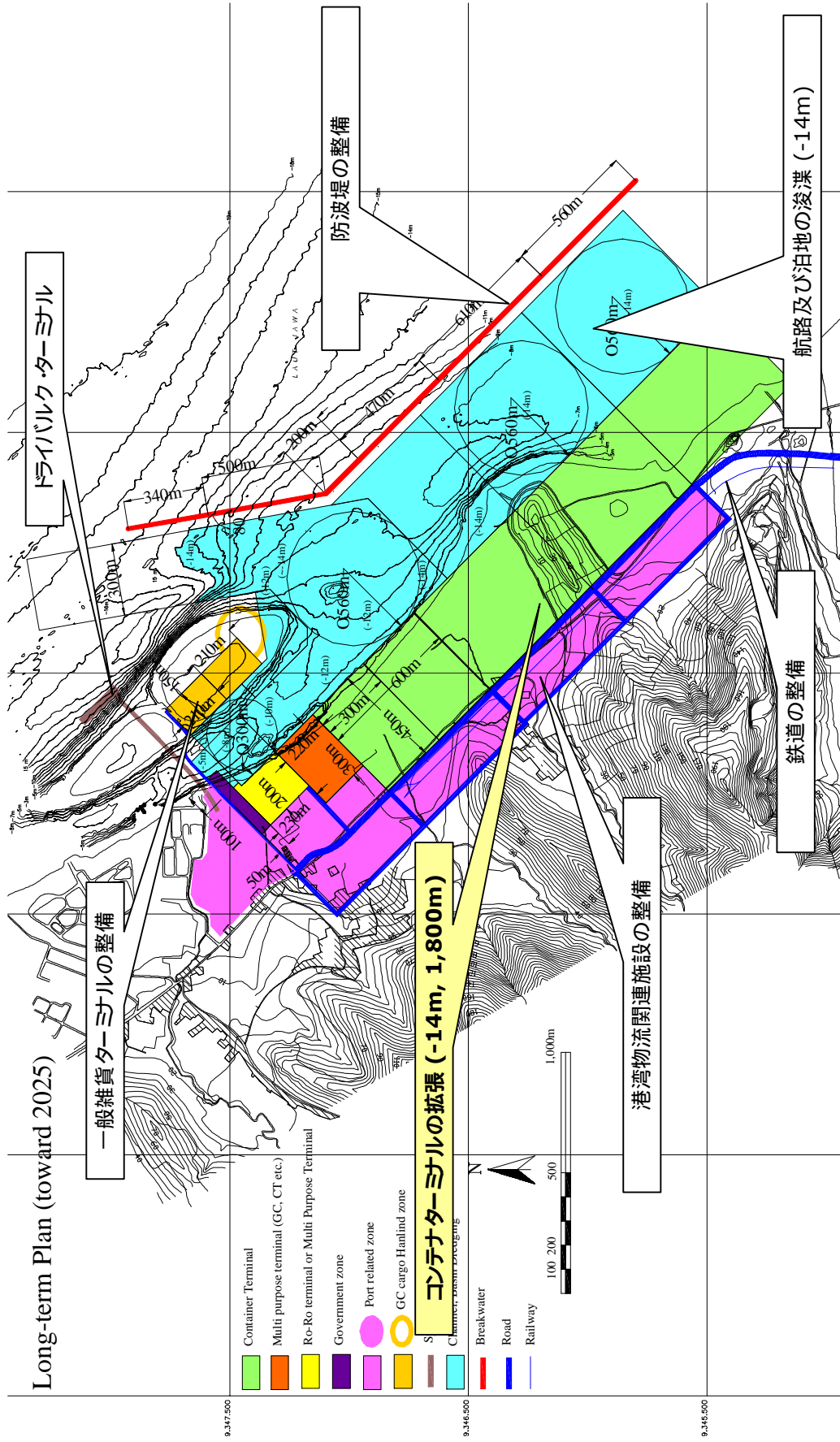


Long-term Plan (toward 2025)



9,347,500

9,345,500

9,345,500

12-D. SELECTION OF PRIORITY PROJECTS FOR FEASIBILITY STUDY

415. Based on the evaluation of the projects in 12-A as well as phased development concept, the study team selects the following projects for feasibility study putting priority on urgency and viability of the project.

Tanjung Priok

Project Component	FS Project	Proposed Year of Operation	Remarks
Widening the Main Channel and Turing Basin	?	2006~	Priority project in order to increase the port capacity. Implemented by phased construction
Widening the channel and basin to the Nusantara area including MTI	–	2012	Need further examination through coordination among related parties such as military
Car Dedicated Terminal Development	?	2006	Priority project implemented immediately in order to accommodate the urgent need of automobile export/import in AFTA
Inter-island Container Handling Improvement	? (Partly)	2010~	Pier III reorganization is selected. (MTI expansion is pending because of the necessity of coordination with the related entities.)
Bulk Cargo Handling Improvement	–	2010~	Need further examination through coordination among related parties
Passenger Terminal Relocation	?	2010	A new passenger terminal is developed in Ancol development area
Inland Yard Development	–	2006~	Inland yard development needs further examination.
Land-use re-development in the urban area adjacent to the port	–	2010~	Requires further examination through coordination among related parties
Ancol Development (New Passenger Terminal, Multi Purpose Terminal and Access Road)	?	2010~	Priority project in order to re-develop the current complicated land use.
Port Inner Road Improvement	?	2006~	Should be implemented accompanied with the increase of port capacity.
Eastern Port Access Highway Development Linking with JORR	–	2008	Should be examined in the context of urban road network development. Responsible body will come from within the road sector.

Bojonegara

Project Component	FS Project	Proposed Year of Operation	Remarks
Container Terminal Development	?	2010~	Should be operated by 2010. Some additional equipment will be deployed in 2011.
Multi Purpose Terminal Development	?	2008	Should be operated by 2008
Ro-Ro Terminal Development	–	2012	Requires further examination
Breakwater, Channel and Basin Development	?	2008~	Implemented by phased construction
Port Access Road Development	–	2008	Should be completed by 2008. Responsible body will come from within the road sector.

? : selected component

CHAPTER-13. MANAGERIAL AND OPERATIONAL IMPROVEMENT

13-A. ADMINISTRATIVE STATUS OF THE FOCUS PORTS

416. Tanjung Priok/Bojonegara should be given the highest status in the national port development policy, not only in terms of status/hierarchy in the Decree of National Port System, i.e., International Hub Port securing transshipment of containers between domestic lines and international lines, but also in terms of national development since Tanjung Priok/Bojonegara are important to the nation's industrial and economic development.

417. The intensive involvement of national government, especially the Ministry of Communication, Ministry of Industry and Ministry of Finance (Customs Office) is a must to promote the development of the port.

13-B. MANAGEMENT AND OPERATION SCHEME FOR INTERNATIONAL CONTAINER TERMINAL

418. Containers are currently handled at three different terminals by three different operators, JICT, TPK Koja and conventional terminal operators including MTI. Container yards are located in and out the port because of the scarce yard space in the terminals. Inefficient movement of containers and vessels together with troublesome customs clearance procedures are common complaints of users.

419. JICT is operated under a concession scheme by a Joint stock company formed by IPCII and private companies while Koja is operated under a joint operation system of IPCII and the private companies. Container handling at the conventional terminal is operated by private companies including PT. MTI, a subsidized company of IPCII.

420. Terminal prices are fixed at higher level compared with other terminals by IPCII even though each terminal has a different operator and different productivity levels. Depending on the organization structure and assets owned by these different operators, operation cost may be quite different by operator. Price should be set in a competitive manner according to the operational skill and cost.

421. These three terminals are not linked systematically as to information and data interchange not only for the operation but also for customs clearance. Hence inefficient movement of containers seems to occur among different terminals.

422. The following suggestions are offered to improve management and operation at the JICT & Koja container terminals.

Overcoming Excessive Manning Scale

423. The table below shows manning scales of one standard gang per crane in Tokyo, Yokohama, Hong Kong and Singapore. It is not easy to compare the manning scales of different ports but it is possible to grasp prevailing tendencies.

Table 13-B-1 Manning Scales at Selected ports (per shift per crane)

	Tokyo (K)	Tokyo	Yokohama	Hong Kong	Singapore

		(MOL)	(K)	(CSX)	
Gantry	2 Drivers	2 Drivers	2 Drivers	1.50 Driver	1 Driver
RTGs	1.25 Drivers	1.30 Drivers	1.30 Drivers	1.30 Drivers	1.30 Drivers
Tractor	3 Drivers	3 Drivers	3 Drivers	3 Drivers	3 Drivers
Lashing	6-8 men	6-8 men	6-8 men	6-8 men	5-7 men
Boss	1 man	1 man	1 man	1	-
Total	around 15 men	around 16 men	around 16 men	around 15 men	around 13 men

Source: JICA Study Team

424. World trends can be summarized as follows:

- ◆ Gantry Crane: 2 drivers/1 unit
- ◆ RTG: 1.5 RTG/1 Gantry
- ◆ Tractor Head: 3 units (3 drivers per Gantry) is standard, but 4-5 units are deployed when needed to expedite operation. An increase in operational efficiency of about 15 % is expected by adding 2 units, 10 % by 1 unit.
- ◆ Lasher: 6 men for a smaller ship (2 Gantries can not be fully deployed.)
- ◆ 8 men for a larger ship (2 or more Gantries can be deployed.)

425. In some advanced ports, R&D on automated operation of container equipment such as gantry crane, RTG is being promoted. New innovations will eventually further decrease the manning scale.

426. For both JICT and Koja, the standard size of one gang per gantry crane per shift is almost double that of the world standard. The difference gets larger as the number of gantry cranes deployed increases.

	World Standard	JICT/Koja
One Gantry:	15 men	30 men
Two Gantries:	30 men	60 men
Three Gantries:	45 men	90 men

427. As long as labor costs in Indonesia are far less than the international standard, this situation might be tolerable. But from the long term managerial view point, it is important to rationalize the present blistered manning scale.

Tariff Reduction

428. Under severe competition, container terminals in the same region may drastically reduce container handling charges to gain an advantage. For example, Tanjung Pelepas (PTP) enjoyed a surge in its container volume when it cut its handling charge by 30 %.

429. JICT and Koja are currently enjoying what can be called a monopoly in the Jakarta metropolitan region. Under present terminal market situation, it is hard for JICT/Koja to find any reason to reduce terminal tariff rates. However, it is not merely a matter of the west Java economy, but of the whole country. Indonesia is facing fierce competition in attracting foreign investors in manufacturing industry such as automobiles and motor cycles with countries such as Vietnam, the Philippines and Thailand.

430. To realize a tariff reduction, priority should be given to reducing costs. Current JICT and Koja seem to be overstaffed in comparison with other terminals with similar throughput. This situation was caused by the transition agreement involving IPC-II employees at the establishment of JICT and Koja. To avoid a possible labor dispute and loss of jobs for the

former IPC-II employees, IPC-II might have been forced to take such measures of secondment. As result, all laborers and staffs are guaranteed employees and it is said to be legally difficult to fire them. For reference, about 10 employees are retiring every year in line with the retirement clause agreed between the company and the union. JICT recruited about 40 new employees in March, 2002 for the first time since the privatization of the terminal in 1999.

Reducing Redundant Labor

431. The purpose of privatization is to reduce the government's financial burden and to increase productivity through the introduction of market-oriented rational management. In any country, privatization of a state owned company is always accompanied with issues on overstaffing.

432. In the privatization of Japanese National Railway which had more than 200,000 employees, Japanese Government took measures to absorb more than 20,000 redundant laborers in two ways: early voluntary retirement with retirement bonus and re-employment by other government organizations and agencies.

433. It will be necessary to adopt a screening process to identify unproductive or unqualified laborers.

Improvement of Terminal Services

434. Interviews revealed a high level of dissatisfaction with JICT and Koja among shipping lines and shippers/consignees. Main points raised by shipping lines and shippers/consignees are listed below.

Item	Dissatisfied Party	Complaint
Equipment maintenance	Shipping lines/Agents	Due to mal-function of gantry crane, schedule is delayed.
Gantry production	Shipping lines/Agents	Low production of GC increases the amount of time a ship is at port.
Pilferage in yard	Shipping lines/Agents Shippers/Consignees	Rampant pilferage occurs
High charge level	Shipping lines/Agents Shippers/Consignees	Compared with other major terminals, too high and raised one-sidedly
Ship's waiting time	Shipping lines/Agents	More than two hours waiting not rare
Mis-operation	Shipping lines/Agents	Due to computer error, containers were loaded and unloaded.

Maintenance:

435. Gantry cranes, especially super-Panamax often break down and ships have to sail out leaving dedicated containers which are sent to Singapore to connect the same ship or other mother ship to the final destination. Users of JICT request that more efforts in the area of preventive maintenance be made.

Pilferage in yard

436. Containers in the custody of a terminal operator are believed safe. This is commonly understood in the world container terminal industry. Unfortunately, containers in JICT yard are not safe. Seals are often cut and goods inside containers are stolen. In many cases, a padlock is used after such pilferage. And this rampant theft has become notorious throughout the world. To

defend their own cargo, shipping lines are hiring their own security guards by their account. This is quite rare in the industry. Judging from the fact that only high price cargoes are stolen, thieves must be receiving inside information.

High charge level

437. Actual charge level quoted in US dollars is felt to be the highest in the world. From the long term view point, it is not wise to uphold this high charge level. Instead, the level should be lowered to a reasonable level to encourage international and domestic trade in containers. Both JICT and Koja could reduce handling charges by rationalizing main cost items.

Ships' waiting time

438. Although shipping lines know the window system introduced by JICT and Koja, they complain about long waiting times. Some ships are kept waiting more than two hours outside the terminals.

Mis-operation

439. Computer system for the yard operation is still at the infancy stage. In the summer of 2002, error input resulted in mis-operation. Many containers were loaded according to the mis-instruction and had to be unloaded again just before the ship's sailing.

440. With the exception of ship's waiting time, all of the above items are rooted in the same problem: namely, lack of proper staff training. The rest are caused by the software and excess labor. It is understood through interviews that JICT has dispatched about 250 employees to Hong Kong for training. To this point, the results of this training have yet to be seen in every day operation. The training curriculum should be reviewed but more important than that is adopting an effective screening process for qualified laborers. It is proposed that a dedicated in-house committee be formed to decide the optimum manning scale. To achieve this, an appropriate set of guidelines is also required.

OB System

441. In both JICT and KOJA, the average dwelling time is comparatively short, i.e., 4.6 days and 5.2 days respectively. This benchmark itself shows that terminal operation condition is not bad. However, it must be noted that the seemingly healthy condition of the terminals is supported by the so called OB system. In this system, the terminal operators under an agreement among concerned parties, are allowed to ask importers to shift import containers sitting in the yard beyond 10 days to an inland depot (usually called a " Dry Port ") which is operated by a private company and licensed by customs.

442. OB System, if it is applied, would result in substantial damage to consignees of import containers. Normally, imported containers are delivered through a gate of a container terminal once only. In the OB System, however, containers are shifted from JICT to a bonded depot and then are delivered to the final destination. This operation flow means each container is handled two times for delivery, once by JICT, and for the second time by a Dry Port operator. This two bound system is meaningless and can be avoided by a rationalization of traffic and customs' documentation.

13-C. MANAGERIAL AND OPERATIONAL IMPROVEMENT FOR THE CONVENTIONAL TERMINAL IN TANJUNG PRIOK

443. As to the conventional cargo handling, 14 operators are operating exclusively with designated berths. Berth productivity in terms of throughput per unit length of quay wall and berth occupancy rate seems extremely high while waiting time of vessels is very long. These figure seems to show the inefficiency of terminal operation from ship operators viewpoint and incurs higher cost to users.

444. In order to manage and operate the conventional terminal more efficiently, a future management and operation system is examined as follows within the framework of the Master Plan.

445. Generally, conventional terminal should be operated by smaller numbers of operators with sufficient skilled personnel and equipment to provide good service to port users. However, the conventional terminal operation at Tanjung Priok port is conducted by PT. MTI, 14 terminal operators and other stevedoring companies without such overall control as shown in Figure 13-C-1.

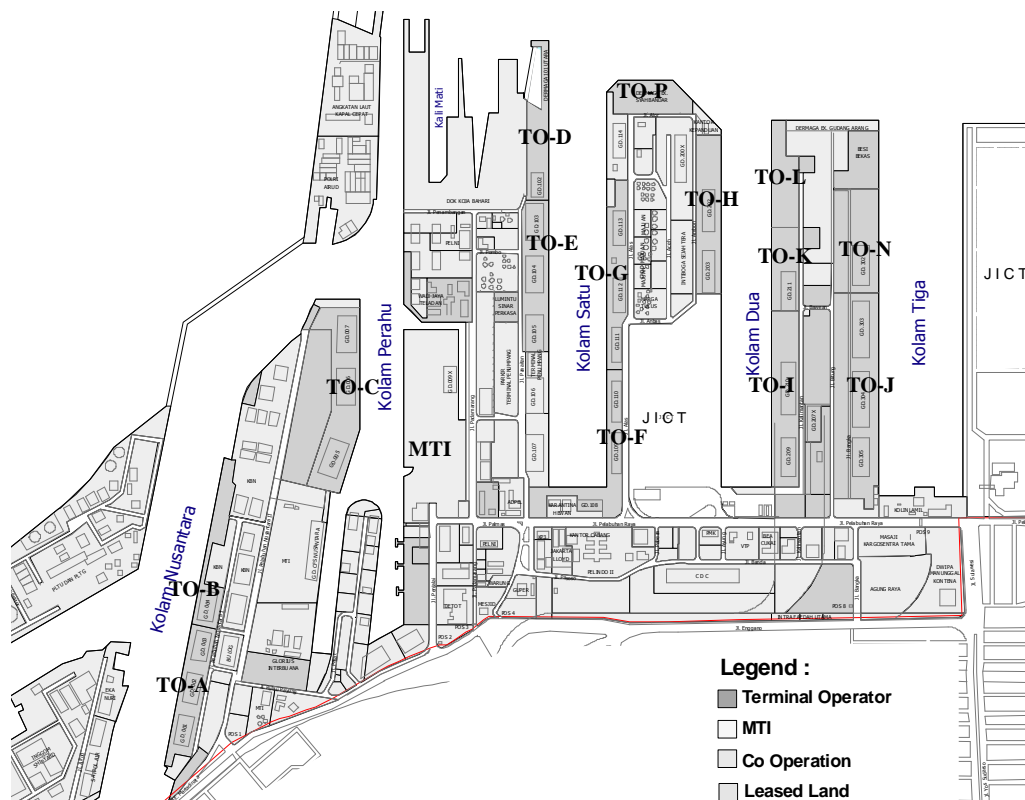


Figure 13-C-1 Utilization of Land at Conventional Terminal Area

446. From the theoretical point of view, excessive number of operators decreases the scale merit in terms of number of available berths for common carriers, causing unnecessary waiting for carriers.

447. To pursue the scale of merit, operators should be grouped into smaller numbers to operate a reasonable number of berths jointly. Therefore, reformation of the current operation structure is required.

448. Reformation of the terminal operators should be carried out paying attention to the following points.

- The new terminal operators will be culled from PT. MTI and 14 terminal operators including other stevedoring companies by the open-tender of IPCII. And at the same time, it is necessary for high-ranking and competent personnel to be appointed from the new terminal operators to organize a terminal operators' cooperative society.
- The new terminal operators should have incentives for efficient management under a system in which the more efficient management is, i.e., cost reduction, business improvement and so on, the more profits increase.

449. Table 13-C-1 shows the evaluation of terminal operators. Six terminal operators are conducting management and operation in a sound manner.

Table 13-C-1 Evaluation of Terminal Operators

Operator	Evaluation Items				General Evaluation
	Operation	Maintenance	Finance	Administration	
Terminal Operator: A					
Terminal Operator: B					
Terminal Operator: C					
Terminal Operator: D					
Terminal Operator: E					
Terminal Operator: F					
Terminal Operator: G					
Terminal Operator: H					
Terminal Operator: I					
Terminal Operator: J					
Terminal Operator: K					
Terminal Operator: L					
Terminal Operator: N					
Terminal Operator: P					

Notes; very good: , good: , poor:

Source: Compiled by the Study Team based on the Report of Evaluation of Terminal Operator 2002, IPCII

450. Therefore, it is recommended that the management and operation of the conventional terminal should be conducted by several operators centering on the operators with sound conditions as well as PT.MTI. However, the conventional terminal should be controlled independently by IPCII. It is also advisable to adopt a measure promoting some competition among these units.

451. Concerning the new development area in the Master Plan, management and operation of these areas should be carried out and shared by the new terminal operators.

13-D. SCHEME OF PORT DEVELOPMENT, OPERATION AND MANAGEMENT

Breakwater and Access Channel

452. Fundamental port infrastructure such as breakwaters and access channels are to be developed by the central government, and their development cost will be borne by her, since

they require a huge cost and generate very little profit by their operation. In addition, the beneficiaries are widely distributed and difficult to specify.

453. However, when it is suitable for them to be managed together with inner channels and basins, they are transferred to the port management body (Pelindo-II in case of Tanjung Priok) for their management/operation.

Inner Channel and Basin

454. Development and management/operation of inner channel and basin in a port area will be basically the responsibility of the port management body and their cost will be borne by her.

Terminal

455. Terminal infrastructure including quay, front turning basin, land reclamation will be developed by the port management body and operated by the private sector, if the operation of the terminal is sufficiently profitable. The cost will be covered by future collection from an operator of the terminal, which should develop superstructure such as pavement, handling equipment and other terminal facilities, depending on profit levels as well as the trend of demand. However, in case that a terminal will be newly developed and the project risk will be considered to be high due to the uncertainty of cargo demand, or there is an urgent need viewing from the national benefit, or a terminal is not likely to be profitable, it should be examined whether the Central Government will bear the initial development cost of infrastructure.

Port Inner Road and Port Access Road

456. Development and management/operation of port inner road will be the responsibility of the port management body and their cost will be borne by her since the major beneficiaries are port users.

457. On the other hand, the development and management / operation of port access road located outside of the port area will be the responsibility of the central government (DGH, Kimpraswil) since the major beneficiaries will be public transport users. (Specific beneficiaries cannot be identified.)

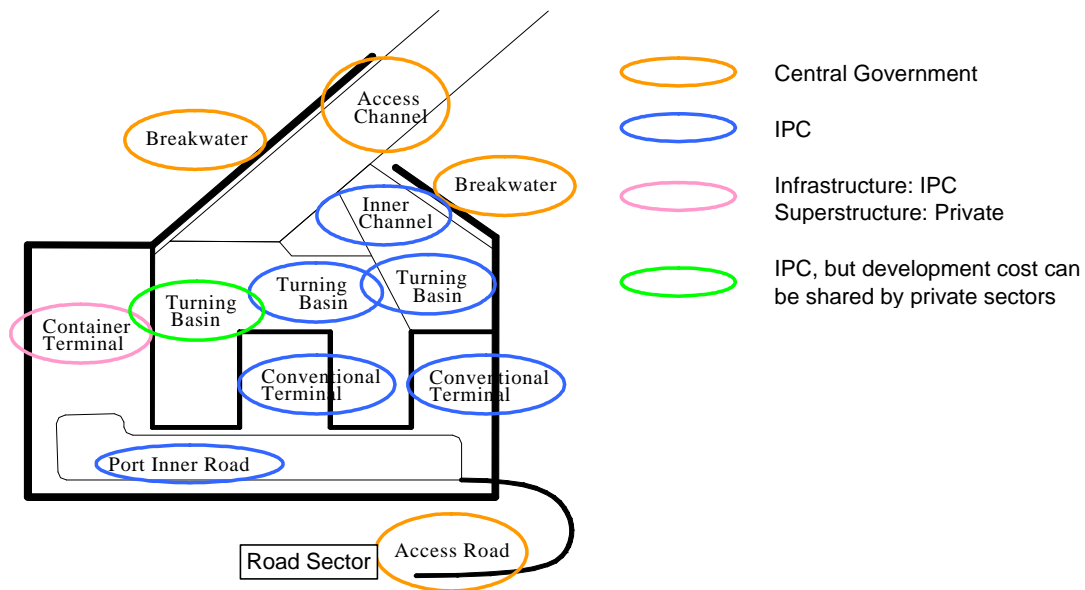
Table 13-D-1 Scheme of Port Development, Operation and Management

	Development	Management/ Operation	Remarks
Breakwater, Access Channel	CG	CG / IPC-2*1	
Inner Channel and Basin	IPC-2	IPC-2	
Terminal (Profitable)			Container terminal etc.
Infrastructure	IPC-2 / CG*2	Private	Quay wall, front basin etc.
Superstructure	Private		Handling equipment, pavement etc.
Terminal (Less profitable)	IPC-2 / CG*2	Private / IPC-2	Conventional terminal etc.
Port Inner Road	IPC-2	IPC-2	
Access Road	Road Sector*3	Road Sector*3	

*1 : When an integrated management by IPC-2 needed

*2 : In case that project risk will be considered to be high, it should be examined whether the CG will bear the cost.

*3 : CG or Local Government



13-E. PRIVATE PARTICIPATION FOR MANAGEMENT AND OPERATION OF THE PORT

458. The Port of Tg. Priok introduced private participation for port operation under a different scheme according to the Government Privatization Policy. For the Bojonegara development, Government tried to introduce concession with the joint stock company formed by IPCII and several private companies under a partial BOT scheme.

459. In introducing the concession scheme, it is necessary to adopt an open tender system to secure fairness and transparency.

460. Based on the “Basic Scheme of Development, Operation and Management of Port Facilities” described in the previous section, possible projects for private participation are as follows among the proposed projects in the Master Plan:

Tanjung Priok

Automobile Terminal

461. One of the possible projects for private participation at Tanjung Priok is an automobile terminal development. Rapid increase of handling volume of automobile products will be expected in the near future under the free trade agreement in AFTA. According to the demand and depending on handling charge, there is a possibility for the private sector to operate a car terminal.

Passenger Terminal

462. Revenues from passenger terminal buildings such as lease fee from tenants can be expected. The development of a passenger terminal building, which handles a large number of passengers, can be promoted on private sector project bases with initiative and encouragement of IPC-II.

Bojonegara

Container Terminal

463. Possible project for private participation at Bojonegara Priok is container terminal development. Handling volume of international containers will be expected to increase rapidly dealing with the overflow containers from Tanjung Priok. According to the demand, there is a strong possibility for the private sector to operate a container terminal based on concession.

13-F. INSTITUTIONAL IMPROVEMENT

Reinforcement of Port Promoting Function of IPCII

464. To promote use of the port, it is essential to establish a more useful and attractive port in terms of both facilities and management and operation for users such as shipping lines, shipping agents, forwarders, shippers consignees, etc. For that purpose, it is necessary to have a real time, broad, systematic grasp of the users' needs and to reflect their needs in the practical development and management of the port. The port should be marketed positively, providing users with pertinent information.

Introduction of Measures for Activation of the Organization

465. For activation of the organization, not only its reformation but also an awareness on the part the of its personnel concerning the need for rational and efficient management is important. For this purpose, many private companies adopt a Quality Control (QC) circle and a proposal activity by personnel. A QC circle is an activity for improvement involving each individual employee. Normally, it is carried out by a group within a single division or section. Members of the group identify problems concerning quality, safety, efficiency etc. and voluntarily try to solve the problems with everyone's cooperation. It is also carried out by a project team extending through several divisions concerned.

Improvement of Statistics System

466. Present port statistics are insufficient to formulate a future investment plan and effective management of port facilities. For instance, the cargo volumes are not sufficiently grasped commodity-wise especially in terms of container cargoes, and are not classified by origin and destination. IPCII does not prepare commodity-wise cargo volume by each berth and by specialized private terminals. Improvement of statistical system is essential for formulating a proper investment plan and effective management. Therefore, it is recommended to improve the statistics system by studying required information to be submitted from port users at the time of application for port utilization in line with the improvement of the information system.

Utilization of EDI

467. EDI Indonesia is an affiliated organization of IPCII, however, the study team could not obtain any information from EDI Indonesia on port activities to analyze the real berth performance. It seems that the level of knowledge and experience of IPCII staff pertaining to EDI is not sufficient to develop and operate EDI by themselves. Therefore IPCII should consider another option. EDI service provider can offer complete service such as consulting service related to EDI, introduction and starting EDI, supplying medium resources, operating service, etc. Therefore, it is recommended that IPCII and related bodies utilize an EDI service provider.

Integration of Customs Offices

468. The port related government offices seem to be arbitrarily located in the port area. In particular, there are three Customs Offices at respective administrative areas; therefore shipping agents and consignees have to submit documents to different offices for customs clearance in the same port. To streamline procedures, it is necessary to prepare an integrated customs office at one location, and the customs clearance should be implemented in accordance with international standards.

Strengthening Cargo Handling Supervisor

469. To increase the efficiency of the cargo handling operation, training for supervisors is required. It is also necessary to make a cargo supervisor's manual, and the cargo handling operation should be implemented according to the provisions of the manual.

Improvement of the Training System

470. IPCII has made much of personnel development and the Port Training Center (PTC) implements all of IPCII training programs which cover various fields of port management. In order to cope with the new management and operation system proposed in the Master Plan, it is recommended that PTC develop and supplement its training courses accordingly.

13-G. PORT WORKING AREA AND PORT INTEREST AREA

471. Port working area is preliminary calculated based on actual traffic records on the number of vessel who will use buoy as follows:

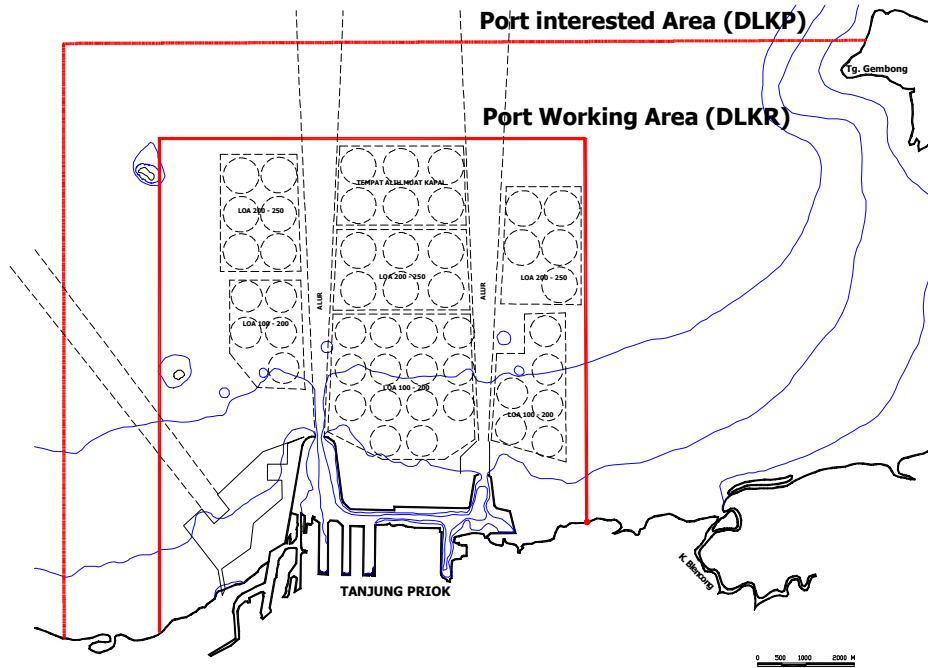


Figure 13-G-1 Port Working and Interest Area

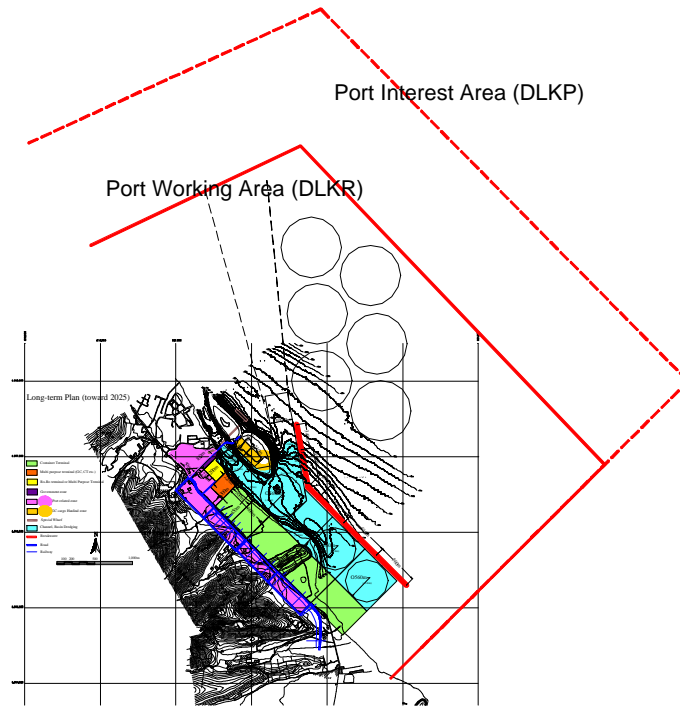


Figure 13-G-2 Port Working and Interest Area

CHAPTER-14. FEASIBILITY STUDY ON URGENT REHABILITATION PLAN OF TANJUNG PRIOK

14-A. CONCEPT AND COMPONENTS OF URGENT REHABILITATION PLAN OF TANJUNG PRIOK

14-A-1 Concept of Urgent Rehabilitation Plan of Tanjung Priok

472. As stated in Chapter-9 “Development Goals and Strategy”, to overcome capacity constraints, increase productivity and better serve its potential hinterland and users, urgent rehabilitation of Tanjung Priok is strongly recommended. For export/import container, which will rapidly increase in future, if there is no rehabilitation of the port including improvement of navigational condition, the capacity of international container handling at Tanjung Priok will reach its limits at **around 2007** even after completion of some new berths. This will cause significant damage to the trade activity in Indonesia since Tanjung Priok is now functioning as the sole international container port in the West Java area. To cope with this situation, navigational condition should be improved, which will increase the international container handling capacity of the port up to **3.6~3.8 million TEUs**.

473. The rehabilitation of Tanjung Priok Port is necessary and urgent even if the development of a new port (here we assume it will be Bojonegara new port) will be developed, since operation of the new port would not commence until around 2008~9, considering the preparation and port construction period as well as the development of a new access road which requires land acquisition.

474. Around 80% of total container cargoes are generated in the hinterland of Tanjung Priok. For these potential users of Tanjung Priok, viewing from existing capacity limits of Tanjung Priok, urgent improvement of Tanjung Priok is strongly desired, otherwise, economic activity as well as investment climate will be surely depressed.

475. Furthermore, the rehabilitation of Tanjung Priok Port is necessary not only for international container but also for increasing the capacity and productivity of conventional wharves including inter-island container handling, together with coping with newly generated cargo demand such as car import/export and alleviating the traffic congestion in/around the port.

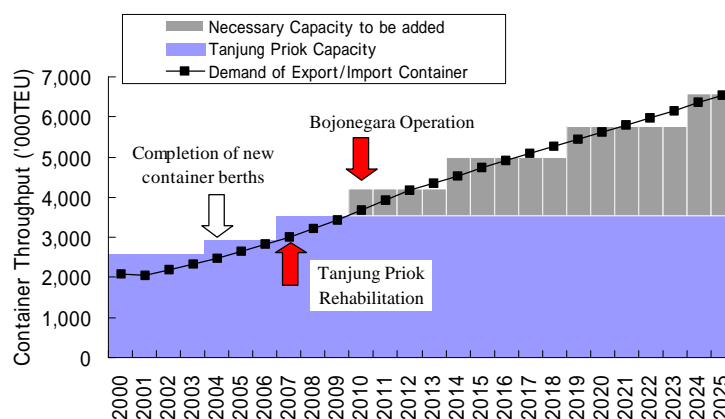


Figure 14-A-1 Demand and Capacity (International Container)

14-A-2 Components of Urgent Rehabilitation Project of Tanjung Priok Port

476. The following project components have been selected for urgent rehabilitation projects of Tanjung Priok port on the basis of the Master Plan and Short-term Development Plan putting priority on “Coping with increasing cargo demands”, “Impact to the national/regional economy”, and “Viability of the project”.

- Widening of the channel and basin together with relocation of the existing breakwater for the purpose of increasing the port capacity and navigational safety, accommodating larger vessels and improving safety of ship traffic
- Development of a dedicated-use automobile terminal for the purpose of facilitating trade of automobile products in AFTA era and promoting various product-related industries in Indonesia
- Re-development of the existing port area for the purpose of improvement of efficiency and productivity of the existing port. (Including passenger terminal relocation, establishment of dedicated inter-island container terminal in Pier-III)
- Development of new port area in East-Ancol to cope with cargo increase in the future and for the smooth implementation of re-development of the existing port. (Including development of new passenger terminal, multi purpose terminal and access road)
- Improvement of port inner road for the purpose of securing smooth vehicle traffic and reducing the traffic congestion in/around the port

477. In relation to the last point, development of the Eastern Port Access Highway linking with JORR is also crucial and should be implemented immediately. However, the responsible body for the development will come from within the road sector such as Kimpraswil since the road itself is outside of the port and is a part of the urban road network. The port sector such as IPC2 should give support to the road sector as much as possible, (e.g. providing part of land in the port) because such development benefits port activity as well as urban transport.

478. Project components are described in Table 14-A-1.

Table 14-A-1 Description of Project Components

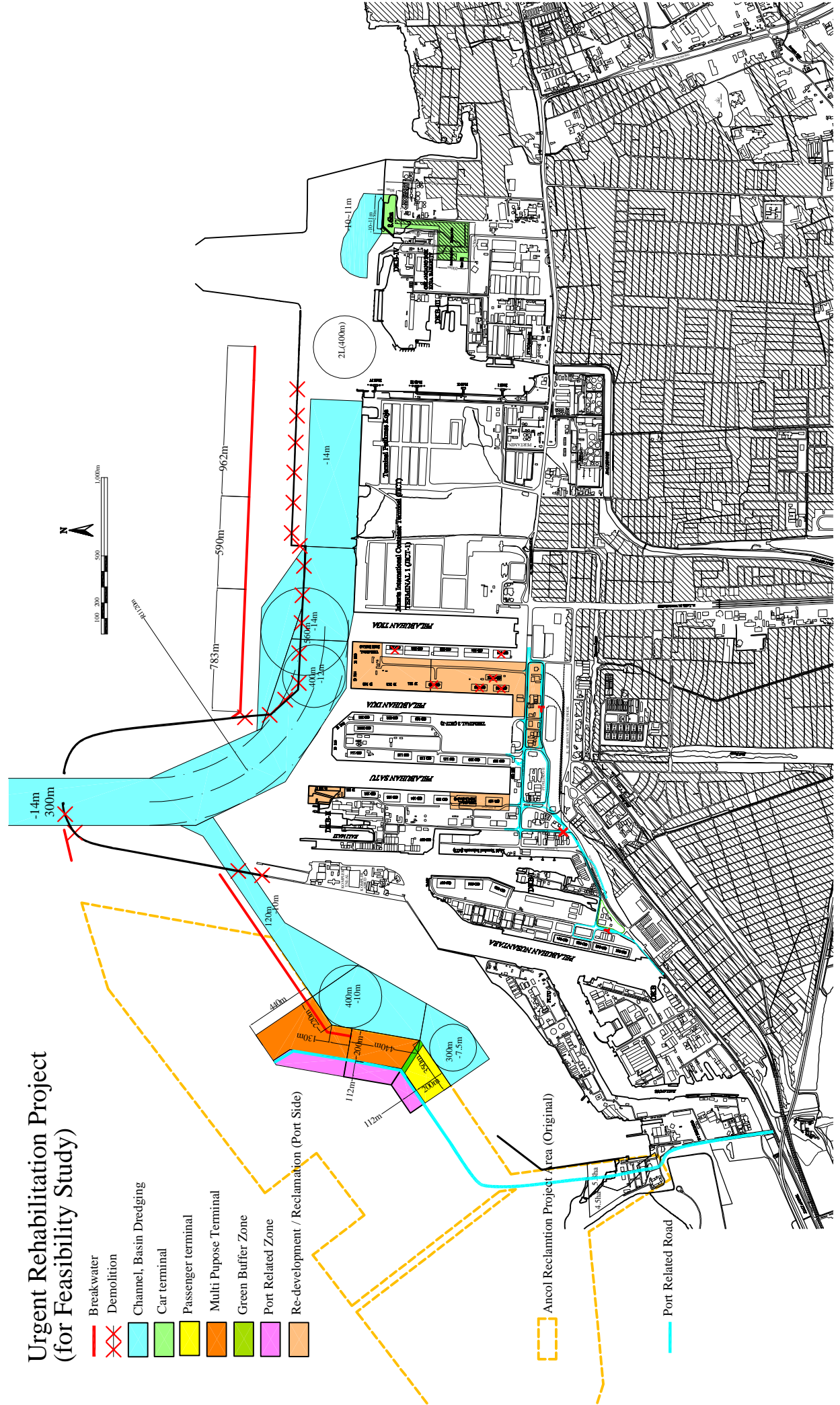
Project Component	Proposed Year of Operation	Remarks
Widening the Main Channel and Turing Basin	2006~	Priority project in order to increase the port capacity and navigational safety. Implemented by phased construction
Car Dedicated Terminal Development	2006	Priority project implemented immediately in order to accommodate the urgent need of automobile export/import in AFTA
Inter-island Container Handling Improvement	2010~	Pier III reorganization is selected. (MTI expansion is pending because of the necessity of coordination with the related entities.).
Passenger Terminal Relocation	2010	A new passenger terminal is developed in Ancol development area
Ancol Development (New Passenger Terminal, Multi Purpose Terminal and Access Road)	2010~	Priority project in order to re-develop the current complicated land use.
Port Inner Road Improvement	2006~	Should be implemented accompanied with the increase of port capacity.
(Development of Eastern Port Access Highway linking with JORR should be implemented by the road sector such as Kimpraswil since the road itself is outside of the port and is a part of the urban road network. However, the port side should give support to the road sector as much as possible because such development benefits port activity as well as urban transport.)		

479. Layout of the project components is shown in Figure 14-A-2 based on the requirements as described in the next section.

Figure 14-A-2 Layout Plan of Urgent Rehabilitation Project of Tanjung Priok Port

Urgent Rehabilitation Project (for Feasibility Study)

- Breakwater
- Demolition
- Channel, Basin Dredging
- Car terminal
- Passenger terminal
- Multi Purpose Terminal
- Green Buffer Zone
- Port Related Zone
- Re-development / Reclamation (Port Side)



14-B. REQUIREMENT & LAYOUT OF THE PORT FACILITIES

14-B-1 Navigational Condition Improvement

Channel

480. Width of two-way channel was examined by applying the international standard stipulated by PIANC and IAPH regulation, i.e. “*Approach Channel – A Guide for Design*”, and set as 300m for the outer channel as well as inner channel.

Turning Basin

481. According to UNCTAD and Japanese standard, the diameter of a turning basin should be equal to or greater than $2 * L$ (Ship length) of the largest ship in case of towing by tugboat. Consequently, to secure a sufficient turning basin to accommodate larger container vessels, the diameter of the maximum turning basin in front of the international container terminal is set as 560m ($2 * 280m$).

Breakwaters

482. In accordance with the improvement of channel and turning basin, the existing breakwater should be relocated considering the calmness of the basin.

VTMS (Vessel Traffic Management System)

483. In order to support the increase of navigational capacity as well as the safety of navigation, the study team proposes that VTMS (Vessel Traffic Management System) be introduced and/or the existing VTIS (Vessel Traffic Information System) be improved. VTIS is only available now for VHS communication and not designed for vessels with AIS system which many vessels have or will introduce to comply with the amended SOLAS convention.

14-B-2 Automobile Terminal

484. Concerning a car handling yard, in order to secure the space for weekly handling volume, assuming 4 weekly services and 500 units are loaded and unloaded per ship, necessary terminal area is planned as follow:

- ◆ Necessary area per one car = around 12m² (based on experience in Japan)
- ◆ Number of ships per week per berth: 4 weekly services
- ◆ Necessary car handling yard = $500 * 2$ (export/import) $\times 4 \times 12 = 48,000m^2$.
- ◆ Necessary car terminal area = $48,000m^2 / 70\% =$ around 70,000m² (including other facilities such as road, receiving area, office, gate etc.) + Apron (250m x 60m) = 85,000m²

485. Based on the above terminal area,, an automobile terminal are planned as follows utilizing inactive DKB-IV’s space:

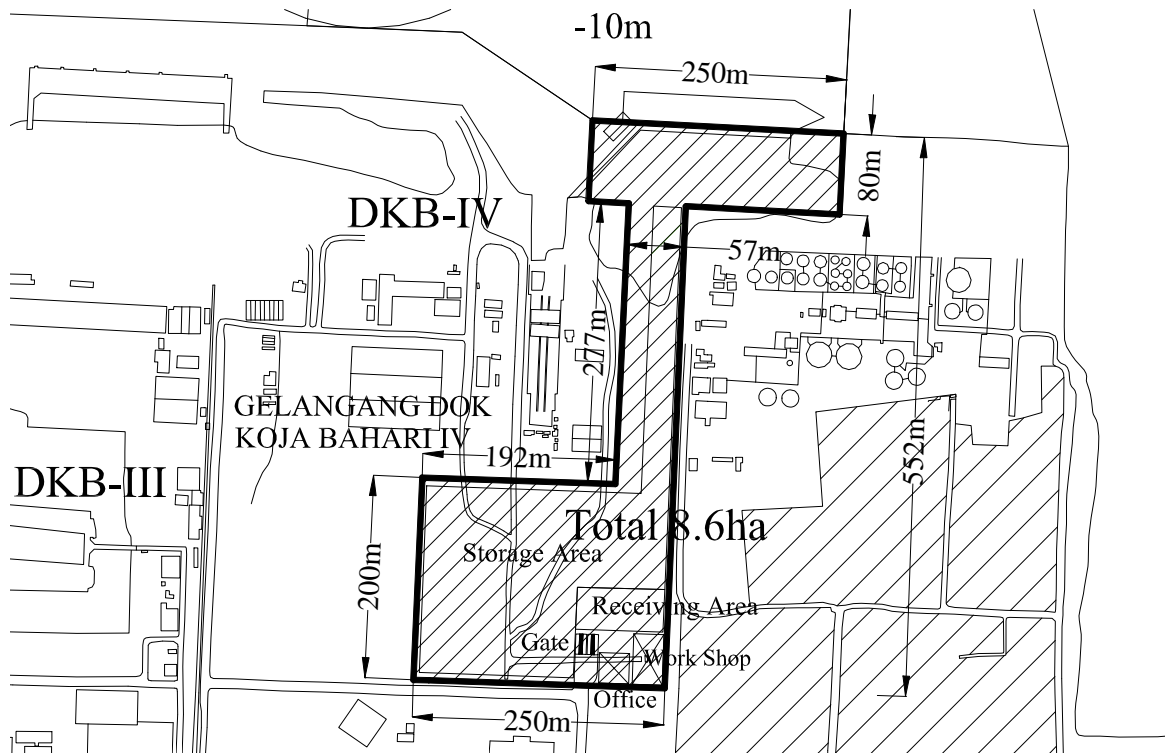


Figure 14-B-1 Layout of Automobile Terminal



Figure 14-B-2 Aerial View of the Site

14-B-3 Inter-island Container Terminal in Pier-III

486. According to the Master Plan, the quay from 208 berth to TBB berth will be for dedicated use of container handling. Some warehouses behind the proposed container berths should be demolished in order to use this area as a container yard.

487. The berth facilities in 2012 are as shown in Table 14-B-1 according to the Master Plan.

Table 14-B-1 Inter-island Container Terminal Berth Facility in 2012

Berth Dimension		Number of Berths	Remarks
Draft	Length		
-9m	1,020m	7	Current berth 208 to 213
-12m	300m, 195m	3	Current berth 214/300 and Current berth TBB

488. As for handling system deployed in Pier-III, mobile cranes at quay side (except the existing gantry cranes at 214/300 berth) as well as forklift/reach stacker and/or straddle carrier in the yard seem to be a suitable system in the short term considering relatively narrow space of the yard. In case of introducing gantry cranes, the productivity of yard side and that of quay side would be unbalanced, and in addition to that, drastic improvement of the existing quay wall would be necessitated.

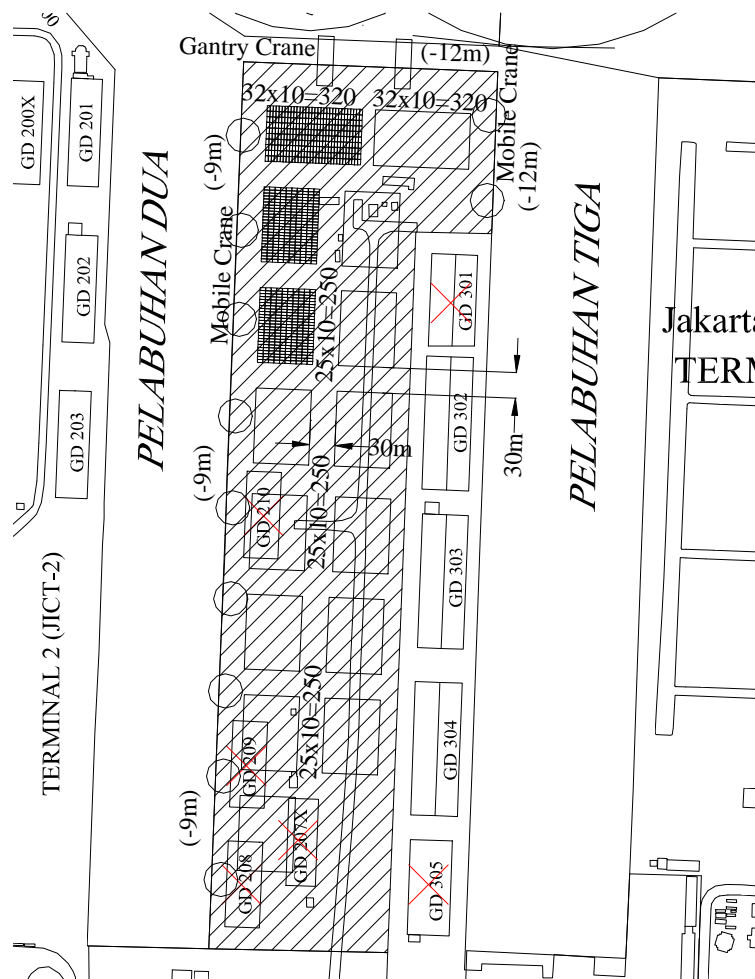


Figure 14-B-3 Layout of Inter-island Container Terminal in Pier-III

14-B-4 Ancol Development

Passenger Terminal

489. As stated in the Master Plan, the passenger terminal should be relocated to the new port area of East-Ancol. The relocation would alleviate traffic concentration on Jl. Panaitan, Jl. Pelabuhan Raya and their intersection mixed with cargo traffic, and provide re-development

space in the port. Park and amenity zone for passengers as well as visitors should also be developed around the terminal as a buffer to the cargo handling zone. Quay length is around 350m with a water depth of -7.5m. The size of the passenger terminal with 2 berths is set as follow:

Item	Dimension	Remarks
Apron	350*20=7,000m ²	Apron width=20m
Passenger Terminal Building Area	10,000m ²	2 floors (10,000m ² + office space)
Parking	43,000m ²	
Others	10,000m ²	
Total Terminal Size=70,000m ² =350m x 200m		

Multi Purpose Terminal in Ancol

490. Even if the existing area will be re-organized and utilized effectively, it is expected that port facilities in the existing port will reach the limit of their capacity for the future cargo demand centering on general (and bag) cargo. In order to meet the future demand of general and bag cargo as well as unitized cargo such as inter-island container and Ro-Ro cargo, multi purpose terminal is planned to be developed in East-Ancol area. Total quay length is around 800m with the depth of -10m.

Port Related Zone

491. The following functions/facilities will be planned in Ancol area in order to support the activity of the new port area:

- Logistic center such as truck terminal, cargo distribution center with some processing facilities etc.
- Welfare facilities for port workers and seamen
- Port related companies' offices such as shipping agency, stevedoring etc.
- Amenity such as port park, observation tower etc.

492. Based on the above examination, the terminal layout in Ancol area is drafted as shown in Figure 14-B-4.

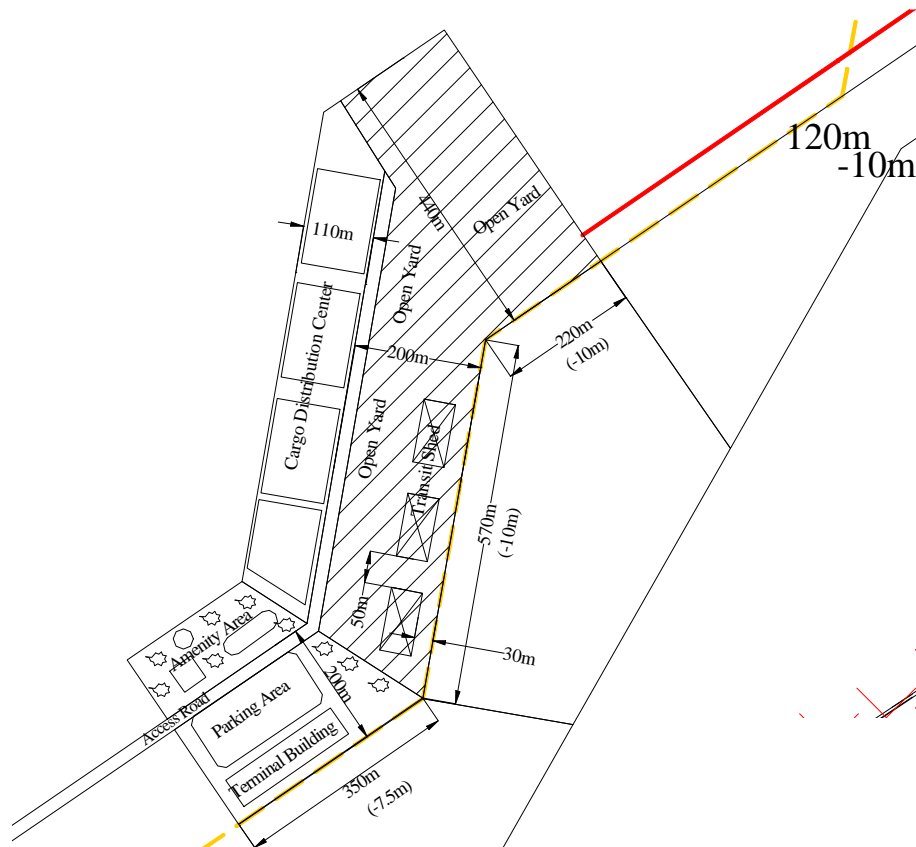


Figure 14-B-4 Terminal Layout in Ancol Area

Breakwater, Channel and Basin

493. According to the Master Plan, breakwater as well as access channel should be developed cost-effectively in accordance with development phases. Initial development cost should be minimized by shortening the breakwater as well as minimizing the width of the access channel. The width of the channel was examined by applying the international standard stipulated by PIANC and IAPH regulation, i.e. “*Approach Channel – A Guide for Design*”, and set as 120m.

494. In accordance with the development of the multi purpose terminal and passenger terminal, a breakwater with the length of around 1,000m should be developed to secure the calmness of the basin as well as to prevent sedimentation of the channel and basin.

495. The diameter of turning basin is set as 400m with the depth of -10m in front of the multi purpose terminal, while set as 300m with the depth of -7.5m in front of passenger terminal, in accordance with UNCTAD and Japanese standards.

14-B-5 Port Inner Road Improvement

496. Based on the result of the above survey traffic movement, the following improvement plans at the target year of 2008, (same as Urgent Rehabilitation Project) are proposed. The proposed plan is to make one-way traffic flow by improving road width and increasing the number of traffic lanes.

- Construction of the Viaduct for one-way traffic at Jl. Pulau Payung

- New access road by extending from Jl. Pulau Payung to Jl. Pasoso through the Gate3.
- Gate-3 is closed to vehicles from outside.
- Widening the existing Jl. Padamarang and converting Jl. Penjalai to a backup area of MTI terminal. The present backup area of MTI wharf is narrow and congested with cargo handling vehicles and through traffic on the road (Jl. Penjalai) behind the wharf.
- The intersection from gate No.1 to Jl. Nusantara is modified for better traffic management of interchange flows with East – West direction and North – South direction.
- Demolition of Jl. Ambon to provide an open space for cargo storage area. Existing office buildings are integrated one location in high buildings.
- The proposed number of lanes in the major road is as follows :

Jl. Pelabuhan Raya Jl. Pasoso, Jl. Ayong	3 lanes	one-way
Jl. Padamarang (behind MTI)	4 lanes	
Jl. Padaramng (North from MTI)	2 lanes	
Jl. Nusantara – Gate-1 Jl. Pabean	2 lanes	2 ways
Jl. Pabean, Jl. Kalimantan	2 lanes	one-way
Jl. Bangka	5 lanes	one-way
Jl. Pelabuhan Raya – Gate-9	2 + 4 lanes	

497. Required lane numbers and alignment of port inner roads are shown in Figure 14-B-5 and Figure 14-B-6. Figure 14-B-7 is a cross section of Pasoso flyover.

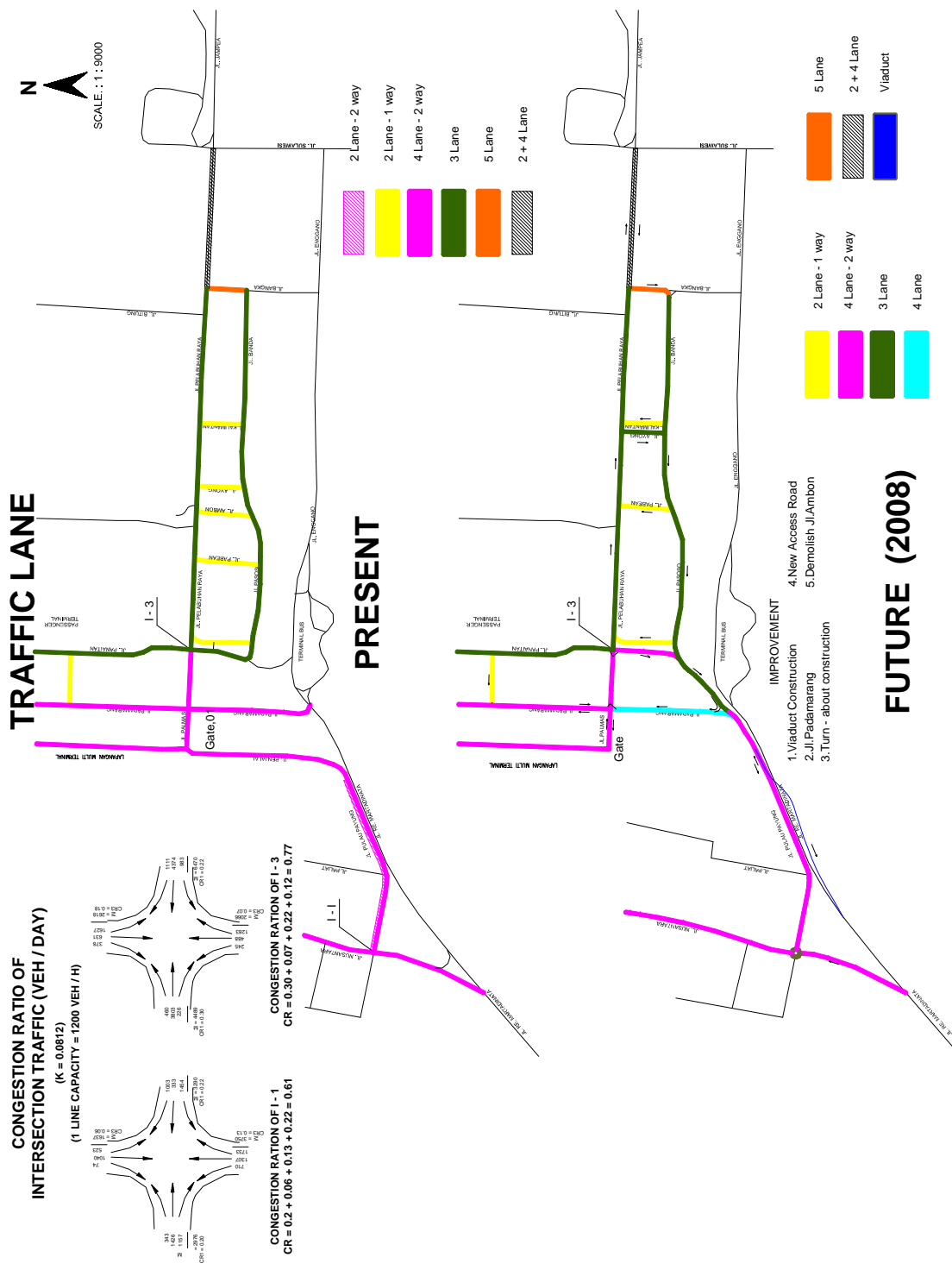


Figure 14-B-5 Required Lane Numbers

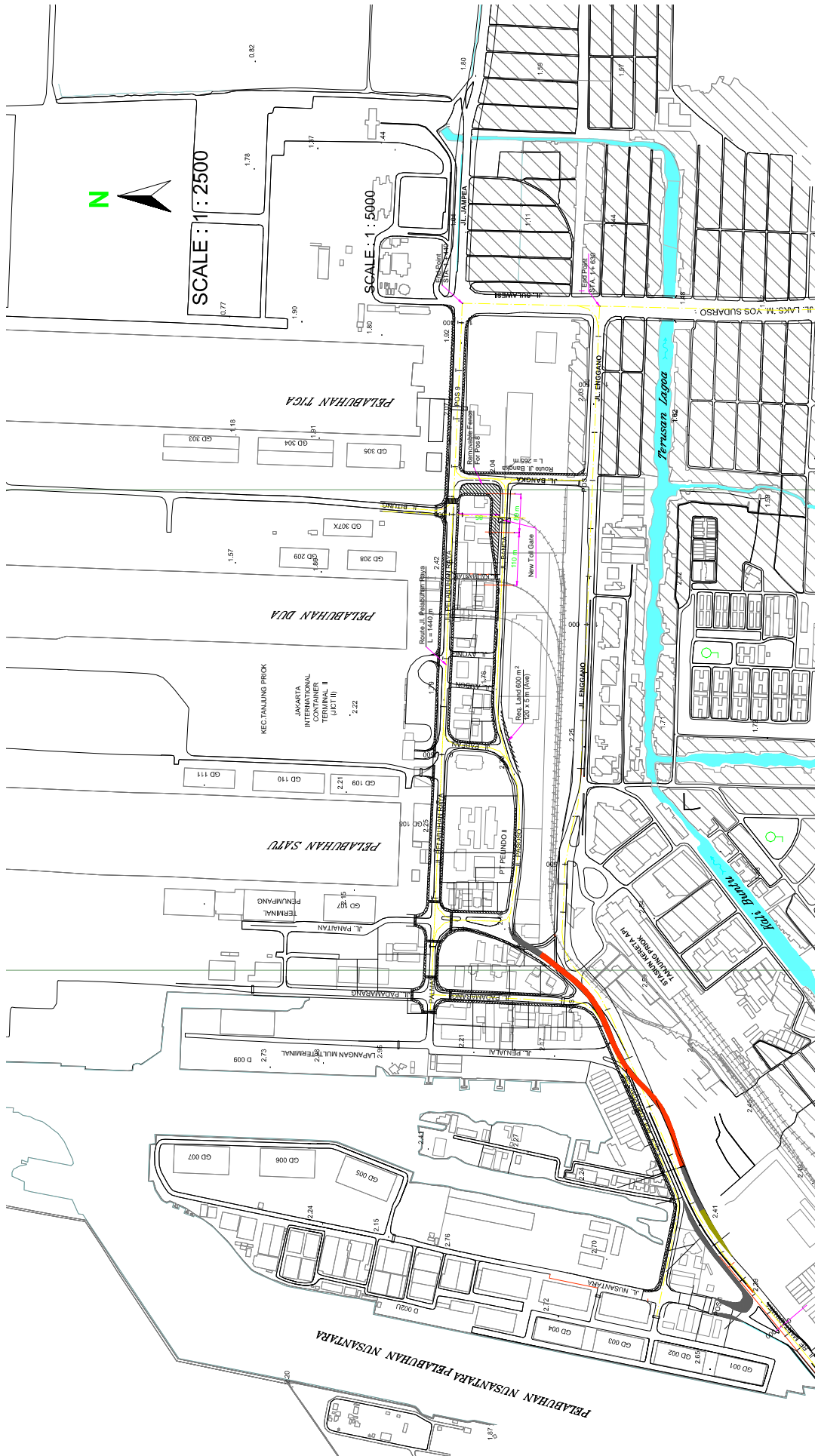


Figure 14-B-6 Alignment of Port Inner Roads

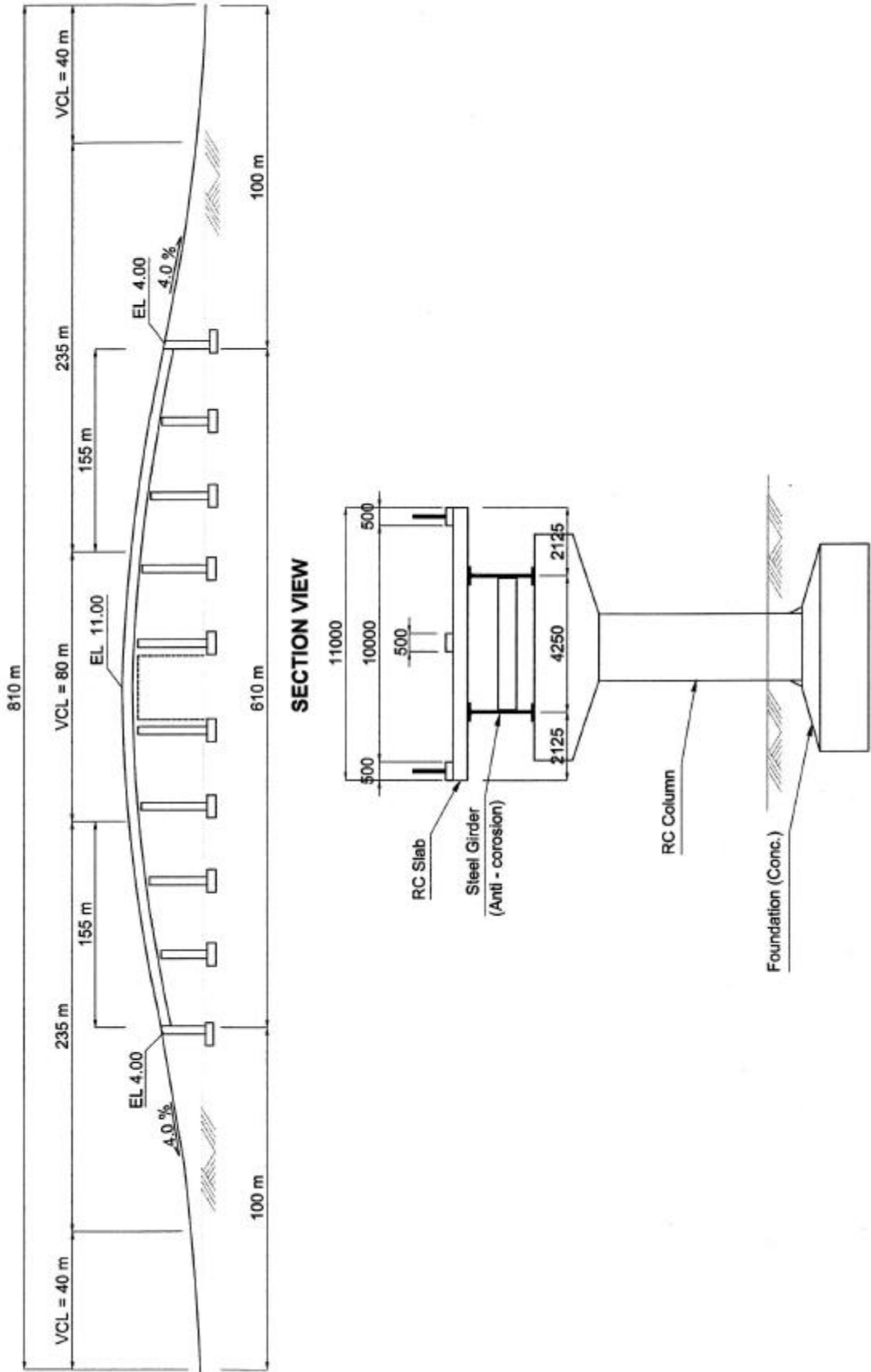


Figure 14-B-7 Pasoso Flyover Plan and Profile