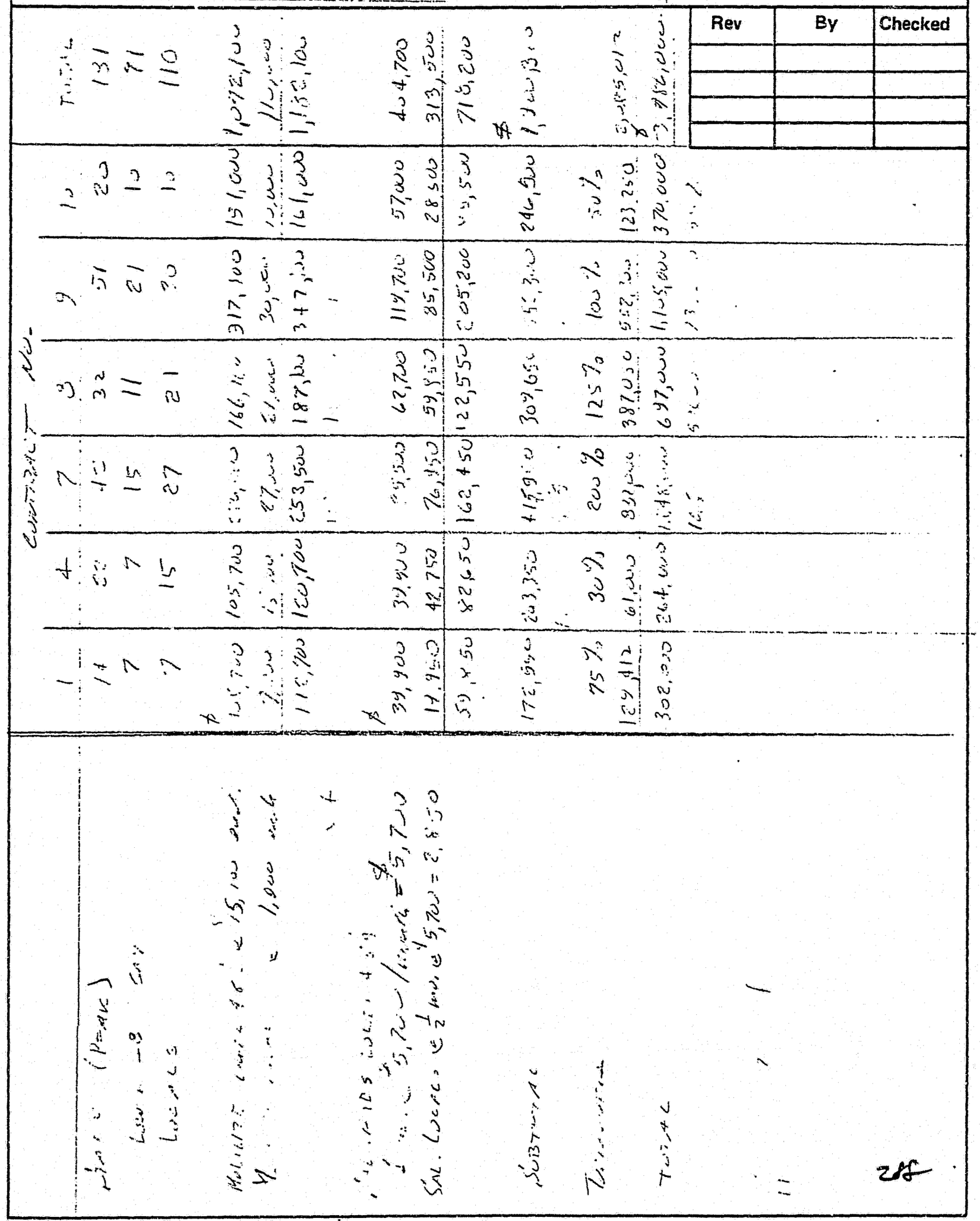

82-03-05-9:55

ACRES

Calculations

SUBJECT [illegible]

By MACD Date _____ Project No. [illegible]

Checked _____ Date _____ Calculation No. _____

Page 1 of ____

Rev	By	Checked

Contract No.	Date Start	Date Finish	Duration in Months	Modified Duration with Floats Months
C1	1 JUL 95	8 MAR 97	20	30
C4	21 AUG 95	16 JAN 97	17	20
C7	21 AUG 95	31 DEC 001	77	~~20~~ 64 ①
C8	21 AUG 95	27 AUG 99	49	~~54~~ 46 ②
C9	26 SEP 96	30 SEP 02	72	74
C10	31 JUL 96	3 FEB 98	19	24

a. Less 2 winter shutdowns of 4 months each = 8 [illegible] 284

c. Less 4 winter shutdowns of 4 months each = 16 months

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Calculations
SUBJECT

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Page 2 of ____

Rev	By	Checked

Supervision

@ 30 people for 20 months = 600 m-m
= 50 m-y

@ 60 people for 30 months = 1,960 m-m
= 413 m-y

@ 50 people for 54 months = 2,700 m-m
225 m-y

@ 74 " " 74 " = 5,476 m-m
456 m-y

@ 48 " " 24 " = 1,152 m-m
= 96 m-y

≤ 14,288 m-m
1 240 m-y

Johnston's Value = 1,189 m-y

296

Calculations

SUBJECT

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7 Jan '82.

By owner @ Comp.

By owner.

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ACRES

Calculations

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Per Contract

1 No of Superintendents.

2 No of Shift Supervisors.

3 Misc. Construction Equipment.

4. What utilities needed.

5. Any Bldg's needed.

Generally, which is not in Directs

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ACRES

Calculations

SUBJECT APA.

By IAJ. Date JAN '82 Project No. P5700

Checked ____ Date ____ Calculation No. ____

Page ___ of ___

Rev	By	Checked

WATANA DAM

PRELIMINARY LIST OF CONTRACTS.

CONTRACT #	DESCRIPTION.	
C1	MAIN ACCESS SITE DEVELOPMENT	EARLY '85 TO SEP. 2 87
C2	DOWNSTREAM BRIDGE	
C3	BATCH PLANT	-
C4	DIVERSION COFFERDAM DAM EXCAVATION	MID 1985 - MID 87 LATE 84 - LATE 91 MID 86 - MID 87 MID 86 - END 88
C7	MAIN DAM & SPILLWAY	1st 1988 - END 92
C8	POWER FACILITIES	EARLY 87 TO END 1992.
C9	SWITCHYARD SITE & SADDLE DAM	MID 1989 TO MID 1991
C10	TRANSMISSION	-
C11	SUBSTATION	-
C12	RESERVOIR CLEARING	-

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Calculations

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C.

85 86 87 88 89 90 91 92

1 - ACCESS

- SITE DEV.

4 - DIVERSION

COFFERDAM

DAM EXCAV.

7 - MAIN DAM & SPILLWAY.

8 - POWER FAC.

294

Calculations

SUBJECT

APA : SUSITNA HYDRO PROJECT.

By IAJ. Date JAN '82 Project No. P 5700

Checked ____ Date ____ Calculation No. ____

Page 1 of ____

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CONTRACTORS INDIRECTS.

PAGE #	SUMMARY	% U.S. AMOUNT.
2	FIELD SUPERVISION	
3	STAFF MOBILIZATION	
4	VEHICLES	
5	EQUIPMENT	
6	TEMPORARY BUILDINGS	
7	CONSUMABLES	
8	UTILITIES	
9	YARD SERVICES	
10	OFFICE EXPENSE	
11	GENERAL EXPENSE	
12	TRAVEL, R&R, HIRING	
13	CAMP	
14	ROADS.	
	LESS SALVAGE VALUE	( )
	HOME OFFICE SUPPORT	
	FEE LAB. M$ @ %	
	MAT. @ %	
	PLANT. @ %	
	INDIRECTS @ %	
	TOTAL	

295

Calculations

SUBJECT

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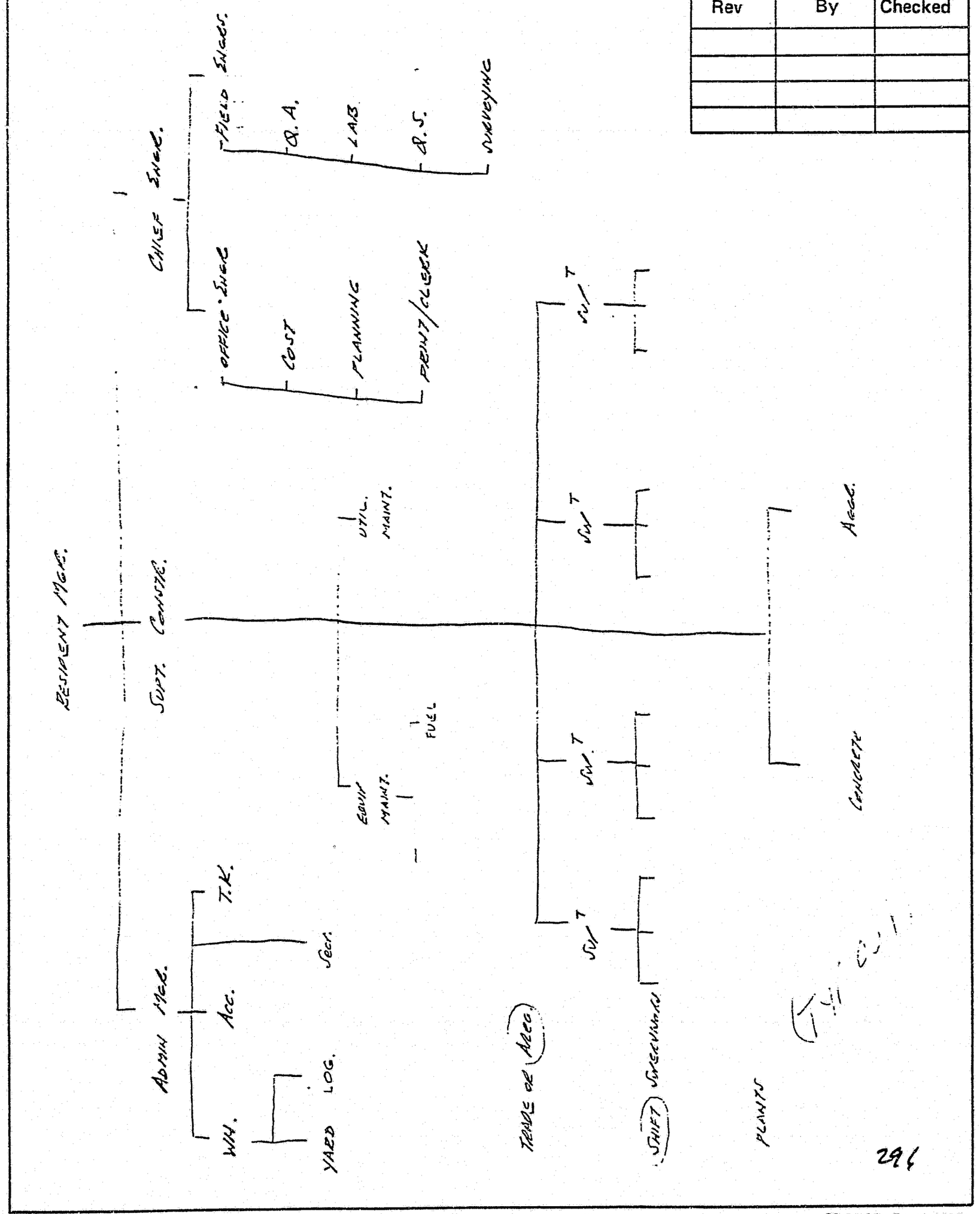

4. FIELD SUPERVISION PAGE 2
   - ARE AS BASE RATE SETTING HIGH
   - STAFF SALARIES SEEM TO BE HIGH SO MUCH
   - WHAT RATES APPLY TO OVERTIME PREMIUMS

5 MISC VEHICLES PAGE 4
   - DOES THIS COVER CAPITAL COST OR ONLY OPERATING ? - IF SO, WHERE IS CAPITAL COST

6 STAFF MOBILIZATION PAGE 3
   - INCLUDE ALL COST ALLOWANCES & TAX
   - ARE SALARIES THESE DURING MOBILIZATION PERIOD ?

[illegible]-3

[illegible] [illegible] [illegible]

√ - [illegible] [illegible]
√ [illegible] [illegible]
- [illegible] [illegible] [illegible]
√ - [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible]

[illegible] [illegible] in (10)

√ - [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible]

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[illegible] [illegible] [illegible]
√ [illegible] [illegible] [illegible] [illegible]
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[illegible] [illegible]

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0 0 0 2 5

ACRES

Calculations

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	10	9	8	7	4
FS/L	.15	.15	.15	.15	.15
Mas/FS	.08	.04	.07	.04	.158
Veh/FS	.07	.08	.08	.07	.07
Bld./Las.	.02	.02	.02	.02	.04
Conv./Las.	.02	.03	.02	.02	.02
Pav/Las.	.08	.08	.07	.08	.13
OE/Las	.47%	.46%	.48%	.47%	.4%
Mu E./Las.	.05	.033	.049	.039	.088
	.04	.04	.04	.04	.04
	.40	.37	.38		
S.T./Las.				.36	.489

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60.04.03 Form 148B

Calculations

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LABOUR CONTENT 100%

FIELD SUPERVISION	15.02
STAFF MOBILIZATION	.73
VEHICLES	1.34
EQUIPMENT	4.00
BUILDINGS	1.35
CONSUMABLES	3.17
UTILITIES	8.37
YARD MAINT.	1.17
OFFICE EXPENSE	0.46
GEN. EXPENSE	
TRAVEL	
CAMP	(N.A.)
BUS TRANSP.	1.17
HAUL ROADS	
SALVAGE	
H.O. SUPPORT	2.96
	39.74
FEE	

301

ACRES

Calculations

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D.C.

Bonds.

CONTRACT	3	7	8	9	
	(2)	(8)	(6.5)	(3.5)	
(T.I.C) ±	53.0 M	1,100.0 M	173.0 M	10.0 M	
ON 1ST 5M	25,000	25,000	25,000	25,000	
$4/1000/YR.	384,000	35,040,000	4,368,000	70,000	
	409,000	35,065,000	4,393,000	95,000	
ADV.	$ 286,000	$ 24,500,000	$ 3,075,000	100,000	

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60.04.03 Form 148B

0 0 0 2 5

From: Acres Consulting Services Ltd
5259 Dorchester Road
Niagara Falls, Ontario
L2E 6W1

Date: March 26/82

Acres
Job No.: P5700.09
AN-AB20

To: Acres American Incorporated
Liberty Bank Building
Main at Court
Buffalo, N.Y. 14202

Attention: Jim Plummer

Project: Susitna Hydroelectric Project

Subject: Devil Canyon
Contractor's
Indirects

Description/Title	Drawing Number	Revision	No. of Each	Code
Summary Sheets - page A and 1 to 18 inclusive - Contractor's Indirects Estimate (photocopy)			1 set	

MAR 29 1982

Codes
A — For Approval or Comment
B — For Construction
C — For Information
D — Drawings Reviewed, No Comment
E — Amend and Resubmit
F — Rejected. See Comments
G —

Copies Sent To: I. A. Johnston
D.H. MacDonald

Yours very truly,

pm for Dave MacDc

303

DOCUMENT TRANSMITTAL

Sign and Return Part 2

(Q) FEASIBILITY REPORT

WATANA/DEVIL CANYON COMPARISON

	— DEVIL CANYON —					— WATANA —				
	4 (2)	7 (4)	8 (3.5)	9 (6)	10 (7)	3 (2)	7 (8)	8 (4.5)	9 (3.5)	
2.08	14.7	4.99	12.15	3.92	G.E.	2.4	37.0	19.755	3.6	
37.0	388.0	82.5	111.7	44.0	∫ T.I.C.	48.5	640.	157	?	OK.
5.62	3.79	4.05	10.9	5.93	%GE/TIC	4.94	3.55	12.58	—	OK. OK.
1.04	2.15	1.43	2.02	1.31	#GE/HC.	1.20	4.62	3.03	—	
2.81	0.63	1.73	1.81	1.98	#GE/HC / ∫T.I.C.	2.47	0.44	1.92		OK

TOTAL

37.84
LBS.2
5.52
4.3
0.92

GE
∫ T.I.C.
% GE/TIC
# GE/HC
#/# GE/HC / T.I.C.

TOTAL

59.16
1245.5
4.75
7.39
0.6

Rev'd

49.00
5.52
8.59
0.70

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Calculations
SUBJECT

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60.04.03 Form 1488

ACRES **Calculations**

SUBJECT

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MAR 22 1982

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DEVIL CANYON:

ACTUAL / ESTIMATE:

693.8 M.Y @ $68,900 (Jon) = $47,802,000

Used $47,827,000

The Total Indirects Come to $203 MILLION.

DESIRED Results $254 MILLION.

$\therefore \frac{254}{203} \times \$47.827 = \$59.84$ Use $60,000,000

AND Ave Rate = $\frac{60,000,000}{683}$ = $87,847/MAN YR.

(Used on Sheets)

Check! % direct labour = $\frac{60,000,000}{174,000,000}$ = 34%

Conclusion: Buffalo Looks Fair 30-35%, Looks OK.

307

ACRES **Calculations**
SUBJECT

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Wajuna.

Actual Estimate:

857 M.Y. @ $ 68,900 (Jan.) = $ 59,047,000
We are D.C. Major $ 87,847 = $ 75,284,000

% Direct Lab. DC = 34.13 = $ 123,965,000
% Total Direct DC = ~~4.62~~ 23 % = $ 119,000,000

Then I fixed for 30% Lab x $ 3634 = $ 108,900,000
Use $ 109,000,000

AT THIS STAGE IT TOOK OK % LAB & % DIRECT & INDIRECT.

HOW, HOW TO SUBSTANTIATE IT!

MET WITH V.H., Value of work/yr.

D.C.	Wat.
$ 25M	$ 40M

USING THE NATIONAL AV D.C. FORCE OF 683 MY.

30% - M. & Mc
50% - G.A. Acc. & T.K. } add 30% more people for 60% more work.
20% - OTHER.

$= \frac{683}{7yr} = 98 \times 1.30 = 127 \text{ people} \times 9yr = \underline{1142 \text{ man yrs.}}$ 308

60.04.03 Form 148B

ACRES

Calculations

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$

D.C.	M.Y	Men	Wajana ADD TO D.C.	No	Yrs	M.Y.
Mgt	29	4	+1	= ~~4~~ 5	x 9	= 45
Supern.	130	19	+10 } 30	= 29	x 9	= 267
Enc	170	24	+10	= 34	x 9	= 310
Clerk.	228	32	+10	= 42	x 9	= 380
Other	126	18	+10	= 28	x 9	= 253 ← (FUDGE)
Σ	683	97	41	138		1255

Backed in from $ 109,000,000 ÷ $ 87,847/MY

30% lab.

Actual Est. 857 M.Y.

Rough Method:

D.C. 683 M.Y x $\frac{9 YR}{7 YR}$ = 878 M.Y.

BUT 857 MY = $ 75,284,000

& I HAVE TO ABSORB ~ 23% OF $ 509 M

309

60.04.03 Form 148B

P57C SUSITNA STUDY
WATANA CONTRACTOR'S INDIRECTS.

I.A.J. MAR 10

ITEM Nº	DESCRIPTION	RELATIONSHIP f	PREVIOUS f	$ 1000	$ x1000 INDIRECTS	% $519 M	% DIRECT LAB.	% TOTAL DIRECTS.	
900.1	FIELD SUPERVISION	LABOUR	34.15	123965	109000	21.00	30.00	9.62	
.2	STAFF MOBILIZATION	SUPERV.	8.3	10330	9000	1.73	2.48	0.79	
.3	STAFF VEHICLES	SUPERV.	5.0	6198	6300	1.21	1.74	0.56	
.4	YARD EQUIPMENT	SCH	9/7 = 1.30	13000	15000	2.89	4.13	1.32	
.5	BUILDINGS & SHOPS	LAB + SUP.	5.5	26730	26000	5.00	7.16	2.29	
.6	CONSUMABLES			7889	8000	1.54	2.20	0.70	
.7	UTILITIES	SCH.	1.28	33428	40000	7.71	11.02	3.53	
.8	YARD SERVICES	SCH	1.28	5200	8000	1.54	2.20	0.70	
.9	OFFICE FURNISHINGS	SUPER.	3.3	4132	4900	0.94	1.35	0.43	
.10	GENERAL EXPENSE			70000	68000	13.10	18.73	6.00	
.11	OFFSITE TRAVEL	LAB.	2.27	8249	8200	1.58	2.26	0.72	
.13	ON SITE TRAVEL	LAB	2.27	8249	8200	1.58	2.26	0.72	
.12	MISC MEALS ALL.	SCH.	1.28	400	400	0.08	0.11	0.03	
	HAUL ROADS	-			-	-	-	-	
.14	SALVAGE RECOVERY			(10000)	(10000)	-	-	(0.88)	
.15	HOME OFFICE SUPPORT	DIR.	3.67	41653	34000	6.66	9.37	3.00	1.81
.20	CONTRACTOR'S FEES		L 101 D 176 M .07	155595	174000	33.54	47.93	15.37	10.5
	TOTAL			509000	509000	100.00	142.96	44.90	

3/0

P57c SUSITNA STUDY
CONTRACTOR'S INDIRECTS

I.A.J. MAR 1 0

ITEM Nº	DESCRIPTION	INDIRECT $ 1000 WATANA	INDIRECT $ 1000 D.C.				% OF LABOUR WATANA	% OF LABOUR D.C.		
300.1	FIELD SUPERVISION	109000	68000				30.50	34.15		
.2	STAFF MOBILIZATION	9000	5000				2.48	2.85	8.26 S	8.33 S
.3	STAFF VEHICLES	6300	3000				1.74	1.71	5.78 S	5.00 S
.4	YARD EQUIPMENT	15000	10000				4.13	5.69		
.5	BUILDINGS & SHOPS	26000	13000				7.16	7.40		
.6	CONSUMABLES	8000	4000				2.20	2.28		
.7	UTILITIES	40000	26000				11.02	14.80		
.8	YARD SERVICES	8000	4000				2.20	2.28		
.9	OFFICE FURNISHINGS	4900	2000				1.35	1.14	18.85 Bl.	15.38 Bl.
.10	GENERAL EXPENSE	68000	33000				18.73	18.78	13.35 E	13.00 E
.11	OFFSITE TRAVEL	8200	4000				2.26	2.28		
.13	ON SITE TRAVEL	8200	4000				2.26	2.28		
.12	MISC MEAL ALLO.	400	300				0.11	0.17		
	HAUL ROADS	-	-				-	-		
.12	SALVAGE	(10000)	(3000)				-	-		
.15	HOME OFFICE STAFF	34000	17000				9.37	9.67	3.00 D.	3.68 D.
.20	CONTRACTOR'S FEES	178000	71700				49.03	40.81	10.4(TIC)	10.0(T.I.C)
	TOTAL	509000	256000				142.96	146.29	45	55

ACRES

Calculations

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	DEVIL CANYON (MAN YRS)	WATANA DAM f	WATANA DAM SCH.	WATANA DAM FINAL	
MANAGEMENT	29	37	36	37	37
SUPERVISION	130	168	168	168	195
ENGINEERING	170	218	238	220	170
CLERICAL	228	293	286	300	342
OTHER	126	162	179	170	189
	683 = 98 MI/YR.			895	

AVE COST/MY 87847 = $ 78,623,000

ACTUAL Calculated $ 47,827,000

" USED $ 60,000,000

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60.04.03 Form 148B

Calculations

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| | 8 | 9 | | |

ACRES

Calculations

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CONTRACT C1. M.Y.

GEN SUPER	1	x 2.75	
DEP. SUPER.	1	x 2.75	
			5.50

(2.75)

CONTRACT C3.

GEN. SUPER	1	x 4.00 ✓	
EXCAV.	1	x 1.50 ✓	
CONCRETE	1	x 1.25 ✓	
DEP. SUPER.	1	x 4.00 ✓	
TUNNEL SUPER	2	x 3.00 ✓	
C D. SUPER	1	x 1.00	
			17.75

(4)

CONTRACT C7.

	A	B	C	D	E		
GEN						=	7.15
DEPUTY						=	7.15
EXCAV.	3	2.25	2.25	1.88	1.11	=	10.49
CONCRETE			2.25		.75	=	3.00
CARP.			2.25		.75	=	3.00
FILL	5.25					=	5.25
							36.04

(7.15)

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Calculations

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CONTRACT CB.

	A	B	C	D	E		E
GEN. SUPER							5.25
DEP. SUPER.							5.25
EXCAVATION.	1.0						1.00
FILL.							—
ROCK		1.75	1.5	1.0	1.25	(2)	11.00
CONCRETE	1.5	1.75	3.5	1.0	1.50		9.25
CARP.	1.5	1.75	3.5	1.0	1.50		9.25
MECH							5.25
ELECT.							5.25
							51.5

5.25

CONTRACT C9.

GEN.	2.5
DEP.	2.5
EXCAV.	1.0
FILL	.5
CONCRETE	.75
MECH	—
ELECT.	—
	7.25

2.5

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Calculations

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NATANA

	No.	Yr.	M.Y.
	5	9	45
	2	9	
	25	9	
			243
	3		
	24		
	5	9	
	32		288
	6		
	33		
	39	9	351
	4		
	22		
	26	9	234

DEVIL CANYON

	No	Yr.	M.Y.
MANAGEMENT	4	7	28
SUPERVISION			
- GEN'L SUP	2	7	14
- OTHER	16.7	7	117
			131
ENGINEERING.			
- OFFICE	3	7	21
- R.A.	17	7	119
- U.S.	4	7	28
	24		170
CLERICAL			
- OFFICE	6		
- BALANCE	27		
	33		228
OTHER			
- SAFETY	3		
- G'N'S.	17		
316	1[illegible]		137

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ACRES

Calculations

SUBJECT

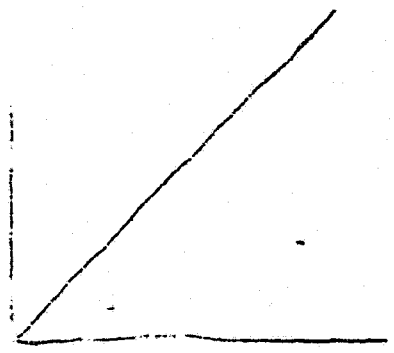
By _____ Date _____ Project No. _____

Checked _____ Date _____ Calculation No. _____

Page ___ of ___

Rev	By	Checked

	DC	W
DY	461.	132.
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	25[illegible]	50[illegible].



lab. [illegible]%

schd. 7 yr 9 yr

supdr [illegible] 60 m. .34 [illegible] 105. .29

683 m.y. ? 1197

[illegible]

[illegible] 70%

[illegible] kpm

[illegible]

[illegible] m.y.

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