APPENDIX C

Appendix The Handling Number of Containers profitable for Top-lifter

The rough comparison between the operation-cost by a top-lifter and handling fee to be paid, in accordance with handling number of containers is calculated as follows.
The result is described as substituted compatible train numbers.

1. Assumption

Top Lifter price :1,540 Million Rp.

1) Depreciation cost :1,540 M. Rp. * 0.9 * 1/8 = 173 M. Rp./year
(for 8 years) = 474,000 Rp./day

2) Maintenance costs : 10% /year of the T.L. price.
(including necessary expenses)
1,540 M. Rp. * 0.1 * 1/365 = 422,000 Rp./day

3) Fuel costs : When diesel fuel price is 380Rp./liter,
fuel consumption of a 300ps engine with full power is 0.2 kg/ps.h, and average is 1/3,
0.2 kg/ps.h * 300ps * 1/3 * 1/0.9 kg/l=22.2 l/hr.
When the handling time for 1 container is 3 min., 20 containers can be handled in 1 hr.
Thus, the fuel consumed for 1 container can be calculated by the following formula.
22.2 l/hr * 1/20 * 380 Rp./l = 421.8 Rp./1 cnt.
= approx. 500 Rp./ cnt.

4) Labor costs : 3 * 8,500 Rp./day for 3 equipment operators.

5) Misc. costs : 10% /year of T.L. price + 10% of (fuel + labor costs)

The following table shows handling costs per container.

Unit : Rp

Number handled per day	Depreciated cost	Maintenance cost	Fuel cost	Labor cost	Misc. cost	Total
20	23,700	21,100	500	1,275	21,278	67,853
30	15,800	14,067	500	850	14,202	45,419
34	13,941	12,412	500	750	12,357	39,960
40	11,850	10,550	500	638	10,664	34,202
50	9,480	8,440	500	510	8,541	27,471
60	7,900	7,033	500	425	7,126	22,984
70	6,771	6,029	500	364	6,115	19,979
80	5,925	5,275	500	319	5,357	17,376
90	5,267	4,689	500	283	4,767	15,506

2. Handling charge per container.

The subject is quoted as follows. (Refer to Vol. 2, 3.4.1)

Unit : Rp

	Empty	Loaded
20'	7,500	27,000
40'	11,500	40,000

Average handling charges per container can be calculated for each category as follows.

Unit : Rp

	Loaded only (departure)	Loaded 50% + Empty 50 % (departure) (arrival)
20' 100%	27,000	17,250
40' 100%	40,000	25,750
20'50%+40'50%	33,500	21,500

3. Handling number of containers and operated train number necessary to get the profit by a single Top Lifter.
   The above is as follows.

	Loaded only (departure)	Loaded 50% + Empty 50% (departure) (arrival)
20' 100%	More than 51 cnt./day (> 2 trains with 13 cars) (> 18,615 TEUs / year)	More than 81 cnt./day (> 2 trains with 11 cars) (> 29,565 TEUs / year)
40' 100%	More than 34 cnt./day (> 2 trains with 17 cars) (> 24,820 TEUs / year)	More than 54 cnt./day (> 2 trains with 14 cars) (> 39,420 TEUs / year)
20'50%+40'50%	More than 40 cnt./day (> 2 trains with 15 cars) (> 21,900 TEUs / year)	More than 68 cnt./day (> 2 trains with 14 cars) (> 37,230 TEUs / year)

The above table shows the handling number of containers profitable for a single top-lifter, still more explains unprofitable for a single train,but two trains are necessary in any cases.

APPENDIX D

Table D-1 Unit Cost of Labour (unit: Rp/day)

Description	West Java (Jakarta)	Central Java & East Java	North Sumatra	Lampung	South Sulawesi	Remarks
(Local)						
Superintendant	24,000	20,000	20,000	20,000	20,000	
Foreman	10,000	10,000	9,000	8,000	8,000	
Common Labour	4,000	4,000	3,500	3,500	3,500	
Skilled Labour	8,000	7,000	7,000	6,000	6,500	
Welder	8,000	7,000	7,000	6,000	6,500	
Mechanician	7,000	7,000	7,000	6,000	6,500	
Electrician	8,000	7,000	7,000	6,000	6,500	
Carpenter	7,000	8,000	6,500	5,500	6,500	
Painter	6,000	6,500	6,000	5,500	6,000	
Bar Bender	7,000	6,500	6,500	5,500	6,500	
Masonry	7,000	6,500	6,000	5,500	7,000	
Equip. Operator	10,000	8,500	7,500	7,000	7,500	
Plant Operator	12,000	10,000	10,000	10,000	10,000	
Diver	40,000	40,000	40,000	40,000	40,000	
Ship Captain	35,000	35,000	35,000	35,000	35,000	
Ship Crew	24,000	24,000	24,000	24,000	24,000	
(Foreign)						
Expatriate	1,350,000	1,350,000	1,350,000	1,350,000	1,350,000	
Ship Captain	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	
Ship Crew	1,350,000	1,350,000	1,350,000	1,350,000	1,350,000	
Diver	1,350,000	1,350,000	1,350,000	1,350,000	1,350,000	

Table D-2 Unit Cost of Materials (unit: Rp)

Description	Unit	West Java (Jakarta)	Central Java & East Java	North Sumatra	Lampung	South Sulawesi	Currency (%)	
							Foreign	Local
Gasoline	Lit	700	700	700	700	700	0	100
Diesel Fuel	Lit	380	380	380	380	380	0	100
A-Oil	Lit	300	300	300	300	300	0	100
Cement	ton	168,750	175,000	162,500	162,500	166,250	49	51
Coarse Aggregate	m3	31,000	25,000	28,000	21,000	26,000	69	31
Fine Aggregate	m3	32,000	18,000	18,000	18,500	18,000	69	31
Sand for Filling	m3	25,000	14,000	10,000	11,750	10,000	65	35
Crushed Stone	m3	29,000	21,000	18,000	15,000	22,500	69	31
Plywood 1cm	m2	6,550	10,500	6,550	6,550	6,250	0	100
Square Timber	m3	332,000	400,000	310,000	310,000	260,000	0	100
Asphalt	kg	470	470	470	470	470	95	5
Reinforcing Bar								
(D-10)	ton	1,056,000	1,116,000	1,074,000	1,004,500	967,500	80	20
(D-16)	ton	888,000	882,000	730,000	854,700	894,800	80	20
(D-25)	ton	951,000	925,000	754,000	628,000	685,000	80	20
Rail (R 50)	ton	1,850,000	1,850,000	1,850,000	1,820,000	-	100	0
Ballast	m3	31,000	25,000	26,000	18,000	30,000	69	31
Wooden Sleeper	Pc	32,000	35,000	35,000	32,000	-	0	100
PC Sleeper	Pc	59,000	59,000	59,000	59,000	-	60	40
Structural Steel	ton	1,100,000	765,000	810,000	800,000	980,000	80	20
PVC Pipe 2"x4m	Pc	14,600	11,400	11,000	13,800	11,000	35	65
PC Pipe Pile								
(D-400)	m	56,000	59,500	66,500	63,000	67,000	60	40
(D-600)	m	109,000	114,000	127,000	120,000	129,000	60	40
Steel Pipe Pile								
(D=600 x12)	ton	2,250,000	2,250,000	2,250,000	2,250,000	2,250,000	76	24
Steel Sheet Pile	ton	2,620,000	2,620,000	2,620,000	2,620,000	2,620,000	76	24
Steel H Beam	ton	1,900,000	1,900,000	1,900,000	1,900,000	1,900,000	76	24

Table D-3 Unit Cost of Equipment (unit: Rp)

Description	Unit	West Java (Jakarta)	Central Java & East Java	North Sumatra	Lampung	South Sulawesi	Currency (%)	
							Foreign	Local
Bulldozer 11t	Rp/day	180,000	180,000	180,000	200,000	200,000	93	7
Bulldozer 21t	Rp/day	365,000	365,000	365,000	400,000	400,000	93	7
Excavater 0.35m3	Rp/day	150,000	155,000	150,000	150,000	150,000	92	8
Excavater 0.6m3	Rp/day	220,000	220,000	220,000	220,000	220,000	92	8
Wheel Loader 1.8m3	Rp/day	195,000	195,000	200,000	200,000	210,000	93	7
Dump Truck 6t	Rp/day	75,000	75,000	75,000	75,000	80,000	92	8
Flat Bet Truck 11t	Rp/day	70,000	70,000	70,000	70,000	70,000	92	8
Truck Crane 25t	Rp/hr	56,000	56,000	56,000	60,000	65,000	97	3
Truck Crane 45t	Rp/hr	71,000	78,000	75,000	80,000	80,000	97	3
Pile Driver 75kw	Rp/hr	276,000	276000	276,000	300,000	300,000	97	3
Giant Breaker 800	Rp/day	122,000	122,000	122,000	135,000	135,000	98	2
Moter Grader 3.1m	Rp/day	75,000	100,000	120,000	120,000	120,000	93	7
Macadam Roller 10t	Rp/day	120,000	120,000	150,000	150,000	150,000	88	12
Tire Roller 8-20t	Rp/day	120,000	120,000	150,000	150,000	150,000	88	12
Concrete Baching Plant 45m3/h	Rp/hr	93,000	100,000	110,000	110,000	110,000	100	0
Agitator Truck 5m3	Rp/hr	27,000	35,000	35,000	35,000	35,000	92	8
Asphalt Plant 30m3/h	Rp/hr	405,000	405,000	405,000	405,000	405,000	100	0
Air Compressor 7m3	Rp/day	75,000	60,000	75,000	75,000	75,000	88	12
Generator 35kva	Rp/day	46,000	46,000	46,000	46,000	46,000	78	22
Generator 100kva	Rp/day	75,000	75,000	75,000	75,000	75,000	78	22
Vibro Hammer	Rp/hr	16,000	16,000	16,000	16,000	18,000	100	0
Concrete Pump	Rp/hr	73,000	73,000	73,000	75,000	75,000	92	8
Welder	Rp/day	3,000	3,000	3,000	3,000	3,000	100	0
Rail Cutter	Rp/day	10,000	10,000	10,000	10,000	-	100	0
Rail Boring	Rp/day	8,600	8,600	8,600	8,600	-	100	0
Rail Bender	Rp/day	11,500	11,500	11,500	11,500	-	100	0
Rail Lifter	Rp/day	3,000	3,000	3,000	3,000	-	100	0
Rail Jack	Rp/day	2,000	2,000	2,000	2,000	-	100	0
Asphalt Finisher	Rp/day	270,000	270,000	300,000	300,000	320,000	98	2
Crawler Crane 80t	Rp/day	720,000	720,000	720,000	730,000	750,000	98	2
Tug Boat 180ps	Rp/hr	63,000	63,000	63,000	63,000	63,000	100	0
Pontoon 300t	Rp/day	250,000	250,000	250,000	250,000	250,000	100	0

Table D-4 Combined Cost for Major Works (unit: Rp)

Work Item	Unit	West Java (Jakarta)	Central Java & East Java	North Sumatra	Lampung	South Sulawesi	Currency (%)	
							Foreign	Local
Excavation	m3	1,900	1,889	1,869	1,857	1,862	75	25
Back Filling	m3	3,449	3,415	3,377	3,583	3,597	60	40
Site Grading	m2	283	281	277	298	299	71	29
Blinding Stone	m3	44,592	33,081	28,653	24,290	35,105	68	32
Base Course	m3	48,365	39,808	44,662	34,543	41,765	68	32
Sub- Base Course	m3	45,484	34,048	30,262	25,903	36,725	68	32
Con.Block Paving	m2	44,470	43,147	42,883	42,735	42,864	45	55
Concrete Form Work	m2	18,432	20,774	18,134	18,144	18,311	53	47
Re-Bar Work	ton	1,442,220	1,450,525	1,294,986	1,267,038	1,305,930	78	22
Mix- Concrete 150kg/cm	m3	100,868	91,650	89,703	85,420	89,660	58	42
Mix- Concrete 210kg/cm	m3	121,042	109,980	107,645	102,500	107,585	58	42
Mix- Concrete 300kg/cm	m3	134,491	122,194	119,604	113,887	119,539	58	42
Concrete Placing (Including Transportation)								
by Man Power	m3	31,008	35,141	34,521	33,815	34,125	57	43
by Truck Crane	m3	30,345	34,840	34,559	34,937	35,810	78	22
by Concrete Pump	m3	28,071	32,582	32,285	32,259	32,375	78	22
As-Con Hot-Mix	ton	635,593	630,237	631,114	629,516	630,615	76	24
As-Con Placing	ton	21,060	20,935	21,458	21,407	21,610	73	27
PC Pile Driving								
D-600mm on land	m	159,731	165,665	181,208	175,112	179,125	66	34
Steel Pile Driving								
D-600mm on land	m	505,368	505,250	505,185	507,803	507,949	76	24
Sheet Pile Driving	m							
Dredging & Disposal								
by Cutter Suction	m3	7,000	7,000	7,000	7,000	7,000	80	20
Paper Drain driving	m	5,063	5,060	5,059	5,058	5,058	90	10
Stone Masonry	m2	59,024	55,818	53,322	51,470	53,314	55	45
Railway Track Placing (Without Foundation)								
on land	m	523,860	522,969	522,402	521,537	521,967	88	12
Manufacturing Steel Structure								
Super Structure	ton	2,100,000	2,100,000	2,100,000	2,100,000	2,100,000	75	25
Supporting Structure	ton	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	75	25
Office Building	m2	1,470,000	1,400,000	1,400,000	1,400,000	1,400,000	70	30
Warehouse or Shed	m2	1,150,000	1,150,000	1,150,000	1,150,000	1,150,000	70	30

APPENDIX E

(Appendix) COMPARISON OF CONTAINER HANDLING SYSTEM (1)

		On-chassis System	Straddle Carrier System	Transfer Crane System	Forklift Truck System
Safety		Very good	Poor	Good	Poor
Simplicity		Very good	Very good	Poor	Poor
Flexibility		Very good	Good	Poor	Poor
Cpst-effective	Equipment	Very high if including chassis	High	High	Low
	No. of workers	Medium	Medium	More	More
Efficiency of handling		Good but some problems on spotting by container cranes	Good Especially good for spotting by container cranes	Medium	Poor
Selectivity of containers		Very good	Good	Poor	Medium
Availability of land	Ground slots	Poor 150-180 TEU/ha. for 20' chassis 200-225 TEU/ha. for 40' Chassis	Good 270-320 TEU/ha.	Good 210-260 TEU/ha.	Poor 200-250 TEU/ha.
	Stowing capacity	Poor	Good 2-3 Stacks	Very good 2-4 Stacks	Poor 1-2 Stacks
Equipment maintenance cost		Very low	High	Low	Medium
Container damage		Very good	Poor	Good	Poor
Pavement of yard		Common	Heavy	Specially heavy for track parts	Poor
Remarks					

Source: Investigation report on existing container terminals (1993, Ministry of Transportation of Japan)

(Appendix) COMPARISON OF CONTAINER HANDLING SYSTEM (2)

	On-chassis System	Straddle Carrier System	Transfer Crane System	Forklift Truck System
Characteristics of ports	OD ports	OD Ports/ Hubcentre	Hubcentre/ OD ports	
Kinds of terminals	Exclusive use	Exclusive use/ Public	Public/ Exclusive	
Balance of trade (Export/Import)	Balanced	Balanced	Either case	Balanced
Connection with inland transport, mainly	Road transport Rail transport	Road transport Sea transport	Sea transport Rail transport Road transport	Road transport
FCL, LCL	FCL > LCL	FCL ≒ LCL	FCL ≒ LCl <	FCL < LCL
Dwell time	Short	Medium	Long	Medium
Seasonal change	Small	Medium	Large	Medium
Sizes of containers	Mono size, preferable	Every size	Every size	20' only
Kinds of containers	Acceptable	Acceptable	Limitted	Acceptable
Empty container stowage	Not suitable	Not suitable	Suitable	Suitable
Type of ships	RO/RO Acceptable	LO/LO only	LO/LO only	RO/RO Acceptable
Area of terminals	Large	Medium	Medium	Large
Shape of terminals	Any shape	Any shape	Rectangular	Any shape
Detached wharf or Finger piers	Acceptable	Not suitable	Acceptable	Acceptable
Remarks	USA	Europe, Japan	Expandable system for future, South East Asia, Japan, USA	Australia

Source: Investigation report on existing container terminals (1993, Ministry of Transportation of Japan)

APPENDIX PRODUCTIVITY OF EXISTING CONTAINER TERMINALS (1)

PORT	TERMINAL NAME	CODE	Total Berth Lngth (m)	Number of Berths	Unit Berth Lngth (m)		Average Number of Loading and Unloading Container (Box/vessel)	Container Crane Hour Prdctv (BOX/Hr/Cr)	Container Crane Number of Units Instld	Container Crane Number of Units Effctv Woking	BOR	Berthing Time NOT per Vessel (Hr)	Berthing Time ET per Vessel (Hr)	Berthing Time IT per Vessel (Hr)	Berthing Time BT per Vessel (Hr)	ETR	Number of ship Calls per Year	40' CNTNR RATIO (%)	Berth Productivity 1,000 Box /Yr	Berth Productivity 1,000 Box /Yr	BERTH EFFICNCY (TEU/m /Yr)
TG PRIOK	NO1 CONTAINER TERMINAL <CONDITION IN 1993>	A100	820	4	205	Average	500	20	2	1.60	0.70	4.0	15.6	1.6	21.2	0.74	289	40	144	202	987
						At peak	750	20		1.60		4.0	23.4	1.6	29.0						
	NO1 CONTAINER TERMINAL <IMPROVE CONDITION> YOR-60% IMPORT:DWLNG TM-7day	A101	820	4	205	Average	500	20	2	1.60	0.70	4.0	15.6	1.6	21.2	0.74	289	40	144	202	987
						At peak	750	20		1.60		4.0	23.4	1.6	29.0						
	(REFR) NO1 CONTAINER TERMINAL <CNT TRFC CND IN 2010> 40' CNTNR RATIO=50% LD-UNLD BOX/VSSL=650	A110	820	4	205	Average	650	20	2	1.60	0.70	4.0	20.3	1.6	25.9	0.78	237	50	154	231	1125
						At peak	750	20		1.60		4.0	23.4	1.6	29.0						
	NO2 CONTAINER TERMINAL <CC +2SET> <CONDITION IN 1993>	A200	360	2	180	Average	300	22	2	1.60	0.70	4.0	8.5	1.6	14.1	0.60	434	32	130	172	955
						At peak	750	22		1.60		4.0	21.3	1.6	26.9						
	NO2 CONTAINER TERMINAL <YARD STACK HEIGHT UP> 1.73-2.40	A201	360	2	180	Average	300	22	2	1.60	0.70	4.0	8.5	1.6	14.1	0.60	434	32	130	172	955
						At peak	750	22		1.60		4.0	21.3	1.6	26.9						
	(REFR) NO2 CONTAINER TERMINAL <CONDITION IN 2010> 40' CNTNR RATIO=50% LD-UNLD BOX/VSSL=650	A210	360	2	180	Average	650	22	2	1.60	0.70	4.0	18.5	1.6	24.1	0.77	255	50	166	248	1380
						At peak	750	22		1.60		4.0	21.3	1.6	26.9						

APPENDIX PRODUCTIVITY OF EXISTING CONTAINER TERMINALS (2)

CODE	Container Storage Yard Necessary Ground Slots to adjust Berth Productivity										Existing Container Yard Productivity								
	Cntnr Hndlng Systm	Proportion		Cargo Volume Required to Handle (1,000 TEU/Yr)	Dwell Time TIME (Day)	Required Storage Capacity (1,000 TEU)	Stacking Height 1 ovr 3	Stacking Height 1 ovr 4	Neccssary Ground Slots 1 ovr 3 (TEU)	Neccssary Ground Slots 1 ovr 4 (TEU)	Yard Area (Ha)	Ratio of Land Use (Ground Slots TEU/Ha)	Ground Slot Capacity (TEU)	Avrage Stacking Height (Tier)	Yard Storage Capacity (TEU)	Dwelling Time TIME (Day)	YOR (%)	Yard Stotage Capacity (Prdctvty) (TEU /Ha/Y)	Yard Efficncy (TEU/Ha /Yr)
A100	Trasfer Crane System	Imploaded	0.45	91.0	9	2.92	2.3	3.0	1,297	972	4.875	336	1,638	2.82	4,619	5.03	54	181,000	37,000
		Empty	0.05	10.1	3	0.11	4.0	4.0	27	27				*;'93 Records					
		Exploaded	0.40	80.9	4	1.15	2.4	3.2	480	360									
		Empty	0.10	20.2	3	0.22	4.0	4.0	54	54									
				202.2	6.1	4.39	2.4	3.1	1,858	1,414									
A101	Trasfer Crane System	Imploaded	0.45	91.0	7	2.27	2.3	3.0	1,008	756	4.875	336	1,638	2.82	4,619	5.03	60	201,000	41,000
		Empty	0.05	10.1	3	0.11	4.0	4.0	27	27				*;'93 Records			**;ESTIMATE		
		Exploaded	0.40	80.9	4	1.15	2.4	3.2	480	360									
		Empty	0.10	20.2	3	0.22	4.0	4.0	54	54									
				202.2	5.2	3.75	2.4	3.1	1,570	1,197									
A110	Trasfer Crane System	Imploaded	0.45	103.8	9	3.33	2.3	3.0	1,479	1,109	4.875	336	1,638	2.82	4,619	5.03	60	201,000	41,000
		Empty	0.05	11.5	3	0.12	4.0	4.0	31	31									
		Exploaded	0.40	92.3	4	1.31	2.4	3.2	548	411									
		Empty	0.10	23.1	3	0.25	4.0	4.0	62	62									
				230.7	6.1	5.01	2.4	3.1	2,119	1,613									
A200	Trasfer Crane System	Imploaded	0.45	77.4	9	2.48	2.3	3.0	1,102	827	4.21	359	1,511	1.73	2,614	4.49	60	127,000	30,000
		Empty	0.05	8.6	3	0.09	4.0	4.0	23	23				*;'93 RECORDS					
		Exploaded	0.40	68.8	4	0.98	2.4	3.2	408	306									
		Empty	0.10	17.2	3	0.18	4.0	4.0	46	46									
				171.9	6.1	3.74	2.4	3.1	1,579	1,202									
A201	Trasfer Crane System	Imploaded	0.45	77.4	9	2.48	2.3	3.0	1,102	827	4.21	359	1,511	2.40	3,627	4.49	60	176,000	41,000
		Empty	0.05	8.6	3	0.09	4.0	4.0	23	23				*;ESTIMATE					
		Exploaded	0.40	68.8	4	0.98	2.4	3.2	408	306									
		Empty	0.10	17.2	3	0.18	4.0	4.0	46	46									
				171.9	6.1	3.74	2.4	3.1	1,579	1,202									
A210	Trasfer Crane System	Imploaded	0.45	111.8	9	3.58	2.3	3.0	1,593	1,195	4.21	359	1,511	2.40	3,627	4.49	60	176,000	41,000
		Empty	0.05	12.4	3	0.13	4.0	4.0	33	33									
		Exploaded	0.40	99.4	4	1.42	2.4	3.2	590	442									
		Empty	0.10	24.8	3	0.27	4.0	4.0	66	66									
				248.4	6.1	5.40	2.4	3.1	2,282	1,736									

APPENDIX PRODUCTIVITY OF EXISTING CONTAINER TERMINALS (1)

PORT	TERMINAL NAME	CODE	Total Berth Lngth (m)	Number of Berths	Unit Berth Lngth (m)		Average Number of Loading and Unloading Container (Box/vessel)	Container Crane Hour Prdctv (BOX/Hr/Cr)	Container Crane Number of Units Instld	Container Crane Number of Units Effctv Woking	BOR	Berthing Time NOT per Vessel (Hr)	Berthing Time ET per Vessel (Hr)	Berthing Time IT per Vessel (Hr)	Berthing Time BT per Vessel (Hr)	ETR	Number of ship Calls per Year	40' CNTNR RATIO (%)	Berth Productivity 1,000 Box /Yr	Berth Productivity 1,000 Box /Yr	BERTH EFFICNCY (TEU/m /Yr)
BELAWAN	GABION CONTAINER TRMNL <CONDITION IN 1993> CONTNR CRN-21BX/Hr 40' CNTNR RATIO=45% LD-UNLD BOX/VSSL=300	B100	500	1	500	Average At peak	300 450	21 21	2	1.60 1.60	0.70	4.0 4.0	8.9 13.4	1.6 1.6	14.5 19.0	0.61	422	45	127	184	367
	(REFR) GABION CONTAINER TRMNL <IMPROVE DWL TIME-4.4> <CONDITION IN 2010> LD-UNLD BOX/VSSL=650 40' CNTNR RATIO=50%	B120	500	1	500	Average At peak	650 450	21 21	2	1.44 1.60	0.70	4.0 4.0	21.6 13.4	1.6 1.6	27.2 19.0	0.79	226	50	147	220	440
	(REFR) GABION CONTAINER TRMNL <IMPROVE DWL TIME-4.4> <CONDITION IN 1993> <CONTAINER CRANE +1>	B130	500	2	250	Average At peak	300 450	21 21	1.5	1.47 1.47	0.70	4.0 4.0	9.7 14.6	1.6 1.6	15.3 20.2	0.63	400	45	120	174	697
TG PERAK	NO2 INTRNTNL CNTNR TRM <CONDITION IN 1993> CONTNR CRN-23BOX/Hr 40' CNTNR RATIO=45% LD-UNLD BOX/VSSL=300	C100	500	2	250	Average At peak	300 450	23 23	1.5	1.47 1.47	0.70	4.0 4.0	8.9 13.3	1.6 1.6	14.5 18.9	0.61	424	45	127	184	737
	NO2 INTRNTNL CNTNR TRM <IMPROVE EMP CON HNDL> DWEL TM SHORTEN	C101	500	2	250	Average At peak	300 450	23 23	1.5	1.47 1.47	0.70	4.0 4.0	8.9 13.3	1.6 1.6	14.5 18.9	0.61	424	45	127	184	737
	(REFR) NO2 INTRNTNL CNTNR TRM <CONTAINER CRANE +1>	C120	500	2	250	Average At peak	300 450	23 23	2	1.60 1.60	0.70	4.0 4.0	8.2 12.2	1.6 1.6	13.8 17.8	0.59	446	45	134	194	776
	(REFR) NO2 INTRNTNL CNTNR TRM <CONDITION IN 2010> 40' CNTNR RATIO=50% LD-UNLD BOX/VSSL=650	C130	500	2	250	Average At peak	650 450	23 23	1.5	1.47 2.40	0.70	4.0 4.0	19.2 8.2	1.6 1.6	24.8 13.8	0.77	247	50	161	241	963

APPENDIX PRODUCTIVITY OF EXISTING CONTAINER TERMINALS (2)

CODE	Container Storage Yard: Necessary Ground Slots to adjust Berth Productivity: Cntnr Hndlng Syst'm	Proportion		Cargo Volume Required to Handle (1,000 TEU/Yr)	Dwell Time TIME (Day)	Required Storage Capacity (1,000 TEU)	Stacking Height: 1 ovr 3	Stacking Height: 1 ovr 4	Necessary Ground Slots: 1 ovr 3 (TEU)	Necessary Ground Slots: 1 ovr 4 (TEU)	Existing Container Yard Productivity: Yard Area (Ha)	Ratio of Land Use (Ground Slots TEU/Ha)	Ground Slot Capacity (TEU)	Avrage Stacking Height (Tier)	Yard Storage Capacity (TEU)	Dwelling Time TIME (Day)	YOR (%)	Yard Stotage Capacity (Prdctvty) (TEU /Ha/Y)	Yard Efficncy (TEU/Ha /Yr)
B100	Trasfer Crane System	Imploaded	0.15	27.5	9	0.88	2.0	2.0	441	441	9.46	167	1,580	2.60	4,108	6.60 *	67	152,000	16,000
		Empty	0.35	64.3	3	0.69	3.0	3.0	229	229									
		Exploaded	0.49	90.0	4	1.28	2.0	2.0	641	641	<IMPROVE DWL TIME>			*:'93 RECORDS					
		Empty	0.01	1.8	3	0.02	3.0	3.0	7	7	9.46	167	1,580	2.60	4,108	4.40 *:ESTIMATE	67	228,000	24,000
				183.6	4.4	2.87	2.2	2.2	1,318	1,318									
B120	Trasfer Crane System	Imploaded	0.15	33.0	9	1.06	2.24 2.0	2.0	529	529	9.46	167	1,580	2.60	4,108	4.40 *	67	228,000	24,000
		Empty	0.35	77.0	3	0.82	3.0	3.0	274	274									
		Exploaded	0.49	107.8	4	1.54	2.0	2.0	768	768						*:ESTIMATE			
		Empty	0.01	2.2	3	0.02	3.0	3.0	8	8									
				220.1	4.4	3.44	2.2	2.2	1,579	1,579									
B130	Trasfer Crane System	Imploaded	0.15	26.1	9	0.84	2.0	2.0	419	419	4.73 (HALF AREA)	167	790	2.60	2,054	4.40 *	67	114,000	24,000
		Empty	0.35	60.9	3	0.65	3.0	3.0	217	217						*:ESTIMATE			
		Exploaded	0.49	85.3	4	1.22	2.0	2.0	608	608									
		Empty	0.01	1.7	3	0.02	3.0	3.0	6	6									
				174.1	4.4	2.72	2.2	2.2	1,250	1,250									
C100	Trasfer Crane System	Imploaded	0.30	55.3	4.3	0.85	3.0	2.3	284	379	6.235 (HALF AREA)	251	1,568	3.00	4,704	6.00	50	143,000	22,000
		Empty	0.20	36.9	4.3	0.57	3.0	4.0	189	142									
		Exploaded	0.05	9.2	7.8	0.25	3.0	2.4	85	106									
		Empty	0.45	82.9	7.8	2.29	3.0	4.0	763	572									
				184.3	6.0	3.96	3.0	3.3	1,322	1,199									
C101	Trasfer Crane System	Imploaded	0.30	55.3	4.3	0.85	3.0	2.3	284	379	6.235 (HALF AREA)	251	1,568	3.00	4,704	3.64	50	235,000	37,000
		Empty	0.20	36.9	3.0	0.39	3.0	4.0	131	98									
		Exploaded	0.05	9.2	7.8	0.25	3.0	2.4	85	106									
		Empty	0.45	82.9	3.0	0.89	3.0	4.0	295	222									
				184.3	3.6	2.39	3.0	3.0	796	805									
C120	Trasfer Crane System	Imploaded	0.30	58.2	4.3	0.90	3.0	2.3	299	399	6.235 (HALF AREA)	251	1,568	3.00	4,704	3.60	50	238,000	38,000
		Empty	0.20	38.8	3.0	0.41	3.0	4.0	138	104									
		Exploaded	0.05	9.7	7.8	0.27	3.0	2.4	89	112									
		Empty	0.45	87.3	3.0	0.93	3.0	4.0	311	233									
				194.0	3.6	2.51	3.0	3.0	837	847									
C130	Trasfer Crane System	Imploaded	0.45	108.4	4.3	1.67	3.0	2.3	557	743	6.235 (HALF AREA)	251	1,568	3.00	4,704	5.50	50	156,000	25,000
		Empty	0.05	12.0	3.0	0.13	3.0	4.0	43	32									
		Exploaded	0.40	96.3	7.8	2.66	3.0	2.4	886	1,108									
		Empty	0.10	24.1	3.0	0.26	3.0	4.0	86	64									
				240.8	5.5	4.72	3.0	2.4	1,572	1,947									

APPENDIX PRODUCTIVITY OF EXISTING CONTAINER TERMINALS (1)

PORT	TERMINAL NAME	CODE	Total Berth Lngth (m)	Number of Berths	Unit Berth Lngth (m)		Average Number of Loading and Unloading Container (Box/vessel)	Container Crane Hour Prdctv (BOX/Hr/Cr)	Container Crane Number of Units Instld	Container Crane Number of Units Effctv Wokng	BOR	Berthing Time NOT per Vessel (Hr)	Berthing Time ET per Vessel (Hr)	Berthing Time IT per Vessel (Hr)	Berthing Time BT per Vessel (Hr)	ETR	Number of ship Calls per Year	40' CNTNR RATIO (%)	Berth Productivity 1,000 Box /Yr	Berth Productivity 1,000 Box /Yr	BERTH EFFICNCY (TEU/m /Yr)
TG EMAS	NEW CONTAINER BERTH <ORIGINAL PLAN> 40' CNTNR RATIO=40%	D100	345	1	345	Average	300	25	2	1.60	0.70	4.0	7.5	1.6	13.1	0.57	468	40	140	197	570
						At peak	750	25		1.60		4.0	18.8	1.6	24.4						
	NEW CONTAINER BERTH <IMPROVE CONDITION> DWEL TIME SHORTEN	D101	345	1	345	Average	300	25	2	1.27	0.70	4.0	9.4	1.6	15.0	0.63	408	40	122	171	497
						At peak	750	25		1.60		4.0	18.8	1.6	24.4						
	NEW CONTAINER BERTH <CONDITION IN 2010> 40' CNTNR RATIO=50% LD-UNLD BOX/VSSL=400 <DWTM SHRT, EMP CON-4>	D120	345	1	345	Average	400	25	2	1.60	0.70	4.0	10.0	1.6	15.6	0.64	393	50	157	236	684
						At peak	750	25		1.60		4.0	18.8	1.6	24.4						
MAKASSAR	NEW CONTAINER BERTH <ORIGINAL PLAN> 40' CNTNR RATIO=25% LD-UNLD BOX/VSSL=300	E100	490	1	490	Average	200	25	2	1.60	0.70	4.0	5.0	1.6	10.6	0.47	578	25	116	145	295
						At peak	750	25		1.60		4.0	18.8	1.6	24.4						
	NEW CONTAINER BERTH <IMPROVE CONDITION> YARD OPE SYSTEM DW TM SHORTEN <AJUST TO YARD CPCTY>	E101	490	1	490	Average	200	25	2	1.60	0.70	4.0	5.0	1.6	10.6	0.47	578	25	116	145	295
						At peak	750	25		1.60		4.0	18.8	1.6	24.4						
	(REFR) NEW CONTAINER BERTH <CNTNR CRN:+1>	E110	490	2	245	Average	200	25	1.5	1.47	0.70	4.0	5.4	1.6	11.0	0.49	555	25	111	139	567
						At peak	750	25		1.47		4.0	20.4	1.6	26.0						
	(REFR) NEW CONTAINER BERTH <CONDITION IN 2010> 40' CNTNR RATIO=50% LD-UNLD BOX/VSSL=400 <AJUST TO YARD CPCTY>	E120	490	1	490	Average	400	25	2	1.60	0.70	4.0	10.0	1.6	15.6	0.64	393	50	157	236	481
						At peak	750	25		1.60		4.0	18.8	1.6	24.4						

APPENDIX PRODUCTIVITY OF EXISTING CONTAINER TERMINALS (2)

CODE	Container Storage Yard: Necessary Ground Slots to adjust Berth Productivity										Existing Container Yard Productivity								Yard Efficncy
	Cntnr Hndlng System	Proportion		Cargo Volume Required to Handle (1,000 TEU/Yr)	Dwell Time TIME (Day)	Required Storage Capacity (1,000 TEU)	Stacking Height 1 ovr 3	Stacking Height 1 ovr 4	Necessary Ground Slots 1 ovr 3 (TEU)	Necessary Ground Slots 1 ovr 4 (TEU)	Yard Area (Ha)	Ratio of Land Use (Ground Slots TEU/Ha)	Ground Slot Capacity (TEU)	Avrage Stacking Height (Tier)	Yard Storage Capacity (TEU)	Dwelling Time TIME (Day)	YOR (%)	Yard Stotage Capacity (Prdctvty) (TEU /Ha/Y)	(TEU/Ha /Yr)
D100	Trasfer Crane System	ImpLoaded	0.35	68.8	12	2.94	3.0	3.0	980	980	5.4	259	1,398	3.2	4,472	12.00	75	102,000	18,000
		Empty	0.15	29.5	12	1.26	4.0	4.0	315	315									
		ExpLoaded	0.45	88.5	12	3.78	3.0	3.0	1,260	1,260									
		Empty	0.05	9.8	12	0.42	4.0	4.0	105	105									
				196.6	12.0	8.40	3.2	3.2	2,661	2,661									
D101	Trasfer Crane System	ImpLoaded	0.35	60.0	9	1.92	2.3	3.0	855	641	5.4	259	1,398	3.15	4,402	5.60	60	172,000	31,000
		Empty	0.15	25.7	3	0.27	4.0	4.0	69	69									
		ExpLoaded	0.45	77.2	4	1.10	2.4	3.0	458	366									
		Empty	0.05	8.6	3	0.09	4.0	4.0	23	23									
				171.5	5.6	3.39	2.4	3.1	1,405	1,099									
D120	Trasfer Crane System	ImpLoaded	0.45	106.1	7	2.65	2.3	3.0	1,176	882	5.2	259	1,346	3.15	4,239	5.20	60	178,000	34,000
		Empty	0.05	11.8	3	0.13	4.0	4.0	32	32									
		ExpLoaded	0.40	94.3	4	1.34	2.4	3.2	560	420									
		Empty	0.10	23.6	3	0.25	4.0	4.0	63	63									
				235.8	5.2	4.37	2.4	3.1	1,831	1,397									
E100	Trasfer Crane System	ImpLoaded	0.45	65.1	12	2.78	2.3	3.5	1,236	795	5.02	283	1,420	3.6 FL;3.5 EM;3.8	5,113	12.80	60	87,000	17,000
		Empty	0.05	7.2	15	0.39	4.0	3.8	97	102									
		ExpLoaded	0.30	43.4	12	1.85	2.4	3.5	773	530									
		Empty	0.20	28.9	15	1.55	4.0	3.8	386	407									
				144.6	12.8	6.57	2.6	3.6	2,492	1,833									
E101	Trasfer Crane System	ImpLoaded	0.45	65.1	9	2.09	2.3	3.5	927	596	5.02	283	1,420	3.5	4,971	5.90	60	184,000	36,000
		Empty	0.05	7.2	3	0.08	4.0	3.8	19	20									
		ExpLoaded	0.30	43.4	4	0.62	2.4	3.5	258	177									
		Empty	0.20	28.9	3	0.31	4.0	3.8	77	81									
				144.6	6.0	3.09	2.4	3.5	1,281	874									
E110	Trasfer Crane System	ImpLoaded	0.45	62.5	9	2.00	2.3	3.5	890	572	2.51	283	710	3.5	2,485	5.90	60	92,000	36,000
		Empty	0.05	6.9	3	0.07	4.0	3.8	19	20									
		ExpLoaded	0.30	41.6	4	0.59	2.4	3.5	247	170									
		Empty	0.20	27.8	3	0.30	4.0	3.8	74	78									
				138.8	6.0	2.97	2.4	3.5	1,230	839									
E120	Trasfer Crane System	ImpLoaded	0.45	106.1	9	3.40	2.3	3.5	1,512	972	5.02	283	1,420	3.5	4,971	6.10	60	178,000	35,000
		Empty	0.05	11.8	3	0.13	4.0	3.8	32	33									
		ExpLoaded	0.40	94.3	4	1.34	2.4	3.5	560	384									
		Empty	0.10	23.6	3	0.25	4.0	3.8	63	66									
				235.8	6.1	5.12	2.4	3.5	2,167	1,455									

APPENDIX PRODUCTIVITY OF EXISTING CONTAINER TERMINALS (1)

PORT	TERMINAL NAME	CODE	Total Berth Lngth (m)	Number of Berths	Unit Berth Lngth (m)		Average Number of Loading and Unloading Container (Box/vessel)	Container Crane: Hour Prdctv (BOX/Hr/Cr)	Container Crane: Number of Units Instld	Container Crane: Number of Units Effctv Woking	BOR	Berthing Time: NOT per Vessel (Hr)	Berthing Time: ET per Vessel (Hr)	Berthing Time: IT per Vessel (Hr)	Berthing Time: BT per Vessel (Hr)	ETR	Number of ship Calls per Year	40' CNTNR RATIO (%)	Berth Productivity: 1,000 Box /Yr	Berth Productivity: 1,000 Box /Yr	BERTH EFFICNCY (TEU/m /Yr)
PANJANG	D2 NEW CONTAINER BERTH <ORIGINAL PLAN> 40' CNTNR RATIO=25% LD-UNLD BOX/VSSL=200	F100	300	1	300	Average	200	25	2	1.60	0.70	4.0	5.0	1.6	10.6	0.47	578	25	116	145	482
						At peak	750	25		1.60		4.0	18.8	1.6	24.4						
	D2 NEW CONTAINER BERTH <LD-UNLD BOX/VSSL=400> <IMPROVE CONDITION> EMPTY CON OPE SYSTEM DW TM SHORTEN	F120	300	1	300	Average	400	25	2	1.60	0.70	4.0	10.0	1.6	15.6	0.64	393	25	157	197	655
						At peak	750	25		1.60		4.0	18.8	1.6	24.4						
	D2 NEW CONTAINER BERTH <CONDITION IN 2010> 40' CNTNR RATIO=50% LD-UNLD BOX/VSSL=400	F130	300	1	300	Average	400	25	2	1.60	0.70	4.0	10.0	1.6	15.6	0.64	393	50	157	236	786
						At peak	750	25		1.60		4.0	18.8	1.6	24.4						

APPENDIX PRODUCTIVITY OF EXISTING CONTAINER TERMINALS (2)

CODE	Container Storage Yard										Existing Container Yard Productivity								
	Necessary Ground Slots to adjust Berth Productivity																		
	Cntnr Hndlng Systm	Proportion		Cargo Volume Required to Handle (1,000 TEU/Yr)	Dwell Time TIME (Day)	Required Storage Capacity (1,000 TEU)	Stacking Height 1 ovr 3	Stacking Height 1 ovr 4	Necessary Ground Slots 1 ovr 3 (TEU)	Necessary Ground Slots 1 ovr 4 (TEU)	Yard Area (Ha)	Ratio of Land Use (Ground Slots TEU/Ha)	Ground Slot Capacity (TEU)	Avrage Stacking Height (Tier)	Yard Storage Capacity (TEU)	Dwelling Time TIME (Day)	YOR (%)	Yard Stotage Capacity (Prdctvty) (TEU /Ha/Y)	Yard Efficncy (TEU/Ha /Yr)
F100	Trasfer Crane System	Imploaded	0.05	7.2	8	0.21	2.3	2.5	92	82	6.55	266	1,740	2.9 FL:2.5 EM:3.5	5,045	8.00	65	149,000	22,000
		Empty	0.45	65.1	8	1.85	4.0	3.5	464	530									
		Exploaded	0.45	65.1	8	1.85	2.4	2.5	773	742									
		Empty	0.05	7.2	8	0.21	4.0	3.5	52	59									
				144.6	8.0	4.12	3.0	2.9	1,379	1,413									
F120	Trasfer Crane System	Imploaded	0.05	9.8	8	0.28	2.3	2.5	124	112	6.55	266	1,740	2.7 FL:2.5 EM:3.5	4,697	5.50	65	202,000	30,000
		Empty	0.45	88.4	3	0.95	4.0	3.5	236	270									
		Exploaded	0.45	88.4	8	2.52	2.4	2.5	1,050	1,008									
		Empty	0.05	9.8	3	0.11	4.0	3.5	26	30									
				196.5	5.5	3.85	2.7	2.7	1,437	1,420									
F130	Trasfer Crane System	Imploaded	0.45	106.1	8	3.02	2.3	2.5	1,344	1,210	6.55	266	1,740	2.5 FL:2.5 EM:3.5	4,349	7.30	65	141,000	21,000
		Empty	0.05	11.8	3	0.13	4.0	3.5	32	36									
		Exploaded	0.40	94.3	8	2.69	2.4	2.5	1,120	1,075									
		Empty	0.10	23.6	3	0.25	4.0	3.5	63	72									
				235.8	7.3	6.09	2.4	2.5	2,559	2,393									

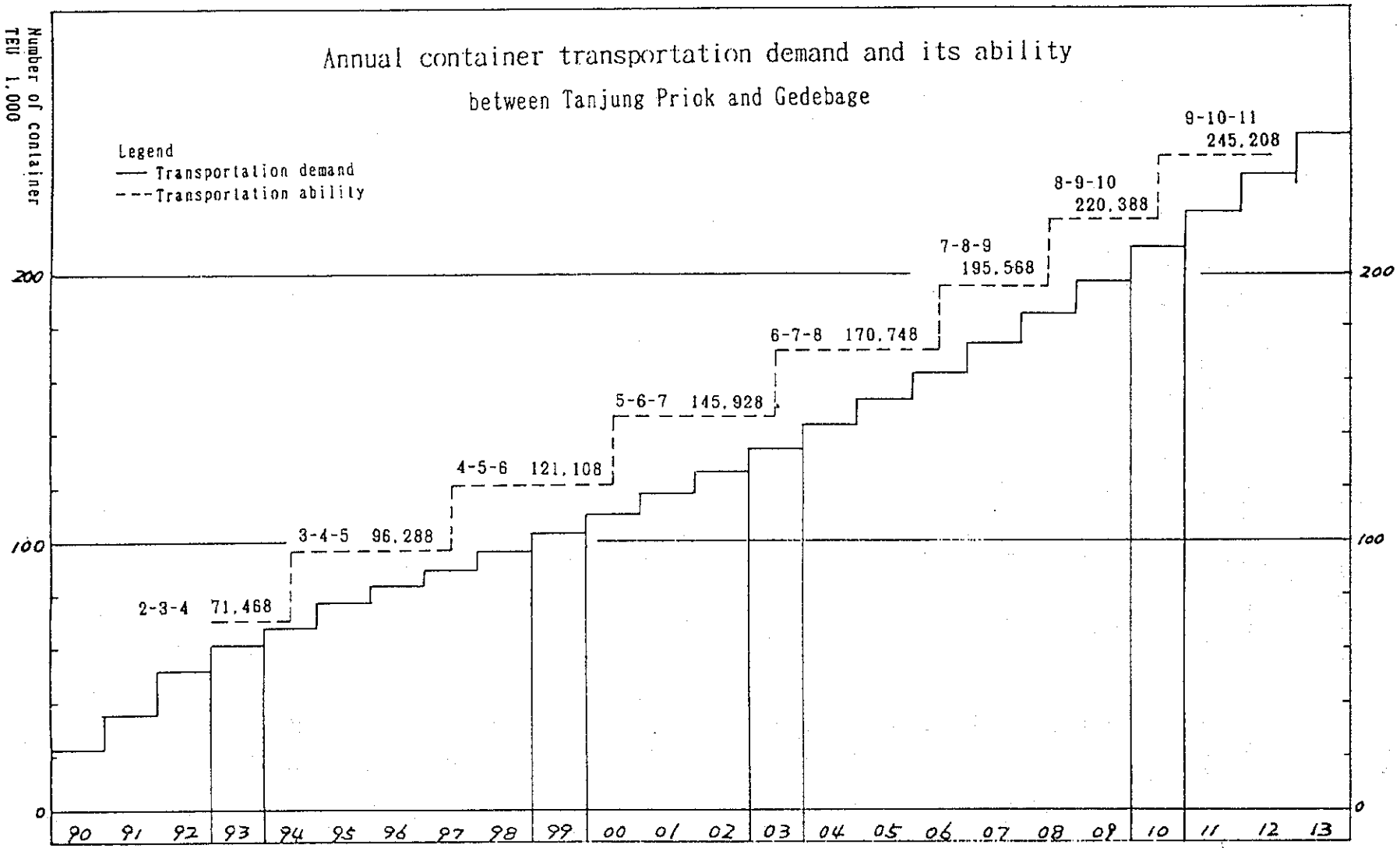
APPENDIX F

Appendix

Transportation demand forecast and necessary train numbers

	traffic	Number of train			operation pland			
	demand TEU	/year	/day	One way	pattern one way	number of train /year	Average one way /day	TEU /year
1990	23,065	678	1.9	1.0				
1991	35,836	1,054	2.9	1.5				
1992	52,008	1,530	4.2	2.1				
1993	60,918	1,792	4.9	2.5				
1994	67,562	1,987	5.4	2.7	2- 3- 4	2,102	2.9	71,469
1995	76,595	2,253	6.2	3.1				
1996	82,935	2,439	6.7	3.4				
1997	89,328	2,627	7.2	3.6	3- 4- 5	2,832	3.9	96,288
1998	95,903	2,821	7.7	3.9				
1999	102,757	3,022	8.3	4.2				
2000	109,964	3,234	8.8	4.4				
2001	117,582	3,458	9.5	4.8	4- 5- 6	3,562	4.9	121,108
2002	125,644	3,695	10.1	5.1				
2003	134,189	3,947	10.8	5.4	5- 6- 7	4,292	5.9	145,928
2004	143,256	4,213	11.5	5.8				
2005	152,880	4,496	12.3	6.2				
2006	163,096	4,797	13.1	6.6	6- 7- 8	5,022	6.9	170,748
2007	173,892	5,114	14.0	7.0				
2008	185,295	5,450	14.9	7.5	7- 8- 9	5,752	7.9	195,568
2009	197,333	5,804	15.9	8.0				
2010	210,033	6,177	16.9	8.5	8- 9-10	6,482	8.9	220,388
2011	223,424	6,571	18.0	9.0				
2012	237,501	6,985	19.1	9.6	9-10-11	7,212	9.9	245,208

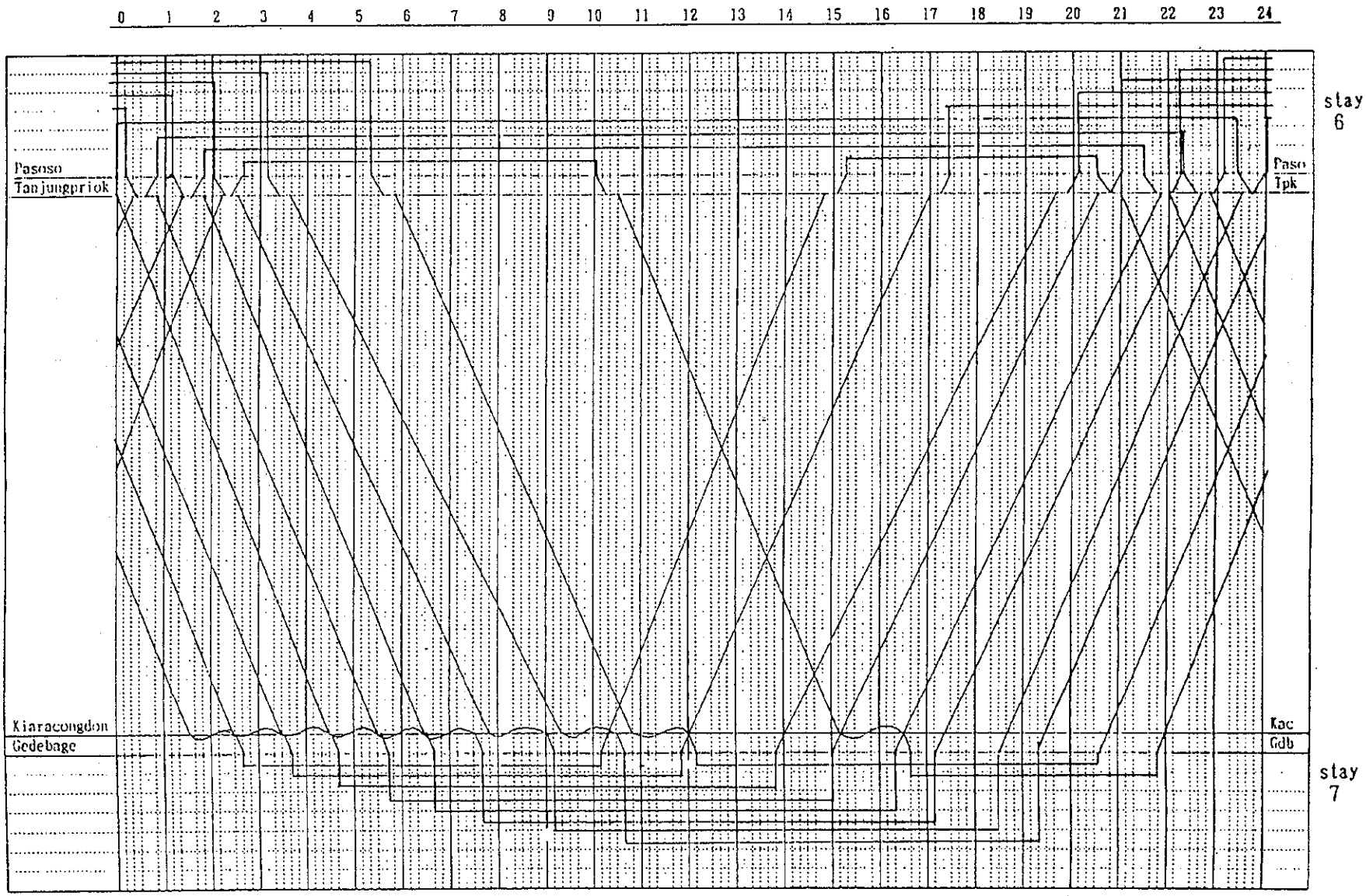
notes ; operation pattern : Sunday and Monday —week day—Peak



Appendix

Annual container transportation demand and ability
Between Tanjung Priok and Gedebage

Tanjung Priok and Gedebage Wagonformation staying diagram



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Appendix Tanjung Priok and Gedebage Wagonformation staying diagram

Appendix

Estimating demand of Container Traffic in Jember area

	Jember area total (TEU)	Container Traffic on Railway(TEU)			number of train		
		total	Export	Import	/year	/day	one way
1989	20,837	518	259	0	25.9	0.1	
1990	21,358	648	324	0	32.4	0.1	
1991	21,892	706	353	0	35.3	0.1	
1992	22,439	1,236	521	0	61.8	0.2	0.1
1993	23,000	2,516	1,258	0	125.8	0.3	0.2
1994	23,575	2,600	1,300	0	130.0	0.4	0.2
1995	24,164	2,840	1,420	68	142.0	0.4	0.2
1996	24,768	3,436	1,718	88	171.8	0.5	0.2
1997	25,388	4,117	2,058	112	205.9	0.6	0.3
1998	26,022	4,879	2,439	138	244.0	0.7	0.3
1999	26,673	5,715	2,857	167	285.8	0.8	0.4
2000	27,340	6,613	3,307	198	330.7	0.9	0.5
2001	28,023	7,559	3,779	230	378.0	1.0	0.5
2002	28,724	8,534	4,267	264	426.7	1.2	0.6
2003	29,442	9,519	4,760	298	476.0	1.3	0.7
2004	30,178	10,499	5,250	332	525.0	1.4	0.7
2005	30,932	11,458	5,729	365	572.9	1.6	0.8
2006	31,706	12,387	6,193	397	619.4	1.7	0.8
2007	32,498	13,277	6,638	427	663.9	1.8	0.9
2008	33,311	14,125	7,063	457	706.3	1.9	1.0
2009	34,144	14,932	7,466	484	746.6	2.0	1.0
2010	34,997	15,699	7,849	511	785.0	2.2	1.1
2011	35,872	16,429	8,214	536	821.5	2.3	1.1
2012	36,769	17,127	8,564	560	856.4	2.3	1.2
2013	37,688	17,799	8,889	583	890.0	2.4	1.2
2014	38,630	18,448	9,224	606	922.4	2.5	1.3
2015	39,596	19,081	9,540	627	954.1	2.6	1.3
2016	40,586	19,701	9,850	649	985.1	2.7	1.3
2017	41,601	20,312	10,156	670	1015.6	2.8	1.4
2018	42,641	20,918	10,459	691	1045.9	2.9	1.4

notes : one container train= 2TEU * 10car =20TEUs

Appendix

(a)Urgent Plan at KIARACONDONG

Unit:1000Rp

	Item	Unit	Total Qty	Unit Price	Total Budget	F/C %	D/C %	1995 F/C	1995 D/C	1996 F/C	1996 D/C	1997 F/C	1997 D/C	1998 F/C	1998 D/C	Remarks
<1>	Land Acquisition	m2	0	0	0											
<2>	Widening Road															
	a)Widening of Pavement	m2	330	40	13,200	70	30			9,240	3,960					
	b)Sandy Gravel(t=0.5m)	m2	330	50	16,500	60	40			9,900	6,600					
	c)New Drainage 1m*1m	m	50	100	5,000	60	40			3,000	2,000					
	d)Removal of Lane Separator	m	10	30	300	0	100			0	300					
	e)relocation of Existing Fence	m	40	20	800	0	100			0	800					
	f)Removal of Existing Fence	m	10	30	300	0	100			0	300					
	g)Installation of New Gate	set	1	5,000	5,000	55	45			2,750	2,250					
					41,100					24,890	16,210					
<3>	Track and Turnout															
	a)Installation Turnout	set	1	150,000	150,000	88	12					132,000	18,000			
	b)Removal Turnout	set	5	1,700	8,500	50	50					4,250	4,250			
	c)Installation Railway	m	240	1,100	264,000	88	12					232,320	31,680			
	d)Removal Railway	m	1,065	50	53,250	50	50					26,625	26,625			
	e)others(track maintenance)	m	1,000	20	20,000	0	100					0	20,000			
					495,750							395,195	100,555			
<4>	Building															
	a)Signal Cabin	Ls	1	500,000	500,000	55	45			275,000	225,000					
<5>	Physical Contingency 10%				103,685					29,989	24,121	39,520	10,055	0	0	
	*Sub Total <1+---+5>				1,140,535			0	0	329,879	265,331	434,715	110,610	0	0	
<6>	Signalling															
	a)Electric Interlocking Device	set	1	2,360,000	2,360,000					2,340,000	0		20,000			
	b)Automatic Block System	set	1	60,340	60,340							59,700	640			

Appendix

(a)Urgent Plan at KIARACONDONG

Unit:1000Rp

	Item	Unit	Total Qty	Unit Price	Total Budget	F/C %	D/C %	1995 F/C	1995 D/C	1996 F/C	1996 D/C	1997 F/C	1997 D/C	1998 F/C	1998 D/C	Remarks
	c) Signal	set	24	9,400	225,600							184,000	41,600			
	d)Switch machine	set	16	18,413	294,608							270,400	24,208			
	e)Track Circuit	set	23	19,416	446,568							359,260	87,308			
	f)Level Crossing Safety Device	set	1	125,000	125,000							117,000	8,000			
	g)Signal Cable	km	25	31,410	785,250							408,680	376,570			
	h)Removal of Signal	set	1	10,100	10,100							0	10,100			
					4,307,466					2,340,000	0	1,399,040	568,426			
<7>	Electric Power															
	a)Electric Power Source Device	set	3	295,900	887,700							815,700	72,000			
	b)Lighting Equipment	set	3	14,100	42,300							36,000	6,300			
					930,000					0	0	851,700	78,300			
<8>	Telecommunication															
	a)Telecommunication Cable	km	5	51,000	255,000							190,000	65,000			
	b)Linked Equipment	set	16	11,211	179,376							174,600	4,776			
					434,376					0	0	364,600	69,776			
	*Sub Total <6+7+8>				5,671,842			0	0	2,340,000	0	2,615,340	716,502			
<9>	Forklift(10t)	set	1	300,000	300,000	100	0			300,000	0					
<10>	*Management Cost 10%	Ls	1		711,238			0	0	296,988	26,533	305,006	82,711	0	0	
	(<1>---<9>)*0.1															
																Grand Total
	Total				7,823,615			0	0	3,266,867	291,864	3,355,061	909,823	0	0	7,823,615

*Excluding VAT

Appendix

(b)Urgent Plan at Gedebage

Unit:1000Rp

	Item	Unit	Total Qty	Unit Price	Total Budget	For. %	Dom. %	1995 F/C	1995 D/C	1996 F/C	1996 D/C	1997 F/C	1997 D/C	1998 F/C	1998 D/C	Remarks
<1>	Land Acquisition	m2	0	0	0											
<2>	Pavement(Container Yard)															
	a)Pavement (t=0.27m)	m2	2,920	40	116,800	0	100	0	116,800							
	b)Sandy Gravel (t=1.0m)	m2	2,920	80	233,600	0	100	0	233,600							Including pile
	c)Masonry Wall	m3	185	100	18,500	0	100	0	18,500							
	d)others(drainage.etc)	set	1	90,000	90,000	0	100	0	90,000							
					458,900			0	458,900							
<3>	Drainage Work (165k450m-166k150m)															
	a)Concrete Pile L=5m	m	677	700	473,900	66	34			312,774	161,126					
	b)Concrete Pile L=6m	m	737	900	663,300	66	34			437,778	225,522					
	c) Pile cap Concrete	m3	98	350	34,300	60	40			20,580	13,720					0.2*0.3*1.629m
	d)Steel Strut	t	34	1,300	44,200	75	25			33,150	11,050					
	e)Safety Passage	m	677	60	40,620	75	25			30,465	10,155					
	f)Common Excavation	m3	3,050	10	30,500	75	25			22,875	7,625					
	g)Borrow Material	m3	3,720	50	186,000	60	40			111,600	74,400					
					1,472,820					969,222	503,598					
<4>	Track and Turnout															
	a)Track raising	m	1,500	100	150,000	0	100			0	75,000	0	75,000			
	b)Installation Turnout	set	6	150,000	900,000	88	12					792,000	108,000			
	c)Removal Turnout	set	2	1,700	3,400	50	50					1,700	1,700			
	d)Installation Railway	m	1,420	1,100	1,562,000	88	12					1,374,560	187,440			
					2,615,400					0	75,000	2,168,260	372,140			
<5>	Building															
	a)Signal Cabin	Ls	1	500,000	500,000	55	45			275,000	225,000					
	b)Removal Signal Cabin	Ls	2	100,000	200,000	0	100			0	200,000					
	c)Management Office	Ls	1	300,000	300,000	55	45			165,000	135,000					
					1,000,000					440,000	560,000					

(b)Urgent Plan at Gedebage

Unit:1000Rp

	Item	Unit	Total Qty	Unit Price	Total Budget	For. %	Dom. %	1995 F/C	1995 D/C	1996 F/C	1996 D/C	1997 F/C	1997 D/C	1998 F/C	1998 D/C	Remarks
<6>	*Physical Contingency 10%	Ls	1		554,712	0	0	0	45,890	140,922	113,860	216,826	37,214	0	0	
	*Sub Total <1>+---+<6>				6,101,832	0	0	0	504,790	1,550,144	1,252,458	2,385,086	409,354	0	0	
<7>	Signalling															
	a)Electric I.Device	set	1	3,240,000	3,240,000					3,220,000	0		20,000			
	b)Automatic Block System	set	1	60,340	60,340							59,700	640			
	c) Signal	set	32	8,425	269,600							221,200	48,400			
	d)Switch machine	set	18	18,600	334,800							307,600	27,200			
	e)Track Circuit	set	26	19,157	498,082							401,020	97,062			
	f)Level Crossing Safty Device	set	1	125,000	125,000							117,000	8,000			
	g)Signal Cable	km	30	32,833	984,990							520,750	464,240			
	h)Removal of Signal	set	1	10,100	10,100							0	10,100			
					5,522,912					3,220,000	0	1,627,270	675,642			
<8>	Electric Power															
	a)Electric Power Source Device	set	3	295,900	887,700	92	8					816,684	71,016			
	b)Lighting Equipment	set	3	14,100	42,300	86	14					36,378	5,922			
					930,000					0	0	853,062	76,938			
<9>	Telecommunication															
	a)Telecommunication Cable	km	5	51,000	255,000	75	25					191,250	63,750			
	b)Linked Equipment	set	28	13,906	389,368	97	3					377,687	11,681			
					644,368					0	0	568,937	75,431			
	*Sub Total <7+8+9>				7,097,280			0	0	3,220,000	0	3,049,269	828,011			
<10>	Locomotive	set	2	3,260,000	6,520,000	50	50			3,260,000	3,260,000			0	0	Bandung Depot

Appendix

(b)Urgent Plan at Gedebage

Unit:1000Rp

	Item	Unit	Total Qty	Unit Price	Total Budget	For. %	Dom. %	1995 F/C	1995 D/C	1996 F/C	1996 D/C	1997 F/C	1997 D/C	1998 F/C	1998 D/C	Remarks
<11>	*Management Cost 10%	Ls	1		1,971,911			0	50,479	803,014	451,246	543,435	123,737	0	0	
	(<1>---<10>)*0.1															
																Grand Total
	Total				21,691,023			0	555,269	8,833,158	4,963,704	5,977,790	1,361,102	0	0	21,691,023

*Excluding VAT

(c)F/S : By 2003 Completed at Kiaracondong (Including Handling Mechine)

Unit:1000Rp

	Item	Unit	Total Qty	Unit Price	Total Budget	F/C %	D/C %	2001 F/C	2001 D/C	2002 F/C	2002 D/C	2003 F/C	2003 D/C	Remarks
<1>	Land Acquisition	m2	0	300	0	0	100					0	0	
<2>	Earthwork													
	a)Installation Fence	m	300	120	36,000	55	45					19,800	16,200	
	b)Removal Fence	m	430	20	8,600	0	100					0	8,600	
	c)Embankment	m3	760	40	30,400	60	40					18,240	12,160	V=8*0.5*190m
	d)Retaining wall	m	220	70	15,400	55	45					8,470	6,930	H=0.5--1.5m
	e)Improvement Drainage	set	1	5,000	5,000	55	45					2,750	2,250	
					95,400							49,260	46,140	
<3>	Track and Turnout													
	a)Installation Turnout	set	6	150,000	900,000	88	12					792,000	108,000	
	b)Removal Turnout	set	7	1,700	11,900	50	50					5,950	5,950	
	c)Installation Railway	m	1,330	1,100	1,463,000	88	12					1,287,440	175,560	
	d)Removal Railway	m	1,380	50	69,000	50	50					34,500	34,500	
	e)Relocation of used railway	m	100	20	2,000	0	100					0	2,000	for depot
					2,445,900							2,119,890	326,010	
<4>	Pavement													
	a)Surface Course(t=5mm)	m2	23,350	20	467,000	70	30					326,900	140,100	
	b)Asphalt Treated Base(t=10mm)	m2	23,350	30	700,500	70	30					490,350	210,150	
					1,167,500							817,250	350,250	
<5>	Building													
	C.F,S	m2	700	600	420,000	55	45					231,000	189,000	
	Maintenance Shop	m2	150	400	60,000	55	45					33,000	27,000	
					480,000							264,000	216,000	
<6>	*Physical Contingency 10%	Ls	1		418,880							325,040	93,840	

Appendix

(c)F/S : By 2003 Completed at Kiaracondong (Including Handling Mechine)

Unit:1000Rp

	Item	Unit	Total Qty	Unit Price	Total Budget	F/C %	D/C %	2001 F/C	2001 D/C	2002 F/C	2002 D/C	2003 F/C	2003 D/C	Remarks
	*Sub Total <2+---+6>				4,607,680							3,575,440	1,032,240	
<7>	Signalling													
	a)Electric I. Device	set	1	606,000	606,000							600,000	6,000	
	b)Signal	set	2	6,100	12,200							9,600	2,600	
	c)Switch Machine	set	2	20,100	40,200							37,200	3,000	
	d)Track Circuit	set	1	34,200	34,200							27,020	7,180	
	e)Signal Cable	km	5	34,060	170,300							91,150	79,150	
	f)Removal of Signal	set	1	2,000	2,000							0	2,000	
					864,900							764,970	99,930	
<8>	Electric Power													
	a)Electric Power Source D.	set	0		0							0	0	
	b)Lighting Equipment	set	0		0							0	0	
					0							0	0	
<9>	Telecommunication													
	a)Linked Equipment	set	1	17,500	17,500							17,100	400	
<10>	*Subtotal<7>+<8>+<9>				882,400							782,070	100,330	
<11>	Handling machine													
	a)Electric Equipment	Ls	1	1,000,000	1,000,000	100	0					1,000,000	0	Generator
	b)Gantry crane(42t)	set	1	3,600,000	3,600,000	100	0					3,600,000	0	
	C)Toplifter(35t)	set	1	1,400,000	1,400,000	100	0					1,400,000	0	
	d)Forklift(10t)	set	1	300,000	300,000	100	0					300,000	0	

Appendix

(c)F/S : By 2003 Completed at Kiaracondong (Including Handling Mechine)

Unit:1000Rp

	Item	Unit	Total Qty	Unit Price	Total Budget	F/C %	D/C %	2001 F/C	2001 D/C	2002 F/C	2002 D/C	2003 F/C	2003 D/C	Remarks
	e)Forklift(3.5t)	set	1	90,000	90,000	100	0					90,000	0	
	f)Forklift(2.5t)	set	2	60,000	120,000	100	0					120,000	0	
	g)Chassis	set	4	50,000	200,000	100	0					200,000	0	
	h)Head truck	set	2	200,000	400,000	100	0					400,000	0	
	i)Hand Pallet(2.5t)	set	1	40,000	40,000	100	0					40,000	0	
					7,150,000							7,150,000	0	
<12>	*Management Cost 10%	Ls	1	1,264,008	1,264,008							1,150,751	113,257	
	(<1>---<11>)*0.1													
														Grand Total
	Total				13,904,088							12,658,261	1,245,827	13,904,088

*Excluding VAT

Appendix

(d)F/S : By 2003 Completed at GEDEBAGE (Including Loco and Wagon)

Unit:1000Rp

	Item	Unit	Total Qty	Unit Price	Total Budget	F/C %	D/C %	2001 F/C	2001 D/C	2002 F/C	2002 D/C	2003 F/C	2003 D/C	Remarks
<1>	Land Acquisition													
	a)Land Acquisition	m2	9,480	300	2,844,000	0	100	0	853,200	0	1,990,800			
	b)Compensation Fee	house	50	21,000	1,050,000	0	100	0	315,000	0	735,000			
					3,894,000			0	1,168,200	0	2,725,800	0	0	
<2>	Earthwork													
	a)Common Excavation and Backfill	m3	2,600	15	39,000	70	30					27,300	11,700	
	b)Borrow Material	m3	4,220	50	211,000	60	40					126,600	84,400	
	c)Concerete Pile L=6m	m	215	900	193,500	66	34					127,710	65,790	
	d)Installation Fence	m	650	120	78,000	55	45					42,900	35,100	
					521,500			0	0	0	0	324,510	196,990	
<3>	Track and Turnout													
	a)Installation Turnout	set	17	150,000	2,550,000	88	12					2,244,000	306,000	
	b)Removal Turnout	set	2	1,700	3,400	50	50					1,700	1,700	
	c)Installation Railway	m	2,570	1,100	2,827,000	88	12					2,487,760	339,240	
	d)Relocation Railway	m	400	40	16,000	50	50					8,000	8,000	
	e)Removal Railway	m	30	50	1,500	50	50					750	750	
					5,397,900			0	0	0	0	4,742,210	655,690	
<4>	Bridge													
	a)Upper Structure	set	3	200,000	600,000	88	12					528,000	72,000	
	b)Lower Structure	set	3	300,000	900,000	88	12					792,000	108,000	
					1,500,000			0	0			1,320,000	180,000	
<5>	Building													
	a)Extension Office	m2	300	500	150,000	55	45					82,500	67,500	

(d)F/S : By 2003 Completed at GEDEBAGE (Including Loco and Wagon)

Unit:1000Rp

	Item	Unit	Total Qty	Unit Price	Total Budget	F/C %	D/C %	2001 F/C	2001 D/C	2002 F/C	2002 D/C	2003 F/C	2003 D/C	Remarks
<6>	*Physical Contingency 10%													
	(<1>---<5>)*0.1	Ls	1		1,146,340			0	116,820	0	272,580	646,922	110,018	
	*Sub Total <2+---+6>				8,715,740			0	116,820	0	272,580	7,116,142	1,210,198	
<7>	Signalling													
	a)Electric I.Device	set	1	1,110,000	1,110,000							1,100,000	10,000	
	b)Signal	set	8	8,200	65,600							53,600	12,000	
	c)Switch Machine	set	10	20,100	201,000							186,000	15,000	
	d)Track Circuit	set	11	19,731	217,040							174,020	43,020	
	e)Signal Cable	km	12	30,993	371,920							192,610	179,310	
	f)Removal of Signal	set	1	2,000	2,000							0	2,000	
					1,967,560							1,706,230	261,330	
<8>	Electric Power													
	a)Electric Power Source D.	set	1	295,900	295,900							271,900	24,000	
	b)Lighting Equipment	set	2	14,100	28,200							24,000	4,200	
					324,100							295,900	28,200	
<9>	Telecommunication													
	a)Telecommunication Cable	km	1	51,000	51,000							38,000	13,000	
	b)Linked Equipment etc.	Ls	1	140,730	140,730							137,400	3,330	
					191,730							175,400	16,330	
<10>	*Sub Total<7>+<8>+<9>				2,483,390							2,177,530	305,860	

Appendix

(d)F/S : By 2003 Completed at GEDEBAGE (Including Loco and Wagon)

Unit:1000Rp

	Item	Unit	Total Qty	Unit Price	Total Budget	F/C %	D/C %	2001 F/C	2001 D/C	2002 F/C	2002 D/C	2003 F/C	2003 D/C	Remarks
<11>	Locomotive and Wagon											<2004years>	<2004years>	
	a)Locomotive	set	3	3,260,000	9,780,000	50	50	1,630,000	1,630,000			3,260,000	3,260,000	
	b)Wagon	set	17	140,000	2,380,000	0	100					0	2,380,000	
					12,160,000			1,630,000	1,630,000	0	0	3,260,000	5,640,000	
<12>	*Management Cost 10%	Ls	1	2,725,313	2,725,313			163,000	291,502	0	299,838	1,255,367	715,606	
	(<1>---<11>)*0.1													
														Grand Total
	Total				29,978,443			1,793,000	3,206,522	0	3,298,218	13,809,039	7,871,664	29,978,443

*Excluding VAT

Appendix

(e)F/S : Doubling of Track

Unit:1000Rp

	Item	Unit	Total Qty	Unit Price	Total Budget	F/C %	D/C %	2006 F/C	2006 D/C	2007 F/C	2007 D/C	2008 F/C	2008 D/C	Remarks
<1>	Compensation fee	house	230	21,000	4,830,000	0	100	0	4,830,000					
<2>	Earthwork													
	a)Common Excavation and Backfill	m3	0	15	0	60	40			0	0			
	b)Borrow Material	m3	27,700	60	1,662,000	60	40			698,040	465,360	299,160	199,440	
	c)Retaining wall	m	2,800	70	196,000	55	45			53,900	44,100	53,900	44,100	
	d)Drainage(Width 1.0m)	m	3,430	100	343,000	55	45			94,325	77,175	94,325	77,175	
	c)Installation Fence	m	1,100	120	132,000	55	45					72,600	59,400	
					2,333,000					846,265	586,635	519,985	380,115	
<3>	Track and Turnout													
	a)Installation Turnout	set	1	150,000	150,000	88	12					132,000	18,000	
	b)Removal Turnout	set	1	1,700	1,700	50	50					850	850	
	c)Installation Railway	m	3,935	1,100	4,328,500	88	12					3,809,080	519,420	
	d)Removal Railway	m	0	50	0	50	50					0	0	
					4,480,200					0	0	3,941,930	538,270	
<4>	Bridge													
	a)160K867M (Span 1.0m)	set	1	120,000	120,000	88	12					105,600	14,400	
	b)161K010M (Span 10.0m)	set	1	600,000	600,000	88	12			528,000	72,000			
	c)161K638M (Span 4.3m)	set	1	350,000	350,000	88	12			308,000	42,000			
	d)161K654M (Span 0.7m)	set	1	110,000	110,000	88	12					96,800	13,200	
	e)162K288M (Span 3.1m)	set	1	250,000	250,000	88	12			220,000	30,000			
	f)162K528M (Span 8.0m)	set	1	500,000	500,000	88	12			440,000	60,000			
	g)162K683M (Span 0.7m)	set	1	110,000	110,000	88	12					96,800	13,200	
	h)163K234M (Span 10.0m)	set	2	600,000	1,200,000	88	12			1,056,000	144,000			
	i)163K379M (Span 0.7m)	set	1	110,000	110,000	88	12					96,800	13,200	

Appendix

(e)F/S : Doubling of Track

Unit:1000Rp

	Item	Unit	Total Qty	Unit Price	Total Budget	F/C %	D/C %	2006 F/C	2006 D/C	2007 F/C	2007 D/C	2008 F/C	2008 D/C	Remarks
	j)163K571M (Span 2.0m)	set	1	200,000	200,000	88	12					176,000	24,000	
	k)163K791M (Span 0.7m)	set	1	110,000	110,000	88	12					96,800	13,200	
	l)164K048M (Span 3.1m)	set	1	250,000	250,000	88	12			220,000	30,000			
	m)164K289M (Span 0.7m)	set	1	110,000	110,000	88	12					96,800	13,200	
	n)164K953M (Span 5.0m)	set	1	350,000	350,000	88	12			308,000	42,000			
					4,370,000					3,080,000	420,000	765,600	104,400	
<5>	Building													
	a)Extension Office	m2	0	350	0	0	100					0	0	
<6>	*Physical Contingency 10%	Ls	1		1,601,320			0	483,000	392,627	100,664	522,752	102,279	
	*Sub Total <2>+---+<6>				12,784,520					4,318,892	1,107,299	5,750,267	1,125,064	
<7>	Electric Reference at Kac													
	a)Electric I.Device	set	1	506,000	506,000							500,000	6,000	
	b)Automatic Blocking System	set	1	60,340	60,340							59,700	640	
	c)Switch Machine	set	3	20,100	60,300							55,800	4,500	
	d)Track Circut	set	4	22,550	90,200							70,180	20,020	
	e)Signal Cable	km	2.00	30,380	60,760							31,230	29,530	
	f)Telecommunication Cable	km	3.00	51,000	153,000							114,000	39,000	
					930,600							830,910	99,690	
<8>	Electric Reference at Gdb													
	a)Electric I.Device	set	1	506,000	506,000							500,000	6,000	
	b)Automatic Blocking System	set	1	60,340	60,340							59,700	640	

Appendix

(e)F/S : Doubling of Track

Unit:1000Rp

	Item	Unit	Total Qty	Unit Price	Total Budget	F/C %	D/C %	2006 F/C	2006 D/C	2007 F/C	2007 D/C	2008 F/C	2008 D/C	Remarks
	c)Signal	set	1	14,500	14,500							12,400	2,100	
	d)Switch Machine	set	4	20,100	80,400							74,400	6,000	
	e)Track Circuit	set	5	21,728	108,640							85,100	23,540	
	f)Signal Cable	km	3.00	29,153	87,460							44,230	43,230	
	g)Telecommunication Cable	km	3.00	51,000	153,000							114,000	39,000	
	h)Linked Equipment	set	1	17,500	17,500							17,100	400	
					1,027,840							906,930	120,910	
<9>	*Sub Total<7>+<8>				1,958,440							1,737,840	220,600	
<10>	Locomotive and Wagon	set	0	0	0	100	0					0	0	
<11>	*Management Cost 10%	Ls	1		1,957,296			0	531,300	431,889	110,730	748,811	134,566	
	(<1>---<10>)*0.1													
														Grand Total
	Total				21,530,256			0	5,844,300	4,750,781	1,218,028	8,236,917	1,480,230	21,530,256

*Excluding VAT

Appendix

(f)F/S : Pasoso St. Stage(1)

Unit:1000Rp

Item	Unit	Total Qty	Unit Price	Total Budget	F/C %	D/C %	2001 F/C	2001 D/C	After 2010 F/C	After 2010 D/C	Later Than deft F/C	Later Than deft D/C	Remarks
Land Acquisition	m2	0	0	0									
Track													
a)Installation Turnout	set	3	150,000	450,000	88	12					396,000	54,000	
b)Scissors crossing	set	1	500,000	500,000	50	50					250,000	250,000	
c)Installation Railway	m	1,200	1,100	1,320,000	88	12					1,161,600	158,400	
				2,270,000							1,807,600	462,400	
*Physical Contingency 10%	Ls	1		227,000							180,760	46,240	
*Sub Total				2,497,000							1,988,360	462,400	
Signalling	set	0	0	0									
Electric Power	set	0	0	0									
Telecommunication	set	0	0	0									
*Management Cost 10%	Ls	1	726,400	249,700			0	0	0	0	198,836	50,864	
													Grand Total
Total				2,746,700			0	0	0	0	2,187,196	559,504	2,746,700

*Excluding VAT

Appendix

(g)F/S : TCT-III Stage(1)

Unit:1000Rp

Item	Unit	Total Qty	Unit Price	Total Budget	F/S %	D/S %	2001 F/S	2001 D/S	2002 F/S	2002 D/S	2003 F/S	2003 D/S	Remarks
Land Acquisition	m2	0	0	0									
Track													
Installation Turnout	set	5	150,000	750,000	88	12					660,000	90,000	
Installation Railway	m	1,890	1,100	2,079,000	88	12					1,829,520	249,480	
				2,829,000							2,489,520	339,480	
Pavement													
a)Asphalt (t=0.15cm)	m2	7,200	50	360,000	60	40					216,000	144,000	
b)Base course(t=0.40cm)	m2	7,200	25	180,000	68	32					122,400	57,600	
				540,000							338,400	201,600	
*Physical Contingency 10 %	Ls	1		336,900							282,792	54,108	
*Sub Total				3,705,900							3,110,712	595,188	
Signalling	set	0	0	0									
Electric Power	set	0	0	0									
Telecommunication	set	0	0	0									
*Management Cost 10%	Ls	1		370,590			0	0	0	0	311,071	59,519	
													Grand Total
Total				4,076,490			0	0	0	0	3,421,783	654,707	4,076,490

*Excluding VAT

Pasoso St. Stage(2stage)

Unit:1000Rp

Item	Unit	Total Qty	Unit Price	Total Budget	F/C %	D/C %	2005 F/C	2005 D/C	2006 F/C	2006 D/C	Remarks
Land Acquisition	m2	0	0	0							
Turnout											
Installation Turnout	set	4	150,000	600,000	88	12			528,000	72,000	
Track											
Installation Railway	m	965	1,100	1,061,500	88	12			934,120	127,380	
Civil(Viaduct)											
Single track(L=845m,H=6.6m)	m	845	5,000	4,225,000	70	30	2,070,250	887,250	887,250	380,250	
*Physical Contingency 10%				588,650			207,025	88,725	234,937	57,963	
Sub Total				6,475,150			2,277,275	975,975	2,584,307	637,593	
Signalling											
	set	1	2,560,000	2,560,000	85	15			2,176,000	384,000	
Electric Power											
	set	1	340,000	340,000	91	9			309,400	30,600	
Telecommunication											
	set	1	140,000	140,000	98	2			137,200	2,800	
*Management Cost 10%	Ls	1		951,515			227,728	97,598	520,691	105,499	
											Grand Total
Total				10,466,665			2,505,003	1,073,573	5,727,598	1,160,492	10,466,665

*Excluding VAT

TCT-III Stage(2)

Unit:1000Rp

Item	Unit	Total Quantity	Unit Price	Total Budget	Foreign %	Domestic %	After 2010		Remarks
							F/C	D/C	
Land Acquisition	m2	0	0	0					
Turnout									
Installation Turnout	set	2	150,000	300,000	88	12	264,000	36,000	
Track									
Installation Railway	m	780	1,100	858,000	88	12	755,040	102,960	
*Physical Contingency 10%				115,800			101,904	13,896	
Sub Total				1,273,800			1,120,944	152,856	
Signalling									
	set	0	0	0					
Electric Power									
	set	0	0	0					
Telecommunication									
	set	0	0	0					
*Management Cost 10%	Ls	1		127,380			112,094	15,286	
									Grand Total
Total				1,401,180			1,233,038	168,142	1,401,180

*Excluding VAT