

SUM-2.WJ2

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## (2) CASE L-2

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	5,810	24,514	10,075	0	40,399
	UNIT PRICE		2.41	2.41	2.41		
	AMOUNT		14.00	59.08	24.28		97.36
ROCK, WEATHERED	QUANTITY	2,240	59,830	60,124	33,500	30	155,724
	UNIT PRICE	3.37	3.37	3.37	3.37	3.37	
	AMOUNT	7.55	201.63	202.62	112.90	0.10	524.79
ROCK	QUANTITY	0	18,255	47,323	67,490	472	133,540
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		89.27	231.41	330.03	2.31	653.01
DREDGING, LOOSE MATERIAL	QUANTITY	5,492	4,068	23	0	7,665	17,248
	UNIT PRICE	2.24	2.57	3.86		2.61	
	AMOUNT	12.30	10.46	0.09		20.01	42.85
DREDGING, WEATHERED SOFT ROCK	QUANTITY	10,377	18,531	4,039	0	9,577	42,524
	UNIT PRICE	5.13	5.42	6.69		5.47	
	AMOUNT	53.23	100.44	27.02		52.39	233.08
ROCK UNDERWATER	QUANTITY	940	22,426	5,805	705	6,793	36,669
	UNIT PRICE	18.15	18.45	20.09	20.41	18.51	
	AMOUNT	17.06	413.76	116.62	14.39	125.74	687.57
DREDGING, CLAYEY MATERIAL	QUANTITY	5,532	0	0	0	10,260	15,792
	UNIT PRICE	2.24				2.61	
	AMOUNT	12.39				26.78	39.17
TOTAL	QUANTITY	24,581	128,920	141,828	111,770	34,797	441,896
	AMOUNT	102.54	829.55	636.84	481.59	227.32	2,277.83

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	12,900,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	2.97
d) VEGETATION	4,500,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.15
e) DEWATERING	1s		95.47
SUBTOTAL			2,398.33
SUPPORTING CONSTRUCTION			134.31
GENERAL CONDITIONS			359.75
TOTAL			2,892.38

SUM-2'.WJ2

(2')CASE L-2'

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	5,810	24,514	10,075	0	40,399
	UNIT PRICE		2.41	2.41	2.41		
	AMOUNT		14.00	59.08	24.28		97.36
ROCK, WEATHERED	QUANTITY	2,240	59,830	60,124	33,500	30	155,724
	UNIT PRICE	3.37	3.37	3.37	3.37	3.37	
	AMOUNT	7.55	201.63	202.62	112.90	0.10	524.79
ROCK	QUANTITY	0	18,255	47,323	67,490	472	133,540
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		89.27	231.41	330.03	2.31	653.01
DREDGING, LOOSE MATERIAL	QUANTITY	5,492	4,068	23	0	7,665	17,248
	UNIT PRICE	2.24	2.57	3.86		2.61	
	AMOUNT	12.30	10.46	0.09		20.01	42.85
DREDGING, WEATHERED SOFT ROCK	QUANTITY	10,377	18,531	4,039	0	9,577	42,524
	UNIT PRICE	5.13	5.42	6.69		5.47	
	AMOUNT	53.23	100.44	27.02		52.39	233.08
ROCK UNDERWATER	QUANTITY	940	22,426	5,805	705	6,793	36,669
	UNIT PRICE	18.15	18.45	20.09	20.41	18.51	
	AMOUNT	17.06	413.76	116.62	14.39	125.74	687.57
DREDGING, CLAYEY MATERIAL	QUANTITY	5,532	0	0	0	10,260	15,792
	UNIT PRICE	2.24				2.61	
	AMOUNT	12.39				26.78	39.17
TOTAL	QUANTITY	24,581	128,920	141,828	111,770	34,797	441,896
	AMOUNT	102.54	829.55	636.84	481.59	227.32	2,277.83

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	12,900,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	2.97
d) VEGETATION	4,500,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.15
e) DEWATERING	1 ls		95.47
SUBTOTAL			2,398.33
SUPPORTING CONSTRUCTION			134.31
GENERAL CONDITIONS			359.75
TOTAL			2,892.38

SUM-3.WJ2

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## (3) CASE L-3

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	9,461	14,310	11,890	3,355	39,016
	UNIT PRICE		2.41	2.41	2.41	2.41	
	AMOUNT		22.80	34.49	28.66	8.09	94.03
ROCK, WEATHERED	QUANTITY	2,240	15,948	20,500	17,148	3,140	58,976
	UNIT PRICE	3.37	3.37	3.37	3.37	3.37	
	AMOUNT	7.55	53.75	69.09	57.79	10.58	198.75
ROCK	QUANTITY	0	42,229	132,990	81,355	7,015	263,589
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		206.50	650.32	397.83	34.30	1288.95
DREDGING, LOOSE MATERIAL	QUANTITY	5,492	20,043	200	505	6,018	32,258
	UNIT PRICE	2.24	2.56	3.86	3.20	2.61	
	AMOUNT	12.30	51.31	0.77	1.62	15.71	81.71
DREDGING, WEATHERED SOFT ROCK	QUANTITY	10,377	56,254	740	2,375	9,206	78,952
	UNIT PRICE	5.13	5.42	6.69	7.28	5.47	
	AMOUNT	53.23	304.90	4.95	17.29	50.36	430.73
ROCK UNDERWATER	QUANTITY	940	48,546	22,420	10,435	7,910	90,251
	UNIT PRICE	18.15	18.45	20.09	19.12	18.51	
	AMOUNT	17.06	895.67	450.42	199.52	146.41	1709.08
DREDGING, CLAYEY MATERIAL	QUANTITY	5,532	20,245	0	0	6,129	31,906
	UNIT PRICE	2.24	2.56			2.61	
	AMOUNT	12.39	51.83			16.00	80.22
TOTAL	QUANTITY	24,581	212,726	191,160	123,708	42,773	594,948
	AMOUNT	102.54	1586.75	1210.03	702.69	281.45	3,883.47
b) HAUL ROAD CONSTRUCTION		29,000 m		652.00 \$/m			18.91
c) CLEARING		12,900,000 m <sup>2</sup>		0.23 \$/m <sup>2</sup>			2.97
d) VEGETATION		4,500,000 m <sup>2</sup>		0.70 \$/m <sup>2</sup>			3.15
e) DEWATERING		1s					95.47
SUBTOTAL							4,003.96
SUPPORTING CONSTRUCTION							224.22
GENERAL CONDITIONS							600.59
TOTAL							4,828.78

SUM-4.WJ2

## (4) CASE L-4

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	7,353	32,725	13,095	0	53,173
	UNIT PRICE		2.41	2.41	2.41		
	AMOUNT		17.72	78.87	31.56		128.15
ROCK, WEATHERED	QUANTITY	0	65,054	76,376	38,885	0	180,315
	UNIT PRICE		3.37	3.37	3.37		
	AMOUNT		219.23	257.39	131.04		607.66
ROCK	QUANTITY	0	24,255	56,659	75,555	0	156,469
	UNIT PRICE		4.89	4.89	4.89		
	AMOUNT		118.61	277.06	369.46		765.13
DREDGING, LOOSE MATERIAL	QUANTITY	6,420	4,746	23	0	10,250	21,439
	UNIT PRICE	2.24	2.57	3.86		2.61	
	AMOUNT	14.38	12.20	0.09		26.75	53.42
DREDGING, WEATHERED SOFT ROCK	QUANTITY	19,502	23,824	4,039	0	27,975	75,340
	UNIT PRICE	5.13	5.42	6.69		5.47	
	AMOUNT	100.05	129.13	27.02		153.02	409.22
ROCK UNDERWATER	QUANTITY	2,060	31,238	5,805	705	9,702	49,510
	UNIT PRICE	18.15	18.45	20.09	20.41	18.51	
	AMOUNT	37.39	576.34	116.62	14.39	179.58	924.33
DREDGING, CLAYEY MATERIAL	QUANTITY	6,420	0	0	0	13,044	19,464
	UNIT PRICE	2.24				2.61	
	AMOUNT	14.38				34.05	48.43
TOTAL	QUANTITY	34,402	156,470	175,627	128,240	60,971	555,710
	AMOUNT	166.20	1073.22	757.05	546.45	393.41	2,936.33

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	13,900,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	3.20
d) VEGETATION	4,500,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.15
e) DEWATERING	1s		95.47
SUBTOTAL			3,057.05
SUPPORTING CONSTRUCTION			171.19
GENERAL CONDITIONS			458.56
TOTAL			3,686.81

SUM-5.WJ2

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## (5) CASE L-5

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	7,353	32,725	13,095	0	53,173
	UNIT PRICE		2.41	2.41	2.41		
	AMOUNT		17.72	78.87	31.56		128.15
ROCK, WEATHERED	QUANTITY	0	65,541	78,652	39,140	30	183,363
	UNIT PRICE		3.37	3.37	3.37	3.37	
	AMOUNT		220.87	265.06	131.90	0.10	617.93
ROCK	QUANTITY	0	26,047	61,566	80,745	533	168,891
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		127.37	301.06	394.84	2.61	825.88
DREDGING, LOOSE MATERIAL	QUANTITY	6,420	4,746	23	0	10,250	21,439
	UNIT PRICE	2.24	2.57	3.86		2.61	
	AMOUNT	14.38	12.20	0.09		26.75	53.42
DREDGING, WEATHERED SOFT ROCK	QUANTITY	19,502	32,166	4,039	0	27,975	83,682
	UNIT PRICE	5.13	5.42	6.69		5.47	
	AMOUNT	100.05	174.34	27.02		153.02	454.43
ROCK UNDERWATER	QUANTITY	2,060	40,593	5,805	705	9,702	58,865
	UNIT PRICE	18.15	18.45	20.09	20.41	18.51	
	AMOUNT	37.39	748.94	116.62	14.39	179.58	1096.93
DREDGING, CLAYEY MATERIAL	QUANTITY	6,420	0	0	0	13,044	19,464
	UNIT PRICE	2.24				2.61	
	AMOUNT	14.38				34.05	48.43
TOTAL	QUANTITY	34,402	176,446	182,810	133,685	61,534	588,877
	AMOUNT	166.20	1301.44	788.71	572.69	396.11	3,225.16

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	15,100,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	3.47
d) VEGETATION	4,400,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.08
e) DEWATERING	1s		95.47

SUBTOTAL	3,346.09
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SUPPORTING CONSTRUCTION	187.38
GENERAL CONDITIONS	501.91

TOTAL	4,035.38
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SUM-6.WJ2

(6) CASE I-6

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	11,837	15,810	13,558	3,745	44,950
	UNIT PRICE		2.41	2.41	2.41	2.41	
	AMOUNT		28.53	38.10	32.68	9.03	108.33
ROCK, WEATHERED	QUANTITY	0	16,986	23,270	19,673	4,750	64,679
	UNIT PRICE		3.37	3.37	3.37	3.37	
	AMOUNT		57.24	78.42	66.30	16.01	217.97
ROCK	QUANTITY	0	55,743	165,840	103,943	11,715	337,241
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		272.58	810.96	508.28	57.29	1649.11
DREDGING, LOOSE MATERIAL	QUANTITY	6,420	23,070	220	345	8,195	38,250
	UNIT PRICE	2.24	2.56	3.86	3.20	2.61	
	AMOUNT	14.38	59.06	0.85	1.10	21.39	96.78
DREDGING, WEATHERED SOFT ROCK	QUANTITY	19,502	69,124	750	2,375	18,775	110,526
	UNIT PRICE	5.13	5.42	6.69	7.28	5.47	
	AMOUNT	100.05	374.65	5.02	17.29	102.70	599.70
ROCK UNDERWATER	QUANTITY	2,060	81,506	25,655	12,240	13,728	135,189
	UNIT PRICE	18.15	18.45	20.09	19.12	18.51	
	AMOUNT	37.39	1503.79	515.41	234.03	254.11	2544.72
DREDGING, CLAYEY MATERIAL	QUANTITY	6,420	23,193	0	0	8,323	37,936
	UNIT PRICE	2.24	2.56			2.61	
	AMOUNT	14.38	59.37			21.72	95.48
TOTAL	QUANTITY	34,402	281,459	231,545	152,134	69,231	768,771
	AMOUNT	166.20	2355.22	1448.76	859.68	482.24	5,312.09

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	15,100,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	3.47
d) VEGETATION	4,400,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.08
e) DEWATERING	1s		95.47
SUBTOTAL			5,433.02
SUPPORTING CONSTRUCTION			304.25
GENERAL CONDITIONS			814.95
TOTAL			6,552.22

SUM-7.WJ2

QUANTITY : 1,000 m3
UNIT COST : dollar
AMOUNT : million dol.

## (7) CASE L-7

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	9,000	44,149	14,835	0	67,984
	UNIT PRICE		2.41	2.41	2.41		
	AMOUNT		21.69	106.40	35.75		163.84
ROCK, WEATHERED	QUANTITY	0	76,257	102,672	45,125	0	224,054
	UNIT PRICE		3.37	3.37	3.37		
	AMOUNT		256.99	346.01	152.07		755.06
ROCK	QUANTITY	0	37,559	75,097	97,520	0	210,176
	UNIT PRICE		4.89	4.89	4.89		
	AMOUNT		183.66	367.22	476.87		1027.76
DREDGING, LOOSE MATERIAL	QUANTITY	8,000	8,556	23	0	14,103	30,682
	UNIT PRICE	2.24	2.57	3.86		2.61	
	AMOUNT	17.92	21.99	0.09		36.81	76.81
DREDGING, WEATHERED SOFT ROCK	QUANTITY	21,750	38,260	4,039	0	41,295	105,344
	UNIT PRICE	5.13	5.42	6.69		5.47	
	AMOUNT	111.58	207.37	27.02		225.88	571.85
ROCK UNDERWATER	QUANTITY	20,843	77,734	5,805	705	37,487	142,574
	UNIT PRICE	18.15	18.45	20.09	20.41	18.51	
	AMOUNT	378.30	1434.19	116.62	14.39	693.88	2637.39
DREDGING, CLAYEY MATERIAL	QUANTITY	8,000	689	0	0	17,671	26,360
	UNIT PRICE	2.24	2.57			2.61	
	AMOUNT	17.92	1.77			46.12	65.81
TOTAL	QUANTITY	58,593	248,055	231,785	158,185	110,556	807,174
	AMOUNT	525.72	2127.66	963.36	679.09	1002.70	5,298.52

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	15,600,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	3.59
d) VEGETATION	4,400,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.08
e) DEWATERING	1s		95.47
SUBTOTAL			5,419.57
SUPPORTING CONSTRUCTION			303.50
GENERAL CONDITIONS			812.94
TOTAL			6,536.00

SUM-8.WJ2

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## (8) CASE L-8

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	9,000	44,149	14,835	0	67,984
	UNIT PRICE		2.41	2.41	2.41		
	AMOUNT		21.69	106.40	35.75		163.84
ROCK, WEATHERED	QUANTITY	0	76,619	104,986	45,360	0	226,965
	UNIT PRICE		3.37	3.37	3.37		
	AMOUNT		258.21	353.80	152.86		764.87
ROCK	QUANTITY	0	39,649	80,871	103,045	714	224,279
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		193.88	395.46	503.89	3.49	1096.72
DREDGING, LOOSE MATERIAL	QUANTITY	8,000	7,656	23	0	14,083	29,762
	UNIT PRICE	2.24	2.57	3.86		2.61	
	AMOUNT	17.92	19.68	0.09		36.76	74.44
DREDGING, WEATHERED SOFT ROCK	QUANTITY	21,750	41,755	4,039	0	41,265	108,809
	UNIT PRICE	5.13	5.42	6.69		5.47	
	AMOUNT	111.58	226.31	27.02		225.72	590.63
ROCK UNDERWATER	QUANTITY	20,843	93,925	5,805	705	37,487	158,765
	UNIT PRICE	18.15	18.45	20.09	20.41	18.51	
	AMOUNT	378.30	1732.92	116.62	14.39	693.88	2936.11
DREDGING, CLAYEY MATERIAL	QUANTITY	8,000	689	0	0	17,651	26,340
	UNIT PRICE	2.24	2.57			2.61	
	AMOUNT	17.92	1.77			46.07	65.76
TOTAL	QUANTITY	58,593	269,293	239,873	163,945	111,200	842,904
	AMOUNT	525.72	2454.46	999.39	706.89	1005.92	5,692.38

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	16,600,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	3.82
d) VEGETATION	4,400,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.08
e) DEWATERING	1s		95.47
SUBTOTAL			5,813.66
SUPPORTING CONSTRUCTION			325.56
GENERAL CONDITIONS			872.05
TOTAL			7,011.27



SUM-9.WJ2

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## (9) CASE L-9

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	12,927	18,090	15,630	4,900	51,547
	UNIT PRICE		2.41	2.41	2.41	2.41	
	AMOUNT		31.15	43.60	37.67	11.81	124.23
ROCK, WEATHERED	QUANTITY	0	16,198	25,945	22,585	6,250	70,978
	UNIT PRICE		3.37	3.37	3.37	3.37	
	AMOUNT		54.59	87.44	76.11	21.06	239.20
ROCK	QUANTITY	0	66,865	213,875	136,688	18,180	435,608
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		326.97	1045.85	668.40	88.90	2130.12
DREDGING, LOOSE MATERIAL	QUANTITY	6,578	26,995	220	345	11,810	45,948
	UNIT PRICE	2.24	2.56	3.86	3.20	2.61	
	AMOUNT	14.74	69.11	0.85	1.10	30.82	116.62
DREDGING, WEATHERED SOFT ROCK	QUANTITY	19,988	82,699	830	2,375	33,918	139,810
	UNIT PRICE	5.13	5.42	6.69	7.28	5.47	
	AMOUNT	102.54	448.23	5.55	17.29	185.53	759.14
ROCK UNDERWATER	QUANTITY	2,060	136,616	30,555	16,725	29,716	215,672
	UNIT PRICE	18.15	18.45	20.09	19.12	18.51	
	AMOUNT	37.39	2520.57	613.85	319.78	550.04	4041.63
DREDGING, CLAYEY MATERIAL	QUANTITY	6,578	27,118	0	0	11,959	45,655
	UNIT PRICE	2.24	2.56			2.61	
	AMOUNT	14.74	69.42			31.21	115.37
TOTAL	QUANTITY	35,204	369,418	289,515	194,348	116,733	1,005,218
	AMOUNT	169.40	3520.03	1797.13	1120.36	919.38	7,526.31

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	17,800,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	4.09
d) VEGETATION	4,400,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.08
e) DEWATERING	1s		95.47
SUBTOTAL			7,647.86
SUPPORTING CONSTRUCTION			428.28
GENERAL CONDITIONS			1,147.18
TOTAL			9,223.32

SUM-10.WJ2

(10) CASE L-10

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	5,810	24,513	10,075	0	40,398
	UNIT PRICE		2.41	2.41	2.41		
	AMOUNT		14.00	59.08	24.28		97.36
ROCK, WEATHERED	QUANTITY	2,240	53,651	60,124	33,500	30	149,545
	UNIT PRICE	3.37	3.37	3.37	3.37	3.37	
	AMOUNT	7.55	180.80	202.62	112.90	0.10	503.97
ROCK	QUANTITY	0	16,010	47,323	67,490	472	131,295
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		78.29	231.41	330.03	2.31	642.03
DREDGING, LOOSE MATERIAL	QUANTITY	5,492	9,056	23	0	7,665	22,236
	UNIT PRICE	2.24	2.57	3.86		2.61	
	AMOUNT	12.30	23.27	0.09		20.01	55.67
DREDGING, WEATHERED SOFT ROCK	QUANTITY	10,377	36,403	4,039	0	9,577	60,396
	UNIT PRICE	5.13	5.42	6.69		5.47	
	AMOUNT	53.23	197.30	27.02		52.39	329.95
ROCK UNDERWATER	QUANTITY	940	95,997	5,805	705	6,793	110,240
	UNIT PRICE	18.15	18.45	20.09	20.41	18.51	
	AMOUNT	17.06	1771.15	116.62	14.39	125.74	2044.96
DREDGING, CLAYEY MATERIAL	QUANTITY	5,532	0	0	0	10,260	15,792
	UNIT PRICE	2.24				2.61	
	AMOUNT	12.39				26.78	39.17
TOTAL	QUANTITY	24,581	216,927	141,827	111,770	34,797	529,902
	AMOUNT	102.54	2264.82	636.84	481.59	227.32	3,713.10

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	12,900,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	2.97
d) VEGETATION	4,500,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.15
e) DEWATERING	1s		95.47
SUBTOTAL			3,833.60
SUPPORTING CONSTRUCTION			214.68
GENERAL CONDITIONS			575.04
TOTAL			4,623.32

SUM-11.WJ2

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

(11) CASE L-11

## a) EXCAVATION

DESCRIPTION		ZONE. I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	16,051	14,310	11,890	3,355	45,606
	UNIT PRICE		2.41	2.41	2.41	2.41	
	AMOUNT		38.68	34.49	28.66	8.09	109.91
ROCK, WEATHERED	QUANTITY	2,240	25,878	20,500	17,148	3,140	68,906
	UNIT PRICE	3.37	3.37	3.37	3.37	3.37	
	AMOUNT	7.55	87.21	69.09	57.79	10.58	232.21
ROCK	QUANTITY	0	91,162	132,990	81,355	7,015	312,522
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		445.78	650.32	397.83	34.30	1528.23
DREDGING, LOOSE MATERIAL	QUANTITY	5,492	16,703	200	505	6,018	28,918
	UNIT PRICE	2.24	2.56	3.86	3.20	2.61	
	AMOUNT	12.30	42.76	0.77	1.62	15.71	73.16
DREDGING, WEATHERED SOFT ROCK	QUANTITY	10,377	42,117	740	2,375	9,206	64,815
	UNIT PRICE	5.13	5.42	6.69	7.28	5.47	
	AMOUNT	53.23	228.27	4.95	17.29	50.36	354.11
ROCK UNDERWATER	QUANTITY	940	70,541	22,420	10,435	7,910	112,246
	UNIT PRICE	18.15	18.45	20.09	19.12	18.51	
	AMOUNT	17.06	1301.48	450.42	199.52	146.41	2114.89
DREDGING, CLAYEY MATERIAL	QUANTITY	5,532	11,198	0	0	6,129	22,859
	UNIT PRICE	2.24	2.56			2.61	
	AMOUNT	12.39	28.67			16.00	57.06
TOTAL	QUANTITY	24,581	273,650	191,160	123,708	42,773	655,872
	AMOUNT	102.54	2172.86	1210.03	702.69	281.45	4,469.57

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	15,200,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	3.50
d) VEGETATION	4,500,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.15
e) DEWATERING	1s		95.47
SUBTOTAL			4,590.59

SUPPORTING CONSTRUCTION	257.07
GENERAL CONDITIONS	688.59
TOTAL	5,536.25

SUM-12.WJ2

(12) CASE L-12

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	22,021	14,750	11,915	13,300	61,986
	UNIT PRICE		2.41	2.41	2.41	2.41	
	AMOUNT		53.07	35.55	28.72	32.05	149.39
ROCK, WEATHERED	QUANTITY	0	63,603	19,455	15,180	19,670	117,908
	UNIT PRICE		3.37	3.37	3.37	3.37	
	AMOUNT		214.34	65.56	51.16	66.29	397.35
ROCK	QUANTITY	0	185,349	155,405	90,485	45,850	477,089
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		906.36	759.93	442.47	224.21	2332.96
DREDGING, LOOSE MATERIAL	QUANTITY	5,492	13,313	200	180	2,415	21,600
	UNIT PRICE	2.24	2.56	3.86	3.20	2.61	
	AMOUNT	12.30	34.08	0.77	0.58	6.30	54.03
DREDGING, WEATHERED SOFT ROCK	QUANTITY	12,617	39,142	2,610	150	5,928	60,447
	UNIT PRICE	5.13	5.42	6.69	7.28	5.47	
	AMOUNT	64.73	212.15	17.46	1.09	32.43	327.85
ROCK UNDERWATER	QUANTITY	940	110,811	22,930	5,365	18,100	158,146
	UNIT PRICE	18.15	18.45	20.09	19.12	18.51	
	AMOUNT	17.06	2044.46	460.66	102.58	335.03	2959.80
DREDGING, CLAYEY MATERIAL	QUANTITY	5,532	13,348	0	0	3,264	22,144
	UNIT PRICE	2.24	2.56			2.61	
	AMOUNT	12.39	34.17			8.52	55.08
TOTAL	QUANTITY	24,581	447,587	215,350	123,275	108,527	919,320
	AMOUNT	106.48	3498.63	1339.94	626.59	704.83	6,276.47

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	28,100,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	6.46
d) VEGETATION	4,500,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.15
e) DEWATERING	1s		95.47
SUBTOTAL			6,400.46
SUPPORTING CONSTRUCTION			358.43
GENERAL CONDITIONS			960.07
TOTAL			7,718.96

SUM-13.WJ2

(13)CASE L-13

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	7,353	32,725	13,095	0	53,173
	UNIT PRICE		2.41	2.41	2.41		
	AMOUNT		17.72	78.87	31.56		128.15
ROCK, WEATHERED	QUANTITY	0	53,994	78,652	39,140	30	171,816
	UNIT PRICE		3.37	3.37	3.37	3.37	
	AMOUNT		181.96	265.06	131.90	0.10	579.02
ROCK	QUANTITY	0	19,171	61,566	80,745	533	162,015
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		93.75	301.06	394.84	2.61	792.25
DREDGING, LOOSE MATERIAL	QUANTITY	6,420	10,248	23	0	10,250	26,941
	UNIT PRICE	2.24	2.57	3.86		2.61	
	AMOUNT	14.38	26.34	0.09		26.75	67.56
DREDGING, WEATHERED SOFT ROCK	QUANTITY	19,502	43,307	4,039	0	27,975	94,823
	UNIT PRICE	5.13	5.42	6.69		5.47	
	AMOUNT	100.05	234.72	27.02		153.02	514.81
ROCK UNDERWATER	QUANTITY	2,060	127,195	5,805	705	9,702	145,467
	UNIT PRICE	18.15	18.45	20.09	20.41	18.51	
	AMOUNT	37.39	2346.75	116.62	14.39	179.58	2694.73
DREDGING, CLAYEY MATERIAL	QUANTITY	6,420	0	0	0	13,044	19,464
	UNIT PRICE	2.24				2.61	
	AMOUNT	14.38				34.05	48.43
TOTAL	QUANTITY	34,402	261,268	182,810	133,685	61,534	673,699
	AMOUNT	166.20	2901.24	788.71	572.69	396.11	4,824.95

b) HAUL ROAD CONSTRUCTION 29,000 m 652.00 18.91

c) CLEARING 15,100,000 m<sup>2</sup> 0.23 3.47d) VEGETATION 4,400,000 m<sup>2</sup> 0.70 3.08

e) DEWATERING ls 95.47

SUBTOTAL 4,945.88

SUPPORTING CONSTRUCTION 276.97

GENERAL CONDITIONS 741.88

TOTAL 5,964.73

SUM-14.WJ2

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## (14) CASE L-14

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	19,327	15,810	13,558	3,745	52,440
	UNIT PRICE		2.41	2.41	2.41	2.41	
	AMOUNT		46.58	38.10	32.68	9.03	126.38
ROCK, WEATHERED	QUANTITY	0	28,301	23,270	19,673	4,750	75,994
	UNIT PRICE		3.37	3.37	3.37	3.37	
	AMOUNT		95.37	78.42	66.30	16.01	256.10
ROCK	QUANTITY	0	114,815	165,840	103,943	11,715	396,313
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		561.45	810.96	508.28	57.29	1937.97
DREDGING, LOOSE MATERIAL	QUANTITY	6,420	17,728	220	345	8,195	32,908
	UNIT PRICE	2.24	2.56	3.86	3.20	2.61	
	AMOUNT	14.38	45.38	0.85	1.10	21.39	83.11
DREDGING, WEATHERED SOFT ROCK	QUANTITY	19,502	48,692	750	2,375	18,775	90,094
	UNIT PRICE	5.13	5.42	6.69	7.28	5.47	
	AMOUNT	100.05	263.91	5.02	17.29	102.70	488.96
ROCK UNDERWATER	QUANTITY	2,060	95,678	25,655	12,240	13,728	149,361
	UNIT PRICE	18.15	18.45	20.09	19.12	18.51	
	AMOUNT	37.39	1765.26	515.41	234.03	254.11	2806.19
DREDGING, CLAYEY MATERIAL	QUANTITY	6,420	13,828	0	0	8,323	28,571
	UNIT PRICE	2.24	2.56			2.61	
	AMOUNT	14.38	35.40			21.72	71.50
TOTAL	QUANTITY	34,402	338,369	231,545	152,134	69,231	825,681
	AMOUNT	166.20	2813.35	1448.76	859.68	482.24	5,770.22

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	17,100,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	3.93
d) VEGETATION	4,400,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.08
e) DEWATERING	1s		95.47
SUBTOTAL			5,891.61
SUPPORTING CONSTRUCTION			329.93
GENERAL CONDITIONS			883.74
TOTAL			7,105.28

SUM-15.WJ2

(15) CASE L-15

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	24,617	14,910	17,160	10,840	67,527
	UNIT PRICE		2.41	2.41	2.41	2.41	
	AMOUNT		59.33	35.93	41.36	26.12	162.74
ROCK, WEATHERED	QUANTITY	0	34,456	21,410	24,040	20,405	100,311
	UNIT PRICE		3.37	3.37	3.37	3.37	
	AMOUNT		116.12	72.15	81.02	68.77	338.05
ROCK	QUANTITY	0	217,105	176,935	184,065	56,280	634,385
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		1061.64	865.21	900.08	275.21	3102.14
DREDGING, LOOSE MATERIAL	QUANTITY	6,420	15,036	130	195	4,900	26,681
	UNIT PRICE	2.24	2.56	3.86	3.20	2.61	
	AMOUNT	14.38	38.49	0.50	0.62	12.79	66.79
DREDGING, WEATHERED SOFT ROCK	QUANTITY	19,502	46,364	610	150	14,758	81,384
	UNIT PRICE	5.13	5.42	6.69	7.28	5.47	
	AMOUNT	100.05	251.29	4.08	1.09	80.73	437.24
ROCK UNDERWATER	QUANTITY	2,060	148,203	22,915	8,995	26,335	208,508
	UNIT PRICE	18.15	18.45	20.09	19.12	18.51	
	AMOUNT	37.39	2734.35	460.36	171.98	487.46	3891.54
DREDGING, CLAYEY MATERIAL	QUANTITY	6,420	15,025	0	0	4,680	26,125
	UNIT PRICE	2.24	2.56			2.61	
	AMOUNT	14.38	38.46			12.22	65.06
TOTAL	QUANTITY	34,402	500,806	236,910	234,605	138,198	1,144,921
	AMOUNT	166.20	4299.68	1438.24	1196.15	963.29	8,063.56

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	31,400,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	7.22
d) VEGETATION	4,400,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.08
e) DEWATERING	1s		95.47
SUBTOTAL			8,188.24
SUPPORTING CONSTRUCTION			458.54
GENERAL CONDITIONS			1,228.24
TOTAL			9,875.01

SUM-16.WJ2

(16) CASE L-16

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	9,000	44,149	14,835	0	67,984
	UNIT PRICE		2.41	2.41	2.41		
	AMOUNT		21.69	106.40	35.75		163.84
ROCK, WEATHERED	QUANTITY	0	58,601	104,986	45,360	0	208,947
	UNIT PRICE		3.37	3.37	3.37		
	AMOUNT		197.49	353.80	152.86		704.15
ROCK	QUANTITY	0	31,131	80,871	103,045	714	215,761
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		152.23	395.46	503.89	3.49	1055.07
DREDGING, LOOSE MATERIAL	QUANTITY	8,000	13,469	23	0	14,083	35,575
	UNIT PRICE	2.24	2.57	3.86		2.61	
	AMOUNT	17.92	34.62	0.09		36.76	89.38
DREDGING, WEATHERED SOFT ROCK	QUANTITY	21,750	49,406	4,039	0	41,295	116,490
	UNIT PRICE	5.13	5.42	6.69		5.47	
	AMOUNT	111.58	267.78	27.02		225.88	632.26
ROCK UNDERWATER	QUANTITY	20,843	208,682	5,805	705	37,487	273,522
	UNIT PRICE	18.15	18.45	20.09	20.41	18.51	
	AMOUNT	378.30	3850.18	116.62	14.39	693.88	5053.38
DREDGING, CLAYEY MATERIAL	QUANTITY	8,000	689	0	0	17,651	26,340
	UNIT PRICE	2.24	2.57			2.61	
	AMOUNT	17.92	1.77			46.07	65.76
TOTAL	QUANTITY	58,593	370,978	239,873	163,945	111,230	944,619
	AMOUNT	525.72	4525.76	999.39	706.89	1006.09	7,763.85

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	16,600,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	3.82
d) VEGETATION	4,000,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	2.80
e) DEWATERING	1s		95.47
SUBTOTAL			7,884.84
SUPPORTING CONSTRUCTION			441.55
GENERAL CONDITIONS			1,182.73
TOTAL			9,509.12



SUM-17.WJ2

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## (17) CASE L-17

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	20,697	18,090	15,630	4,900	59,317
	UNIT PRICE		2.41	2.41	2.41	2.41	
	AMOUNT		49.88	43.60	37.67	11.81	142.95
ROCK, WEATHERED	QUANTITY	0	30,291	25,875	22,585	6,250	85,001
	UNIT PRICE		3.37	3.37	3.37	3.37	
	AMOUNT		102.08	87.20	76.11	21.06	286.45
ROCK	QUANTITY	0	135,855	213,875	135,188	18,180	503,098
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		664.33	1045.85	661.07	88.90	2460.15
DREDGING, LOOSE MATERIAL	QUANTITY	6,578	20,543	220	345	11,810	39,496
	UNIT PRICE	2.24	2.56	3.86	3.20	2.61	
	AMOUNT	14.74	52.59	0.85	1.10	30.82	100.10
DREDGING, WEATHERED SOFT ROCK	QUANTITY	19,988	56,347	830	2,375	33,918	113,458
	UNIT PRICE	5.13	5.42	6.69	7.28	5.47	
	AMOUNT	102.54	305.40	5.55	17.29	185.53	616.31
ROCK UNDERWATER	QUANTITY	2,060	130,771	30,555	16,725	29,716	209,827
	UNIT PRICE	18.15	18.45	20.09	19.12	18.51	
	AMOUNT	37.39	2412.73	613.85	319.78	550.04	3933.79
DREDGING, CLAYEY MATERIAL	QUANTITY	6,578	15,983	0	0	11,959	34,520
	UNIT PRICE	2.24	2.56			2.61	
	AMOUNT	14.74	40.92			31.21	86.86
TOTAL	QUANTITY	35,204	410,487	289,445	192,848	116,733	1,044,717
	AMOUNT	169.40	3627.92	1796.90	1113.02	919.38	7,626.63

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	19,600,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	4.51
d) VEGETATION	4,000,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	2.80
e) DEWATERING	1s		95.47
SUBTOTAL			7,748.31
SUPPORTING CONSTRUCTION			433.91
GENERAL CONDITIONS			1,162.25
TOTAL			9,344.46

SUM-18.WJ2

(18)CASE L-18

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	29,400	18,135	18,585	37,325	103,445
	UNIT PRICE		2.41	2.41	2.41	2.41	
	AMOUNT		70.85	43.71	44.79	89.95	249.30
ROCK, WEATHERED	QUANTITY	0	74,697	26,440	26,290	18,270	145,697
	UNIT PRICE		3.37	3.37	3.37	3.37	
	AMOUNT		251.73	89.10	88.60	61.57	491.00
ROCK	QUANTITY	0	278,510	241,315	169,470	79,770	769,065
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		1361.91	1180.03	828.71	390.08	3760.73
DREDGING, LOOSE MATERIAL	QUANTITY	8,000	17,290	260	325	7,625	33,500
	UNIT PRICE	2.24	2.56	3.86	3.20	2.61	
	AMOUNT	17.92	44.26	1.00	1.04	19.90	84.13
DREDGING, WEATHERED SOFT ROCK	QUANTITY	21,750	51,569	830	250	24,115	98,514
	UNIT PRICE	5.13	5.42	6.69	7.28	5.47	
	AMOUNT	111.58	279.50	5.55	1.82	131.91	530.36
ROCK UNDERWATER	QUANTITY	20,843	198,630	31,265	10,950	65,569	327,257
	UNIT PRICE	18.15	18.45	20.09	19.12	18.51	
	AMOUNT	378.30	3664.72	628.11	209.36	1213.68	6094.18
DREDGING, CLAYEY MATERIAL	QUANTITY	8,000	17,235	0	0	7,394	32,629
	UNIT PRICE	2.24	2.56			2.61	
	AMOUNT	17.92	44.12			19.30	81.34
TOTAL	QUANTITY	58,593	667,331	318,245	225,870	240,068	1,510,107
	AMOUNT	525.72	5717.11	1947.51	1174.32	1926.39	11,291.04

b) HAUL ROAD CONSTRUCTION	29,000 m	652.00 \$/m	18.91
c) CLEARING	36,200,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	8.33
d) VEGETATION	4,000,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	2.80
e) DEWATERING	1s		95.47
SUBTOTAL			11,416.55
SUPPORTING CONSTRUCTION			639.33
GENERAL CONDITIONS			1,712.48
TOTAL			13,768.36

SUM-19.WJ2

QUANTITY : 1,000 m<sup>3</sup>

UNIT COST : dollar

AMOUNT : million dol.

## (19) CASE S-1

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	480	44,590	101,010	16,250	5,700	168,030
	UNIT PRICE	2.61	2.61	2.61	2.61	2.61	
	AMOUNT	1.25	116.38	263.64	42.41	14.88	438.56
ROCK, WEATHERED	QUANTITY	720	92,965	283,470	40,645	13,275	431,075
	UNIT PRICE	3.61	3.61	3.61	3.61	3.61	
	AMOUNT	2.60	335.60	1023.33	146.73	47.92	1556.18
ROCK	QUANTITY	2,323	117,948	186,610	0	0	306,881
	UNIT PRICE	5.15	5.15	5.15			
	AMOUNT	11.96	607.43	961.04			1580.44
DREDGING, LOOSE MATERIAL	QUANTITY	595	0	0	0	5,679	6,274
	UNIT PRICE	2.24				2.24	
	AMOUNT	1.33				12.72	14.05
DREDGING, WEATHERED SOFT ROCK	QUANTITY	1,750	0	0	0	16,558	18,308
	UNIT PRICE	5.13				5.13	
	AMOUNT	8.98				84.94	93.92
ROCK UNDERWATER	QUANTITY	1,488	0	0	0	0	1,488
	UNIT PRICE	18.15					
	AMOUNT	27.01					27.01
DREDGING, CLAYEY MATERIAL	QUANTITY	595	0	0	0	5,679	6,274
	UNIT PRICE	2.24				2.24	
	AMOUNT	1.33				12.72	14.05
TOTAL	QUANTITY	7,951	255,503	571,090	56,895	46,891	938,330
	AMOUNT	54.47	1059.42	2248.01	189.14	173.19	3,724.21

b) HAUL ROAD CONSTRUCTION 58,000 m 796.00 \$/m 46.17

c) CLEARING 11,400,000 m<sup>2</sup> 0.23 \$/m<sup>2</sup> 2.62d) VEGETATION 4,890,000 m<sup>2</sup> 0.70 \$/m<sup>2</sup> 3.42

e) DEWATERING 1s 449.60

SUBTOTAL 4,226.03

SUPPORTING CONSTRUCTION 236.66

GENERAL CONDITIONS 633.90

TOTAL 5,096.59

SUM-20.WJ2

(20)CASE S-2

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	880	78,925	161,035	27,125	9,075	277,040
	UNIT PRICE	2.61	2.61	2.61	2.61	2.61	
	AMOUNT	2.30	205.99	420.30	70.80	23.69	723.07
ROCK, WEATHERED	QUANTITY	1,320	191,170	508,665	80,675	29,265	811,095
	UNIT PRICE	3.61	3.61	3.61	3.61	3.61	
	AMOUNT	4.77	690.12	1836.28	291.24	105.65	2928.05
ROCK	QUANTITY	5,225	252,475	263,335	0	0	521,035
	UNIT PRICE	5.15	5.15	5.15			
	AMOUNT	26.91	1300.25	1356.18			2683.33
DREDGING, LOOSE MATERIAL	QUANTITY	1,313	0	0	0	12,619	13,932
	UNIT PRICE	2.24				2.24	
	AMOUNT	2.94				28.27	31.21
DREDGING, WEATHERED SOFT ROCK	QUANTITY	3,780	0	0	0	36,904	40,684
	UNIT PRICE	5.13				5.13	
	AMOUNT	19.39				189.32	208.71
ROCK UNDERWATER	QUANTITY	3,325	0	0	0	0	3,325
	UNIT PRICE	18.15					
	AMOUNT	60.35					60.35
DREDGING, CLAYEY MATERIAL	QUANTITY	1,313	0	0	0	12,619	13,932
	UNIT PRICE	2.24				2.24	
	AMOUNT	2.94				28.27	31.21
TOTAL	QUANTITY	17,156	522,570	933,035	107,800	100,482	1,681,043
	AMOUNT	119.59	2196.36	3612.76	362.03	375.19	6,665.93

b) HAUL ROAD CONSTRUCTION	58,000 m	796.00 \$/m	46.17
c) CLEARING	22,100,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	5.08
d) VEGETATION	4,890,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.42
e) DEWATERING	1s		449.60
SUBTOTAL			7,170.21
SUPPORTING CONSTRUCTION			401.53
GENERAL CONDITIONS			1,075.53
TOTAL			8,647.27

SUM-21.WJ2

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## (21) CASE S-3

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	540	50,540	117,750	17,650	6,300	192,780
	UNIT PRICE	2.61	2.61	2.61	2.61	2.61	
	AMOUNT	1.41	131.91	307.33	46.07	16.44	503.16
ROCK, WEATHERED	QUANTITY	810	122,390	493,588	50,275	16,830	683,893
	UNIT PRICE	3.61	3.61	3.61	3.61	3.61	
	AMOUNT	2.92	441.83	1781.85	181.49	60.76	2468.85
ROCK	QUANTITY	3,060	146,125	11,845	0	0	161,030
	UNIT PRICE	5.15	5.15	5.15			
	AMOUNT	15.76	752.54	61.00			829.31
DREDGING, LOOSE MATERIAL	QUANTITY	809	0	0	0	7,213	8,022
	UNIT PRICE	2.24				2.24	
	AMOUNT	1.81				16.16	17.97
DREDGING, WEATHERED SOFT ROCK	QUANTITY	2,252	0	0	0	30,372	32,624
	UNIT PRICE	5.13				5.13	
	AMOUNT	11.55				155.81	167.36
ROCK UNDERWATER	QUANTITY	3,003	0	0	0	0	3,003
	UNIT PRICE	18.15					
	AMOUNT	54.50					54.50
DREDGING, CLAYEY MATERIAL	QUANTITY	809	0	0	0	7,213	8,022
	UNIT PRICE	2.24				2.24	
	AMOUNT	1.81				16.16	17.97
TOTAL	QUANTITY	11,283	319,055	623,183	67,925	67,928	1,089,374
	AMOUNT	89.77	1326.28	2150.18	227.56	265.32	4,059.12

b) HAUL ROAD CONSTRUCTION	58,000 m	796.00 \$/m	46.17
c) CLEARING	12,800,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	2.94
d) VEGETATION	4,890,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.42
e) DEWATERING	ls		449.60
SUBTOTAL			4,561.25
SUPPORTING CONSTRUCTION			255.43
GENERAL CONDITIONS			684.19
TOTAL			5,500.87

SUM-22.WJ2

(22)CASE S-4

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	1,040	88,950	173,580	30,250	10,050	303,870
	UNIT PRICE	2.61	2.61	2.61	2.61	2.61	
	AMOUNT	2.71	232.16	453.04	78.95	26.23	793.10
ROCK, WEATHERED	QUANTITY	1,560	247,915	883,785	103,300	37,260	1,273,820
	UNIT PRICE	3.61	3.61	3.61	3.61	3.61	
	AMOUNT	5.63	894.97	3190.46	372.91	134.51	4598.49
ROCK	QUANTITY	6,970	308,725	0	0	0	315,695
	UNIT PRICE	5.15	5.15				
	AMOUNT	35.90	1589.93				1625.83
DREDGING, LOOSE MATERIAL	QUANTITY	1,675	0	0	0	15,531	17,206
	UNIT PRICE	2.24				2.24	
	AMOUNT	3.75				34.79	38.54
DREDGING, WEATHERED SOFT ROCK	QUANTITY	4,890	0	0	0	68,652	73,542
	UNIT PRICE	5.13				5.13	
	AMOUNT	25.09				352.19	377.27
ROCK UNDERWATER	QUANTITY	4,967	0	0	0	0	4,967
	UNIT PRICE	18.15					
	AMOUNT	90.15					90.15
DREDGING, CLAYEY MATERIAL	QUANTITY	1,675	0	0	0	15,531	17,206
	UNIT PRICE	2.24				2.24	
	AMOUNT	3.75				34.79	38.54
TOTAL	QUANTITY	22,777	645,590	1,057,365	133,550	147,024	2,006,306
	AMOUNT	166.98	2717.07	3643.51	451.87	582.50	7,561.93

b) HAUL ROAD CONSTRUCTION	58,000 m	796.00 \$/m	46.17
c) CLEARING	25,300,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	5.82
d) VEGETATION	4,890,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.42
e) DEWATERING	ls		449.60
SUBTOTAL			8,066.94
SUPPORTING CONSTRUCTION			451.75
GENERAL CONDITIONS			1,210.04
TOTAL			9,728.73

SUM-23.WJ2

(23) CASE S-5

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	560	51,870	134,230	19,400	6,450	212,510
	UNIT PRICE	2.61	2.61	2.61	2.61	2.61	
	AMOUNT	1.46	135.38	350.34	50.63	16.84	554.65
ROCK, WEATHERED	QUANTITY	840	127,185	362,495	54,185	18,225	562,930
	UNIT PRICE	3.61	3.61	3.61	3.61	3.61	
	AMOUNT	3.03	459.14	1308.61	195.61	65.79	2032.18
ROCK	QUANTITY	4,825	161,045	191,840	0	0	357,710
	UNIT PRICE	5.15	5.15	5.15			
	AMOUNT	24.85	829.38	987.98			1842.21
DREDGING, LOOSE MATERIAL	QUANTITY	858	0	0	0	7,840	8,698
	UNIT PRICE	2.24				2.24	
	AMOUNT	1.92				17.56	19.48
DREDGING, WEATHERED SOFT ROCK	QUANTITY	2,438	0	0	0	37,372	39,810
	UNIT PRICE	5.13				5.13	
	AMOUNT	12.51				191.72	204.23
ROCK UNDERWATER	QUANTITY	3,725	0	0	0	0	3,725
	UNIT PRICE	18.15					
	AMOUNT	67.61					67.61
DREDGING, CLAYEY MATERIAL	QUANTITY	858	0	0	0	7,840	8,698
	UNIT PRICE	2.24				2.24	
	AMOUNT	1.92				17.56	19.48
TOTAL	QUANTITY	14,104	340,100	688,565	73,585	77,727	1,194,081
	AMOUNT	113.30	1423.90	2646.92	246.24	309.47	4,739.84

b) HAUL ROAD CONSTRUCTION	58,000 m	796.00 \$/m	46.17
c) CLEARING	13,600,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	3.13
d) VEGETATION	4,890,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.42
e) DEWATERING	1s		449.60
SUBTOTAL			5,242.16
SUPPORTING CONSTRUCTION			293.56
GENERAL CONDITIONS			786.32
TOTAL			6,322.04

SUM-24.WJ2

(24)CASE S-6

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	1,100	94,520	197,810	31,550	10,500	335,480
	UNIT PRICE	2.61	2.61	2.61	2.61	2.61	
	AMOUNT	2.87	246.70	516.28	82.35	27.41	875.60
ROCK, WEATHERED	QUANTITY	1,650	258,425	652,430	111,250	40,620	1,064,375
	UNIT PRICE	3.61	3.61	3.61	3.61	3.61	
	AMOUNT	5.96	932.91	2355.27	401.61	146.64	3842.39
ROCK	QUANTITY	7,495	341,225	308,240	0	0	656,960
	UNIT PRICE	5.51	5.51	5.51			
	AMOUNT	41.30	1880.15	1698.40			3619.85
DREDGING, LOOSE MATERIAL	QUANTITY	1,794	0	0	0	16,883	18,677
	UNIT PRICE	2.24				2.24	
	AMOUNT	4.02				37.82	41.84
DREDGING, WEATHERED SOFT ROCK	QUANTITY	5,265	0	0	0	82,890	88,155
	UNIT PRICE	5.13				5.13	
	AMOUNT	27.01				425.23	452.24
ROCK UNDERWATER	QUANTITY	8,385	0	0	0	0	8,385
	UNIT PRICE	18.15					
	AMOUNT	152.19					152.19
DREDGING, CLAYEY MATERIAL	QUANTITY	1,794	0	0	0	16,883	18,677
	UNIT PRICE	2.24				2.24	
	AMOUNT	4.02				37.82	41.84
TOTAL	QUANTITY	27,483	694,170	1,158,480	142,800	167,776	2,190,709
	AMOUNT	237.36	3059.76	4569.96	483.96	674.91	9,025.94

b) HAUL ROAD CONSTRUCTION	58,000 m	796.00 \$/m	46.17
c) CLEARING	26,900,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	6.19
d) VEGETATION	4,890,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.42
e) DEWATERING	ls		449.60
SUBTOTAL			9,531.32
SUPPORTING CONSTRUCTION			533.75
GENERAL CONDITIONS			1,429.70
TOTAL			11,494.77



SUM-25.WJ2

(25)CASE S-7

QUANTITY : 1,000 m3
UNIT COST : dollar
AMOUNT : million dol.

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	6,899	43,485	3,140	430	53,954
	UNIT PRICE		2.61	2.61	2.61	2.61	
	AMOUNT		18.01	113.50	8.20	1.12	140.82
ROCK, WEATHERED	QUANTITY	0	8,625	62,950	4,195	565	76,335
	UNIT PRICE		3.61	3.61	3.61	3.61	
	AMOUNT		31.14	227.25	15.14	2.04	275.57
ROCK	QUANTITY	0	28,973	513,098	25,420	1,295	568,786
	UNIT PRICE		5.15	5.15	5.15	5.15	
	AMOUNT		149.21	2642.46	130.91	6.67	2929.25
DREDGING, LOOSE MATERIAL	QUANTITY	3,240	7,005	4,770	1,240	5,143	21,398
	UNIT PRICE	2.24	2.17	3.06	3.06	2.61	
	AMOUNT	7.26	15.20	14.60	3.79	13.42	54.27
DREDGING, WEATHERED SOFT ROCK	QUANTITY	9,721	20,368	8,635	1,940	8,028	48,692
	UNIT PRICE	37.67	37.60	38.45	38.45	38.00	
	AMOUNT	366.19	765.84	332.02	74.59	305.06	1843.70
ROCK UNDERWATER	QUANTITY	1,040	68,879	38,137	4,920	1,540	114,516
	UNIT PRICE	44.97	44.90	45.75	45.75	45.30	
	AMOUNT	46.77	3092.67	1744.77	225.09	69.76	5179.06
DREDGING, CLAYEY MATERIAL	QUANTITY	3,240	6,315	1,215	0	5,368	16,138
	UNIT PRICE	2.24	2.17	3.06		2.61	
	AMOUNT	7.26	13.70	3.72		14.01	38.69
TOTAL	QUANTITY	17,241	147,064	672,290	40,855	22,369	899,819
	AMOUNT	427.48	4085.76	5078.30	457.73	412.09	10,461.36

b) HAUL ROAD CONSTRUCTION	39,000 m	705.00 \$/m	27.50
c) CLEARING	7,600,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	1.75
d) VEGETATION	3,300,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	2.31
e) DEWATERING	ls		303.05

SUBTOTAL	10,795.96
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SUPPORTING CONSTRUCTION	604.57
GENERAL CONDITIONS	1,619.39
TOTAL	13,019.93

SUM-26.WJ2

(26) CASE S-8

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	11,937	61,140	5,940	830	79,847
	UNIT PRICE		2.61	2.61	2.61	2.61	
	AMOUNT		31.16	159.58	15.50	2.17	208.40
ROCK, WEATHERED	QUANTITY	0	14,701	88,630	8,495	1,155	112,981
	UNIT PRICE		3.61	3.61	3.61	3.61	
	AMOUNT		53.07	319.95	30.67	4.17	407.86
ROCK	QUANTITY	0	57,150	826,195	48,490	3,310	935,145
	UNIT PRICE		5.15	5.15	5.15	5.15	
	AMOUNT		294.32	4254.90	249.72	17.05	4816.00
DREDGING, LOOSE MATERIAL	QUANTITY	6,420	13,405	8,215	1,550	11,375	40,965
	UNIT PRICE	2.24	2.17	3.06	3.06	2.61	
	AMOUNT	14.38	29.09	25.14	4.74	29.69	103.04
DREDGING, WEATHERED SOFT ROCK	QUANTITY	19,502	39,862	15,580	2,510	23,590	101,044
	UNIT PRICE	37.67	37.60	38.45	38.45	38.00	
	AMOUNT	734.64	1498.81	599.05	96.51	896.42	3825.43
ROCK UNDERWATER	QUANTITY	2,060	147,303	75,705	10,820	4,980	240,668
	UNIT PRICE	44.97	44.90	45.75	45.75	45.30	
	AMOUNT	92.64	6613.91	3463.50	485.87	225.59	10881.51
DREDGING, CLAYEY MATERIAL	QUANTITY	6,420	12,030	2,210	0	11,850	32,510
	UNIT PRICE	2.24	2.17	3.06		2.61	
	AMOUNT	14.38	26.11	6.76		30.93	78.18
TOTAL	QUANTITY	34,402	296,388	1,077,675	77,605	57,090	1,543,160
	AMOUNT	856.04	8546.46	8828.89	883.01	1206.01	20,320.42

b) HAUL ROAD CONSTRUCTION	39,000 m	705.00 \$/m	27.50
c) CLEARING	14,800,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	3.40
d) VEGETATION	3,300,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	2.31
e) DEWATERING	1s		303.05
SUBTOTAL			20,656.68
SUPPORTING CONSTRUCTION			1,156.77
GENERAL CONDITIONS			3,098.50
TOTAL			24,911.95

SUM-27.WJ2

QUANTITY : 1,000 m3
UNIT COST : dollar
AMOUNT : million dol.

(27) CASE S-9

a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	7,040	46,550	3,720	570	57,880
	UNIT PRICE		2.61	2.61	2.61	2.61	
	AMOUNT		18.37	121.50	9.71	1.49	151.07
ROCK, WEATHERED	QUANTITY	0	10,872	67,425	4,920	660	83,877
	UNIT PRICE		3.61	3.61	3.61	3.61	
	AMOUNT		39.25	243.40	17.76	2.38	302.80
ROCK	QUANTITY	0	37,687	573,205	30,565	3,185	644,642
	UNIT PRICE		5.15	5.15	5.15	5.15	
	AMOUNT		194.09	2952.01	157.41	16.40	3319.91
DREDGING, LOOSE MATERIAL	QUANTITY	4,000	7,800	4,500	1,240	7,344	24,884
	UNIT PRICE	2.24	2.17	3.06	3.06	2.61	
	AMOUNT	8.96	16.93	13.77	3.79	19.17	62.62
DREDGING, WEATHERED SOFT ROCK	QUANTITY	10,875	22,839	9,640	2,100	18,632	64,086
	UNIT PRICE	37.67	37.60	38.45	38.45	38.00	
	AMOUNT	409.66	858.75	370.66	80.75	708.02	2427.83
ROCK UNDERWATER	QUANTITY	10,453	89,903	48,800	7,490	6,499	163,145
	UNIT PRICE	44.97	44.90	45.75	45.75	45.30	
	AMOUNT	470.07	4036.65	2232.60	342.67	294.41	7376.39
DREDGING, CLAYEY MATERIAL	QUANTITY	4,000	7,145	1,905	0	7,733	20,783
	UNIT PRICE	2.24	2.17	3.06		2.61	
	AMOUNT	8.96	15.51	5.83		20.18	50.48
TOTAL	QUANTITY	29,328	183,286	752,025	50,035	44,623	1,059,297
	AMOUNT	897.65	5179.53	5939.76	612.09	1062.05	13,691.08

b) HAUL ROAD CONSTRUCTION	39,000 m	705.00 \$/m	27.50
c) CLEARING	8,600,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	1.98
d) VEGETATION	3,300,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	2.31
e) DEWATERING	ls		303.05
SUBTOTAL			14,025.91
SUPPORTING CONSTRUCTION			785.45
GENERAL CONDITIONS			2,103.89
TOTAL			16,915.25

SUM-28.WJ2

(28)CASE S-10

QUANTITY : 1,000 m3
UNIT COST : dollar
AMOUNT : million dol.

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	13,590	66,450	6,925	965	87,930
	UNIT PRICE		2.61	2.61	2.61	2.61	
	AMOUNT		35.47	173.44	18.07	2.52	229.50
ROCK, WEATHERED	QUANTITY	0	18,594	97,150	9,820	1,350	126,914
	UNIT PRICE		3.61	3.61	3.61	3.61	
	AMOUNT		67.12	350.71	35.45	4.87	458.16
ROCK	QUANTITY	0	77,883	981,205	63,010	4,690	1,126,788
	UNIT PRICE		5.15	5.15	5.15	5.15	
	AMOUNT		401.10	5053.21	324.50	24.15	5802.96
DREDGING, LOOSE MATERIAL	QUANTITY	8,000	15,530	8,350	1,660	15,850	49,390
	UNIT PRICE	2.24	2.17	3.06	3.06	2.61	
	AMOUNT	17.92	33.70	25.55	5.08	41.37	123.62
DREDGING, WEATHERED SOFT ROCK	QUANTITY	21,750	45,187	17,805	2,670	44,545	131,957
	UNIT PRICE	37.67	37.60	38.45	38.45	38.00	
	AMOUNT	819.32	1699.03	684.60	102.66	1692.71	4998.33
ROCK UNDERWATER	QUANTITY	20,843	195,337	97,605	13,600	25,559	352,944
	UNIT PRICE	44.97	44.90	45.75	45.75	45.30	
	AMOUNT	937.31	8770.63	4465.43	622.20	1157.82	15953.39
DREDGING, CLAYEY MATERIAL	QUANTITY	8,000	13,860	3,510	0	16,304	41,674
	UNIT PRICE	2.24	2.17	3.06		2.61	
	AMOUNT	17.92	30.08	10.74		42.55	101.29
TOTAL	QUANTITY	58,593	379,981	1,272,075	97,685	109,263	1,917,597
	AMOUNT	1792.47	11037.13	10763.68	1107.97	2966.00	27,667.25

b) HAUL ROAD CONSTRUCTION	39,000 m	705.00 \$/m	27.50
c) CLEARING	17,000,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	3.91
d) VEGETATION	3,300,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	2.31
e) DEWATERING	1s		303.05
SUBTOTAL			28,004.01
SUPPORTING CONSTRUCTION			1,568.22
GENERAL CONDITIONS			4,200.60
TOTAL			33,772.84

SUM-29.WJ2

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## (29) CASE S-11

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	7,700	47,990	3,910	550	60,150
	UNIT PRICE		2.61	2.61	2.61	2.61	
	AMOUNT		20.10	125.25	10.21	1.44	156.99
ROCK, WEATHERED	QUANTITY	0	13,073	69,365	5,295	710	88,443
	UNIT PRICE		3.61	3.61	3.61	3.61	
	AMOUNT		47.19	250.41	19.12	2.56	319.28
ROCK	QUANTITY	0	41,208	611,880	32,520	2,400	688,008
	UNIT PRICE		5.15	5.15	5.15	5.15	
	AMOUNT		212.22	3151.18	167.48	12.36	3543.24
DREDGING, LOOSE MATERIAL	QUANTITY	4,439	8,290	4,850	1,310	8,296	27,185
	UNIT PRICE	2.24	2.17	3.06	3.06	2.61	
	AMOUNT	9.94	17.99	14.84	4.01	21.65	68.44
DREDGING, WEATHERED SOFT ROCK	QUANTITY	12,120	24,293	10,275	2,130	22,716	71,534
	UNIT PRICE	37.67	37.60	38.45	38.45	38.00	
	AMOUNT	456.56	913.42	395.07	81.90	863.21	2710.16
ROCK UNDERWATER	QUANTITY	11,560	99,197	54,340	8,720	10,400	184,217
	UNIT PRICE	44.97	44.90	45.75	45.75	45.30	
	AMOUNT	519.85	4453.95	2486.06	398.94	471.12	8329.91
DREDGING, CLAYEY MATERIAL	QUANTITY	4,439	7,545	2,015	0	8,648	22,647
	UNIT PRICE	2.24	2.17	3.06		2.61	
	AMOUNT	9.94	16.37	6.17		22.57	55.05
TOTAL	QUANTITY	32,558	201,306	800,715	53,885	53,720	1,142,184
	AMOUNT	996.30	5681.24	6428.98	681.65	1394.91	15,183.07

b) HAUL ROAD CONSTRUCTION	39,000 m	705.00 \$/m	27.50
c) CLEARING	9,100,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	2.09
d) VEGETATION	3,300,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	2.31
e) DEWATERING	1s		303.05
SUBTOTAL			15,518.02
SUPPORTING CONSTRUCTION			869.01
GENERAL CONDITIONS			2,327.70
TOTAL			18,714.73

SUM-30.WJ2

(30)CASE S-12

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	14,760	68,045	7,235	1,000	91,040
	UNIT PRICE		2.61	2.61	2.61	2.61	
	AMOUNT		38.52	177.60	18.88	2.61	237.61
ROCK, WEATHERED	QUANTITY	0	20,779	99,485	10,390	1,430	132,084
	UNIT PRICE		3.61	3.61	3.61	3.61	
	AMOUNT		75.01	359.14	37.51	5.16	476.82
ROCK	QUANTITY	0	84,392	1,057,945	67,930	5,245	1,215,512
	UNIT PRICE		5.15	5.15	5.15	5.15	
	AMOUNT		434.62	5448.42	349.84	27.01	6259.89
DREDGING, LOOSE MATERIAL	QUANTITY	8,878	16,030	9,070	1,750	17,346	53,074
	UNIT PRICE	2.24	2.17	3.06	3.06	2.61	
	AMOUNT	19.89	34.79	27.75	5.36	45.27	133.05
DREDGING, WEATHERED SOFT ROCK	QUANTITY	24,240	47,976	19,105	2,700	49,626	143,647
	UNIT PRICE	37.67	37.60	38.45	38.45	38.00	
	AMOUNT	913.12	1803.90	734.59	103.82	1885.79	5441.21
ROCK UNDERWATER	QUANTITY	23,120	206,467	107,270	14,650	34,454	385,961
	UNIT PRICE	44.97	44.90	45.75	45.75	45.30	
	AMOUNT	1039.71	9270.37	4907.60	670.24	1560.77	17448.68
DREDGING, CLAYEY MATERIAL	QUANTITY	8,878	14,680	3,700	0	17,918	45,176
	UNIT PRICE	2.24	2.17	3.06		2.61	
	AMOUNT	19.89	31.86	11.32		46.77	109.83
TOTAL	QUANTITY	65,116	405,084	1,364,620	104,655	127,019	2,066,494
	AMOUNT	1992.60	11689.06	11666.42	1185.64	3573.38	30,107.10

b) HAUL ROAD CONSTRUCTION	39,000 m	705.00 \$/m	27.50
c) CLEARING	18,000,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	4.14
d) VEGETATION	3,300,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	2.31
e) DEWATERING	1s		303.05
SUBTOTAL			30,444.10
SUPPORTING CONSTRUCTION			1,704.87
GENERAL CONDITIONS			4,566.61
TOTAL			36,715.58

SUM-31.WJ2

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

(31)CASE S-13

a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	880	78,925	101,010	27,125	9,075	217,015
	UNIT PRICE	2.61	2.61	2.61	2.61	2.61	
	AMOUNT	2.30	205.99	263.64	70.80	23.69	566.41
ROCK, WEATHERED	QUANTITY	1,320	191,170	283,470	80,675	29,265	585,900
	UNIT PRICE	3.61	3.61	3.61	3.61	3.61	
	AMOUNT	4.77	690.12	1023.33	291.24	105.65	2115.10
ROCK	QUANTITY	5,225	252,475	186,610	0	0	444,310
	UNIT PRICE	5.15	5.15	5.15			
	AMOUNT	26.91	1300.25	961.04			2288.20
DREDGING, LOOSE MATERIAL	QUANTITY	1,313	0	0	0	12,619	13,932
	UNIT PRICE	2.24				2.24	
	AMOUNT	2.94				28.27	31.21
DREDGING, WEATHERED SOFT ROCK	QUANTITY	3,780	0	0	0	36,904	40,684
	UNIT PRICE	5.13				5.13	
	AMOUNT	19.39				189.32	208.71
ROCK UNDERWATER	QUANTITY	3,325	0	0	0	0	3,325
	UNIT PRICE	18.15					
	AMOUNT	60.35					60.35
DREDGING, CLAYEY MATERIAL	QUANTITY	1,313	0	0	0	12,619	13,932
	UNIT PRICE	2.24				2.24	
	AMOUNT	2.94				28.27	31.21
TOTAL	QUANTITY	17,156	522,570	571,090	107,800	100,482	1,319,098
	AMOUNT	119.59	2196.36	2248.01	362.03	375.19	5,301.18

b) HAUL ROAD CONSTRUCTION	58,000 m	796.00 \$/m	46.17
c) CLEARING	16,700,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	3.84
d) VEGETATION	4,900,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.43
e) DEWATERING	1s		449.60
SUBTOTAL			5,804.22
SUPPORTING CONSTRUCTION			325.04
GENERAL CONDITIONS			870.63
TOTAL			6,999.89

SUM-32.WJ2

(32) CASE S-14

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	1,040	88,950	117,750	30,250	10,050	248,040
	UNIT PRICE	2.61	2.61	2.61	2.61	2.61	
	AMOUNT	2.71	232.16	307.33	78.95	26.23	647.39
ROCK, WEATHERED	QUANTITY	1,560	247,915	493,588	103,300	37,260	883,623
	UNIT PRICE	3.61	3.61	3.61	3.61	3.61	
	AMOUNT	5.63	894.97	1781.85	372.91	134.51	3189.88
ROCK	QUANTITY	6,970	308,725	11,845	0	0	327,540
	UNIT PRICE	5.15	5.15	5.15			
	AMOUNT	35.90	1589.93	61.00			1686.83
DREDGING, LOOSE MATERIAL	QUANTITY	1,675	0	0	0	15,531	17,206
	UNIT PRICE	2.24				2.24	
	AMOUNT	3.75				34.79	38.54
DREDGING, WEATHERED SOFT ROCK	QUANTITY	4,890	0	0	0	68,652	73,542
	UNIT PRICE	5.13				5.13	
	AMOUNT	25.09				352.19	377.27
ROCK UNDERWATER	QUANTITY	4,967	0	0	0	0	4,967
	UNIT PRICE	18.15					
	AMOUNT	90.15					90.15
DREDGING, CLAYEY MATERIAL	QUANTITY	1,675	0	0	0	15,531	17,206
	UNIT PRICE	2.24				2.24	
	AMOUNT	3.75				34.79	38.54
TOTAL	QUANTITY	22,777	645,590	623,183	133,550	147,024	1,572,124
	AMOUNT	166.98	2717.07	2150.18	451.87	582.50	6,068.60

b) HAUL ROAD CONSTRUCTION	58,000 m	796.00 \$/m	46.17
c) CLEARING	19,100,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	4.39
d) VEGETATION	4,900,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.43
e) DEWATERING	1s		449.60
SUBTOTAL			6,572.19
SUPPORTING CONSTRUCTION			368.04
GENERAL CONDITIONS			985.83
TOTAL			7,926.06



SUM-33.WJ2

(33) CASE S-15

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	1,100	94,520	134,230	31,550	10,500	271,900
	UNIT PRICE	2.61	2.61	2.61	2.61	2.61	
	AMOUNT	2.87	246.70	350.34	82.35	27.41	709.66
ROCK, WEATHERED	QUANTITY	1,650	258,425	362,495	111,250	40,620	774,440
	UNIT PRICE	3.61	3.61	3.61	3.61	3.61	
	AMOUNT	5.96	932.91	1308.61	401.61	146.64	2795.73
ROCK	QUANTITY	7,495	341,225	191,840	0	0	540,560
	UNIT PRICE	5.15	5.15	5.15			
	AMOUNT	38.60	1757.31	987.98			2783.88
DREDGING, LOOSE MATERIAL	QUANTITY	1,794	0	0	0	16,883	18,677
	UNIT PRICE	2.24				2.24	
	AMOUNT	4.02				37.82	41.84
DREDGING, WEATHERED SOFT ROCK	QUANTITY	5,265	0	0	0	82,890	88,155
	UNIT PRICE	5.13				5.13	
	AMOUNT	27.01				425.23	452.24
ROCK UNDERWATER	QUANTITY	8,385	0	0	0	0	8,385
	UNIT PRICE	18.15					
	AMOUNT	152.19					152.19
DREDGING, CLAYEY MATERIAL	QUANTITY	1,794	0	0	0	16,883	18,677
	UNIT PRICE	2.24				2.24	
	AMOUNT	4.02				37.82	41.84
TOTAL	QUANTITY	27,483	694,170	688,565	142,800	167,776	1,720,794
	AMOUNT	234.66	2936.92	2646.92	483.96	674.91	6,977.37

b) HAUL ROAD CONSTRUCTION	58,000 m	796.00 \$/m	46.17
c) CLEARING	20,200,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	4.65
d) VEGETATION	4,900,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	3.43
e) DEWATERING	1s		449.60
SUBTOTAL			7,481.21
SUPPORTING CONSTRUCTION			418.95
GENERAL CONDITIONS			1,122.18
TOTAL			9,022.34

SUM-34.WJ2

(34) CASE S-16

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	11,937	43,485	5,940	830	62,192
	UNIT PRICE		2.61	2.61	2.61	2.61	
	AMOUNT		31.16	113.50	15.50	2.17	162.32
ROCK, WEATHERED	QUANTITY	0	14,701	62,950	8,496	1,155	87,301
	UNIT PRICE		3.61	3.61	3.61	3.61	
	AMOUNT		53.07	227.25	30.67	4.17	315.16
ROCK	QUANTITY	0	57,150	513,098	48,490	3,310	622,048
	UNIT PRICE		5.15	5.15	5.15	5.15	
	AMOUNT		294.32	2642.46	249.72	17.05	3203.55
DREDGING, LOOSE MATERIAL	QUANTITY	6,420	13,405	4,770	1,550	11,375	37,520
	UNIT PRICE	2.24	2.17	3.06	3.06	2.61	
	AMOUNT	14.38	29.09	14.60	4.74	29.69	92.50
DREDGING, WEATHERED SOFT ROCK	QUANTITY	19,502	39,862	8,635	2,510	23,590	94,099
	UNIT PRICE	37.67	37.60	38.45	38.45	38.00	
	AMOUNT	734.64	1498.81	332.02	96.51	896.42	3558.40
ROCK UNDERWATER	QUANTITY	2,060	147,303	38,137	10,620	4,980	203,100
	UNIT PRICE	44.97	44.90	45.75	45.75	45.30	
	AMOUNT	92.64	6613.91	1744.77	485.87	225.59	9162.77
DREDGING, CLAYEY MATERIAL	QUANTITY	6,420	12,030	1,215	0	11,850	31,515
	UNIT PRICE	2.24	2.17	3.06		2.61	
	AMOUNT	14.38	26.11	3.72		30.93	75.13
TOTAL	QUANTITY	34,402	296,388	672,290	77,605	57,090	1,137,775
	AMOUNT	856.04	8546.46	5078.30	883.01	1206.01	16,569.83

b) HAUL ROAD CONSTRUCTION	39,800 m	705.00 \$/m	27.50
c) CLEARING	11,200,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	2.58
d) VEGETATION	3,300,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	2.31
e) DEWATERING	1s		303.05
SUBTOTAL			16,905.26
SUPPORTING CONSTRUCTION			946.69
GENERAL CONDITIONS			2,535.79
TOTAL			20,387.74

SUM-35.WJ2

(35)CASE S-17

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	13,590	46,550	6,925	965	68,030
	UNIT PRICE		2.61	2.61	2.61	2.61	
	AMOUNT		35.47	121.50	18.07	2.52	177.56
ROCK, WEATHERED	QUANTITY	0	18,594	67,425	9,820	1,350	97,189
	UNIT PRICE		3.61	3.61	3.61	3.61	
	AMOUNT		67.12	243.40	35.45	4.87	350.85
ROCK	QUANTITY	0	77,883	573,205	63,010	4,690	718,788
	UNIT PRICE		5.15	5.15	5.15	5.15	
	AMOUNT		401.10	2952.01	324.50	24.15	3701.76
DREDGING, LOOSE MATERIAL	QUANTITY	8,000	15,530	4,500	1,660	15,850	45,540
	UNIT PRICE	2.24	2.17	3.06	3.06	2.61	
	AMOUNT	17.92	33.70	13.77	5.08	41.37	111.84
DREDGING, WEATHERED SOFT ROCK	QUANTITY	21,750	45,187	9,640	2,670	44,545	123,792
	UNIT PRICE	37.67	37.60	38.45	38.45	38.00	
	AMOUNT	819.32	1699.03	370.66	102.66	1692.71	4684.38
ROCK UNDERWATER	QUANTITY	20,843	195,337	48,800	13,600	25,559	304,139
	UNIT PRICE	44.97	44.90	45.75	45.75	45.30	
	AMOUNT	937.31	8770.63	2232.60	622.20	1157.82	13720.56
DREDGING, CLAYEY MATERIAL	QUANTITY	8,000	13,860	1,905	0	16,304	40,069
	UNIT PRICE	2.24	2.17	3.06		2.61	
	AMOUNT	17.92	30.08	5.83		42.55	96.38
TOTAL	QUANTITY	58,593	379,981	752,025	97,685	109,263	1,397,547
	AMOUNT	1792.47	11037.13	5939.76	1107.97	2966.00	22,843.34

b) HAUL ROAD CONSTRUCTION	39,000 m	705.00 \$/m	27.50
c) CLEARING	12,800,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	2.94
d) VEGETATION	3,300,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	2.31
e) DEWATERING	1s		303.05
SUBTOTAL			23,179.13
SUPPORTING CONSTRUCTION			1,298.03
GENERAL CONDITIONS			3,476.87
TOTAL			27,954.04

SUM-36.WJ2

(36)CASE S-18

QUANTITY : 1,000 m <sup>3</sup>
UNIT COST : dollar
AMOUNT : million dol.

a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	14,760	47,990	7,235	1,000	70,985
	UNIT PRICE		2.61	2.61	2.61	2.61	
	AMOUNT		38.52	125.25	18.88	2.61	185.27
ROCK, WEATHERED	QUANTITY	0	20,779	69,365	10,390	1,430	101,964
	UNIT PRICE		3.61	3.61	3.61	3.61	
	AMOUNT		75.01	250.41	37.51	5.16	368.09
ROCK	QUANTITY	0	84,392	611,880	67,930	5,245	769,447
	UNIT PRICE		5.15	5.15	5.15	5.15	
	AMOUNT		434.62	3151.18	349.84	27.01	3962.65
DREDGING, LOOSE MATERIAL	QUANTITY	8,878	16,030	4,850	1,750	17,346	48,854
	UNIT PRICE	2.24	2.17	3.06	3.06	2.61	
	AMOUNT	19.89	34.79	14.84	5.36	45.27	120.14
DREDGING, WEATHERED SOFT ROCK	QUANTITY	24,240	47,976	10,275	2,700	49,626	134,817
	UNIT PRICE	37.67	37.60	38.45	38.45	38.00	
	AMOUNT	913.12	1803.90	395.07	103.82	1885.79	5101.70
ROCK UNDERWATER	QUANTITY	23,120	206,467	54,340	14,650	34,454	333,031
	UNIT PRICE	44.97	44.90	45.75	45.75	45.30	
	AMOUNT	1039.71	9270.37	2486.06	670.24	1560.77	15027.13
DREDGING, CLAYEY MATERIAL	QUANTITY	8,878	14,680	2,015	0	17,918	43,491
	UNIT PRICE	2.24	2.17	3.06		2.61	
	AMOUNT	19.89	31.86	6.17		46.77	104.68
TOTAL	QUANTITY	65,116	405,084	800,715	104,655	127,019	1,502,589
	AMOUNT	1992.60	11689.06	6428.98	1185.64	3573.38	24,869.66

b) HAUL ROAD CONSTRUCTION	39,000 m	705.00 \$/m	27.50
c) CLEARING	13,600,000 m <sup>2</sup>	0.23 \$/m <sup>2</sup>	3.13
d) VEGETATION	3,300,000 m <sup>2</sup>	0.70 \$/m <sup>2</sup>	2.31
e) DEWATERING	ls		303.05
SUBTOTAL			25,205.64
SUPPORTING CONSTRUCTION			1,411.52
GENERAL CONDITIONS			3,780.85
TOTAL			30,398.00

SUM-37.WJ2

(37) CASE 'STATUS QUO'

QUANTITY : 1,000 m3
UNIT COST : dollar
AMOUNT : million dol.

## a) EXCAVATION

DESCRIPTION		ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	TOTAL
EARTH, COMMON	QUANTITY	0	5,419	22,958	9,431	0	37,808
	UNIT PRICE		2.41	2.41	2.41		
	AMOUNT		13.06	55.33	22.73		91.12
ROCK, WEATHERED	QUANTITY	2,110	56,008	56,298	31,355	81	145,852
	UNIT PRICE	3.37	3.37	3.37	3.37	3.37	
	AMOUNT	7.11	188.75	189.72	105.67	0.27	491.52
ROCK	QUANTITY	0	17,084	44,302	63,164	455	125,005
	UNIT PRICE		4.89	4.89	4.89	4.89	
	AMOUNT		83.54	216.64	308.87	2.23	611.28
DREDGING, LOOSE MATERIAL	QUANTITY	5,129	3,806	41	0	7,156	16,132
	UNIT PRICE	2.24	2.57	3.86		2.61	
	AMOUNT	11.49	9.78	0.16		18.68	40.11
DREDGING, WEATHERED SOFT ROCK	QUANTITY	972	17,332	3,764	0	8,976	31,044
	UNIT PRICE	5.13	5.42	6.69		5.47	
	AMOUNT	4.99	93.94	25.18		49.10	173.20
ROCK UNDERWATER	QUANTITY	869	20,972	5,419	662	6,370	34,292
	UNIT PRICE	18.15	18.45	20.09	20.41	18.51	
	AMOUNT	15.77	386.93	108.87	13.51	117.91	642.99
DREDGING, CLAYEY MATERIAL	QUANTITY	5,171	0	0	0	9,597	14,768
	UNIT PRICE	2.24				2.61	
	AMOUNT	11.58				25.05	36.63
TOTAL	QUANTITY	14,251	120,621	132,782	104,612	32,635	404,901
	AMOUNT	50.94	776.00	595.90	450.78	213.23	2,086.85

SUBTOTAL	2,086.85
SUPPORTING CONSTRUCTION	116.86
GENERAL CONDITIONS	313.03
TOTAL	2,516.74

## 2.3.4 Breakdown of Lock Concrete Structure

SUM1-10.WJ2

### (1) High-rise Lock

a) 100,000 DWT  
CASE L-1,L-2,L-10

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 4 CHAMBERS	ATLANTIC SIDE 4 CHAMBERS	TOTAL
EXCAVATION	QUANTITY	3.30	3.30	6.60
	UNIT PRICE	3.44	3.44	
	AMOUNT	11.35	11.35	22.70
BUCKFILL	QUANTITY	9.80	9.80	19.60
	UNIT PRICE	2.54	2.54	
	AMOUNT	24.89	24.89	49.78
CONCRETE	QUANTITY	4.64	4.64	9.28
	UNIT PRICE	46.67	46.67	
	AMOUNT	216.55	216.55	433.10
REINFORCED BAR	QUANTITY	0.05	0.05	0.09
	UNIT PRICE	742.00	742.00	
	AMOUNT	34.13	34.13	68.26
TOTAL	AMOUNT	286.92	286.92	573.85

SUBTOTAL COST	286.92	286.92	
SUPPORTING CONSTRUCTION	16.07	16.07	
GENERAL CONDITIONS	43.04	43.04	
TOTAL	346.03	346.03	692.06

SUMI-10'.WJ2

High-rise Lock

a') 100,000 DWT  
CASE L-2'

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 2 CHAMBERS	ATLANTIC SIDE 2 CHAMBERS	TOTAL
EXCAVATION	QUANTITY	3.30	3.30	6.60
	UNIT PRICE	3.44	3.44	
	AMOUNT	11.35	11.35	22.70
BUCKFILL	QUANTITY	9.80	9.80	19.60
	UNIT PRICE	2.54	2.54	
	AMOUNT	24.89	24.89	49.78
CONCRETE	QUANTITY	4.64	4.64	9.28
	UNIT PRICE	46.67	46.67	
	AMOUNT	216.55	216.55	433.10
REINFORCED BAR	QUANTITY	0.05	0.05	0.09
	UNIT PRICE	742.00	742.00	
	AMOUNT	34.13	34.13	68.26
TOTAL	AMOUNT	286.92	286.92	573.85

SUBTOTAL COST	286.92	286.92	
SUPPORTING CONSTRUCTION	16.07	16.07	
GENERAL CONDITIONS	43.04	43.04	
TOTAL	346.03	346.03	692.06

SUM1-11.WJ2

High-rise Lock

b) 150,000 DWT

CASE L-4,L-5,L-13

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 4 CHAMBERS	ATLANTIC SIDE 4 CHAMBERS	TOTAL
EXCAVATION	QUANTITY	4.00	4.00	8.00
	UNIT PRICE	3.44	3.44	
	AMOUNT	13.76	13.76	27.52
BUCKFILL	QUANTITY	11.90	11.90	23.80
	UNIT PRICE	2.54	2.54	
	AMOUNT	30.23	30.23	60.45
CONCRETE	QUANTITY	5.88	5.88	11.76
	UNIT PRICE	46.67	46.67	
	AMOUNT	274.42	274.42	548.84
REINFORCED BAR	QUANTITY	0.06	0.06	0.12
	UNIT PRICE	742.00	742.00	
	AMOUNT	44.52	44.52	89.04
TOTAL	AMOUNT	362.93	362.93	725.85

SUBTOTAL COST	362.93	362.93	
SUPPORTING CONSTRUCTION	20.32	20.32	
GENERAL CONDITIONS	54.44	54.44	
TOTAL	437.69	437.69	875.38



High-rise Lock

c) 250,000 DWT  
CASE L-7,L-8,L-16

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 4 CHAMBERS	ATLANTIC SIDE 4 CHAMBERS	TOTAL
EXCAVATION	QUANTITY	4.70	4.70	9.40
	UNIT PRICE	3.44	3.44	
	AMOUNT	16.17	16.17	32.34
BUCKFILL	QUANTITY	14.00	14.00	28.00
	UNIT PRICE	2.54	2.54	
	AMOUNT	35.56	35.56	71.12
CONCRETE	QUANTITY	8.39	8.39	16.78
	UNIT PRICE	46.67	46.67	
	AMOUNT	391.56	391.56	783.12
REINFORCED BAR	QUANTITY	0.08	0.08	0.16
	UNIT PRICE	742.00	742.00	
	AMOUNT	59.36	59.36	118.72
TOTAL	AMOUNT	502.65	502.65	1,005.30

SUBTOTAL COST	502.65	502.65	
SUPPORTING CONSTRUCTION	28.15	28.15	
GENERAL CONDITIONS	75.40	75.40	
TOTAL	606.20	606.20	1,212.39

SUMI-13.WJ2

(2) Low-rise Lock 55'

a) 100,000 DWT

CASE L-3,L-11

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 2 CHAMBERS	ATLANTIC SIDE 2 CHAMBERS	TOTAL
EXCAVATION	QUANTITY	1.54	1.54	3.08
	UNIT PRICE	3.44	3.44	
	AMOUNT	5.30	5.30	10.60
BUCKFILL	QUANTITY	8.40	8.40	16.80
	UNIT PRICE	2.54	2.54	
	AMOUNT	21.34	21.34	42.67
CONCRETE	QUANTITY	3.92	3.92	7.84
	UNIT PRICE	46.67	46.67	
	AMOUNT	182.95	182.95	365.89
REINFORCED BAR	QUANTITY	0.04	0.04	0.08
	UNIT PRICE	742.00	742.00	
	AMOUNT	28.94	28.94	57.88
TOTAL	AMOUNT	238.52	238.52	477.04

SUBTOTAL COST	238.52	238.52	
SUPPORTING CONSTRUCTION	13.36	13.36	
GENERAL CONDITIONS	35.78	35.78	
TOTAL	287.65	287.65	575.31

SUMI-14.WJ2

Low-rise Lock 55'

b) 150,000 DWT

CASE L-6,L-14

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 2 CHAMBERS	ATLANTIC SIDE 2 CHAMBERS	TOTAL
EXCAVATION	QUANTITY	1.76	1.76	3.52
	UNIT PRICE	3.44	3.44	
	AMOUNT	6.05	6.05	12.11
BUCKFILL	QUANTITY	9.60	9.60	19.20
	UNIT PRICE	2.54	2.54	
	AMOUNT	24.38	24.38	48.77
CONCRETE	QUANTITY	4.48	4.48	8.96
	UNIT PRICE	46.67	46.67	
	AMOUNT	209.08	209.08	418.16
REINFORCED BAR	QUANTITY	0.05	0.05	0.09
	UNIT PRICE	742.00	742.00	
	AMOUNT	33.39	33.39	66.78
TOTAL	AMOUNT	272.91	272.91	545.82

SUBTOTAL COST	272.91	272.91	
SUPPORTING CONSTRUCTION	15.28	15.28	
GENERAL CONDITIONS	40.94	40.94	
TOTAL	329.13	329.13	658.26

SUMI-15.WJ2

Low-rise Lock 55'

e) 250,000 DWT  
CASE L-9,L-17

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 2 CHAMBERS	ATLANTIC SIDE 2 CHAMBERS	TOTAL
EXCAVATION	QUANTITY	2.20	2.20	4.40
	UNIT PRICE	3.44	3.44	
	AMOUNT	7.57	7.57	15.14
BUCKFILL	QUANTITY	12.00	12.00	24.00
	UNIT PRICE	2.54	2.54	
	AMOUNT	30.48	30.48	60.96
CONCRETE	QUANTITY	5.60	5.60	11.20
	UNIT PRICE	46.67	46.67	
	AMOUNT	261.35	261.35	522.70
REINFORCED BAR	QUANTITY	0.06	0.06	0.11
	UNIT PRICE	742.00	742.00	
	AMOUNT	41.55	41.55	83.10
TOTAL	AMOUNT	340.95	340.95	681.90

SUBTOTAL COST	340.95	340.95	
SUPPORTING CONSTRUCTION	19.09	19.09	
GENERAL CONDITIONS	51.14	51.14	
TOTAL	411.19	411.19	822.38

SUM1-23.WJ2

Low-rise Lock 30'

a) 100,000 DWT  
CASE L-12

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 2 CHAMBERS	ATLANTIC SIDE 2 CHAMBERS	TOTAL
EXCAVATION	QUANTITY	1.54	1.54	3.08
	UNIT PRICE	3.44	3.44	
	AMOUNT	5.30	5.30	10.60
BUCKFILL	QUANTITY	8.40	8.40	16.80
	UNIT PRICE	2.54	2.54	
	AMOUNT	21.34	21.34	42.67
CONCRETE	QUANTITY	3.78	3.78	7.56
	UNIT PRICE	46.67	46.67	
	AMOUNT	176.41	176.41	352.83
REINFORCED BAR	QUANTITY	0.04	0.04	0.08
	UNIT PRICE	742.00	742.00	
	AMOUNT	28.94	28.94	57.88
TOTAL	AMOUNT	231.98	231.98	463.97

SUBTOTAL COST	231.98	231.98	
SUPPORTING CONSTRUCTION	12.99	12.99	
GENERAL CONDITIONS	34.80	34.80	
TOTAL	279.77	279.77	559.55

SUMI-24.WJ2

Low-rise Lock 30'

b) 150,000 DWT

CASE L-15

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 2 CHAMBERS	ATLANTIC SIDE 2 CHAMBERS	TOTAL
EXCAVATION	QUANTITY	1.76	1.76	3.52
	UNIT PRICE	3.44	3.44	
	AMOUNT	6.05	6.05	12.11
BUCKFILL	QUANTITY	9.60	9.60	19.20
	UNIT PRICE	2.54	2.54	
	AMOUNT	24.38	24.38	48.77
CONCRETE	QUANTITY	4.32	4.32	8.64
	UNIT PRICE	46.67	46.67	
	AMOUNT	201.61	201.61	403.23
REINFORCED BAR	QUANTITY	0.04	0.04	0.08
	UNIT PRICE	742.00	742.00	
	AMOUNT	29.68	29.68	59.36
TOTAL	AMOUNT	261.73	261.73	523.47

SUBTOTAL COST	261.73	261.73	
SUPPORTING CONSTRUCTION	14.66	14.66	
GENERAL CONDITIONS	39.26	39.26	
TOTAL	315.65	315.65	631.30

SUMI-25.WJ2

Low-rise Lock 30'

c) 250,000 DWT

CASE I-18

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 2 CHAMBERS	ATLANTIC SIDE 2 CHAMBERS	TOTAL
EXCAVATION	QUANTITY	2.20	2.20	4.40
	UNIT PRICE	3.44	3.44	
	AMOUNT	7.57	7.57	15.14
BUCKFILL	QUANTITY	12.00	12.00	24.00
	UNIT PRICE	2.54	2.54	
	AMOUNT	30.48	30.48	60.96
CONCRETE	QUANTITY	5.40	5.40	10.80
	UNIT PRICE	46.67	46.67	
	AMOUNT	252.02	252.02	504.04
REINFORCED BAR	QUANTITY	0.05	0.05	0.10
	UNIT PRICE	742.00	742.00	
	AMOUNT	37.10	37.10	74.20
TOTAL	AMOUNT	327.17	327.17	654.33

SUBTOTAL COST	327.17	327.17	
SUPPORTING CONSTRUCTION	18.32	18.32	
GENERAL CONDITIONS	49.07	49.07	
TOTAL	394.56	394.56	789.12

## (3) Tidal Gate Concrete Structure

a) 150,000 DWT (1 LANE)

CASE S-1,S-7,S-13,S-16

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE	ATLANTIC SIDE	TOTAL
EXCAVATION	QUANTITY	5.85	5.85	11.70
	UNIT PRICE	3.44	3.44	
	AMOUNT	20.12	20.12	40.25
BUCKFILL	QUANTITY	5.55	5.55	11.10
	UNIT PRICE	2.54	2.54	
	AMOUNT	14.10	14.10	28.19
CONCRETE	QUANTITY	1.05	1.05	2.10
	UNIT PRICE	46.67	46.67	
	AMOUNT	49.00	49.00	98.01
REINFORCED BAR	QUANTITY	0.01	0.01	0.02
	UNIT PRICE	742.00	742.00	
	AMOUNT	6.23	6.23	12.47
TOTAL	AMOUNT	89.46	89.46	178.91

SUBTOTAL COST	89.46	89.46	
SUPPORTING CONSTRUCTION	5.01	5.01	
GENERAL CONDITIONS	13.42	13.42	
TOTAL	107.89	107.89	215.77



SUMI-17.WJ2

b) 150,000 DWT (2 LANE)  
CASE S-2,S-8

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE	ATLANTIC SIDE	TOTAL
EXCAVATION	QUANTITY	6.88	6.88	13.76
	UNIT PRICE	3.44	3.44	
	AMOUNT	23.67	23.67	47.33
BUCKFILL	QUANTITY	6.50	6.50	13.00
	UNIT PRICE	2.54	2.54	
	AMOUNT	16.51	16.51	33.02
CONCRETE	QUANTITY	1.26	1.26	2.52
	UNIT PRICE	46.67	46.67	
	AMOUNT	58.80	58.80	117.61
REINFORCED BAR	QUANTITY	0.01	0.01	0.02
	UNIT PRICE	742.00	742.00	
	AMOUNT	7.48	7.48	14.96
TOTAL	AMOUNT	106.46	106.46	212.92

SUBTOTAL COST	106.46	106.46	
SUPPORTING CONSTRUCTION	5.96	5.96	
GENERAL CONDITIONS	15.97	15.97	
TOTAL	128.39	128.39	256.78

SUMI-18.WJ2

c) 250,000 DWT (1 LANE)  
CASE S-3,S-9,S-14,S-17

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE	ATLANTIC SIDE	TOTAL
EXCAVATION	QUANTITY	6.50	6.50	13.00
	UNIT PRICE	3.44	3.44	
	AMOUNT	22.36	22.36	44.72
BUCKFILL	QUANTITY	6.17	6.17	12.34
	UNIT PRICE	2.54	2.54	
	AMOUNT	15.67	15.67	31.34
CONCRETE	QUANTITY	1.28	1.28	2.56
	UNIT PRICE	46.67	46.67	
	AMOUNT	59.74	59.74	119.48
REINFORCED BAR	QUANTITY	0.01	0.01	0.02
	UNIT PRICE	742.00	742.00	
	AMOUNT	7.60	7.60	15.20
TOTAL	AMOUNT	105.37	105.37	210.73

SUBTOTAL COST	105.37	105.37	
SUPPORTING CONSTRUCTION	5.90	5.90	
GENERAL CONDITIONS	15.81	15.81	
TOTAL	127.07	127.07	254.15

d) 250,000 DWT (2 LANE)  
CASE S-4,S-10

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE	ATLANTIC SIDE	TOTAL
EXCAVATION	QUANTITY	7.65	7.65	15.30
	UNIT PRICE	3.44	3.44	
	AMOUNT	26.32	26.32	52.63
BUCKFILL	QUANTITY	7.25	7.25	14.50
	UNIT PRICE	2.54	2.54	
	AMOUNT	18.42	18.42	36.83
CONCRETE	QUANTITY	1.53	1.53	3.06
	UNIT PRICE	46.67	46.67	
	AMOUNT	71.41	71.41	142.81
REINFORCED BAR	QUANTITY	0.01	0.01	0.02
	UNIT PRICE	742.00	742.00	
	AMOUNT	9.08	9.08	18.16
TOTAL	AMOUNT	125.22	125.22	250.44

SUBTOTAL COST	125.22	125.22	
SUPPORTING CONSTRUCTION	7.01	7.01	
GENERAL CONDITIONS	18.78	18.78	
TOTAL	151.01	151.01	302.03

SUMI-20.WJ2

e) 300,000 DWT (1LANE)  
CASE S-5,S-11,S-15,S-18

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE	ATLANTIC SIDE	TOTAL
EXCAVATION	QUANTITY	7.23	7.23	14.46
	UNIT PRICE	3.44	3.44	
	AMOUNT	24.87	24.87	49.74
BUCKFILL	QUANTITY	6.85	6.85	13.70
	UNIT PRICE	2.54	2.54	
	AMOUNT	17.40	17.40	34.80
CONCRETE	QUANTITY	1.50	1.50	3.00
	UNIT PRICE	46.67	46.67	
	AMOUNT	70.01	70.01	140.01
REINFORCED BAR	QUANTITY	0.01	0.01	0.02
	UNIT PRICE	742.00	742.00	
	AMOUNT	8.90	8.90	17.81
TOTAL	AMOUNT	121.18	121.18	242.36

SUBTOTAL COST	121.18	121.18	
SUPPORTING CONSTRUCTION	6.79	6.79	
GENERAL CONDITIONS	18.18	18.18	
TOTAL	146.14	146.14	292.28

SUM1-21.WJ2

f) 300,000 DWT (2LANE)  
CASE S-6,S-12

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE	ATLANTIC SIDE	TOTAL
EXCAVATION	QUANTITY	8.50	8.50	17.00
	UNIT PRICE	3.44	3.44	
	AMOUNT	29.24	29.24	58.48
BUCKFILL	QUANTITY	8.06	8.06	16.12
	UNIT PRICE	2.54	2.54	
	AMOUNT	20.47	20.47	40.94
CONCRETE	QUANTITY	1.80	1.80	3.60
	UNIT PRICE	46.67	46.67	
	AMOUNT	84.01	84.01	168.01
REINFORCED BAR	QUANTITY	0.01	0.01	0.03
	UNIT PRICE	742.00	742.00	
	AMOUNT	10.68	10.68	21.37
TOTAL	AMOUNT	144.40	144.40	288.81

SUBTOTAL COST	144.40	144.40	
SUPPORTING CONSTRUCTION	8.09	8.09	
GENERAL CONDITIONS	21.66	21.66	
TOTAL	174.15	174.15	348.30

(4) Status Quo65,000 DWTCASE SQ

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 6 CHAMBERS	ATLANTIC SIDE 6 CHAMBERS	TOTAL
EXCAVATION	QUANTITY	2.80	2.80	5.60
	UNIT PRICE	3.44	3.44	
	AMOUNT	9.63	9.63	19.26
BUCKFILL	QUANTITY	8.30	8.30	16.60
	UNIT PRICE	2.54	2.54	
	AMOUNT	21.08	21.08	42.16
CONCRETE	QUANTITY	2.20	2.20	4.40
	UNIT PRICE	46.67	46.67	
	AMOUNT	102.67	102.67	205.35
REINFORCED BAR	QUANTITY	0.01	0.01	0.02
	UNIT PRICE	742.00	742.00	
	AMOUNT	5.94	5.94	11.87
TOTAL	AMOUNT	139.32	139.32	278.65

SUBTOTAL COST	139.32	139.32	
SUPPORTING CONSTRUCTION	7.80	7.80	
GENERAL CONDITIONS	20.90	20.90	
TOTAL	168.02	168.02	336.05

2.3.5 Breakdown of Gate Leaves  
and Related Facilities

SUM2-1.WJ2

CASE L-1  
High-rise Lock  
100,000 DWT

GATE LEAF WEIGHT ton	49,851
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DESCRIPTION	COST million dol.
LEAVES	466.89
MACHINERY	622.99
ELECTRIC	143.99
OTHERS	30.68
TOTAL	1,264.54

(Including General Condition  
/Supporting Construction)

SUM2-2.WJ2

CASE L-2  
High-rise Lock  
100,000 DWT

GATE LEAF WEIGHT ton	48,862
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DESCRIPTION	COST million dol.
LEAVES	457.52
MACHINERY	610.49
ELECTRIC	141.10
OTHERS	30.06
TOTAL	1,239.18

(Including General Condition  
/Supporting Construction)



CASE L-2'  
High-rise Lock  
100,000 DWT

GATE LEAF WEIGHT ton	45,178
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DESCRIPTION	COST million dol.
LEAVES	427.99
MACHINERY	571.09
ELECTRIC	132.00
OTHERS	28.12
TOTAL	1,159.21

(Including General Condition  
/Supporting Construction)

SUM2-3.WJ2

CASE L-3  
Low-rise Lock  
100,000 DWT

GATE LEAF WEIGHT	
ton	41,647

DESCRIPTION	COST million dol.
LEAVES	393.37
MACHINERY	524.90
ELECTRIC	121.32
OTHERS	25.85
TOTAL	1,065.44

(Including General Condition  
/Supporting Construction)

SUM2-4.WJ2

CASE L-4  
High-rise Lock  
150,000 DWT

GATE LEAF WEIGHT ton	65,527
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DESCRIPTION	COST million dol.
LEAVES	615.92
MACHINERY	821.85
ELECTRIC	189.96
OTHERS	40.47
TOTAL	1,668.20

(Including General Condition  
/Supporting Construction)

SUM2-5.WJ2

CASE L-5  
High-rise Lock  
150,000 DWT

GATE LEAF WEIGHT ton	64,141
-------------------------	--------

DESCRIPTION	COST million dol.
LEAVES	602.53
MACHINERY	803.98
ELECTRIC	185.83
OTHERS	39.59
TOTAL	1,631.92

(Including General Condition  
/Supporting Construction)

SUM2-6.WJ2

CASE L-6  
Low-rise Lock  
150,000 DWT

GATE LEAF WEIGHT	
ton	54,301

DESCRIPTION	COST million dol.
LEAVES	514.18
MACHINERY	686.09
ELECTRIC	158.58
OTHERS	33.79
TOTAL	1,392.62

(Including General Condition  
/Supporting Construction)

SUM2-7.WJ2

CASE L-7  
High-rise Lock  
250,000 DWT

GATE LEAF WEIGHT	
ton	99,445

DESCRIPTION	COST million dol.
LEAVES	943.55
MACHINERY	1,259.02
ELECTRIC	291.00
OTHERS	62.00
TOTAL	2,555.57

(Including General Condition  
/Supporting Construction)

CASE L-8  
 High-rise Lock  
 250,000 DWT

GATE LEAF WEIGHT	
ton	97,241

DESCRIPTION	COST million dol.
LEAVES	921.64
MACHINERY	1,229.78
ELECTRIC	284.24
OTHERS	60.56
TOTAL	2,496.22

(Including General Condition  
 /Supporting Construction)

SUM2-9.WJ2

CASE L-9  
Low-rise Lock  
250,000 DWT

GATE LEAF WEIGHT	
ton	75,684

DESCRIPTION	COST million dol.
LEAVES	720.17
MACHINERY	960.95
ELECTRIC	222.11
OTHERS	47.32
TOTAL	1,950.55

(Including General Condition  
/Supporting Construction)



SUM2-10.WJ2

CASE L-10  
High-rise Lock  
100,000 DWT

GATE LEAF WEIGHT ton	48,862
-------------------------	--------

DESCRIPTION	COST million dol.
LEAVES	457.52
MACHINERY	610.49
ELECTRIC	141.10
OTHERS	30.06
TOTAL	1,239.18

(Including General Condition  
/Supporting Construction)

SUM2-11.WJ2

CASE L-11  
Low-rise Lock  
100,000 DWT

GATE LEAF WEIGHT ton	41,647
-------------------------	--------

DESCRIPTION	COST million dol.
LEAVES	393.37
MACHINERY	524.90
ELECTRIC	121.32
OTHERS	25.85
TOTAL	1,065.44

(Including General Condition  
/Supporting Construction)

CASE L-12  
 Low-rise Lock  
 100,000 DWT

GATE LEAF WEIGHT	
ton	36,557

DESCRIPTION	COST million dol.
LEAVES	345.53
MACHINERY	461.05
ELECTRIC	106.56
OTHERS	22.70
TOTAL	935.84

(Including General Condition  
 /Supporting Construction)

SUM2-13.WJ2

CASE L-13  
High-rise Lock  
150,000 DWT

GATE LEAF WEIGHT ton	64,141
-------------------------	--------

DESCRIPTION	COST million dol.
LEAVES	602.53
MACHINERY	803.98
ELECTRIC	185.83
OTHERS	39.59
TOTAL	1,631.92

(Including General Condition  
/Supporting Construction)

CASE L-14  
Low-rise Lock  
150,000 DWT

GATE LEAF WEIGHT ton	54,301
-------------------------	--------

DESCRIPTION	COST million dol.
LEAVES	514.18
MACHINERY	686.09
ELECTRIC	158.58
OTHERS	33.79
TOTAL	1,392.62

(Including General Condition  
/Supporting Construction)

CASE L-15  
 Low-rise Lock  
 150,000 DWT

GATE LEAF WEIGHT ton	47,158
-------------------------	--------

DESCRIPTION	COST million dol.
LEAVES	445.88
MACHINERY	594.96
ELECTRIC	137.51
OTHERS	29.30
TOTAL	1,207.65

(Including General Condition  
 /Supporting Construction)

SUM2-16.WJ2

CASE L-16  
High-rise Lock  
250,000 DWT

GATE LEAF WEIGHT	
ton	97,241

DESCRIPTION	COST million dol.
LEAVES	921.64
MACHINERY	1,229.78
ELECTRIC	284.24
OTHERS	60.56
TOTAL	2,496.22

(Including General Condition  
/Supporting Construction)

SUM2-17.WJ2

CASE L-17  
Low-rise Lock  
250,000 DWT

GATE LEAF WEIGHT ton	75,684
-------------------------	--------

DESCRIPTION	COST million dol.
LEAVES	720.17
MACHINERY	960.95
ELECTRIC	222.11
OTHERS	47.32
TOTAL	1,950.55

(Including General Condition  
/Supporting Construction)



CASE L-18  
 Low-rise Lock  
 250,000 DWT

GATE LEAF WEIGHT ton	64,668
-------------------------	--------

DESCRIPTION	COST million dol.
LEAVES	611.97
MACHINERY	816.58
ELECTRIC	188.74
OTHERS	40.21
TOTAL	1,657.49

(Including General Condition  
 /Supporting Construction)

SUM2-19.WJ2

CASE S-1  
Tidal Gate  
150,000 DWT

WEIGHT	ton
LEAVES	13,664
EMBEDDED	2,050
MACHINERY	1,366

DESCRIPTION	COST million dol.
LEAVES	150.30
ACCESSORY	13.53
EMBEDDED	22.55
MACHINERY	21.32
TOTAL	207.69

(Including General Condition  
/Supporting Construction)

SUM2-20.WJ2

CASE S-2  
Tidal Gate  
150,000 DWT

WEIGHT	ton
LEAVES	13,664
EMBEDDED	3,074
MACHINERY	2,733

DESCRIPTION	COST million dol.
LEAVES	150.30
ACCESSORY	13.53
EMBEDDED	33.82
MACHINERY	42.63
TOTAL	240.28

(Including General Condition  
/Supporting Construction)

SUM2-21.WJ2

CASE S-3  
Tidal Gate  
250,000 DWT

WEIGHT	ton
LEAVES	19,046
EMBEDDED	2,857
MACHINERY	1,905

DESCRIPTION	COST million dol.
LEAVES	209.51
ACCESSORY	18.86
EMBEDDED	31.43
MACHINERY	29.71
TOTAL	289.50

(Including General Condition  
/Supporting Construction)

CASE S-4  
Tidal Gate  
250,000 DWT

WEIGHT	ton
LEAVES	19,046
EMBEDDED	4,285
MACHINERY	3,809

DESCRIPTION	COST million dol.
LEAVES	209.51
ACCESSORY	18.86
EMBEDDED	47.14
MACHINERY	59.42
TOTAL	334.92

(Including General Condition  
/Supporting Construction)

SUM2-23.WJ2

CASE S-5  
Tidal Gate  
300,000 DWT

WEIGHT	ton
LEAVES	21,562
EMBEDDED	3,234
MACHINERY	2,156

DESCRIPTION	COST million dol.
LEAVES	237.18
ACCESSORY	21.35
EMBEDDED	35.58
MACHINERY	33.64
TOTAL	327.74

(Including General Condition  
/Supporting Construction)

SUM2-24.WJ2

CASE S-6  
Tidal Gate  
300,000 DWT

WEIGHT	ton
LEAVES	21,562
EMBEDDED	4,851
MACHINERY	4,312

DESCRIPTION	COST million dol.
LEAVES	237.18
ACCESSORY	21.35
EMBEDDED	53.37
MACHINERY	67.27
TOTAL	379.17

(Including General Condition  
/Supporting Construction)

SUM2-25.WJ2

CASE S-7  
Tidal Gate  
150,000 DWT

WEIGHT	ton
LEAVES	13,664
EMBEDDED	2,050
MACHINERY	1,366

DESCRIPTION	COST million dol.
LEAVES	150.30
ACCESSORY	13.53
EMBEDDED	22.55
MACHINERY	21.32
TOTAL	207.69

(Including General Condition  
/Supporting Construction)



SUM2-26.WJ2

CASE S-8  
Tidal Gate  
150,000 DWT

WEIGHT	ton
LEAVES	13,664
EMBEDDED	3,074
MACHINERY	2,733

DESCRIPTION	COST million dol.
LEAVES	150.30
ACCESSORY	13.53
EMBEDDED	33.82
MACHINERY	42.63
TOTAL	240.28

(Including General Condition  
/Supporting Construction)

SUM2-27.WJ2

CASE S-9  
Tidal Gate  
250,000 DWT

WEIGHT	ton
LEAVES	19,046
EMBEDDED	2,857
MACHINERY	1,905

DESCRIPTION	COST million dol.
LEAVES	209.51
ACCESSORY	18.86
EMBEDDED	31.43
MACHINERY	29.71
TOTAL	289.50

(Including General Condition  
/Supporting Construction)

CASE S-10  
Tidal Gate  
250,000 DWT

WEIGHT	ton
LEAVES	19,046
EMBEDDED	4,285
MACHINERY	3,809

DESCRIPTION	COST million dol.
LEAVES	209.51
ACCESSORY	18.86
EMBEDDED	47.14
MACHINERY	59.42
TOTAL	334.92

(Including General Condition  
/Supporting Construction)

CASE S-11  
Tidal Gate  
300,000 DWT

WEIGHT	ton
LEAVES	21,562
EMBEDDED	3,234
MACHINERY	2,156

DESCRIPTION	COST million dol.
LEAVES	237.18
ACCESSORY	21.35
EMBEDDED	35.58
MACHINERY	33.64
TOTAL	327.74

(Including General Condition  
/Supporting Construction)

CASE S-12  
Tidal Gate  
300,000 DWT

WEIGHT	ton
LEAVES	21,562
EMBEDDED	4,851
MACHINERY	4,312

DESCRIPTION	COST million dol.
LEAVES	237.18
ACCESSORY	21.35
EMBEDDED	53.37
MACHINERY	67.27
TOTAL	379.17

(Including General Condition  
/Supporting Construction)

SUM2-31.WJ2

CASE S-13  
Tidal Gate  
150,000 DWT

WEIGHT	ton
LEAVES	13,664
EMBEDDED	2,050
MACHINERY	1,366

DESCRIPTION	COST million dol.
LEAVES	150.30
ACCESSORY	13.53
EMBEDDED	22.55
MACHINERY	21.32
TOTAL	207.69

(Including General Condition  
/Supporting Construction)

CASE S-14  
Tidal Gate  
250,000 DWT

WEIGHT	ton
LEAVES	19,046
EMBEDDED	2,857
MACHINERY	1,905

DESCRIPTION	COST million dol.
LEAVES	209.51
ACCESSORY	18.86
EMBEDDED	31.43
MACHINERY	29.71
TOTAL	289.50

(Including General Condition  
/Supporting Construction)

SUM2-33.WJ2

CASE S-15  
Tidal Gate  
300,000 DWT

WEIGHT	ton
LEAVES	21,562
EMBEDDED	3,234
MACHINERY	2,156

DESCRIPTION	COST million dol.
LEAVES	237.18
ACCESSORY	21.35
EMBEDDED	35.58
MACHINERY	33.64
TOTAL	327.74

(Including General Condition  
/Supporting Construction)



SUM2-34.WJ2

CASE S-16  
Tidal Gate  
150,000 DWT

WEIGHT	ton
LEAVES	13,664
EMBEDDED	2,050
MACHINERY	1,366

DESCRIPTION	COST million dol.
LEAVES	150.30
ACCESSORY	13.53
EMBEDDED	22.55
MACHINERY	21.32
TOTAL	207.69

(Including General Condition  
/Supporting Construction)

CASE S-17  
Tidal Gate  
250,000 DWT

WEIGHT	ton
LEAVES	19,046
EMBEDDED	2,857
MACHINERY	1,905

DESCRIPTION	COST million dol.
LEAVES	209.51
ACCESSORY	18.86
EMBEDDED	31.43
MACHINERY	29.71
TOTAL	289.50

(Including General Condition  
/Supporting Construction)

CASE S-18  
 Tidal Gate  
 300,000 DWT

SUM2-36.WJ2

WEIGHT	ton
LEAVES	21,562
EMBEDDED	3,234
MACHINERY	2,156

DESCRIPTION	COST million dol.
LEAVES	237.18
ACCESSORY	21.35
EMBEDDED	35.58
MACHINERY	33.64
TOTAL	327.74

(Including General Condition  
 /Supporting Construction)

SUM2-37.WJ2

CASE SQ  
Status Quo  
65,000 DWT

GATE LEAF WEIGHT ton	71,212
-------------------------	--------

DESCRIPTION	COST million dol.
LEAVES	675.60
MACHINERY	741.67
ELECTRIC	110.30
OTHERS	25.00
TOTAL	1,552.57

(Including General Condition  
/Supporting Construction)

2.3.6 Breakdown of Barrier Dams

SUM3-2.WJ2

(1) Low-rise Lock Canal

a) 30 feet

CASE L-12,L-15,L-18

DESCRIPTION	UNIT	QUANTITY million	UNIT PRICE dollar	AMOUNT million dol.
BARRIER DAMS				
A	m3			
B	m3			
C	m3			
D	m3			
TOTAL		20.30	14.12	286.64

SUBTOTAL	286.64
SUPPORTING CONSTRUCTION	16.05
GENERAL CONDITIONS	43.00
TOTAL	345.68

SUM3-1.WJ2

b) 55 feet

CASE L-3,L-6,L-9,L-11,L-14,L-17

DESCRIPTION	UNIT	QUANTITY million	UNIT PRICE dollar	AMOUNT million dol.
BARRIER DAMS				
A	m3	0.80		
B-1	m3	11.30		
B-2	m3	0.60		
B-3	m3	0.20		
B-4	m3	0.20		
C-1	m3	4.30		
C-2	m3	1.80		
C-3	m3	0.70		
D	m3	0.40		
TOTAL		20.30	14.12	286.64

SUBTOTAL	286.64
SUPPORTING CONSTRUCCION	16.05
GENERAL CONDITIONS	43.00
<b>TOTAL</b>	<b>345.68</b>

(2) Sea-level Canala) Route 14-SCASE S-7,S-8,S-9,S-10,S-11,S-12,S-16,S-17,S-18

DESCRIPTION	UNIT	QUANTITY million	UNIT PRICE dollar	AMOUNT million dol.
BARRIER DAMS				
A	m3			
B	m3			
C	m3			
D	m3			
TOTAL		20.30	14.12	286.64

SUBTOTAL	286.64
SUPPORTING CONSTRUCTION	16.05
GENERAL CONDITIONS	43.00
<b>TOTAL</b>	<b>345.68</b>

## b) Route-10

CASE S-1,S-2,S-3,S-4,S-5,S-6,S-13,S-14,S-15

DESCRIPTION	UNIT	QUANTITY million	UNIT PRICE dollar	AMOUNT million dol.
BARRIER DAMS				
E	m3	4.50		
F	m3	5.50		
G	m3	0.70		
TOTAL		10.70	14.12	151.08

SUBTOTAL	151.08
SUPPORTING CONSTRUCTION	8.46
GENERAL CONDITIONS	22.66
TOTAL	182.21



2.3.7 Breakdown of Flood

Control System

SUM4.WJ2

CASE S-1,S-2,S-3,S-4,S-5,S-6,S-13,S-14,S-15

DESCRIPTION	QUANTITY million m3	UNIT PRICE dol./m3	TOTAL million dol.
OPEN CHANNEL	8.00	1.32	10.56
TOTAL			10.56

SUBTOTAL	10.56
SUPPORTING CONSTRUCTION	0.59
GENERAL CONDITIONS	1.58
TOTAL	12.74

2.3.8 Breakdown of New Dams

SUM5-1.WJ2

(1) CASE L-1, L-4, L-5, L-7, L-13

DESCRIPTION	UNIT	QUANTITY million	UNIT PRICE dollar	AMOUNT million dol.
CIRI DAM	m3	1.50	14.65	21.98
TRINIDAD DAM	m3	2.50	13.62	34.05
TOTAL		4.00		56.03

SUBTOTAL	56.03
SUPPORTING CONSTRUCTION	3.14
GENERAL CONDITIONS	8.40
<hr/> TOTAL	<hr/> 67.57

SUM5-2.WJ2

(2)CASE L-2,L-2',L-8,L-10,L-16

DESCRIPTION	UNIT	QUANTITY million	UNIT PRICE dollar	AMOUNT million dol.
CIRI DAM	m3	1.50	14.65	21.98
TRINIDAD DAM	m3	4.00	12.14	48.56
TOTAL		5.50		70.54

SUBTOTAL	70.54
SUPPORTING CONSTRUCTION	3.95
GENERAL CONDITIONS	10.58
<hr/> TOTAL	<hr/> 85.07

2.3.9 Breakdown of Pump Station

SUM6.WJ2

CASE L-1,2,2',3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18

Per 1 Lot

DESCRIPTION	UNIT	QUANTITY	UNIT PRICE dollar	AMOUNT million dol.
<b>PUMP STATION</b>				
CONCRETE	m3	14,680	170.00	2.50
EXCAVATION	m3	60,000	4.23	0.25
BUILDING	m2	1,750	1,000.00	1.75
SUBTOTAL				4.50
<b>PUMP, MACHINERY &amp; ELECTRICAL FACILITIES</b>				
PUMP & VALVE	unit	3	7,350,000.00	22.05
MACHINERY	unit	3	4,410,000.00	13.23
ELECTRICAL FAC.	unit	3	2,940,000.00	8.82
SUBTOTAL				44.10
<b>WATERWAY</b>				
EMBANKMENT	m3	33,000	3.00	0.10
EXCAVATION	m3	45,000	4.23	0.19
SUBTOTAL				0.29
<b>REGULATION POND</b>				
EMBANKMENT	m3	132,000	3.00	0.40
EXCAVATION	m3	5,000,000	4.23	21.15
SUBTOTAL				21.55
<b>TOTAL</b>				<b>70.43</b>

SUBTOTAL	70.43
SUPPORTING CONSTRUCTION	3.94
GENERAL CONDITIONS	10.57
<b>TOTAL</b>	<b>84.94</b>

2.3.10 Breakdown of Partition Wall

SUM7.WJ2

CASE		S- 2	S- 4	S- 6	S- 8	S-10	S-12
LENGTH OF PARTITION WALL	km	26.0	26.0	26.0	27.0	27.0	27.0
UNIT PRICE	million dollar /km	17.74	20.74	23.68	17.75	20.74	23.68
AMOUNT	million dol.	461.27	539.26	615.78	479.22	560.00	639.47

SUBTOTAL	461.27	539.26	615.78	479.22	560.00	639.47
SUPPORTING						
CONSTRUCTION	25.83	30.20	34.48	26.84	31.36	35.81
GENERAL CONDITIONS	69.19	80.89	92.37	71.88	84.00	95.92
TOTAL	556.30	650.35	742.64	577.94	675.36	771.20

2.3.11 Breakdown of Break Water

SUM8.WJ2

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

CASE S-1,2,3,4,5,6,13,14,15

DESCRIPTION		PACIFIC SIDE	ATLANTIC SIDE	TOTAL
CORE	QUANTITY	5.59	11.07	16.66
	UNIT COST	0.14	0.24	
	AMOUNT	0.78	2.66	3.44
ARMOR ROCK (0.5 ton)	QUANTITY	0.89	1.11	2.00
	UNIT COST	3.38	6.07	
	AMOUNT	3.02	6.72	9.74
ARMOR ROCK (5.0 ton)	QUANTITY	2.53	2.58	5.12
	UNIT COST	3.38	6.07	
	AMOUNT	8.56	15.68	24.24
TOTAL	AMOUNT	12.37	25.06	37.42

SUBTOTAL COST	12.37	25.06	37.42
SUPPORTING CONSTRUCTION	0.69	1.40	2.10
GENERAL CONDITIONS	1.85	3.76	5.61
CONSTRUCTION COST TOTAL	14.91	30.22	45.13

APPENDIX 1. Breakdown of Lock  
Concrete Structure (one lane)

APPENDIX1-1.WJ2

(1) High-rise Lock (85', 90') 100,000DWT

CASE (L-1,L-2,L-10)

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 2 CHAMBERS	ATLANTIC SIDE 2 CHAMBERS	TOTAL
EXCAVATION	QUANTITY	1.82	1.82	3.63
	UNIT PRICE	3.44	3.44	
	AMOUNT	6.24	6.24	12.49
BUCKFILL	QUANTITY	7.35	7.35	14.70
	UNIT PRICE	2.54	2.54	
	AMOUNT	18.67	18.67	37.34
CONCRETE	QUANTITY	2.32	2.32	4.64
	UNIT PRICE	46.17	46.17	
	AMOUNT	107.11	107.11	214.23
REINFORCEMENT BAR	QUANTITY	0.02	0.02	0.05
	UNIT PRICE	742.00	742.00	
	AMOUNT	17.07	17.07	34.13
TOTAL	AMOUNT	149.09	149.09	298.19

SUPPORTING CONSTRUCTION	16.70
GENERAL CONDITIONS	44.73
<b>TOTAL</b>	<b>359.61</b>

(2) High-rise Lock (85') 100,000 DWT

CASE (L-2')

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 2 CHAMBERS	ATLANTIC SIDE 2 CHAMBERS	TOTAL
EXCAVATION	QUANTITY	1.82	1.82	3.63
	UNIT PRICE	3.44	3.44	
	AMOUNT	6.24	6.24	12.49
BUCKFILL	QUANTITY	7.35	7.35	14.70
	UNIT PRICE	2.54	2.54	
	AMOUNT	18.67	18.67	37.34
CONCRETE	QUANTITY	2.32	2.32	4.64
	UNIT PRICE	46.17	46.17	
	AMOUNT	107.11	107.11	214.23
REINFORCEMENT BAR	QUANTITY	0.02	0.02	0.05
	UNIT PRICE	742.00	742.00	
	AMOUNT	17.07	17.07	34.13
TOTAL	AMOUNT	149.09	149.09	298.19

SUPPORTING CONSTRUCTION	16.70
GENERAL CONDITIONS	44.73
<b>TOTAL</b>	<b>359.61</b>



(3) High-rise Lock(85',90') 150,000DWT

CASE (L-4,L-5,L-13)

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 2 CHAMBERS	ATLANTIC SIDE 2 CHAMBERS	TOTAL
EXCAVATION	QUANTITY	2.20	2.20	4.40
	UNIT PRICE	3.44	3.44	
	AMOUNT	7.57	7.57	15.14
BUCKFILL	QUANTITY	8.93	8.93	17.85
	UNIT PRICE	2.54	2.54	
	AMOUNT	22.67	22.67	45.34
CONCRETE	QUANTITY	2.94	2.94	5.88
	UNIT PRICE	46.17	46.17	
	AMOUNT	135.74	135.74	271.48
REINFORCEMENT BAR	QUANTITY	0.03	0.03	0.06
	UNIT PRICE	742.00	742.00	
	AMOUNT	22.26	22.26	44.52
TOTAL	AMOUNT	188.24	188.24	376.47

SUPPORTING CONSTRUCTION	21.08
GENERAL CONDITIONS	56.47
<b>TOTAL</b>	<b>454.03</b>

(4) High-rise Lock (85', 90') 250,000 DWT

CASE (L-7,L-8,L-16)

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 2 CHAMBERS	ATLANTIC SIDE 2 CHAMBERS	TOTAL
EXCAVATION	QUANTITY	2.59	2.59	5.17
	UNIT PRICE	3.44	3.44	
	AMOUNT	8.89	8.89	17.78
BUCKFILL	QUANTITY	10.50	10.50	21.00
	UNIT PRICE	2.54	2.54	
	AMOUNT	26.67	26.67	53.34
CONCRETE	QUANTITY	4.20	4.20	8.39
	UNIT PRICE	46.17	46.17	
	AMOUNT	193.68	193.68	387.37
REINFORCEMENT BAR	QUANTITY	0.04	0.04	0.08
	UNIT PRICE	742.00	742.00	
	AMOUNT	29.68	29.68	59.36
TOTAL	AMOUNT	258.93	258.93	517.85

SUPPORTING CONSTRUCTION	29.00
GENERAL CONDITIONS	77.68
TOTAL	624.53

(5) Low-rise Lock (55') 100,000DWT

CASE (L-3,L-11)

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 1 CHAMBER	ATLANTIC SIDE 1 CHAMBER	TOTAL
EXCAVATION	QUANTITY	0.85	0.85	1.69
	UNIT PRICE	3.44	3.44	
	AMOUNT	2.91	2.91	5.83
BUCKFILL	QUANTITY	6.30	6.30	12.60
	UNIT PRICE	2.54	2.54	
	AMOUNT	16.00	16.00	32.00
CONCRETE	QUANTITY	1.96	1.96	3.92
	UNIT PRICE	46.17	46.17	
	AMOUNT	90.49	90.49	180.99
REINFORCEMENT BAR	QUANTITY	0.02	0.02	0.04
	UNIT PRICE	742.00	742.00	
	AMOUNT	14.47	14.47	28.94
TOTAL	AMOUNT	123.88	123.88	247.76

SUPPORTING CONSTRUCTION	13.87
GENERAL CONDITIONS	37.16
TOTAL	298.79

## (6) Low-rise Lock (55') 150,000DWT

CASE (L-6,L-14)

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 1 CHAMBER	ATLANTIC SIDE 1 CHAMBER	TOTAL
EXCAVATION	QUANTITY	0.97	0.97	1.94
	UNIT PRICE	3.44	3.44	
	AMOUNT	3.33	3.33	6.66
BUCKFILL	QUANTITY	7.20	7.20	14.40
	UNIT PRICE	2.54	2.54	
	AMOUNT	18.29	18.29	36.58
CONCRETE	QUANTITY	2.24	2.24	4.48
	UNIT PRICE	46.17	46.17	
	AMOUNT	103.42	103.42	206.84
REINFORCEMENT BAR	QUANTITY	0.02	0.02	0.05
	UNIT PRICE	742.00	742.00	
	AMOUNT	16.70	16.70	33.39
TOTAL	AMOUNT	141.73	141.73	283.47

SUPPORTING CONSTRUCTION	15.87
GENERAL CONDITIONS	42.52
<b>TOTAL</b>	<b>341.86</b>

(7) Low-rise Lock(55') 250,000DWT

CASE (L-9,L-17)

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 1 CHAMBER	ATLANTIC SIDE 1 CHAMBER	TOTAL
EXCAVATION	QUANTITY	1.21	1.21	2.42
	UNIT PRICE	3.44	3.44	
	AMOUNT	4.16	4.16	8.32
BUCKFILL	QUANTITY	9.00	9.00	18.00
	UNIT PRICE	2.54	2.54	
	AMOUNT	22.86	22.86	45.72
CONCRETE	QUANTITY	2.80	2.80	5.60
	UNIT PRICE	46.17	46.17	
	AMOUNT	129.28	129.28	258.55
REINFORCEMENT BAR	QUANTITY	0.03	0.03	0.06
	UNIT PRICE	742.00	742.00	
	AMOUNT	20.78	20.78	41.55
TOTAL	AMOUNT	177.07	177.07	354.15

SUPPORTING CONSTRUCTION	19.83
GENERAL CONDITIONS	53.12
<u>TOTAL</u>	<u>427.10</u>

(8) Low-rise Lock(30')100,000DWT

CASE (L-12)

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 1 CHAMBER	ATLANTIC SIDE 1 CHAMBER	TOTAL
EXCAVATION	QUANTITY	0.85	0.85	1.69
	UNIT PRICE	3.44	3.44	
	AMOUNT	2.91	2.91	5.83
BUCKFILL	QUANTITY	6.30	6.30	12.60
	UNIT PRICE	2.54	2.54	
	AMOUNT	16.00	16.00	32.00
CONCRETE	QUANTITY	1.89	1.89	3.78
	UNIT PRICE	46.17	46.17	
	AMOUNT	87.26	87.26	174.52
REINFORCEMENT BAR	QUANTITY	0.02	0.02	0.04
	UNIT PRICE	742.00	742.00	
	AMOUNT	14.10	14.10	28.20
TOTAL	AMOUNT	120.27	120.27	240.55

SUPPORTING CONSTRUCTION 13.47

GENERAL CONDITIONS 36.08

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TOTAL 290.10

(9) Low-rise Lock (30') 150,000DWT

CASE (L-15)

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 1 CHAMBER	ATLANTIC SIDE 1 CHAMBER	TOTAL
EXCAVATION	QUANTITY	0.97	0.97	1.94
	UNIT PRICE	3.44	3.44	
	AMOUNT	3.33	3.33	6.66
BUCKFILL	QUANTITY	7.20	7.20	14.40
	UNIT PRICE	2.54	2.54	
	AMOUNT	18.29	18.29	36.58
CONCRETE	QUANTITY	2.16	2.16	4.32
	UNIT PRICE	46.17	46.17	
	AMOUNT	99.73	99.73	199.45
REINFORCEMENT BAR	QUANTITY	0.02	0.02	0.04
	UNIT PRICE	742.00	742.00	
	AMOUNT	15.95	15.95	31.91
TOTAL	AMOUNT	137.30	137.30	274.60

SUPPORTING CONSTRUCTION	15.38
GENERAL CONDITIONS	41.19
<b>TOTAL</b>	<b>331.16</b>

(10) Low-rise Lock (30') 250,000DWT

CASE (L-18)

QUANTITY	: million m3
UNIT COST	: dollar
AMOUNT	: million dollar

DESCRIPTION		PACIFIC SIDE 1 CHAMBER	ATLANTIC SIDE 1 CHAMBER	TOTAL
EXCAVATION	QUANTITY	1.21	1.21	2.42
	UNIT PRICE	3.44	3.44	
	AMOUNT	4.16	4.16	8.32
BUCKFILL	QUANTITY	9.00	9.00	18.00
	UNIT PRICE	2.54	2.54	
	AMOUNT	22.86	22.86	45.72
CONCRETE	QUANTITY	2.70	2.70	5.40
	UNIT PRICE	46.17	46.17	
	AMOUNT	124.66	124.66	249.32
REINFORCEMENT BAR	QUANTITY	0.03	0.03	0.05
	UNIT PRICE	742.00	742.00	
	AMOUNT	20.03	20.03	40.07
TOTAL	AMOUNT	171.72	171.72	343.43

SUPPORTING CONSTRUCTION	19.23
GENERAL CONDITIONS	51.51
<u>TOTAL</u>	<u>414.18</u>



**APPENDIX 2.**

**Quantities of Main Equipment and Manpower**

(At Midway of Construction Period)

MAINEM. WJ2

150,000 DWT-2 line

	Spec.	Case L-4	Case L-6	Case S-2	Case S-8
		Lock Canal	Lock Canal	Route-10	Route 14-S
		(High-rise)	(Low-rise)	(Sea-level)	(Sea-level)
		Construction	Construction	Construction	Construction
		Period	Period	Period	Period
		7.5 yrs	7.5 yrs	12.5 yrs	10.5 yrs
<b>(1) Heavy Equipments</b>					
Bulldozer	86 t - eq.	60	42	100	47
Shovel	15 m3 - eq.	17	16	26	24
Dumptruck	136 t - eq.	154	150	293	249
Bulldozer	60 t - eq.	16	19	32	26
Blast hole drill	165 dia.	36	44	39	77
<b>(2) Dredgers, Barges</b>					
Cutter Suction Dredger	18,000 HP	5	10	1	10
Anchor Boat	600 HP	22	55	2	256
Grab Dredger	50 m3 - 3,000 HP	1	3	1	22
Drag Suction Dredger	7,800 HP	1	1	1	1
Survey Boat	750 HP	1	1	1	1
Pusher Boat	3,200 HP	7	15	1	26
Split Barge	500 HP	13	28	3	51
Blasting Barge	Drill 10 nos 3,000 HP	5	14	1	84
<b>(3) Plants</b>					
Concrete Plant	100-200 m3/H	2	2	2	2
Crushing Plant	250-500 t/H	2	2	2	2
<b>(4) Manpower</b>					
Direct Manpower		8,020	9,820	8,210	17,190
Indirect Manpower		800	980	820	1,720
Total		8,820	10,800	9,030	18,910

APPENDIX 3. Project Cost Distribution by Year

(Assumptions : No advance payment and no retention money)

APPENDIX4-1.WJ2

High-rise Lock Canal

CASE L-4 (150,000 DWT)

Route : 15 + Third Lock

Rise 90'

unit : million dollar

MAJOR COST COMPONENT	YEAR of EXPENDITURE															Total Cost
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Construction Cost																
Canal Excavation			442.41	663.62	405.55	405.55	405.55	405.55	405.55	553.03						3,686.81
Lock Concrete Structure				245.10	148.81	148.81	148.81	183.85								875.38
Gate Leaves & Related Facilities								667.28	500.46	500.46						1,668.20
Barrier Dams			13.51	10.13	10.13	10.13	10.13	13.54								67.57
Pumping Station			84.94	42.47	42.47	42.47	106.18	106.19								424.72
Indirect Cost																
Administrative Cost	4.36	4.36	8.39	10.04	10.04	10.04	10.04	10.04	10.04	10.04						87.39
Headquarters Cost	40.35	40.34	40.34	6.72	6.72	6.72	6.72	6.72	6.72	6.72						168.07
Construction Supervision	4.43	4.43	14.86	17.74	17.74	17.74	17.74	17.74	17.74	17.74						147.90
Land Acquisition & Land Rights	3.52	3.54	1.76													8.82
Compensation Cost	42.00	42.00	21.00													105.00
Contingency				67.22	67.22	67.22	67.22	134.45	134.45	134.49						672.27
Annual Distribution	94.66	94.67	627.21	1,063.04	708.68	708.68	772.39	1,545.36	1,074.96	1,222.48						7,912.13

High-rise Lock Canal

CASE L-6 (150,000 DWT)

Route : 15 + Third Lock

Rise 55'

unit : million dollar

MAJOR COST COMPONENT	YEAR of EXPENDITURE															Total Cost
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Construction Cost																
Canal Excavation			786.26	1,179.39	720.74	720.74	720.74	720.74	720.74	982.87						6,552.22
Lock Concrete Structure				184.31	111.90	111.90	111.90	138.25								658.26
Gate Leaves & Related Facilities								557.04	417.80	417.78						1,392.62
Barrier Dams			69.13	51.85	51.85	51.85	51.85	69.15								345.68
Pumping Station			50.96	50.96	50.96	50.96	127.41	178.42								509.67
Indirect Cost																
Administrative Cost	6.14	6.14	11.70	14.14	14.14	14.14	14.14	14.14	14.14	14.14						122.96
Headquarters Cost	56.75	56.75	56.81	9.45	9.45	9.45	9.45	9.45	9.45	9.45						236.46
Construction Supervision	6.24	6.24	20.82	24.97	24.97	24.97	24.97	24.97	24.97	24.97						208.09
Land Acquisition & Land Rights	3.53	3.53	1.76													8.82
Compensation Cost	42.00	42.00	21.00													105.00
Contingency				94.58	94.58	94.58	94.58	189.17	189.17	189.19						945.85
Annual Distribution	114.66	114.66	1,018.44	1,609.65	1,078.59	1,078.59	1,155.04	1,901.33	1,376.27	1,638.40						11,085.63

Sea Level Canal

CASE S-2 (150,000 DWT)

Route : 10

Rise 0'

unit : million dollar

MAJOR COST COMPONENT	YEAR of EXPENDITURE															Total Cost
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Construction Cost																
Canal Excavation				1,297.09	1,729.45	864.72	864.72	864.72	864.72	864.72	1,297.13					8,647.27
Tidal Gate																
Concrete Structure					71.89	43.65	43.65	43.65	53.94							256.78
Gate Leaves & Related Facilities									96.11	72.08	72.09					240.28
Barrier Dams				54.66	41.00	41.00	45.55									182.21
Flood Control System				3.82	2.87	2.87	3.18									
Breakwater				6.77	9.03	4.51	4.51	4.51	4.51	4.51	6.78					
Partition Wall				111.26	66.75	66.75	66.75	66.75	66.75	111.29						556.30
Indirect Cost																
Administrative Cost	3.87	3.87	7.75	14.27	14.21	14.21	14.21	14.21	14.21	14.21	14.21					129.23
Headquarters Cost	59.64	59.64	59.64	34.81	4.97	4.97	4.97	4.97	4.97	4.97	4.97					248.52
Construction Supervision	4.37	4.37	4.37	21.91	26.24	26.24	26.24	26.24	26.24	26.24	26.24					218.70
Land Acquisition & Land Rights	25.30	30.37	30.37	15.18												101.22
Compensation Cost	5.25	6.30	6.30	3.15												21.00
Contingency					99.40	99.40	99.40	99.40	198.81	198.81	198.85					994.07
Annual Distribution	98.43	104.55	108.43	1,562.92	2,065.81	1,168.32	1,173.18	1,124.45	1,330.26	1,296.83	1,620.27					11,653.45

## Sea Level Canal

CASE S-8 (150,000 DWT)

Route : 14S

Rise 0'

unit : million dollar

MAJOR COST COMPONENT	YEAR of EXPENDITURE															Total Cost
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Construction Cost																
Canal Excavation			2,989.43	4,235.03	1,743.83	1,743.83	1,743.83	1,743.83	1,743.83	1,743.83	1,743.83	1,743.83	3,736.85			
Tidal Gate																
Concrete Structure						71.89	43.65	43.65	43.65	53.94						
Gate Leaves & Related Facilities											96.11	72.09	72.08			
Barrier Dams			103.70	77.78	77.78	86.42										
Partition Wall							115.58	69.35	69.35	69.35	69.35	69.35	115.61			
Indirect Cost																
Administrative Cost	6.84	6.84	20.64	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80			
Headquarters Cost	197.50	197.50	164.62	9.87	9.87	9.87	9.87	9.87	9.87	9.87	9.87	9.87	9.87			
Construction Supervision	17.37	17.37	52.13	49.24	49.24	49.24	49.24	49.24	49.24	49.24	49.24	49.24	49.29			
Land Acquisition & Land Rights	3.53	3.53	1.76													
Compensation Cost	42.00	42.00	21.00													
Contingency				184.32	184.32	184.32	184.32	184.32	184.32	184.32	447.65	447.65	447.72			
Annual Distribution	267.24	267.24	3,353.28	4,587.04	2,095.84	2,176.37	2,177.29	2,131.06	2,131.06	2,141.35	2,446.85	2,422.83	4,462.22			
																30,659.67











