

## **Appendix-1. LABOR COST**

APPENDIX-1 LABOR COST

LA UNION PORT DEVELOPMENT PROJECT

This unit price includes payment for:

- a) seventh day(5.5 work days & 1.5 vacation days) of the week
- b) holidays
- c) christmas vacation
- d) 15 days of vacations per year
- e) social insurance(ISSS)
- f) sick leave
- g) social charges
- h) working hour : 8:00-12:00 and 13:00-16:00 \*\*  
Saturday : 8:00-13:00

\*\* According to Collective Agreement between the Construction Workers Union(SITRACOCS) and the Association of Construction Companies (CASALCO), July, 1999

Code No.	Particular	Unit	Unit Price(per day)
			US\$
1	Foreman	man/day	38.17
2	Skilled Labor	man/day	14.29
3	Common Labor	man/day	11.72
4	Unskilled Labor	man/day	12.7
5	Operator A Heavy	man/day	32.69
6	Operator B Light	man/day	30.86
7	Assistant Operator	man/day	19.54
8	Driver	man/day	22.06
9	Mechanician	man/day	30.86
10	Electrician	man/day	31.09
11	Welder	man/day	23.09
12	Plumber	man/day	20.91
13	Painter	man/day	20.91
14	Plant Operator	man/day	20.91
15	Carpenter	man/day	14.29
16	Concrete Worker	man/day	20.91
17	Steel Bender	man/day	14.29
18	Mason	man/day	31.09
19	Senior Civil Engineer	man/mon.	5,876.57
20	Junior Civil Engineer	man/mon.	2939.43
21	Architect	man/mon.	5488.00
22	Building Engineer	man/mon.	5,488.00
23	Surveyor	man/mon.	1136.00
24	Administrator	man/mon.	3,712.00
25	Accountant	man/mon.	1,547.43
26	Office Clerk	man/mon.	2,784.00
27	Secretary	man/mon.	1,197.71
28	Typist	man/mon.	772.57
29	CAD Operator	man/mon.	1661.71
30	Office boy	man/mon.	729.14
31	Cleaner	man/day	324.57
32	Security(Guardman)	man/mon.	361.14
33	Crew High Class (foreigner)	man/day	375.00
34	Crew Middle Class	man/day	100.00
35	Crew Low Class	man/day	33.00
36	Off-shore Foreman	man/day	38.17
37	Off-shore Skilled L.	man/day	14.29
38	Off-shore Common L.	man/day	11.72

Three Shift: 3x8hours A x 125%

Over time: From 5pm-7pm A/7 x 200%/hour

From 7pm-6am A/7 x 225%/hour

From 6am-8am A/7 x 200%/hour

Sunday work : Basic hourly rate x 2.5 + Compensation of 1 day-off in next week

Holiday work : Basic hourly rate x 2.0

## **Appendix-2. MATERIAL COST**

## APPENDIX-2 MATERIAL COST (1/15)

## LA UNION PORT DEVELOPMENT PROJECT

This unit cost includes transportation fee to site except IVA.

	Code No.	Name	Class/Type	Unit	Unit Cost	
					Foreign (US\$)	Local (US\$)
Fuel & Others						
	1	Fuel	Diesel Heavy Oil	liter	-	0.31
	2	Fuel	Diesel Light Oil (Kerosine)	liter	-	0.28
	3	Fuel	Gasoline/Petrol	liter	-	0.51
	4	Fuel	Marine heavy oil (turbine)	liter	-	0.19
	5	Fuel	Marine light oil (diesel engine)	liter	-	0.33
	6	Lubricant		liter	-	1.42
	7	Acetylene Gas		kg	-	1.05
	8	Oxygen		m <sup>3</sup>	-	0.62
	9	Water		m <sup>3</sup>	-	
Sand, Aggregate & Rock						
	10	Sand	for Reclamation	m <sup>3</sup>	-	4.00
	11	Sand	for Concrete	m <sup>3</sup>	-	8.23
	12	Sand	for Replacement	m <sup>3</sup>	-	6.00
	13	Course Aggregate	40mm	m <sup>3</sup>	-	18.85
	14	Course Aggregate	25mm	m <sup>3</sup>	-	21.31
	15	Quarry Run	10-50kg	m <sup>3</sup>	-	7.54
	16	Crushed Stone	5.0-100kg	m <sup>3</sup>	-	6.40
	17	Crushed Stone	100-300kg	m <sup>3</sup>	-	5.16
	18	Armor Stone	0.5-1 ton	m <sup>3</sup>	-	9.04
	19	Armor Stone	1-2 ton	m <sup>3</sup>	-	7.75
	20	Armor Stone	2 ton	m <sup>3</sup>	-	6.20
	21	Sub base course	CBR 30	m <sup>3</sup>	-	9.04
	22	Base course	CBR 80	m <sup>3</sup>	-	9.04
	23	Cement treatment Macadam		m <sup>3</sup>	-	33.78

APPENDIX-2 MATERIAL COST (2/15)

LA UNION PORT DEVELOPMENT PROJECT

	Code No.	Name	Class/Type	Unit	Unit Cost	
					Foreign (US\$)	Local (US\$)
Asphalt						
	24	Asphalt concrete	Dense	ton	-	64.00
	25	Asphalt concrete	Coarse	ton	-	64.00
	26	Straight Asphalt		kg	-	0.57
	27	Asphalt bitumen	for Asphalt concrete	kg	-	0.25
	28	Asphalt bitumen	for Prime coat	liter	-	0.25
	29	Asphalt bitumen	for Tack coat	liter	-	0.25
Concrete						
	30	Portland cement	bag	ton	-	102.85
	31	Portland cement	bulk	ton	-	65.00
	32	Mortar		m3	-	75.00
	33	Ready mixed concrete	270kg/cm2	m3	-	75.00
	34	Ready mixed concrete	240kg/cm2	m3	-	70.00
	35	Ready mixed concrete	180kg/cm2	m3	-	67.00
	36	Ready mixed concrete	120kg/cm2	m3	-	65.00
	37	Admixture, AE Agent		kg	-	4.73
Steel						
	38	Steel Pipe Pile	Dia 1200 t=14mm	ton	995.36	-
	39	Steel Pipe Pile	Dia 900 t=12mm	ton	973.83	-
	40	H-Shaped steel	400x400x13x21x6m length 172kg/m	ton	-	400
	41	H-Shaped steel	350x350x12x19x6m length 135kg/m	ton	-	400
	42	H-Shaped steel	300x300x10x15x6m length 93kg/m	ton	-	400
	43	H-Shaped steel	250x250x9x14x6m length 72kg/m	ton	-	400
	44	L-Shaped steel	50x50x6x6m length 4.43kg/m	ton	-	410
	45	L-Shaped steel	75x75x9x6m length 9.96kg/m	ton	-	410
	46	Reinforcement bar(round)	less than 13mm	ton	-	360
	47	Reinforcement bar(round)	16-25mm	ton	-	340
	48	Reinforcement bar(round)	29-32mm	ton	-	350
	49	Reinforcement bar(Deformed)	less than 13mm	ton	-	360

## APPENDIX-2 MATERIAL COST (3/15)

## LA UNION PORT DEVELOPMENT PROJECT

	Code No.	Name	Class/Type	Unit	Unit Cost	
					Forein(US\$)	Local (US\$)
Steel						
	50	Reinforcement bar(Deformed)	16-25mm	ton	-	360.00
	51	Reinforcement bar(Deformed)	29-32mm	ton	-	350.00
	52	Steel plate	t=20mm	ton	-	330.00
	53	Steel plate	t=10mm	ton	-	330.00
	54	Wire rope	Dia 32mm	m	-	0.63
	55	Wire rope	Dia 26mm	m	-	0.63
	56	Rail	70.0kg/m	ton	-	113.00
	57	Rail	50.0kg/m	ton	-	113.00
	58	Channel steel	11x 250x90	ton	-	380.00
	59	Channel steel	12x300x90	ton	-	380.00
	60	Anchor bolt	M16x200mm	pc	-	9.62
	61	Bolt/Nut	M24x65	pc	-	6.61
	62	Bolt/Nut	M16x85	pc	-	2.84
	63	Welding rod	1/8	kg	-	2.07
	64	Welding rod	5/32	kg	-	2.07
	65	Welding rod	3/16	kg	-	2.07
Timber etc.						
	66	Timber	1' *1' - 2' *8' (treated)	m3	-	397.00
	67	Board	t=18mm	m3	-	821.00
	68	Board	t=15mm	m3	-	909.00
	69	Board	t=9mm	m3	-	1638.00
Products of Concrete						
	70	R. C. Pipe	Dia 457mm t=50mm	m	-	23.17
	71	R. C. Pipe	Dia 610mm t=65mm	m	-	29.36
	72	R. C. Pipe	Dia 762mm t=88mm	m	-	51.00
	73	R. C. Pipe	Dia. 914mm t=101mm	m	-	76.50
	74	R. C. Pipe	Dia. 1219mm t= 127mm	m	-	136.75

APPENDIX-2 MATERIAL COST (4/15)

LA UNION PORT DEVELOPMENT PROJECT

	Code No.	Name	Class/Type	Unit	Unit Cost	
					Forein(US\$)	Local (US\$)
Others						
	75	Interlocking block	250kg/cm2	m2	-	4.80
	76	Interlocking block	400kg/cm2	m2	-	18.00
	77	Brick		pc	-	0.28
	78	PVC pipe	Dia 100mm	m	-	15.97
	79	Geotextile sheet		m2	-	1.47
	80	Fender	Type A	No.	10,000	-
	81	Fender	Type B	No.	9,000	-
	82	Fender	Type C	No.	5,500	-
	83	Bollard	100ton	pc	7,500	-
	84	Bollard	75ton	pc	5,000	-
	85	Elas tigh board		m2		8.33

APPENDIX-2 MATERIAL COST (5/15)  
LA UNION PORT DEVELOPMENT PROJECT

Furniture and Equipment

No.	Item	Unit	Price (US\$)	Remark
1	Vehicle CAMRY 2.4	No	32,000	
2	" TOYOTA HI-ACE	No	21,800	
3	" TOYOTA Runner 4 x 4	No	30,000	
4	" TOYOTA Hi-Lux Pickup Truck	No	25,000	
5	Computer INTEL 15" monitor	No	1,250	
6	Laser Printer	No	3,350	
7	Telephone handset	No	30	
8	Whiteboard 1.2 x 0.90	No	45	
9	Pin-board 2.4 x 1.21	No	65	
10	Desk, double pedestal with lockable drawer 2	No	600	
11	Working table 5 x 2.5 with 8 chars	set	1,800	
12	Chair with arm	No	120	
13	Lockable stationary 0.7 x 1.8	No	200	
14	Steel filing cabinet	No	140	
15	Bookcase with five shelves 0.7 x 1.8	No	80	
16	Waste paper bin	No	8	
17	Fire extinguisher	No	325	
18	Fist aid kit	No	25	
19	Copying machine per minute 40sheets	No	8,000	
20	Copying machine per minute 28sheets	No	5,500	
21	Facsimile machine	No	300	
22	Digital video tape recorder	No	4,000	
23	Color printer inkjet type	No	1,100	
24	Telephone switchboard	No	1,000	
25	Portable radio VHF-FM	No	250	
26	Binding machine	No	260	
27	Electric typewriter	No	350	
28	Computer INTEL 17" monitor	No	1,400	
29	Plotter HP800ps	No	9,300	
30	Network cable hub of 24 ports	No	900	
31	Refrigerator 2m3	No	800	
32	Microwave, 1000W	No	300	
33	Electric stove	No	75	
34	Electric kettle	No	30	
35	Kitchen cupboard lockable 1.8 x 0.9 x 0.6	No	160	
36	Coffee maker	No	170	
37	Electric bottled water dispenser	No	350	



APPENDIX-2 MATERIAL COST (6/15)

LA UNION PORT DEVELOPMENT PROJECT

	Code No.	Description	Remarks	Unit	Unit Cost	
					Foreign(US\$)	Local(US\$)
<b>Pipes and Fittings</b>						
	86	Galvanized Iron pipe, diameter 63 mm	For Fire Fighting	m		12.59
	87	Galvanized Iron pipe, diameter 75 mm	For Fire Fighting	m		15.98
	88	PVC pipe, diameter 12 mm	For Water Supply	m		0.28
	89	PVC pipe, diameter 18 mm	For Water Supply	m		0.39
	90	PVC pipe, diameter 25 mm	For Water Supply	m		0.70
	91	PVC pipe, diameter 31 mm	For Water Supply	m		0.76
	92	PVC pipe, diameter 38 mm	For Water Supply	m		0.88
	93	PVC pipe, diameter 50 mm	For Water Supply	m		0.98
	94	PVC pipe, diameter 75 mm	For Water Supply	m		2.25
	95	PVC pipe, diameter 100 mm	For Water Supply	m		3.25
	96	PVC pipe, diameter 150 mm	For Water Supply	m		7.56
	97	PVC pipe, diameter 200 mm	For Water Supply	m		12.05
	98	Ductile Iron pipe, diameter 63 mm	For Water Supply	m		10.14
	99	Ductile Iron pipe, diameter 75 mm	For Water Supply	m		12.87
	100	Ductile Iron pipe, diameter 100 mm	For Water Supply	m		40.45
	101	Ductile Iron pipe, diameter 150 mm	For Water Supply	m		44.11
	102	Ductile Iron pipe, diameter 300 mm	For Water Supply	m		81.68
	103	PVC pipe, diameter 50 mm	For Wastewater	m		2.02
	104	PVC pipe, diameter 63 mm	For Wastewater	m		3.58
	105	PVC pipe, diameter 75 mm	For Wastewater	m		3.66
	106	PVC pipe, diameter 100 mm	For Wastewater	m		2.13
	107	PVC pipe, diameter 150 mm	For Wastewater	m		7.56
	108	PVC pipe, diameter 200 mm	For Wastewater	m		12.05
	109	PVC pipe, diameter 300 mm	For Wastewater	m		46.11
	110	PVC pipe, diameter 400 mm	For Wastewater	m		73.75

## APPENDIX-2 MATERIAL COST (7/15)

## LA UNION PORT DEVELOPMENT PROJECT

	Code No.	Description	Remarks	Unit	Unit Cost	
					Foreign(US\$)	Local(US\$)
<b>Valves, Meters, Hydrants</b>						
111		Gate Valve, cast iron, flanged, 75 mm	For Fire Fighting	No.		202.87
112		Angle Valve, bronze, threaded, 63 mm	For Fire Fighting	No.		94.87
113		Meter, cast iron, flanged, 63 mm		No.		275.00
114		Fire Monitor, bronze, flanged, 75 mm	For Fire Fighting	No.		2,250.00
115		Standing Hydrant	For Fire Fighting	No.		1,150.00
116		Gate Valve, Bronze, threaded, diameter 25 mm	For Water Supply	No.		25.43
117		Gate Valve, Bronze, threaded, diameter 31 mm	For Water Supply	No.		3.86
118		Gate Valve, Bronze, threaded, diameter 38 mm	For Water Supply	No.		5.43
119		Gate Valve, Bronze, threaded, diameter 50 mm	For Water Supply	No.		12.29
120		Gate Valve, Bronze, threaded, diameter 75 mm	For Water Supply	No.		26.14
121		Gate Valve, Cast Iron, flanged, diameter 100 mm	For Water Supply	No.		190.30
122		Gate Valve, Cast Iron, flanged, diameter 150 mm	For Water Supply	No.		295.90
123		Gate Valve, Cast Iron, flanged, diameter 300 mm	For Water Supply	No.		875.00
124		Swing Check Valve, diameter 50 mm	For Water Supply	No.		104.03
125		Swing Check Valve, diameter 63 mm	For Water Supply	No.		260.70
126		Air Release Valve, 50mm	For Water Supply	No.		208.00
127		Float Operated Valve, diameter 50mm	For Water Supply	No.		107.15
128		Meter, ductile iron, diameter 38 mm	For Water Supply	No.		224.50
129		Meter, ductile iron, diameter 75 mm	For Water Supply	No.		298.78

APPENDIX-2 MATERIAL COST (8/15)

LA UNION PORT DEVELOPMENT PROJECT

	Code No.	Description	Remarks	Unit	Unit Cost	
					Foreign(US\$)	Local(US\$)
<b>Fire Fighting Equipment</b>						
	130	Equipment and Hose House, galvanized steel, red enameled		No.		1,350.00
	131	Brass gated wye		No.		400.00
	132	Professional 39 mm nozzle aluminum		No.		475.00
	133	Nitrile fire hoses 39 mm x 15m coupled aluminum		No.		260.00
	134	Nitrile fire hoses 63 mm x 15m coupled aluminum		No.		380.00
	135	Professional 63 mm nozzle aluminum		No.		660.00
	136	Alternative play pipe aluminum		No.		760.00
	137	Hydrant wrench		No.		33.00
	138	Universal spanner wrench aluminum		No.		20.00
	139	Adapter reducer 63 x 39 mm		No.		20.00
	140	Hose gasket 63mm		No.		1.15
	141	Hose gasket 39mm		No.		1.50
	142	International Shore Connection		No.		750.00
	143	Stationary Fire Pump		No.		1,900.00
	144	Mobile Fire Pump		No.		163,000.00
	145	AFFF Foam Extinguisher, 6 liters		No.		150.00
	146	CO2 Extinguisher, 4.5 Kg		No.		180.00
	147	CO2 Extinguisher, 7 Kg		No.		217.14
	148	Dry Chemical Multi Purpose Extinguisher, 4.5 Kg		No.		54.86
	149	Dry Chemical Multi Purpose Extinguisher, 9 Kg		No.		89.14
	150	Dry Chemical Multi Purpose Wheeled Extinguisher, 56.7 Kg		No.		1,714.29
	151	Wet Chemical Class K Extinguisher		No.		180.00
	152	Indoor Hydrants		No.		1,215.00

## APPENDIX-2 MATERIAL COST (9/15)

## LA UNION PORT DEVELOPMENT PROJECT

	Code No.	Description	Remarks	Unit	Unit Cost	
					Foreign(US\$)	Local(US\$)
<b>Sanitary Appliances</b>						
	153	Water Closet, American Standard model "Hydra"		No.		51.20
	154	Wash Basin, American Standard model "Saturno"		No.		34.75
	155	Urinal, American Standard model "Artico"		No.		131.65
	156	Metal Sink Type 1, stainless steel, one bowl-one drainboard		No.		154.95
	157	Metal Sink Type 2, stainless steel, two bowls-two drainboards		No.		355.40
<b>Plumbing Accessories</b>						
	158	Shower, chromium plated bronze head and gate valve		No.		112.40
	159	Sanitary Cleanout, cast iron body, nickel plated bronze cover, 50mm		No.		41.50
	160	Sanitary Cleanout, cast iron body, nickel plated bronze cover, 63mm		No.		61.50
	161	Sanitary Cleanout, cast iron body, nickel plated bronze cover, 75mm		No.		71.50
	162	Sanitary Cleanout, cast iron body, nickel plated bronze cover, 100 mm		No.		96.25
	163	Shower Drain, cast iron body, nickel plated bronze grating, 50 mm		No.		32.50
	164	Floor Drain, cast iron body, nickel plated bronze grating, 75 mm		No.		94.25
<b>Toilet Accessories</b>						
	165	Shower Curtain Holder		No.		13.50
	166	Toilet Tissue Dispenser		No.		49.50
	167	Hand Drier, electrical, automatic		No.		89.90
	168	Grab Bars, stainless steel		No.		139.95

APPENDIX-2 MATERIAL COST (10/15)

LA UNION PORT DEVELOPMENT PROJECT

Code No.	Description	Remarks	Unit	Unit Cost	
				Foreign(US\$)	Local(US\$)
<b>Boxes and Fittings</b>					
169	Rectangular 4"x2" box		No.		0.78
170	Round 4" box	2" Depth	No.		0.78
171	Round 4" box	4" Depth	No.		1.35
172	Square 4" box	2" Depth	No.		1.14
173	Square 4" box	2" Depth	No.		1.14
174	Round 4" blank cover	1/2" knockout	No.		0.45
175	Square 4" blank cover		No.		0.45
176	1/2" connector		No.		0.22
177	Scotchlock connector	Yellow	No.		0.15
178	Scotchlock connector	Red	No.		0.20
179	Scotchlock connector	Grey	No.		0.27
180	Scotchlock connector	Blue	No.		0.39
<b>Piping</b>					
181	Flexible Electrical Nonmetallic Tubing	Dia. 13 mm	m		1.23
182	Flexible Electrical Nonmetallic Tubing	Dia. 19 mm	m		1.52
183	Flexible Electrical Nonmetallic Tubing	Dia. 25 mm	m		2.05
184	Shedule 40 Conduit (PVC)	Dia. 13 mm	m		1.05
185	Shedule 40 Conduit (PVC)	Dia. 19 mm	m		1.34
186	Shedule 40 Conduit (PVC)	Dia. 25 mm	m		1.97
187	Shedule 80 Conduit (PVC)	Dia. 13 mm	m		1.75
188	Shedule 80 Conduit (PVC)	Dia. 19 mm	m		1.90
189	Shedule 80 Conduit (PVC)	Dia. 25 mm	m		2.40
190	Shedule 80 Conduit (PVC)	Dia. 38 mm	m		3.15
191	Shedule 80 Conduit (PVC)	Dia. 50 mm	m		4.40
192	Shedule 80 Conduit (PVC)	Dia. 100 mm	m		10.30
193	Shedule 80 Conduit (PVC)	Dia. 150 mm	m		14.50
194	Steel Conduit	Dia. 13 mm	m		2.80
195	Steel Conduit	Dia. 19 mm	m		4.00
196	Steel Conduit	Dia. 25 mm	m		6.80
197	Steel Conduit	Dia. 38 mm	m		10.00
198	Steel Conduit	Dia. 50 mm	m		13.50
199	Steel Conduit	Dia. 100 mm	m		24.00
200	Steel Conduit	Dia. 152 mm	m		38.21

## APPENDIX-2 MATERIAL COST (11/15)

## LA UNION PORT DEVELOPMENT PROJECT

	Code No.	Description	Remarks	Unit	Unit Cost	
					Foreign(US\$)	Local(US\$)
Cables						
201		Cable PVC 600V	2.1 mm <sup>2</sup>	m		0.09
202		Cable PVC 600V	3.3 mm <sup>2</sup>	m		0.13
203		Cable PVC 600V	5.3 mm <sup>2</sup>	m		0.24
204		Cable PVC 600V	8.4 mm <sup>2</sup>	m		0.36
205		Cable PVC 600V	13.2 mm <sup>2</sup>	m		0.53
206		Cable PVC 600V	85 mm <sup>2</sup>	m		3.62
207		Cable XLPE/PVC Cu 600V	1c x 500 mm <sup>2</sup>	m		23.00
208		Cable XLPE/PVC Cu 600V	4c x 150 mm <sup>2</sup>	m		49.00
209		Cable XLPE/PVC Cu 600V	4c x 60 mm <sup>2</sup>	m		14.87
210		Cable XLPE/PVC Cu 600V	4c x 38 mm <sup>2</sup>	m		8.96
211		Cable XLPE/PVC Cu 600V	4c x 14 mm <sup>2</sup>	m		3.15
212		Cable XLPE/PVC Cu 600V	1c x 400 mm <sup>2</sup>	m		16.00
213		Cable XLPE/PVC Cu 600V	3c x 100 mm <sup>2</sup>	m		17.00
214		Cable XLPE/PVC Cu 600V	3c x 60 mm <sup>2</sup>	m		13.80
215		Cable XLPE/PVC Cu 600V	3c x 38 mm <sup>2</sup>	m		8.10
216		Cable XLPE/PVC Cu 600V	3c x 22 mm <sup>2</sup>	m		7.36
217		Cable XLPE/PVC Cu 5 KV	1c x 400 mm <sup>2</sup>	m		155.00
218		Cable XLPE/PVC Cu 5 KV	3Cx100 mm <sup>2</sup>	m		41.00
219		Cable XLPE/PVC Cu 5 KV	3Cx60 mm <sup>2</sup>	m		38.00
220		Cable XLPE/PVC Cu 5 KV	3Cx22 mm <sup>2</sup>	m		26.00
221		Cable ACSR; AI	100 mm <sup>2</sup>	m		5.78
222		Cable Cu for grounding	100 mm <sup>2</sup>	m		4.62
223		Steel round cable (downconductor)	50 mm <sup>2</sup>	m		3.11
224		Cable Terminal Kit	5 KV	No.		300.00

APPENDIX-2 MATERIAL COST (12/15)

LA UNION PORT DEVELOPMENT PROJECT

Code No.	Description	Remarks	Unit	Unit Cost	
				Foreign(US\$)	Local(US\$)
<b>Lighting Fixtures</b>					
225	Flourescent Fixture 3x32W	Type A, parabolic troffer	No.		105.49
226	Flourescent Fixture 2x22W	Type B, parabolic troffer	No.		105.49
227	Flourescent Fixture 2x26W	Type C, downlight	No.		119.77
228	Flourescent Fixture	Type D, surface mounted	No.		226.00
229	Flourescent Fixture 4x32W	Type F, industrial	No.		68.80
230	Flourescent Fixture 2x32W	Type I, emergency	No.		161.00
231	Flourescent Fixture 2x32W	Type J rought use, angle mounted	No.		486.00
232	Flourescent Fixture	Type T, wall mounted	No.		127.00
233	Flourescent Fixture 4x32W	Type L, wrap around	No.		129.00
234	Flourescent Fixture 3x32W	Type LI, wrap around	No.		113.71
235	Incandescent light receptacle	Type E	No.		0.55
236	Incandescent light receptacle	Type E	No.		176.00
237	HPS Fixture 150W	Type N, Low Bay Industrial	No.		423.00
238	HPS Fixture 1000W	Type High Mast	No.		198.00
239	HPS Fixture 250W	Road Type Cobra	No.		774.74
240	Metal Halide Fixture 100W	Type G, recessed in wall	No.		774.74
241	Metal Halide Fixture 100W	Type GI, recessed in wall	No.		159.43
242	Metal Halide Fixture 400W	Type M, High Bay Industrial	No.		154.43
243	Metal Halide Fixture 400W	Type Q, High Mast	No.		318.00
244	Metal Halide Fixture 250W	Type R	No.		208.00
<b>Switches and Outlets</b>					
245	Single Switch 120V		No.		1.95
246	Single Switch 120V	Industrial	No.		1.83
247	Single Switch, 2-pole 240V	Industrial	No.		5.14
248	Duplex Receptacle 120V		No.		3.45
249	Duplex Receptacle 120V	Industrial	No.		1.35
250	Single Receptacle 20A/240V	Industrial	No.		3.75
251	Single Receptacle 50A/240V	Industrial	No.		10.00
252	Single Receptacle 3-phase/32A	IP-44, surface mounted	No.		52.00
253	Single Floor Receptacle 1-phase/20A		No.		18.00
254	Wall Plate for Switch	1 gang, residential type	No.		1.70
255	Wall Plate for Switch	2 gang, residential type	No.		1.70
256	Wall Plate for Switch	1 gang, industrial	No.		1.55
257	Wall Plate for Receptacle	2 gang, residential type	No.		1.70
258	Wall Plate for Receptacle	2 gang, weather proof	No.		3.57
259	Wall Plate for Receptacle	1 gang, industrial	No.		3.12
260	Wall Plate for Receptacle	2 gang, industrial	No.		3.12

## APPENDIX-2 MATERIAL COST (13/15)

## LA UNION PORT DEVELOPMENT PROJECT

	Code No.	Description	Remarks	Unit	Unit Cost	
					Foreign(US\$)	Local(US\$)
Panelboard						
261		Panelboard 3-phase, 240/480v	16 circuits,100A	No.		154.08
262		Panelboard 3-phase, 240/480v	16 circuits,200A	No.		254.63
263		Panelboard 3-phase, 240/480v	24 circuits,200A	No.		275.10
264		Panelboard 3-phase, 240/480v	16 circuits,400A	No.		355.44
265		Panelboard 3-phase, 240/480v	30 circuits,400A	No.		417.37
266		Panelboard 3-phase, 240/480v	42 circuits,400A	No.		438.85
267		Safety switch 3-phase	200A/240V	No.		170.64
268		Safety switch 3-phase	200A/480V	No.		251.89
269		Molded Case Circuit Breaker	15A/1P	No.		6.86
270		Molded Case Circuit Breaker	20A/1P	No.		6.86
271		Molded Case Circuit Breaker	30A/1P	No.		6.86
272		Molded Case Circuit Breaker	15A/2P	No.		14.22
273		Molded Case Circuit Breaker	20A/2P	No.		14.22
274		Molded Case Circuit Breaker	30A/2P	No.		14.22
275		Molded Case Circuit Breaker	40A/2P	No.		14.22
276		Molded Case Circuit Breaker	15A/3P	No.		23.58
277		Molded Case Circuit Breaker	20A/3P	No.		23.58
278		Molded Case Circuit Breaker	30A/3P	No.		23.58
279		Molded Case Circuit Breaker	40A/3P	No.		23.58
280		Molded Case Circuit Breaker	50A/3P	No.		23.58
281		Molded Case Circuit Breaker	70A/3P	No.		48.70
282		Molded Case Circuit Breaker	100A/3P	No.		48.70
283		Molded Case Circuit Breaker	125A/3P	No.		63.15



APPENDIX-2 MATERIAL COST (14/15)

LA UNION PORT DEVELOPMENT PROJECT

	Code No.	Description	Remarks	Unit	Unit Cost	
					Foreign(US\$)	Local(US\$)
Power Equipment						
284		Transformer, 3-phase, oil immersed	46/4.16 KV,4000 KVA	No.		78,000.00
285		Transformer, 3-phase, padmounted	4.16/0.48 KV, 1000 KVA	No.		14,252.00
286		Transformer, 3-phase, padmounted	4.16/0.208 KV, 500 KVA	No.		8,000.00
287		Transformer, 3-phase, dry type	4.16/0.48 KV, 500 KVA	No.		8,650.00
288		Transformer, 3-phase, dry type	480/208V,500 KVA	No.		7,000.00
289		Transformer, 3-phase, dry type	480/2208V,25 KVA	No.		1,350.00
290		Transformer, 3-phase, dry type	480/440V, 40 KVA	No.		2,150.00
291		Transformer, 1-phase, dry type	480/220V, 10 KVA	No.		930.00
292		Generator Set	1000 KVA/4.16 KV	No.		98,800.00
293		Transfer switch	Paralelling	No.		142,000.00
294		Fuel Tank	Underground, 8m <sup>3</sup>	No.		2,525.00
295		46 KV 3-P, pole mounted section switch		No.		15,000.00
296		46 KV circuit breaker SF6		No.		45,000.00
297		46 KV disconnect switch		No.		10,000.00
298		46 KV 1-P potencial Transformer		No.		3,000.00
299		46 KV 1-P Current Transformer		No.		2,500.00
300		46 KV 1-P Arrester		No.		2,000.00
301		46 KV Outdoor Galvanized Steel Structure		No.		30,000.00
302		Neutral Grounding Resistor		No.		6,000.00
303		4.16 KV Switchgear Cubicle		No.		350,000.00
304		Main Control Switchboard		No.		10,000.00
305		AC Panel		No.		2,500.00
306		DC Panel		No.		4,000.00
307		Battery Charger		No.		3,000.00
308		Battery		No.		2,500.00

## APPENDIX-2 MATERIAL COST (15/15)

## LA UNION PORT DEVELOPMENT PROJECT

	Code No.	Description	Remarks	Unit	Unit Cost	
					Foreign(US\$)	Local(US\$)
Miscellaneous						
	309	Concrete Pole	12 m	No.		335.00
	310	Steel pole for 1 road fixture	12m	No.		1,926.00
	311	Steel pole for 2 road fixture	12m	No.		2,175.00
	312	Ligthing mast with lowering device	25 m	No.		15,667.00
	313	Ligthing mast with lowering device	36 m	No.		19,339.00
	314	Dynamic Lighting Terminal	Pulsar 30	No.		1,415.00
	315	Ligthning strike counter		No.		642.00
	316	Ligthning down conductor clamp	For dia. 8 mm cable	No.		3.40
	317	Fire Alarm Main Panel		No.		3,000.00
	318	Fire Alarm Sub Panel		No.		2,000.00
	319	Fire Alarm combination panel		No.		150.00
	320	Smoke/heat detector		No.		100.00
	321	Infra red fire detector		No.		310.00
	322	Fire alarm pushbottom	outdoor type	No.		80.00
	323	Copperclad ground rod	Dia.15mm x 3m	No.		19.43
	324	Copperclad ground rod	Dia.19mm x 3m	No.		23.80
	325	Bronze ground rod clamp	Dia.15mm	No.		2.86
	326	Bronze ground rod clamp	Dia.19mm	No.		3.42

## **Appendix-3. EQUIPMENT COST**

### APPENDIX-3 LIST OF DEPRECIABLE VALUE OF EQUIPMENT (1/4)

#### LA UNION PORT DEVELOPMENT PROJECT

The construction period of this project are estimated three years more, then the depreciable values of equipment are calculated by the under formula

$$E=A(1+C/100+D/100)$$

$$F=1/12\text{month/year} \times (30-5)\text{day/month} \times \text{Byear}$$

No.	Equipment	Specification	PS	A	B	C	D	E	F	G	Remarks
				Purchase Cost (US\$)	Economic life of equipment (year)	Total rate of Maint. cost (%)	Annual rate of owning cost (%)	Total Cost of Economic life (US\$)	Daily depreciation rate	Daily Equipment owning cost (US\$/day)	
1	Grab Bucket Dredger	20m3 (11.5m3)	2,800	11,916,667	10	100	7	24,667,500	0.000333333	8,223	
2	Trailing Suction Hopper	8,000m3	10000+3200	52,120,833	18	130	7	123,526,375	0.000185185	22,875	15.3% Repairing
3	Trailing Suction Hopper	5000m3	10,600	33,333,333	14	115	7	74,000,000	0.000238095	17,619	12.2% Repairing
4	Anchor boat	30ton	480	2,241,667	18	180	7	6,433,583	0.000185185	1,191	
5	"	20ton	360	1,550,000	18	180	7	4,448,500	0.000185185	324	
6	"	10ton	180	780,833	18	180	7	2,240,992	0.000185185	415	
7	Tug Boat	450PS	450	406,667	20	130	7	963,800	0.000166667	161	
8	"	250PS	250	248,333	20	130	7	588,550	0.000166667	98	
9	Pusher Boat	3000PS	3,000	2,783,333	16	130	7	6,596,500	0.000208333	1,374	
10	"	1000PS	1,000	1,375,000	16	130	7	3,258,750	0.000208333	679	
11	Passenger Boat	180PS	180	108,333	18	175	7	305,500	0.000185185	57	
12	"	100PS	100	56,167	18	175	7	158,390	0.000185185	29	
13	Survey boat	70PS	70	36,667	18	180	7	105,233	0.000185185	19	
14	Hopper Barge	3000m3		3,150,000	16	120	6	7,119,000	0.000208333	1,483	
15	"	1300m3		1,358,333	16	120	6	3,069,833	0.000208333	640	
16	Self-propelled Hopper B	850m3, 3.0m3	1,500	2,858,333	8	95	7	5,773,833	0.000416667	2,406	
17	"	400m3, 1.8m3	800	1,733,333	8	95	7	3,501,333	0.000416667	1,459	
18	Out Barge	1000m3 3.0m3	400	2,100,000	8	95	7	4,242,000	0.000416667	1,768	
19	Flat Barge	1000ton		458,333	18	140	6	1,127,500	0.000185185	209	
20	"	500ton		262,500	18	140	6	645,750	0.000185185	120	
21	"	100ton		76,250	18	140	6	187,575	0.000185185	35	
22	Floating Dock	6000t		6,950,000	13	65	7	11,954,000	0.00025641	3,065	
23	"	10000t		11,250,000	13	65	7	19,350,000	0.00025641	4,962	
24	Pile Driving Barge	D-72	550	5,891,667	17	85	7	11,312,000	0.000196078	2,218	
25	"	D-72 with Auger	550	7,483,333	17	85	7	14,368,000	0.000196078	2,817	

APPENDIX-3 LIST OF DEPRECIABLE VALUE OF EQUIPMENT (2/4)

LA UNION PORT DEVELOPMENT PROJECT

$$E=A(1+C/100+D/100)$$

$$F=1/12\text{month/year} \times (30-5)\text{day/month} \times \text{Byear}$$

No.	Equipment	Specification	PS	A	B	C	D	E	F	G	Remarks
				Purchase Cost (US\$)	Economic life of equipment (year)	Total rate of Maint. cost (%)	Annual rate of owning cost (%)	Total Cost of Economic life (US\$)	Daily depreciation rate	Daily Equipment owning cost (US\$/day)	
26	Pump Dredger	DE8000PS	13,000	31,083,333	12	70	7	55017500	0.000277778	15,283	
27	Floater	for Dia. 800		9,333	4	15	5	11200	0.000833333	9.33	
28	Steel pipe	Dia. 800		2,383	4	15	5	2860	0.000833333	2.38	
29	Rubber sleeve	Dia. 800		6,425	7	120	6	14520.5	0.00047619	6.91	
30	Valve	Dia. 800		4,917	4	20	5	6,146	0.000833333	5.12	
31	Steel curve pipe	Dia. 800		2,283	4	15	5	2,740	0.000833333	2.28	
32	Steel T pipe	Dia. 800		2,408	4	15	5	2,890	0.000833333	2.41	
33	Bulldozer	21ton	207	188,333	10	55	9	308,867	0.000333333	103	
34	"	15ton	136	114,187	10	55	9	187,233	0.000333333	62	
35	"	11ton	106	85,833	10	55	9	140,767	0.000333333	47	
36	" with	32ton	232	311,667	10	55	9	511,133	0.000333333	170	
37	" with	21ton	177	207,500	10	55	9	340,300	0.000333333	113	
38	Buckhoe	2.0m3	367	388,333	8	45	9	598,033	0.000416667	249	
39	"	1.5m3	303	252,500	8	45	9	388,850	0.000416667	162	
40	"	1.2m3	224	197,500	8	45	9	304,150	0.000416667	127	
41	Wheel loader	3.5m3	218	191,667	10	60	9	323,917	0.000333333	108	
42	"	2.5m3	149	131,667	10	60	9	222,517	0.000333333	74	
43	Shovel loader(crawler)	3.2m3	250	227,500	10	60	9	384,475	0.000333333	128	
44	"	2.0m3	152	135,000	10	60	9	228,150	0.000333333	76	
45	Dump truck	10ton	335	78,667	8	60	12	135,307	0.000416667	56	
46	"	8ton	244	59,833	8	60	12	102,913	0.000416667	43	
47	Truck	8ton	253	52,250	9	40	12	79,420	0.00037037	29	
48	"	4ton	186	31,750	9	40	12	48,260	0.00037037	18	
49	" with cr	8ton 2.9ton	269	82,000	9	40	12	124,640	0.00037037	46	
50	" with cr	4ton 2.9ton	180	50,000	9	40	12	75,000	0.00037037	28	

## APPENDIX-3 LIST OF DEPRECIABLE VALUE OF EQUIPMENT (3/4)

LA UNION PORT DEVELOPMENT PROJECT

$$E=A(1+C/100+D/100)$$

$$F=1/12\text{month/year} \times (30-5)\text{day/month} \times \text{Year}$$

No.	Equipment	Specification	PS	A	B	C	D	E	F	G	Remarks
				Purchase Cost (US\$)	Economic life of equipment (year)	Total rate of Maint. cost (%)	Annual rate of owning cost (%)	Total Cost of Economic life (US\$)	Daily depreciation rate	Daily Equipment owning cost (US\$/day)	
51	Trailer	32ton	320	147,500	9	35	9	212,400	0.00037037	79	
52		28ton	320	137,500	9	35	9	198,000	0.00037037	73	
53	Crawler crane	50ton	180	362,500	11	60	9	612,625	0.00030303	186	
54		30ton	150	219,167	11	60	9	370,392	0.00030303	112	
55		16ton	96	140,000	11	60	9	236,600	0.00030303	72	
56	Truck crane	45ton	300+150	360,833	9	30	9	501,558	0.00037037	186	
57		30ton	286+150	261,667	9	30	9	363,717	0.00037037	135	
58		25ton	274+140	210,000	9	30	9	291,900	0.00037037	108	
59	Truck crane	16ton	230+100	152,500	9	30	9	211,975	0.00037037	79	
60	Forklift	2.5ton	50	18,567	7	35	9	26,880	0.00047619	13	
61		1.5ton	36	15,833	7	35	9	22,800	0.00047619	11	
62	Breaker	1300kg		39,083	6	25	7	51,590	0.000555556	29	
63		800-900kg		23,917	6	25	7	31,570	0.000555556	16	
64	Hand Hammer	20kg		1,567	5	30	7	2,146	0.000666667	1.43	
65	Leg Hammer	40kg		2,317	5	40	7	3,406	0.000666667	2.27	
66		30kg		2,058	5	40	7	3,026	0.000666667	2.02	
67	Motor Grader	2.8m	95	76,333	12	35	9	109,920	0.000277778	31	
68	Road Roller(Macadam)	10-12ton	90	64,417	12	35	9	92,760	0.000277778	26	
69	Tire Roller	8-20ton	96	65,000	12	45	9	100,100	0.000277778	28	
70	Vibration Roller	8-10ton	132	106,667	10	40	9	158,933	0.000333333	53	
71	Tampa & Ramme	60-100kg	4	1,692	5	50	7	2,656	0.000666667	1.77	
72	Truck Mixer	4.5m3	290	76,500	9	45	9	117,810	0.00037037	44	
73	Concrete pump car	45m3/h	112	95,833	8	70	9	171,542	0.000416667	71	
74	Concrete pump	45m3/h	50	118,333	8	45	9	182,233	0.000416667	76	
75	Asphalt Finisher	1.6-3.0m	37	98,333	11	40	9	146,517	0.00030303	44	
76	Asphalt Kettle	3000L		5,617	6	20	7	7,133	0.000555556	3.96	
77	Distributor	2000-3000L	100+10	55,417	11	50	9	88,113	0.00030303	27	
78	Asphalt sprayer(engine)	200L	3	1,417	5	50	7	2,224	0.000666667	1.48	
79	Line Marker	15cm 80-120kg		6,042	8	55	7	9,788	0.000416667	4.08	
80	Water tank lorry	3800L	160	38,583	9	50	9	61,348	0.00037037	23	
81	Air compressor	7.5m3/min	80	26,083	11	35	7	37,038	0.00030303	11	

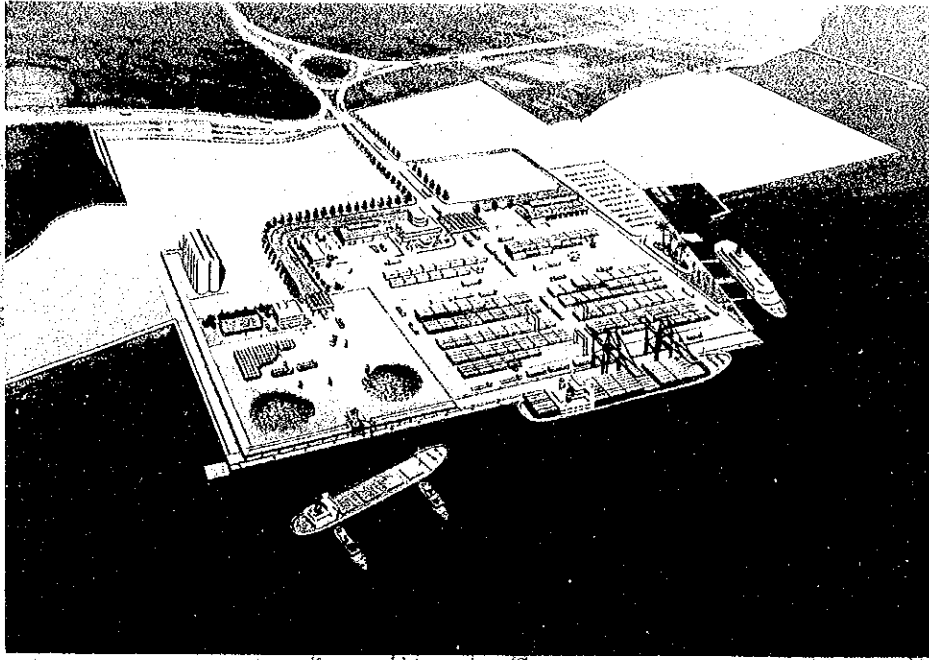
APPENDIX-3 LIST OF DEPRECIABLE VALUE OF EQUIPMENT (4/4)

LA UNION PORT DEVELOPMENT PROJECT

$$E=A(1+C/100+D/100)$$

$$F=1/12\text{month/year} \times (30-5)\text{day/month} \times \text{Byear}$$

No.	Equipment	Specification	PS	A	B	C	D	E	F	G	Remarks
				Purchase Cost (US\$)	Economic life of equipment (year)	Total rate of Maint. cost (%)	Annual rate of owning cost (%)	Total Cost of Economic life (US\$)	Daily depreciation rate	Daily Equipment owning cost (US\$/day)	
82	Submersible pump	100mm 30m	11KW	3,125	9	150	7	8,031	0.00037037	2.97	
83	"	80mm 30m	5.5KW	1,875	9	150	7	4,819	0.00037037	1.78	
84	Submersible sand pump	100mm 25m	11.0KW	3,400	9	160	7	9,078	0.00037037	3.36	
85	Stabilizer	100t/h	44kw	154,167	10	55	9	252,833	0.000333333	84	
86	Concrete Spreader	3~7.5m	45	177,500	10	40	9	264,475	0.000333333	88	
87	Concrete Finisher	3~4.5m	26	145,833	10	45	9	224,583	0.000333333	75	
88	Concrete Planer	3~7.5m	25	218,333	10	40	9	325,317	0.000333333	108	
89	Concrete Cutter	3~7.5m	4	10,500	7	45	7	15,960	0.00047619	8	
90	Concrete Mixer	0.6m3	7.5kw	78,500	8	55	9	128,740	0.000416667	54	
91	Generator	125KVA	158	33,083	9	45	7	50,287	0.00037037	19	
92	"	100KVA	125	26,167	9	45	7	39,773	0.00037037	15	
93	"	45KVA	57	16,417	9	45	7	24,953	0.00037037	9	
94	Welder	500A		1,800	13	95	7	3,636	0.00025641	0.93	
95	"	400A		1,508	13	95	7	3,047	0.00025641	0.78	
96	"	300A		1,108	13	95	7	2,239	0.00025641	0.57	
97	" (semi-a	500A		4,583	11	70	7	8,113	0.00030303	2.46	
98	"	300A		3,250	11	70	7	5,753	0.00030303	1.74	
99	Concrete Vibrator	40mm 0.7KW		983	5	55	7	1,593	0.000666667	1.06	
100	Concrete Vibrator	50mm 0.9KW		1,042	5	55	7	1,688	0.000666667	1.13	
101	Bar Bender			2,083	5	55	7	3,375	0.000666667	2.25	
102	Bar Cutter			2,083	5	55	7	3,375	0.000666667	2.25	
103	Vibrohammer	60kw		84,167	5	50	7	132,142	0.000666667	88.09	



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