

Table A19.2.1 Rough Cost Estimate on Ben Dinh Sao Mai Master Plan for 80,000DWT

## A. Ben Dinh Sao Mai Container Berth for 80,000DWT 2 Berth

2 Berth (L=700m, B=60m, D=-16m, TOP EL+5.0m)

15,000VND=1USD=120Yen

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Land Reclamation				377,595,500	25,173	3,020,764
	Fill Sand		m3	3,967,200	238,032,000	15,869	1,904,256
	P.B.Vertical Drain	depth=16m	m2	385,000	88,550,000	5,903	708,400
	Surcharge Soil		m3	1,070,300	48,163,500	3,211	385,308
	Temporary Embankment		m2	47,500	2,850,000	190	22,800
2	Dredging				37,630,000	2,509	301,040
	Dredging		m3	752,600	22,578,000	1,505	180,624
	Dumping		m3	752,600	15,052,000	1,003	120,416
3	Pier	2 Berth: L=700m, B=60m			637,337,388	42,489	5,098,699
	Steel Pile SM490	D=900mm, t=16/9mm, L=55(25+30)m	t	26,918	440,102,842	29,340	3,520,823
	Pile Driving		piece	1,833	42,342,300	2,823	338,738
	Slab Concrete		m3	16,800	24,192,000	1,613	193,536
	Re-bar of Slab Concrete		t	2,016	13,537,440	902	108,300
	Beam Concrete		m3	15,302	22,034,880	1,469	176,279
	Re-bar of Beam Concrete		t	918	6,165,176	411	49,321
	Rubber Fender	SUC1000H/RH	piece	142	62,125,000	4,142	497,000
	Protector for Fender	3500mmx1500mm	piece	71	1,775,000	118	14,200
	Bollard	100ton	piece	36	1,692,000	113	13,536
	Pile Top Protection		set	1	10,310,625	687	82,485
	Cathodic Protection		set	1	13,060,125	871	104,481
4	Sheet Pile Revetment	L=700m			87,943,219	5,863	703,546
	Steel Sheet Pile Wall	Type III, L=19m	t	1,995	32,319,000	2,155	258,552
	Sheet Pile Driving		piece	1,750	36,400,000	2,427	291,200
	Anchor Pile	H=300x300 L=14m	t	571	8,335,534	556	66,684
	Anchor Pile Driving		piece	439	8,199,950	547	65,600
	Tie Rod	D=46mm L=15m	piece	439	1,197,105	80	9,577
	Coping Concrete		m3	840	1,209,600	81	9,677
	Re-bar of Coping Concrete		t	42	282,030	19	2,256
5	Rubble Stone Revetment	L=1,800m			7,780,500	519	62,244
	Rubble Stone		m3	22,050	5,512,500	368	44,100
	Geo-textile		m2	25,200	504,000	34	4,032
	Stone Placing/ Finishing		m2	25,200	504,000	34	4,032
	Curb Concrete		m3	900	1,260,000	84	10,080
6	Yard Construction		m2	369,200	190,330,000	12,689	1,522,640
	Container Stack Yard	2 Berth	m2	242,400	145,440,000	9,696	1,163,520
	Reefer Point	2 Berth	set	200	510,000	34	4,080
	Equipment Yard	2 Berth	m2	2,100	735,000	49	5,880
	Truck Waiting Yard	2 Berth	m2	2,100	735,000	49	5,880
	Container Washing Area	2 Berth	m2	400	140,000	9	1,120
	Inner Road & Others Pavement	RTG Runway etc.	m2	122,200	42,770,000	2,851	342,160
7	Buildings		m2	18,700	29,340,000	1,956	234,720
	Administration Building	1 Building with 4 Stories	m2	3,000	5,400,000	360	43,200
	Amenity Block Building	1 Building with 2 Stories	m2	2,400	4,320,000	288	34,560
	CFS	1 Building	m2	7,000	10,500,000	700	84,000
	Maintenance Shop	1 Building	m2	2,500	3,500,000	233	28,000
	Main Gate & Gate House	1 Building	m2	2,100	3,150,000	210	25,200
	Sub Gate & Gate House	1 Building	m2	900	1,350,000	90	10,800
	Power Station	1 Building	m2	400	560,000	37	4,480

A. Ben Dinh Sao Mai Container Berth for 80,000DWT 2 Berth

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
	Fuel Station	1 Building	m2	400	560,000	37	4,480
8	Utilities				43,158,000	2,877	345,264
	Water Supply system	for 2 Berth	L.S	1	7,117,000	474	56,936
	Electric Supply System	for 2 Berth	L.S	1	10,500,000	700	84,000
	Drainage & Sewage System	for 2 Berth	L.S	1	5,911,000	394	47,288
	Fence	for 2 Berth	m	1,950	1,755,000	117	14,040
	Lighting	for 2 Berth	set	11.0	17,875,000	1,192	143,000
9	Equipment		unit	88	1,289,000,000	85,933	10,312,000
	Quay Gantry Crane	for 2 Berth	unit	6	750,000,000	50,000	6,000,000
	RTG	for 2 Berth	unit	24	450,000,000	30,000	3,600,000
	Tractor & Chassis	for 2 Berth	unit	30	45,000,000	3,000	360,000
	Forklift & Others	3ton to 5 ton for 2 Berth	unit	20	9,000,000	600	72,000
	Side Lifter	30.5ton for 2 Berth	unit	4	15,000,000	1,000	120,000
	Reachstacker	30.5ton for 2 Berth	unit	4	20,000,000	1,333	160,000
A	Total				2,700,114,607	180,008	21,600,917

B. Basin of Ben Dinh Sao Mai Container Berth for 80,000DWT 2 Berth 15,000VND=1USD=120Yen

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Basin	L=700m, B=50m	m2	35,000	59,480,000	3,965	475,840
	Dredging	D=-16.0m	m3	1,189,600	35,688,000	2,379	285,504
	Dumping		m3	1,189,600	23,792,000	1,586	190,336
B	Total				59,480,000	3,965	475,840

C. Breakwater for Ben Dinh Sao Mai

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Breakwater	L=100m			37,000,000	2,467	296,000
	Rubble Mound		m	100	32,000,000	2,133	256,000
	Excavation		m3	100,000	5,000,000	333	40,000
C	Total				37,000,000	2,467	296,000

80,000DWT Total					2,796,594,607	186,440	22,372,757
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Table A19.2.2 Rough Cost Estimate on Ben Dinh Master Plan for 50,000DWT

## A. Ben Dinh Sao Mai Container Berth for 50,000DWT 3 Berth

3 Berth(L=900m, B=40m, D=14m, TOPEL=+5.0m)

15,000VND=1USD=120Yen

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Land Reclamation				408,078,000	27,205	3,264,624
	Fill Sand		m3	3,088,800	185,328,000	12,355	1,482,624
	P.B.Vertical Drain	depth=36m	m	405,000	170,100,000	11,340	1,360,800
	Surcharge Soil		m3	1,125,900	50,665,500	3,378	405,324
	Temporary Embankment		m2	33,075	1,984,500	132	15,876
2	Dredging		m3	949,950	47,497,500	3,167	379,980
	Dredging		m3	949,950	28,498,500	1,900	227,988
	Dumping		m3	949,950	18,999,000	1,267	151,992
3	Pier	3 Berth: L=900m, B=40m			463,573,782	30,905	3,708,590
	Steel Pile	D=800mm, t=16/9mm, L=53(23+30)m	t	17,936	293,259,748	19,551	2,346,078
	Pile Driving		piece	1,448	32,110,848	2,141	256,887
	Slab Concrete		m3	14,400	20,736,000	1,382	165,888
	Re-bar of Slab Concrete		t	1,728	11,603,520	774	92,828
	Beam Concrete		m3	13,554	19,517,760	1,301	156,142
	Re-bar of Beam Concrete		t	813	5,460,907	364	43,687
	Rubber Fender	SUC1000H/R0	piece	182	61,425,000	4,095	491,400
	Protector for Fender	3,500mmx1,500mm	piece	91	2,275,000	152	18,200
	Bollard	100ton	piece	46	2,162,000	144	17,296
	Pile Top Protection		set	1	6,878,000	459	55,024
	Cathodic Protection		set	1	8,145,000	543	65,160
4	Sheet Pile Revetment	L=700m			118,563,694	7,904	948,510
	Steel Sheet Pile Wall	Type III, L=19m	t	2,565	41,553,000	2,770	332,424
	Sheet Pile Driving		piece	2,250	46,800,000	3,120	374,400
	Anchor Pile	H=300x300 L=14m	t	734	10,711,684	714	85,693
	Anchor Pile Driving		piece	564	10,537,450	702	84,300
	Tie Rod	D=46mm L=15m	piece	564	7,043,750	470	56,350
	Coping Concrete		m3	1,080	1,555,200	104	12,442
	Re-bar of Coping Concrete		t	54	362,610	24	2,901
5	Rubble Stone Revetment	L=2,250m			9,725,625	648	77,805
	Rubble Stone		m3	27,563	6,890,625	459	55,125
	Geo-textile		m2	31,500	630,000	42	5,040
	Stone Placing/ Finishing		m2	31,500	630,000	42	5,040
	Curb Concrete		m3	1,125	1,575,000	105	12,600
6	Yard Construction		m2	394,250	198,520,000	13,235	1,588,160
	Container Stack Yard	3 Berth	m2	240,600	144,360,000	9,624	1,154,880
	Reefer Point	3 Berth	set	150	382,500	26	3,060
	Equipment Yard	3 Berth	m2	3,150	1,102,500	74	8,820
	Truck Waiting Yard	3 Berth	m2	3,150	1,102,500	74	8,820
	Container Washing Area		m2	600	210,000	14	1,680
	Inner Road & Others Pavement	RTG Runway etc.	m2	146,750	51,362,500	3,424	410,900
7	Buildings		m2	14,850	30,100,000	2,007	240,800
	Administration Building	1 Building with 4 Stories	m2	3,000	5,400,000	360	43,200
	Amenity Block Building	1 Building with 2 Stories	m2	3,600	6,480,000	432	51,840
	CFS	2 Buildings	m2	6,000	9,000,000	600	72,000
	Maintenance Shop	2 Buildings	m2	2,250	3,150,000	210	25,200
	Main Gate & Gate House	1 Building incl. Weigh Brid	m2	1,500	2,250,000	150	18,000
	Sub Gate & Gate House	2 Building incl. Weigh Bri	m2	1,800	2,700,000	180	21,600
	Power Station	1 Building	m2	400	560,000	37	4,480

A. Ben Dinh Sao Mai Container Berth for 50,000DWT 3 Berth

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
	Fuel Station	1 Building	m2	400	560,000	37	4,480
8	Utilities				51,082,000	3,405	408,656
	Water Supply system		L.S	1	9,150,000	610	73,200
	Electric Supply System		L.S	1	13,500,000	900	108,000
	Drainage & Sewage System		L.S	1	7,600,000	507	60,800
	Fence		m	1,480	1,332,000	89	10,656
	Lighting		set	12	19,500,000	1,300	156,000

A. Ben Dinh Sao Mai Container Berth for 50,000DWT 3 Berth

15,000VND=1USD=120Yen

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
9	Equipment			110	1,527,600,000	101,840	12,220,800
	Quay Gantry Crane	for 3 Berth	unit	9	900,000,000	60,000	7,200,000
	RTG	for 3 Berth	unit	27	506,250,000	33,750	4,050,000
	Tractor & Chassis	for 3 Berth	unit	39	58,500,000	3,900	468,000
	Forklift & Others	3ton to 5 ton for 3 Berth	unit	23	10,350,000	690	82,800
	Side Lifter	30.5ton for 3 Berth	unit	6	22,500,000	1,500	180,000
	Reachstacker	30.5ton for 3 Berth	unit	6	30,000,000	2,000	240,000
A	Total				2,854,740,601	190,316	22,837,925

B. Basin of Ben Dinh Sao Mai Container Berth for 50,000DWT 3 Berth

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Basin	L=900m, B=50m	m2	45,000	93,821,000	6,255	750,568
	Dredging	D=-14.0m	m3	1,443,400	43,302,000	2,887	346,416
	Dumping		m3	1,443,400	50,519,000	3,368	404,152
B	Total				93,821,000	6,255	750,568

	<b>50,000DWT Total</b>				<b>2,948,561,601</b>	<b>196,571</b>	<b>23,588,493</b>
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C. Access Road for Ben Dinh Sao Mai

(L=3,000m W=20)

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Access Road	(L=3,000m W=20)			104,781,250	6,985	838,250
	Sand Fill		m3	585,000	35,100,000	2,340	280,800
	Soil Improvement	Vertical Drain(Depth=16m)	m2	90,000	20,700,000	1,380	165,600
	Road Pavement	W=16m	m2	48,000	19,200,000	1,280	153,600
	Pedestrian Road Pavement	W=2m× 2	m2	12,000	2,400,000	160	19,200
	Drainage	Drainage	m	6,000	10,500,000	700	84,000
	Lighting	Lighting	set	1	1,881,250	125	15,050
	Bridge	(L=100m, W=20m)	set	1	15,000,000	1,000	120,000
C	Total				104,781,250	6,985	838,250

D. Channel for Ben Dinh Sao Mai

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Channel (BDSM-Ganh Rai)	L=5,840m, B=350m	m2	2,044,000	1,400,470,200	93,365	11,203,762
	Dredging	D=-16.0m	m3	46,682,340	466,823,400	31,122	3,734,587
	Dumping		m3	46,682,340	933,646,800	62,243	7,469,174
2	Channel (S50-Ganh Rai)	L=10,510m, B=350m	m2	3,678,500	131,470,000	8,765	1,051,760
	Dredging	D=-16.0m	m3	5,258,800	52,588,000	3,506	420,704
	Dumping		m3	5,258,800	78,882,000	5,259	631,056
D	Total		m3	51,941,140	1,531,940,200	102,129	12,255,522
<b>Grand Total</b>					<b>7,381,877,658</b>	<b>492,125</b>	<b>59,055,021</b>

Table A19.2.3 Rough Cost Estimate on Cai Mep Master Plan for 80,000DWT

## A. Cai Mep Container Berth for 80,000DWT 2 Berth

2 Berth (L=700m, B=60m, D=-16m, TOPEL=+5.0m)

15,000VND=1USD=120Yen

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Land Reclamation				351,382,500	23,426	2,811,060
	Fill Sand		m3	2,319,900	139,194,000	9,280	1,113,552
	P.B.Vertical Drain	depth=36m	m2	385,000	161,700,000	10,780	1,293,600
	Surcharge Soil		m3	1,070,300	48,163,500	3,211	385,308
	Temporary Embankment		m2	38,750	2,325,000	155	18,600
2	Dredging				36,699,000	2,447	293,592
	Dredging		m3	564,600	16,938,000	1,129	135,504
	Dumping		m3	564,600	19,761,000	1,317	158,088
3	Pier	2 Berth: L=700m, B=60m			580,212,226	38,681	4,641,698
	Steel Pipe Pile SM490	D=1000mm, t=16/9mm, L=53(23+30)m	t	4,378	71,576,507	4,772	572,612
	Pile Driving		piece	282	6,514,200	434	52,114
	Steel Pile	D=900mm, t=16/9mm, L=53(23+30)m	t	21,663	297,863,734	19,858	2,382,910
	Pile Driving	piece	piece	1,551	35,828,100	2,389	286,625
	Slab Concrete		m3	16,800	24,192,000	1,613	193,536
	Re-bar of Slab Concrete		t	4,032	27,074,880	1,805	216,599
	Beam Concrete		m3	15,302	22,034,880	1,469	176,279
	Re-bar of Beam Concrete		t	918	6,165,176	411	49,321
	Rubber Fender	SUC1000H/RH	piece	142	62,125,000	4,142	497,000
	Protector for Fender	3500mmx1500mm	piece	71	1,775,000	118	14,200
	Bollard	100ton	piece	36	1,692,000	113	13,536
	Pile Top Protection		set	1	10,310,625	687	82,485
	Cathodic Protection		set	1	13,060,125	871	104,481
4	Trestle	30m x 90m x 4			44,315,836	2,954	354,527
	Steel Pipe Pile SM490	D=800mm, t=16/9mm, L=53(23+30)m	t	1,387	22,683,074	1,512	181,465
	Pile Driving		piece	112	2,587,200	172	20,698
	Slab Concrete		m3	3,780	5,443,200	363	43,546
	Re-bar for Slab		t	454	3,045,924	203	24,367
	Concrete Beam		m3	4,838	6,967,296	464	55,738
	Re-bar for Beam		t	290	1,949,391	130	15,595
	Pile Top Protection		set	1	532,000	35	4,256
	Cathodic Protection		set	1	714,000	48	5,712
	Hand Rail		m	630	393,750	26	3,150
5	Retaining Wall Revetment	L=700m			5,853,302	390	46,826
	Concrete		m3	1,785	2,570,400	171	20,563
	Re-bar		t	143	958,902	64	7,671
	Rubble Stone		m3	8,400	2,100,000	140	16,800
	Geo-textile		m2	7,000	140,000	9	1,120
	Stone Placing/ Finishing		m2	4,200	84,000	6	672
6	Rubble Stone Revetment				7,780,500	519	62,244
	Rubble Stone	L=1800m	m3	22,050	5,512,500	368	44,100
	Geo-textile		m2	25,200	504,000	34	4,032
	Stone Placing/ Finishing		m2	25,200	504,000	34	4,032
	Curb Concrete		m3	900	1,260,000	84	10,080
7	Yard Construction		m2	369,200	190,330,000	12,689	1,522,640
	Container Stack Yard	2 Berth	m2	242,400	145,440,000	9,696	1,163,520
	Reefer Point	2 Berth	set	200	510,000	34	4,080
	Equipment Yard	2 Berth	m2	2,100	735,000	49	5,880

## A. Cai Mep Container Berth for 80,000DWT 2 Berth

15,000VND=1USD=120Yen

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
	Truck Waiting Yard	2 Berth	m2	2,100	735,000	49	5,880
	Container Washing Area		m2	400	140,000	9	1,120
	Inner Road & Others Pavement	RTG Runway etc.	m2	122,200	42,770,000	2,851	342,160
8	Buildings		m2	18,700	29,340,000	1,956	234,720
	Administration Building	1 Building with 4 Stories	m2	3,000	5,400,000	360	43,200
	Amenity Block Building	1 Building with 2 Stories	m2	2,400	4,320,000	288	34,560
	CFS	1 Building	m2	7,000	10,500,000	700	84,000
	Maintenance Shop	1 Building	m2	2,500	3,500,000	233	28,000
	Main Gate & Gate House	1 Building	m2	2,100	3,150,000	210	25,200
	Sub Gate & Gate House	1 Building	m2	900	1,350,000	90	10,800
	Power Station	1 Building	m2	400	560,000	37	4,480
	Fuel Station	1 Building	m2	400	560,000	37	4,480
9	Utilities				43,158,000	2,877	345,264
	Water Supply system	for 2 Berth	L.S	1	7,117,000	474	56,936
	Electric Supply System	for 2 Berth	L.S	1	10,500,000	700	84,000
	Drainage & Sewage System	for 2 Berth	L.S	1	5,911,000	394	47,288
	Fence	for 2 Berth	m	1,950	1,755,000	117	14,040
	Lighting	for 2 Berth	set	11.0	17,875,000	1,192	143,000
10	Equipment			88	1,289,000,000	85,933	10,312,000
	Quay Gantry Crane	for 2 Berth	unit	6	750,000,000	50,000	6,000,000
	RTG	for 2 Berth	unit	24	450,000,000	30,000	3,600,000
	Tractor & Chassis	for 2 Berth	unit	30	45,000,000	3,000	360,000
	Forklift & Others	3ton to 5 ton for 2 Berth	unit	20	9,000,000	600	72,000
	Side Lifter	30.5ton for 2 Berth	unit	4	15,000,000	1,000	120,000
	Reachstacker	30.5ton for 2 Berth	unit	4	20,000,000	1,333	160,000
A	Total				2,578,071,364	171,871	20,624,571

## B. Basin of Cai Mep Container Berth for 80,000DWT 2 Berth

15,000VND=1USD=120Yen

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Basin	L=700m B=50m	m2	35,000	0	0	0
	Dredging	D=-16.0m	m3	0	0	0	0
	Dumping		m3	0	0	0	0
B	Total			0	0	0	0

80,000DWT Total					2,578,071,364	171,871	20,624,571
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Table A19.2.4 Rough Cost Estimate on Cai Mep Master Plan for 50,000DWT

## A. Cai Mep Container Berth for 50,000DWT 3 Berth

3 Berth (L=900m, B=40m, D=14m, TOPEL=+5.0m)

15,000VND=1USD=120Yen

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Land Reclamation				372,591,000	24,839	2,980,728
	Fill Sand		m3	2,481,600	148,896,000	9,926	1,191,168
	P.B.Vertical Drain	depth=36m	m	405,000	170,100,000	11,340	1,360,800
	Surcharge Soil		m3	1,125,900	50,665,500	3,378	405,324
	Temporary Embankment		m2	48,825	2,929,500	195	23,436
2	Dredging				29,672,500	1,978	237,380
	Dredging		m3	456,500	13,695,000	913	109,560
	Dumping		m3	456,500	15,977,500	1,065	127,820
3	Pier	3 Berth: L=900m, B=40m			512,367,382	34,158	4,098,939
	Steel Pipe Pile	D=1000mm, t=16/9mm, L=53(23+30)m	t	5,620	91,881,899	6,125	735,055
	Pile Driving	Pile Driving	piece	362	8,027,712	535	64,222
	Steel Pipe Pile	D=900mm, t=16/9mm, L=53(23+30)m	t	15,168	247,999,449	16,533	1,983,996
	Pile Driving	Pile Driving	piece	1,086	24,083,136	1,606	192,665
	Slab Concrete		m3	14,400	20,736,000	1,382	165,888
	Re-bar of Slab Concrete		t	1,728	11,603,520	774	92,828
	Beam Concrete		m3	13,554	19,517,760	1,301	156,142
	Re-bar of Beam Concrete		t	813	5,460,907	364	43,687
	Rubber Fender	SUC1000H/R0	piece	182	61,425,000	4,095	491,400
	Protector for Fender	3,500mmx1,500mm	piece	91	2,275,000	152	18,200
	Bollard	100ton	piece	46	2,162,000	144	17,296
	Pile Top Protection		set	1	8,145,000	543	65,160
	Cathodic Protection		set	1	9,050,000	603	72,400
4	Trestle	20m x 90m x 6			48,026,069	3,202	384,209
	Steel Pipe Pile SM490	D=800mm, t=16/9mm, L=53(23+30)m	t	1,561	25,518,459	1,701	204,148
	Pile Driving	Pile Driving	piece	126	2,794,176	186	22,353
	Slab Concrete		m3	3,780	5,443,200	363	43,546
	Re-bar for Slab		t	454	3,045,924	203	24,367
	Concrete Beam		m3	5,076	7,309,440	487	58,476
	Re-bar for Beam		t	305	2,045,120	136	16,361
	Pile Top Protection		set	1	598,500	40	4,788
	Cathodic Protection		set	1	708,750	47	5,670
	Hand Rail		m	900	562,500	38	4,500
5	Retaining Wall Revetment	L=900m			7,525,674	502	60,205
	Concrete		m3	2,295	3,304,800	220	26,438
	Re-bar		t	184	1,232,874	82	9,863
	Rubble Stone		m3	10,800	2,700,000	180	21,600
	Geo-textile		m2	9,000	180,000	12	1,440
	Stone Placing/ Finishing		m2	5,400	108,000	7	864
6	Rubble Stone Revetment	L=2,250m			9,725,625	648	77,805
	Rubble Stone		m3	27,563	6,890,625	459	55,125
	Geo-textile		m2	31,500	630,000	42	5,040
	Stone Placing/ Finishing		m2	31,500	630,000	42	5,040
	Curb Concrete		m3	1,125	1,575,000	105	12,600
7	Yard Construction		m2	394,250	198,520,000	13,235	1,588,160
	Container Stack Yard	3 Berth	m2	240,600	144,360,000	9,624	1,154,880
	Reefer Point	3 Berth	set	150	382,500	26	3,060
	Equipment Yard	3 Berth	m2	3,150	1,102,500	74	8,820

A. Cai Mep Container Berth for 50,000DWT 3 Berth

15,000VND=1USD=120Yen

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
	Truck Waiting Yard	3 Berth	m2	3,150	1,102,500	74	8,820
	Container Washing Area		m2	600	210,000	14	1,680
	Inner Road & Others Pavement	RTG Runway etc.	m2	146,750	51,362,500	3,424	410,900
8	Buildings		m2	14,850	30,100,000	2,007	240,800
	Administration Building	1 Building with 4 Stories	m2	3,000	5,400,000	360	43,200
	Amenity Block Building	1 Building with 2 Stories	m2	3,600	6,480,000	432	51,840
	CFS	2 Buildings	m2	6,000	9,000,000	600	72,000
	Maintenance Shop	2 Buildings	m2	2,250	3,150,000	210	25,200
	Main Gate & Gate House	1 Building incl. Weigh Bridge	m2	1,500	2,250,000	150	18,000
	Sub Gate & Gate House	2 Building incl. Weigh Bridge	m2	1,800	2,700,000	180	21,600
	Power Station	1 Building	m2	400	560,000	37	4,480
	Fuel Station	1 Building	m2	400	560,000	37	4,480
9	Utilities				51,082,000	3,405	408,656
	Water Supply system	for 3 Berth	L.S	1	9,150,000	610	73,200
	Electric Supply System	for 3 Berth	L.S	1	13,500,000	900	108,000
	Drainage & Sewage System	for 3 Berth	L.S	1	7,600,000	507	60,800
	Fence	for 3 Berth	m	1,480	1,332,000	89	10,656
	Lighting	for 3 Berth	set	12	19,500,000	1,300	156,000
10	Equipment			110	1,527,600,000	101,840	12,220,800
	Quay Gantry Crane	for 3 Berth	unit	9	900,000,000	60,000	7,200,000
	RTG	for 3 Berth	unit	27	506,250,000	33,750	4,050,000
	Tractor & Chassis	for 3 Berth	unit	39	58,500,000	3,900	468,000
	Forklift & Others	3ton to 5 ton for 3 Berth	unit	23	10,350,000	690	82,800
	Side Lifter	30.5ton for 3 Berth	unit	6	22,500,000	1,500	180,000
	Reachstacker	30.5ton for 3 Berth	unit	6	30,000,000	2,000	240,000
A	Total				2,787,210,250	185,814	22,297,682

B. Basin of Cai Mep Container Berth for 50,000DWT 3 Berth

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Basin	L=900m B=50m	m2	45,000	8,313,500	554	66,508
	Dredging	D=-14.0m	m3	127,900	3,837,000	256	30,696
	Dumping		m3	127,900	4,476,500	298	35,812
B	Total				8,313,500	554	66,508

<b>50,000DWT Total</b>					<b>2,795,523,750</b>	<b>186,368</b>	<b>22,364,190</b>
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C. Access Road for Cai Mep (L=3,000m W=20)

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Access Road	L=3,000m W=20			100,931,247	6,729	807,450
	Sand Fill		m3	495,000	29,700,000	1,980	237,600
	Soil Improvement	Vertical Drain (Depth=16m)	m2	90,000	20,700,000	1,380	165,600
	Road Pavement	W=16m	m2	48,000	19,200,000	1,280	153,600
	Pedestrian Road Pavement	W=2m× 2	m2	12,000	2,400,000	160	19,200
	Drainage	Drainage	m	6,000	10,500,000	700	84,000

C. Access Road for Cai Mep (L=3,000m W=20)

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
	Lighting	Lighting	set	1	1,881,250	125	15,050
	Culvert	2.0m×1.8m L=30m	set	10	1,549,997	103	12,400
	Bridge	L=100m, W=20m	set	1	15,000,000	1,000	120,000
C	Total				100,931,247	6,729	807,450

D. Channel for Cai Mep Cai Mep-Ganh Rai

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Channel (Cai Mep--S43)	L=13,270m B=350m	m2	4,644,500	1,398,009,500	93,201	11,184,076
	Dredging	D=-16.0m	m3	27,960,190	279,601,900	18,640	2,236,815
	Dumping		m3	27,960,190	1,118,407,600	74,561	8,947,261
2	Channel (Cai MepS43-Ganh Rai)	L=10,510m B=350m	m2	3,678,500	131,470,000	8,765	1,051,760
	Dredging	D=-16.0m	m3	5,258,800	52,588,000	3,506	420,704
	Dumping		m3	5,258,800	78,882,000	5,259	631,056
D	Total		m3	33,218,990	1,529,479,500	101,965	12,235,836

	<b>Grand Total</b>				<b>7,004,005,861</b>	<b>466,934</b>	<b>56,032,047</b>
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Table A19.2.5 Rough Cost Estimate on Thi Vai Master Plan for General Cargo Berth (50,000DWT)

A.. Thi Vai General Cargo Berth for 50,000DWT 2 Berth

2 Berth(L=600m, B=40m, D=-14.0m,TOP EL=+5.0m)

15,000VND=1USD=120Yen

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Land Reclamation				242,695,200	16,180	1,941,562
	Fill Sand		m3	1,788,800	107,328,000	7,155	858,624
	P.B.Vertical Drain	depth=35m	m2	246,000	103,320,000	6,888	826,560
	Surcharge Soil		m3	683,880	30,774,600	2,052	246,197
	Temporary Embankment		m2	21,210	1,272,600	85	10,181
2	Dredging				0	0	0
	Dredging		m3		0	0	0
	Dumping		m3		0	0	0
3	Pier	2 Berth: L=600m, B=40m			354,842,551	23,656	2,838,740
	Steel Pile SM490	D=1000mm, t=16/9mm, L=55m	t	3,945	64,494,210	4,300	515,954
	Pile Driving		piece	242	5,590,200	373	44,722
	Steel Pile SM490	D=900mm, t=16/9mm, L=55m	t	10,647	174,075,017	11,605	1,392,600
	Pile Driving		piece	726	16,770,600	1,118	134,165
	Slab Concrete		m3	9,600	13,824,000	922	110,592
	Re-bar of Slab Concrete		t	1,152	7,735,680	516	61,885
	Beam Concrete		m3	9,036	13,011,840	867	104,095
	Re-bar of Beam Concrete		t	542	3,640,604	243	29,125
	Rubber Fender	SUC1000H/R0	piece	122	41,175,000	2,745	329,400
	Protector for Fender	3500mmx1500mm	piece	61	1,525,000	102	12,200
	Bollard	100ton	piece	31	1,457,000	97	11,656
	Pile Top Protection		set	1	5,445,000	363	43,560
	Cathodic Protection		set	1	6,098,400	407	48,787
4	Retaining Wall Revetment	Retaining Wall (L=600m)			5,017,116	334	40,137
	Concrete		m3	1,530	2,203,200	147	17,626
	Re-bar		t	122	821,916	55	6,575
	Rubble Stone		m3	7,200	1,800,000	120	14,400
	Geo-textile		m2	6,000	120,000	8	960
	Stone Placing/ Finishing		m2	3,600	72,000	5	576
5	Rubble Stone Revetment	L=1,440m	m3		6,375,800	425	51,006
	Rubble Stone		m3	17,395	4,970,000	331	39,760
	Geo-textile		m2	19,880	397,600	27	3,181
	Stone Placing/ Finishing		m2	19,880	14,200	1	114
	Curb Concrete		m3	710	994,000	66	7,952
6	Yard Construction		m2	223,400	106,990,000	7,133	855,920
	Open Yard	2 Berth	m2	115,200	69,120,000	4,608	552,960
	Equipment Yard	2 Berth	m2	2,800	980,000	65	7,840
	Truck Waiting Yard	2 Berth	m2	4,600	1,610,000	107	12,880
	Inner Road & Others Pavement	2 Berth	m2	100,800	35,280,000	2,352	282,240
7	Buildings		m2	26,000	39,000,000	2,600	312,000
	Warehouse	2 Buildings	m2	8,000	11,200,000	747	89,600
	Transit Shed	2 Buildings	m2	8,000	11,200,000	747	89,600
	Administration Building	1 Building with 2 Stories	m2	3,600	6,480,000	432	51,840
	Amenity Block Building	1 Building with 2 Stories	m2	2,400	4,320,000	288	34,560
	Maintenance Shop	1 Building	m2	1,200	1,680,000	112	13,440
	Main Gate & Gate House	1 Building	m2	1,250	1,875,000	125	15,000
	Sub Gate & Gate House		m2	750	1,125,000	75	9,000
	Power Station		m2	400	560,000	37	4,480
	Fuel Station		m2	400	560,000	37	4,480

A. Thi Vai General Cargo Berth for 50,000DWT 2 Berth

15,000VND=1USD=120Yen

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
8	Utilities				33,226,000	2,215	265,808
	Water Supply system		L.S	1	5,229,000	349	41,832
	Electric Supply System	for 2 Berth	L.S	1	7,715,000	514	61,720
	Drainage & Sewage System	for 2 Berth	L.S	1	4,343,000	290	34,744
	Fence	for 2 Berth	m	1,460	1,314,000	88	10,512
	Lighting	for 2 Berth	set	9.0	14,625,000	975	117,000
9	Equipment	for 2 Berth			418,250,000	27,883	3,346,000
	Quayside Jib Crane	10ton to 30ton	unit	6	300,000,000	20,000	2,400,000
	Forklift	3ton to 15 ton for 2 Berth	unit	50	22,500,000	1,500	180,000
	Low Flat Bed Chassis	40ft Container for 2 Berth	unit	40	18,000,000	1,200	144,000
	Tractor Head	340HP for 2 Berth	unit	30	31,500,000	2,100	252,000
	Top Lifter	30.5ton for 2Berth	unit	2	10,000,000	667	80,000
	Side Lifter	30.5ton for 2Berth	unit	2	7,500,000	500	60,000
	Reachstacker	35~40ton for 2 Berth	unit	2	10,000,000	667	80,000
	Mobile Crane	150ton to 200ton for 2 Berth	unit	1	18,750,000	1,250	150,000
A	Total				1,206,396,667	80,426	9,651,173

B. Basin of Thi Vai General Cargo Berth for 50,000DWT 2 Berth

15,000VND=1USD=120Yen

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
B	Basin	L=600m, B=50m	m2	30,000	0	0	0
1	Dredging	D=-14.0m	m3	0	0	0	0
2	Dumping		m3	0	0	0	0
B	Total			0	0	0	0

<b>50,000DWT Total</b>					<b>1,206,396,667</b>	<b>80,426</b>	<b>9,651,173</b>
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Table A19.2.6 Rough Cost Estimate on Thi Vai Master Plan for General Cargo Berth (30,000DWT)

## A. Thi Vai General Cargo Berth for 30,000DWT 2 Berth

2 Berth (L=500m, B=30m, D=-12m, TOP EL.=+5.0m)

15,000VND=1USD=120Yen

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Land Reclamation				131,342,700	8,756	1,050,742
	Fill Sand		m3	946,400	56,784,000	3,786	454,272
	P.B.Vertical Drain	depth=35m	m	135,000	56,700,000	3,780	453,600
	Surcharge Soil		m3	375,300	16,888,500	1,126	135,108
	Temporary Embankment		m2	16,170	970,200	65	7,762
2	Dredging				734,500	49	5,876
	Dredging		m3	11,300	339,000	23	2,712
	Dumping		m3	11,300	395,500	26	3,164
3	Pier	2 Berth: L=500m, B=40m			231,762,286	15,451	1,854,098
	Steel Pile SM490	D=1000mm, t=16/9mm, L=55m	t	3,293	53,834,010	3,589	430,672
	Pile Driving		piece	202	4,666,200	311	37,330
	Steel Pile SM490	D=900mm, t=16/9mm, L=55m	t	5,925	96,868,191	6,458	774,946
	Pile Driving		piece	404	9,332,400	622	74,659
	Slab Concrete		m3	6,000	8,640,000	576	69,120
	Re-bar of Slab Concrete		t	720	4,834,800	322	38,678
	Beam Concrete		m3	5,950	8,568,000	571	68,544
	Re-bar of Beam Concrete		t	357	2,397,255	160	19,178
	Rubber Fender	SUC1000H/R0	piece	102	34,425,000	2,295	275,400
	Protector for Fender	3,000mmx1,500mm	piece	51	1,275,000	85	10,200
	Bollard	100ton	piece	26	1,222,000	81	9,776
	Pile Top Protection		set	1	3,408,750	227	27,270
	Cathodic Protection		set	1	2,290,680	153	18,325
4	Retaining Wall Revetment	Retaining Wall (L=600m)			4,180,930	279	33,447
	Concrete		m3	1,275	1,836,000	122	14,688
	Re-bar		t	102	684,930	46	5,479
	Rubble Stone		m3	6,000	1,500,000	100	12,000
	Geo-textile		m2	5,000	100,000	7	800
	Stone Placing/ Finishing		m2	3,000	60,000	4	480
5	Rubble Stone Revetment	L=1,040m			4,495,400	300	35,963
	Rubble Stone		m3	12,740	3,185,000	212	25,480
	Geo-textile		m2	14,560	291,200	19	2,330
	Stone Placing/ Finishing		m2	14,560	291,200	19	2,330
	Curb Concrete		m3	520	728,000	49	5,824
6	Yard Construction		m2	120,800	55,780,000	3,719	446,240
	Open Yard	2 Berth	m2	54,000	32,400,000	2,160	259,200
	Equipment Yard	2 Berth	m2	2,940	1,029,000	69	8,232
	Truck Waiting Yard	2 Berth	m2	3,200	1,120,000	75	8,960
	Inner Road & Others Pavement	2 Berth	m2	60,660	21,231,000	1,415	169,848
7	Buildings		m2	16,200	29,990,000	1,999	239,920
	Warehouse	2 Buildings.	m2	6,400	8,960,000	597	71,680
	Transit Shed	2 Buildings.	m2	6,400	8,960,000	597	71,680
	Administration Building	1 Building with 2 Stories	m2	1,600	2,880,000	192	23,040
	Amenity Block Building	1 Building with 2 Stories	m2	1,800	3,240,000	216	25,920
	Maintenance Shop	1Building	m2	1,200	1,680,000	112	13,440
	Main Gate & Gate House	1Building incl. Weigh Bridge	m2	1,200	1,800,000	120	14,400
	Sub Gate & Gate House	1Building incl. Weigh Bridge	m2	900	1,350,000	90	10,800
	Power Station	1Building	m2	400	560,000	37	4,480
	Fuel Station	1Building	m2	400	560,000	37	4,480

A. Thi Vai General Cargo Berth for 30,000DWT 2 Berth

15,000VND=1USD=120Yen

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
8	Utilities				28,900,001	1,927	231,200
	Water Supply system	for 2 Berth	L.S	1	5,083,000	339	40,664
	Electric Supply System	for 2 Berth	L.S	1	7,500,000	500	60,000
	Drainage & Sewage System	for 2 Berth	L.S	1	4,222,000	281	33,776
	Fence	for 2 Berth	m	800	720,000	48	5,760
	Lighting	for 2 Berth	set	7	11,375,000	758	91,000
9	Equipment				380,000,000	25,333	3,040,000
	Quayside Jib Crane	10ton to 30ton for 2 berth	unit	6	300,000,000	20,000	2,400,000
	Forklift	3ton to 15 ton for 2 berth	unit	40	18,000,000	1,200	144,000
	Low Flat Bed Chassis	40ft Container for 2 Berth	unit	30	13,500,000	900	108,000
	Tractor Head	340HP for 2 Berth	unit	20	21,000,000	1,400	168,000
	Top Lifter	30.5ton for 2 Beth	unit	2	10,000,000	667	80,000
	Side Lifter	30.5ton for 2 Beth	unit	2	7,500,000	500	60,000
	Reachstacker	35~40ton for2 Berth	unit	2	10,000,000	667	80,000
A	Total				867,185,817	57,812	6,937,487

B. Basin of Thi Vai General Cargo Berth for 30,000DWT 2 Berth

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Basin	L=600m B=50m	m2	30,000	0	0	0
	Dredging	D=-14.0m	m3	0	0	0	0
	Dumping		m3	0	0	0	0
B	Total			0	0	0	0

	30,000DWT Total				867,185,817	57,812	6,937,487
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C Access Road for Thi Vai L=2000m

1	Access Road	L=2,000m W=20			60,612,250	4,041	484,898
	Fill Sand			390,000	23,400,000	1,560	187,200
	Soil Improvement	Vertical Drain (Depth=16m)	m2	60,000	13,800,000	920	110,400
	Road Pavement	W=16m	m2	32,000	12,800,000	853	102,400
	Pedestrian Road Pavement	W=2m×2	m2	8,000	1,600,000	107	12,800
	Drainage	Drainage	m	4,000	7,000,000	467	56,000
	Lighting	Lighting	set	1	1,256,250	84	10,050
	Culvert	2.0m×1.8m L=30m	set	7	756,000	50	6,048
C	Total				60,612,250	4,041	484,898

D. Channel for Thi Vai Cai Mep-Thi Vai

No.	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Channel	L=12,000m B=310m	m2	3,720,000	669,915,000	44,661	5,359,320
	Dredging	D=-14.0m	m3	13,398,300	133,983,000	8,932	1,071,864
	Dumping		m3	13,398,300	535,932,000	35,729	4,287,456
D	Total		m3	13,398,300	669,915,000	44,661	5,359,320

	Grand Total	50,000DWT,30,000DWT			2,804,109,734	186,941	22,432,878
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Table A28.2.1 Cost Estimate on F/S for Lower Cai Mep International Container Terminal (LCC3&LCC4)  
A. LCC3&LCC4 for 50,000 DWT 2 Berth  
2 Berth (L=600m, B=50m, D=14m, TOPEL=+5.0m)

15,000 VND=1 USD=120 Yen

No	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000 VND	1,000 USD	1,000 Yen
1	Land Reclamation	S=390,000m <sup>2</sup>			309,693,000	20,646	2,477,544
	Fill Sand		m <sup>3</sup>	2,077,000	112,158,000	7,477	897,264
	P.B. Vertical Drain	depth=36m	m <sup>2</sup>	390,000	163,800,000	10,920	1,310,400
	Surcharge Soil		m <sup>3</sup>	1,521,000	30,420,000	2,028	243,360
	Temporary Embankment		m <sup>2</sup>	30,000	3,315,000	221	26,520
2	Dredging	Inside Quay Line		0	0	0	0
	Dredging		m <sup>3</sup>	0	0	0	0
	Dumping		m <sup>3</sup>	0	0	0	0
3	Pier	2 Berth: L=600m, B=50m			302,369,382	20,158	2,418,955
	Steel Pipe Pile SM490	D=800mm, t=16/9mm, L=50(20+30)m	t	2,149	33,375,000	2,225	267,000
	Pile Driving	Vertical	piece	168	4,410,000	294	35,280
	Steel Pipe Pile	D=800mm, t=16/9mm, L=51.7(21.7+30)m	t	1,675	26,023,430	1,735	208,187
	Pile Driving	Raking	piece	128	3,680,000	245	29,440
	Steel Pipe Pile SM490	D=700mm, t=12/9mm, L=50(20+30)m	t	8,299	128,899,900	8,593	1,031,199
	Pile Driving	Vertical	piece	904	23,730,000	1,582	189,840
	Slab Concrete		m <sup>3</sup>	15,150	16,665,000	1,111	133,320
	Re-bar of Slab Concrete		t	1,483	8,604,230	574	68,834
	Beam & Other Concrete		m <sup>3</sup>	5,254	5,779,422	385	46,235
	Re-bar of Beam Concrete		t	315	1,828,399	122	14,627
	Rubber Fender	SUC1000H/R0	piece	112	34,020,000	2,268	272,160
	Protector for Fender	3,500mmx1,500mm	piece	56	1,400,000	93	11,200
	Bollard	100ton	piece	32	1,504,000	100	12,032
	Pile Top Protection		set	1,200	5,700,000	380	45,600
	Cathodic Protection		set	1	6,750,000	450	54,000
4	Trestle	20m x 90m x 4			26,690,612	1,779	213,525
	Steel Pipe Pile SM490	D=700mm, t=12/9mm, L=50(20+30)m	t	1,028	15,969,895	1,065	127,759
	Pile Driving	Vertical	piece	112	2,940,000	196	23,520
	Slab Concrete		m <sup>3</sup>	2,880	3,168,000	211	25,344
	Re-bar for Slab		t	259	1,503,360	100	12,027
	Concrete Beam		m <sup>3</sup>	990	1,089,527	73	8,716
	Re-bar for Beam		t	61	351,580	23	2,813
	Pile Top Protection		set	1	532,000	35	4,256
	Cathodic Protection		set	1	630,000	42	5,040
	Hand Rail		m	900	506,250	34	4,050
5	Retaining Wall Revetment	L=600m			4,735,190	316	37,882
	Concrete		m <sup>3</sup>	1,545	1,699,830	113	13,599
	Re-bar		t	126	731,360	49	5,851
	Rubble Stone		m <sup>3</sup>	9,360	2,106,000	140	16,848
	Geo-textile		m <sup>2</sup>	6,300	126,000	8	1,008
	Stone Placing/ Finishing		m <sup>2</sup>	3,600	72,000	5	576
6	Rubble Stone Revetment	L=1,900m			8,980,588	599	71,845
	Rubble Stone		m <sup>3</sup>	30,258	6,807,938	454	54,464
	Geo-textile		m <sup>2</sup>	27,930	558,600	37	4,469
	Stone Placing/ Finishing		m <sup>2</sup>	27,930	558,600	37	4,469
	Curb Concrete		m <sup>3</sup>	960	1,055,450	70	8,444

## A. LCC3&amp;LCC4 for 50,000DWT 2 Berth

15,000VND=1USD=120Yen

No	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
7	Yard Construction	2 Berth	m2	428,690	115,085,770	7,672	920,686
	Container Stack Yard	Concrete& Block Pavement	m2	117,200	23,674,000	1,578	189,392
	RTG Runway	PC Concrete Slab, B=1.5m	m2	52,760	24,797,200	1,653	198,378
	Reefer Point	Concrete & Block Pavement	set	400	918,000	61	7,344
	Equipment Yard	Concrete & Block Pavement	m2	2,800	476,000	32	3,808
	Truck Waiting Yard	Concrete & Block Pavement	m2	2,000	340,000	23	2,720
	Container Washing Area	Concrete	m2	300	108,000	7	864
	Inner Road Pavement		m2	150,000	53,250,000	3,550	426,000
	Others Pavement	Concrete& Block Pavement	m2	51,540	8,761,800	584	70,094
	Future Yard Space	Gravel	m2	52,090	2,760,770	184	22,086
8	Buildings		m2	20,300	33,035,000	2,202	264,280
	Admi. & Amenity Block	1 Building with 4 Stories	m2	9,400	16,920,000	1,128	135,360
	CFS	1 Building	m2	6,000	9,000,000	600	72,000
	Maintenance Shop	1 Building	m2	1,750	2,450,000	163	19,600
	Main Gate & Gate House	1 Building with weigh bridge	m2	1,500	2,250,000	150	18,000
	Sub Gate & Gate House	1 Building with weigh bridge	m2	1,050	1,575,000	105	12,600
	Power Station	1 Building	m2	300	420,000	28	3,360
	Fuel Station	1 Building	m2	300	420,000	28	3,360
9	Utilities				22,468,000	1,498	179,744
	Water Supply system	for 2 Berth	LS	1	6,000,000	400	48,000
	Electric Supply System	for 2 Berth	LS	1	7,715,000	514	61,720
	Drainage & Sewage System	for 2 Berth	LS	1	4,343,000	290	34,744
	Fence	for 2 Berth	m	1,900	1,710,000	114	13,680
	Lighting	for 2 Berth	set	9	2,700,000	180	21,600
10	Equipment			100	720,450,000	48,030	5,763,600
	Quayside Container Crane	2 Berth	unit	6	405,000,000	27,000	3,240,000
	RTG	4+1High6+1Wide	unit	15	253,125,000	16,875	2,025,000
	Low Flat Bed Chassis	for 2 Berth	unit	30	12,150,000	810	97,200
	Tractor Head	for 2 Berth	unit	30	28,350,000	1,890	226,800
	Forklift	3ton to 5 ton	unit	15	6,075,000	405	48,600
	Side Lifter	30.5ton	unit	2	6,750,000	450	54,000
	Reachstacker	30.5ton	unit	2	9,000,000	600	72,000
A	Total				1,543,507,541	102,901	12,348,060

## B. Basin of LCC3&amp;4 for 50,000DWT 2 Berth

15,000VND=1USD=120Yen

No	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Basin	Within L=600m B=50m	m2	26,000	1,372,800	92	10,982
	Dredging	D=-14.0m	m3	31,200	468,000	31	3,744
	Dumping		m3	31,200	904,800	60	7,238
B	Total				1,372,800	92	10,982

## C. Access Road for LCC L=3,000m W=20m

15,000VND=1USD=120Yen

No	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Access Road	L=3,000m W=20			86,949,500	5,797	695,596
	Sand Fill		m3	333,000	17,982,000	1,199	143,856
	Soil Improvement	VPBD (Depth=20m)	m2	90,000	26,100,000	1,740	208,800
	Road Pavement	W=20m	m2	48,000	8,160,000	544	65,280
	Pedestrian Road Pavement	W=2m×2	m2	12,000	900,000	60	7,200
	Drainage	Drainage	m	6,000	9,450,000	630	75,600
	Lighting	Lighting	set	1	937,500	63	7,500
	Culvert	2.0m×1.8m L=30m	set	10	920,000	61	7,360
	Bridge	L=100m, W=30m	set	1	22,500,000	1,500	180,000
C	Total				86,949,500	5,797	695,596

## D. Channel for LCC

Cai Mep-Ganh Rai-Vung Tau

15,000VND=1USD=120Yen

No	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Channel (S15.2-S20.8)	L=5,600m B=310m incl.Bouy 5sets	m2	1,736,000	315,385,200	21,026	2,523,082
	Dredging	D=-14.0m	m3	8,122,000	121,830,000	8,122	974,640
	Dumping		m3	8,122,000	193,555,200	12,904	1,548,442
2	Channel (S3.9-Vung Tau)	L=3,900m B=310m incl.Bouy 2sets	m2	1,209,000	35,920,000	2,395	287,360
	Dredging	D=-14.0m	m3	1,796,000	26,940,000	1,796	215,520
	Dumping		m3	1,796,000	8,980,000	599	71,840
D	Total		m3	9,918,000	351,305,200	23,420	2,810,442

E	Direct Cost	(A+B+C+D)			1,983,135,000	132,209	15,865,080
F	Value Added Tax	(A+B+C+D)×0.05			99,157,000	6,610	793,256
G	Engineering (incl.Survey)	(A+B+C+D)×0.05+Survey			109,157,000	7,277	873,256
H	Contingency	(A+B+C+D)×0.1			198,314,000	13,221	1,586,512
	50,000DWT Total				2,389,763,000	159,318	19,118,104

Table A28.2.2 Cost Estimate on F/S for Thi Vai International General Cargo Terminal(TVG1&TVG2)  
A. TVG1&TVG2 for 50,000DWT 2 Berth

2 Berth(L=600m, B=40m, D=-14.0m,TOP EL=+5.0m)

15,000VND=1USD=120Yen

No	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Land Reclamation	S=246,000m <sup>2</sup>			143,038,018	9,536	1,144,304
	Fill Sand		m <sup>3</sup>	1,200,000	64,800,000	4,320	518,400
	Vertical P.B. Drain	depth=15m	m <sup>2</sup>	246,000	54,120,000	3,608	432,960
	Surcharge Soil		m <sup>3</sup>	959,400	19,188,000	1,279	153,504
	Temporary Embankment	(Slope Surface)	m <sup>2</sup>	29,000	4,930,018	329	39,440
2	Dredging	Inside Quay Line L=600m	m <sup>3</sup>	240,000	12,720,000	848	101,760
	Dredging		m <sup>3</sup>	240,000	3,600,000	240	28,800
	Dumping		m <sup>3</sup>	240,000	9,120,000	608	72,960
3	Pier	2 Berth: L=600m, B=40m	m	600	281,833,850	18,789	2,254,671
	Steel Pile SM490	D=800mm, t=14/9mm, L=50(30+20)m	t	1,504	23,354,667	1,557	186,837
	Pile Driving	Vertical	piece	120	3,150,000	210	25,200
	Steel Pile SM490	D=700mm, t=12/9mm, L=50(30+20)m	t	7,932	123,196,334	8,213	985,571
	Pile Driving	Vertical	piece	864	22,680,000	1,512	181,440
	Steel Pile SM490	D=700mm, t=12/9mm, L=51.7(30+21.7)m	t	1,812	28,152,644	1,877	225,221
	Pile Driving	Raking	piece	192	5,544,000	370	44,352
	Slab Concrete		m <sup>3</sup>	12,120	13,332,000	889	106,656
	Re-bar of Slab Concrete		t	1,187	6,883,384	459	55,067
	Beam & Other Concrete		m <sup>3</sup>	4,410	4,850,582	323	38,805
	Re-bar of Beam Concrete		t	270	1,565,239	104	12,522
	Rubber Fender	SUC1000H/R0	piece	112	34,020,000	2,268	272,160
	Protector for Fender	3500mmx1500mm	piece	56	1,400,000	93	11,200
	Bollard	100ton	piece	32	1,504,000	100	12,032
	Pile Top Protection		set	1	5,586,000	372	44,688
	Cathodic Protection		set	1	6,615,000	441	52,920
4	Sheet Pile Wall Revetment	L=600m	m	600	72,109,202	4,807	576,874
	Coping Concrete		m <sup>3</sup>	1,940	2,134,220	142	17,074
	Re-bar of Coping Concrete		t	158	918,258	61	7,346
	Sheet Pile SY295	SP-IV, L=14m	t	2,037	28,472,797	1,898	227,782
	Sheet Pile Driving		piece	1,500	12,562,500	838	100,500
	Tie Rod HT690	D=50mm, L=15m	piece	375	4,687,500	313	37,500
	Anchor Pile SSM490	H-400x400x13x21, L=16m	t	1,032	12,983,927	866	103,871
	Pile Driving		piece	375	3,375,000	225	27,000
	Other Steel Materials		t	60	675,000	45	5,400
	Front Foot Protection	600m×42m	m <sup>2</sup>	25,200	6,300,000	420	50,400
5	Rubble Stone Revetment	L=1,440m	m	1,440	6,960,183	464	55,681
	Rubble Stone		m <sup>3</sup>	22,700	5,107,388	340	40,859
	Geo-textile		m <sup>2</sup>	20,900	418,000	28	3,344
	Stone Placing/ Finishing		m <sup>2</sup>	19,900	397,995	27	3,184
	Curb Concrete		m <sup>3</sup>	720	1,036,800	69	8,294
6	Yard Construction	2 Berth	m <sup>2</sup>	223,250	64,730,000	4,315	517,840
	Open Storage Yard	Asphalt Pavement	m <sup>2</sup>	115,200	34,560,000	2,304	276,480
	Inner Road Pavement	Asphalt Pavement	m <sup>2</sup>	85,600	25,680,000	1,712	205,440
	Other Pavement	Asphalt Pavement	m <sup>2</sup>	22,450	4,490,000	299	35,920
7	Buildings		m <sup>2</sup>	25,750	38,675,000	2,578	309,400
	Warehouse	2 Buildings	m <sup>2</sup>	8,000	11,200,000	747	89,600
	Transit Shed	2 Buildings	m <sup>2</sup>	8,000	11,200,000	747	89,600

A. TVG1&TVG2 for 50,000DWT 2 Berth

2 Berth(L=600m, B=40m, D=-14.0m,TOP EL=+5.0m)

15,000VND=1USD=120Yen

No	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
	Administration Building	1 Building with 2 Stories	m2	3,600	6,480,000	432	51,840
	Amenity Block Building	1 Building with 2 Stories	m2	2,400	4,320,000	288	34,560
	Maintenace Shop	1 Building	m2	800	1,120,000	75	8,960
	Main Gate & Gate House	1 Building with weigh bridge	m2	1,500	2,250,000	150	18,000
	Sub Gate & Gate House	1 Building with weigh bridge	m2	750	1,125,000	75	9,000
	Power Station	1 Building	m2	300	420,000	28	3,360
	Fuel Station	1 Building	m2	400	560,000	37	4,480
8	Utilities		LS	1	16,378,000	1,092	131,024
	Water Supply system	For 2 Berth	LS	1	4,445,000	296	35,560
	Electric Supply System	For 2 Berth	LS	1	4,263,000	284	34,104
	Drainage & Sewage System	For 2 Berth	LS	1	3,692,000	246	29,536
	Fence	For 2 Berth	m	1,420	1,278,000	85	10,224
	Lighting	For 2 Berth	set	9.0	2,700,000	180	21,600
9	Equipment	For 2 Berth		112	290,250,000	19,350	2,322,000
	Multi-Purpose Quayside Crane	Double-link Level Luffing 40ton	unit	2	90,000,000	6,000	720,000
	Quayside Jib Crane	Jib 20ton	unit	2	67,500,000	4,500	540,000
	Quayside Jib Crane	Jib 10ton	unit	2	45,000,000	3,000	360,000
	Forklift	2ton to 4 ton	unit	50	20,250,000	1,350	162,000
	Low Flat Bed Chassis	40ft. Container	unit	20	8,100,000	540	64,800
	Tractor Head	340HP	unit	10	9,450,000	630	75,600
	Side Lifter	30.5ton	unit	2	6,750,000	450	54,000
	Reachstacker	35~40ton	unit	2	9,000,000	600	72,000
	Mobile Crane	40ton to 100ton	unit	2	26,325,000	1,755	210,600
	Movable Hopper		unit	5	2,812,500	188	22,500
	Movable Beltconveyer	L=20m	unit	15	5,062,500	338	40,500
A.	Total				926,694,253	61,780	7,413,554

B. Basin of TVG1&TVG2 for 50,000DWT 2 Berth

15,000VND=1USD=120Yen

No	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
B.	Basin	Within L=600m, B=50m	m2	11,200	1,229,600	82	9,837
1	Dredging	D=-14.0m	m3	23,200	348,000	23	2,784
2	Dumping		m3	23,200	881,600	59	7,053
B.	Total				1,229,600	82	9,837

C. Access Road for TVG L=2000m

15,000VND=1USD=120Yen

No	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
1	Access Road	L=2,000m W=20			42,347,000	2,823	338,776
	Fill Sand		m3	507,000	27,378,000	1,825	219,024
	Soil Improvement	Vertical Drain(Depth=16m)	m2	0	0	0	0
	Road Pavement	W=20m	m2	40,000	6,800,000	453	54,400
	Pedestrian Road Pavement	W=2m×2	m2	8,000	600,000	40	4,800
	Drainage	Drainage	m	4,000	6,300,000	420	50,400
	Lighting	Lighting	set	1	625,000	42	5,000
	Culvert	2.0m×1.8m L=30m	set	7	644,000	43	5,152
C.	Total				42,347,000	2,823	338,776

## D. Channel for TVG

## Cai Mep-TVG

15,000VND=1USD=120Yen

No	Item	Description	Unit	Quantity	Amount of Construction Cost		
					1,000VND	1,000USD	1,000Yen
I	Channel	L=4,700m B=310m incl. Buoy 3 sets	m2	1,457,000	33,828,400	2,255	270,627
	Dredging	D=-14.0m	m3	663,000	10,623,400	708	84,987
	Dumping		m3	663,000	23,205,000	1,547	185,640
D	Total				33,828,400	2,255	270,627
E	Direct Cost	(A+B+C+D)			1,004,100,000	66,940	8,032,800
F	Value Added Tax	(A+B+C+D)×0.05			50,205,000	3,347	401,644
G	Engineering (incl.Survey)	(A+B+C+D)×0.05+Survey			60,205,000	4,014	481,640
H	Contingency	(A+B+C+D)×0.1			100,410,000	6,694	803,280
	<b>50,000DWT Total</b>				<b>1,214,920,000</b>	<b>80,995</b>	<b>9,719,360</b>