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Port Muhammad-Bin-Qasim project : detailed design
report; Annex to summary of cost estimates in
currency proportion.

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PORT MUHAMMAD-BIN-QASIM PROJECT

DETAILED DESIGN REPORT

ANNEX

TO

SUMMARY OF COST ESTIMATES

IN

CURRENCY PROPORTION

DECEMBER 1975

JAPAN INTERNATIONAL COOPERATION AGENCY

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C O N T E N T S

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1. SUMMARY OF COST ESTIMATES

1,000 Rupies

	<u>Description</u>	Local Currency PAK. Rs	Foreign Currency in PAK. Rs (US\$)	Total Amount PAK. Rs	<u>Remarks</u>
(I)	Iron-Ore & Coal Berth and Related Facilities	79,114	130,494	209,608	Refer to Estimate No. (I)
(II)	Navigation Channel Dredging	50,833	404,627	455,460	Refer to Estimate No. (II)
(III)	Navigation Aids	9,016	17,700	26,716	Refer to Estimate No. (III)
(IV)	Engineering (Supervision Fee) (Survey)	8,000	22,000	30,000 (18,000) (12,000)	
	Grand Total	146,963 (20%)	574,821 (80%)	721,784 (100%)	

Estimate No. (I)

2. IRON-ORE & COAL BERTH AND RELATED FACILITIES

	DESCRIPTION	LOCAL CURRENCY PAK.RS	FOREIGN CURRENCY IN PAK.RS(US\$)	TOTAL AMOUNT PAK.RS
PART I	TEMPORARY AND PREPARATORY WORKS	14,919,000	45,231,000	60,150,000
PART II	MAIN BERTH STRUCTURE	36,279,760	54,704,851	90,984,611
PART III	APPROACH. TRESTLE	6,790,542	8,460,686	15,251,228
PART IV	SMALL CRAFTS PIER	1,608,567	1,859,193	3,467,760
PART V	LAND RECLAMATION	9,709,174	14,658,855	24,368,029
PART VI	WATER AND OIL SUPPLY AND FIRE FIGHTING	2,899,606	1,996,378	4,895,984
PART VII	ELECTRIC FACILITIES AND POWER SUPPLY	3,385,861	2,484,000	5,869,861
PART VIII	BUILDINGS	3,521,906	1,099,000	4,620,906
	TOTAL	79,114,416 (38%)	130,493,963 (62%)	209,608,379 (100%)

PART I TEMPORARY AND PREPARATORY WORKS

	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
1. Preparation of Working Yard	7,393,000	6,907,000	14,300,000
2. Mobilization of Constructional Machines and Plants	3,752,000	21,548,000	25,300,000
3. Demobilization of Constructional Machines and Plants	3,684,000	16,716,000	20,400,000
4. Soil Investigation	90,000	60,000	150,000
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Total	14,919,000	45,231,000	60,150,000
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	(25%)	(75%)	(100%)

PART II MAIN BERTH STRUCTURE

		<u>Local</u>	<u>Foreign</u>	<u>Total</u>
Section	1. Piling Work	15,287,552.64	31,816,007.06	47,103,559.70
	2. Corrosion Protection	1,443,883.08	3,058,509.44	4,502,392.52
	3. Precast Concrete Work	7,278,040.24	7,716,891.44	14,994,931.68
	4. Cast In-situ Concrete Work	9,332,434.40	6,612,857.32	15,945,291.72
	5. Metal Work	130,923.12	72,540.76	203,463.88
	6. Installation Work of Equipment	2,712,581.72	5,355,011.28	8,067,593.00
	7. Ancillary Work	94,349.88	73,033.44	167,383.32
	Total	36,279,760.08	54,704,850.74	90,984,610.82
		(40%)	(60%)	(100%)

PART III APPROACH TRESTLE

	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
Section 1. Piling Work	2,415,047.92	4,258,546.06	6,673,593.98
2. Corrosion Protection	348,303.16	657,371.88	1,005,675.04
3. Precast Concrete Work	2,366,520.94	2,432,985.86	4,799,506.80
4. Cast In-situ Concrete Work	1,597,162.79	1,058,751.50	2,655,914.29
5. Metal Work	55,157.68	53,030.40	108,188.08
6. Ancillary Work	8,350.00	0.00	8,350.00
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Total	6,790,542.49	8,460,685.70	15,251,228.19
	(45%)	(55%)	(100%)

PART IV

SMALL CRAFTS PIER

		<u>Local</u>	<u>Foreign</u>	<u>Total</u>
Section	1. Steel Pipe Pile Works	139,351	795,419	934,770
	2. In-Situ Concrete	831,335	745,609	1,576,944
	3. Precast Concrete	537,951	289,641	827,592
	4. Pavement	14,981	9,100	24,081
	5. Accessories	84,949	19,424	104,373
	<u>Total</u>	<u>1,608,567</u>	<u>1,859,193</u>	<u>3,467,760</u>
		(46%)	(54%)	(100%)

PART V

LAND RECLAMATION

		<u>Local</u>	<u>Foreign</u>	<u>Total</u>
Section	1. Banking and Rip-rapping	8,728,730	14,004,176	22,732,906
	2. Sea Wall Work	157,099	99,637	256,736
	3. Drainage	220,256	235,522	455,778
	4. Pavement	431,275	286,520	717,795
	5. Sodding	11,814	0	11,814
	6. Gate and Fencing	160,000	33,000	193,000
	<u>Total</u>	<u>9,709,174</u>	<u>14,658,855</u>	<u>24,368,029</u>
		(40%)	(60%)	(100%)

PART VI WATER AND OIL SUPPLY AND FIRE FIGHTING

		<u>Local</u>	<u>Foreign</u>	<u>Total</u>
<u>Division 1.</u>	<u>Service Reservoir and Inlet Piping</u>			
Section	1. Precast Reinforced Concrete Piles	524,803	47,531	572,334
	2. Main Body of Ser- vice Reservoir	683,035	115,771	798,806
	3. Accessories of Ser- vice Reservoir	13,777	24,102	37,879
	4. Valve and Fittings to Service Reser- voir	33,223	103,328	136,551
	5. Inlet Piping	80,008	93,860	173,868
	Sub-Total	1,334,846	384,592	1,719,438.
<u>Division 2.</u>	<u>Equipment and Pipeline for Distribution</u>			
Section	1. Potable Water Dis- tribution system	598,858	646,887	1,245,745
	2. Fuel Oil Distri- bution system	750,527	756,679	1,507,206
	3. Mechanical Works	153,640	188,220	341,860
	Sub-Total	1,503,025	1,591,786	3,094,811
<u>Division 3.</u>	<u>Pump House</u>			
Section	1. Concrete Work	24,959	400	25,358
	2. Concrete Masonry	11,688		11,688
	3. Miscellaneous Metal	2,494	500	2,994
	4. Moisture Protection	2,500	9,100	11,600
	5. Doors, Window and Frame	4,359	10,000	14,359
	6. Finishes	12,376		12,376
	7. Plumbing	3,360		3,360
	Sub-Total	61,735	20,000	81,735
	<u>Total</u>	<u>2,899,606</u>	<u>1,996,378</u>	<u>4,895,984</u>
		(59%)	(41%)	(100%)

PART VII ELECTRIC FACILITIES AND POWER SUPPLY

		<u>Local</u>	<u>Foreign</u>	<u>Total</u>
<u>Division 1.</u>	<u>Power Supply System</u>			
Section	1. Power Incomming Facility	60,865	20,000	80,865
	2. Sub Station	479,016	558,000	1,037,016
	3. Power Station	488,800	860,000	1,348,800
	4. Distribution	451,905	192,000	643,905
	Sub-Total	1,480,586	1,630,000	3,110,586
<u>Division 2.</u>	<u>Power Supply and Control System for Pumps</u>	221,445	97,000	318,445
<u>Division 3.</u>	<u>Lighting and Plug Socket System</u>			
Section	1. Terminal Office	159,128	140,000	299,128
	2. Sub Station	13,422	12,000	25,422
	3. Gate House	9,917	8,000	17,917
	4. Pump House	2,659	1,200	3,859
	5. Area Lights	168,080	138,800	306,880
	6. Berth	329,594	204,000	533,594
	Sub-Total	682,800	504,000	1,186,800
<u>Division 4.</u>	<u>Telephone System</u>			
Section	1. Out Door Cabling	61,694	0	61,694
	2. Terminal Office	8,937	0	8,937
	3. Sub Station	134	0	134
	4. Gate House	306	0	306
	5. Pump House	229	0	229
	6. Berth	17,066	19,000	36,066
	Sub-Total	88,366	19,000	107,366

PART VII, (cont'd)

		<u>Local</u>	<u>Foreign</u>	<u>Total</u>
<u>Division 5.</u>	<u>Fire Alarm System</u>			
Section	1. Out Door Cabling	54,238	16,000	70,238
	2. Terminal Office	34,001	28,000	62,001
	3. Sub Station	4,316	3,000	7,316
	4. Gate House	1,626	1,000	2,626
	5. Pump House	1,834	1,100	2,934
	6. Berth	37,354	11,900	49,254
	Sub-Total	133,369	61,000	194,369
<u>Division 6.</u>	<u>Sub Station (Architectural Works)</u>			
Section	1. Piling	383,030		383,030
	2. Earch Work	17,840		17,840
	3. Concrete Work	214,364	13,000	227,364
	4. Concrete Masonry	60,300		60,300
	5. Miscellaneous	5,767	2,000	7,767
	6. Moisture Protection	4,092	39,000	43,092
	7. Door and Windows	13,020	107,000	120,020
	8. Finishes	59,282		59,282
	9. Ventilation	3,600	30,000	33,600
	Sub-Total	761,295	191,000	952,295
	<u>Total</u>	<u>3,385,861</u>	<u>2,484,000</u>	<u>5,869,861</u>
		(58%)	(42%)	(100%)

PART VIII BUILDINGS

		<u>Local</u>	<u>Foreign</u>	<u>Total</u>
<u>Division 1.</u>	<u>Terminal Office</u>			
	<u>Building</u>			
Section	1. Piling	1,049,160		1,049,160
	2. Earth Work	37,309		37,309
	3. Concrete Work	903,952	20,000	923,952
	4. Concrete Masonry	174,192		174,192
	5. Miscellaneous Metal	101,875	38,000	139,875
	6. Carpentry	4,846		4,846
	7. Moisture Protection	13,862	158,000	171,862
	8. Doors, Windows and Frame	87,644	225,000	312,644
	9. Finishes	481,419		481,419
	10. Specialties	12,746		12,746
	11. Plumbing	77,497	74,000	151,497
	12. Air Conditioning and Ventilation	40,307	269,000	309,307
	Sub-Total	2,984,809	784,000	3,768,809

<u>Division 2.</u>	<u>Gate House</u>			
Section	1. Earth Work	3,784		3,784
	2. Concrete Work	71,251		71,251
	3. Concrete Masonry	15,302		15,302
	4. Miscellaneous Metal	3,664	1,000	4,664
	5. Moisture Protection	6,488	14,000	20,488
	6. Doors, Windows and Frame	15,283	18,000	33,283
	7. Finishes	29,750		29,750
	8. Plumbing	7,708		7,708
	9. Air Conditioning	8,280	14,000	22,280
	Sub-Total	161,510	47,000	208,510

PART VIII, (cont'd)

		<u>Local</u>	<u>Foreign</u>	<u>Total</u>
<u>Division 3.</u>	<u>Sewer System</u>			
Section	1. Sewer system	369,397	266,000	635,397
	2. Water service line	6,190	2,000	8,190
	Sub-Total	375,587	268,000	643,587
	<u>Total</u>	<u>3,521,906</u>	<u>1,099,000</u>	<u>4,620,906</u>
		(76%)	(24%)	(100%)

Estimate No. (II)

3.

NAVIGATION CHANNEL DREDGING

DESCRIPTION	LOCAL CURRENCY PAK.RS	FOREIGN CURRENCY IN PAK.RS (US\$)	TOTAL AMOUNT PAK.RS
DIVISION 1 Preliminaries	14,280,100	44,224,000	58,504,100
DIVISION 2 Early Completion Dredging	924,400	4,190,000	5,114,400
DIVISION 3 First Phase Dredging	8,088,900	173,526,000	181,614,900
DIVISION 4 Second Phase Dredging	10,918,600	48,213,000	59,131,600
DIVISION 5 Third Phase Dredging	16,621,000	134,474,000	151,095,000
Total	50,833,000	404,627,000	455,460,000
	(11%)	(89%)	(100%)

NAVIGATION CHANNEL DREDGING

	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
<u>Division 1. Preliminaries</u>			
Section 1. Temporary and Preparatory Works for the Approach Channel	9,972,000	23,128,000	33,100,000
2. Temporary and Preparatory Works for the Inner Channel, the Turning Basin, Berth Area and Land Reclamation Area	4,308,100	21,096,000	25,404,100
Sub-Total	14,280,100	44,224,000	58,504,100
<u>Division 2. Early Completion Dredging</u>	924,400	4,190,000	5,114,000
<u>Division 3. First Phase Dredging</u>	8,088,900	173,526,000	181,614,900
<u>Division 4. Second Phase Dredging</u>	10,918,600	48,213,000	59,131,600
<u>Division 5. Third Phase Dredging</u>	16,621,000	134,474,000	151,095,000
Total	50,833,000	404,627,000	455,460,000

Estimate No. (III)

4. NAVIGATION AIDS

DESCRIPTION	LOCAL CURRENCY PAK.RS	FOREIGN CURRENCY IN PAK.RS (US\$)	TOTAL AMOUNT PAK.RS
Division 1 Lighthouses	5,372,000	4,056,750	9,428,750
Division 2 Lighted Buoy System	3,200,500	7,466,205	10,666,705
Division 3 Port Radio System	444,000	6,177,003	6,621,003
Total	9,016,500	17,699,958	26,716,458
	(34%)	(66%)	(100%)

NAVIGATION AIDS

		<u>Local</u>	<u>Foreign</u>	<u>Total</u>
<u>Divison 1.</u>	<u>Light Houses</u>			
Section 1.	Light House	2,355,000	2,438,000	4,793,000
2.	Leading Lights	1,623,000	836,750	2,549,750
3.	Lighted Beacon	1,394,000	782,000	2,176,000
	Sub-Total	5,372,000	4,056,750	9,428,750
<u>Division 2.</u>	<u>Lighted Buoy</u>			
	<u>System</u>			
Section 1.	Buoy Body	2,638,000	3,345,000	5,983,000
2.	Mooring Equipment	298,000	1,235,805	1,533,805
3.	Lighting Equipment	249,500	2,721,800	2,971,300
4.	Radar Reflector	0	28,600	28,600
5.	Spare Parts	0	100,000	100,000
6.	Assembly of Equipment	15,000	10,000	25,000
7.	Training	0	25,000	25,000
	Sub-Total	3,200,500	7,466,205	10,666,705
<u>Division 3.</u>	<u>Port Radio</u>			
	<u>System</u>			
Section 1.	VHF Radio Communication System	300,000	3,482,614	3,782,614
2.	Decca Sea Fix Equipment	143,000	2,258,529	2,401,529
3.	Radar Transponder Equipment	1,000	92,200	93,200

(cont'd)

		<u>Local</u>	<u>Foreign</u>	<u>Total</u>
Section 4.	Test Gear and Equipment	0	343,660	343,660
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	Sub-Total	444,000	6,177,003	6,621,003
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	Total	9,016,500	17,699,958	26,716,458

