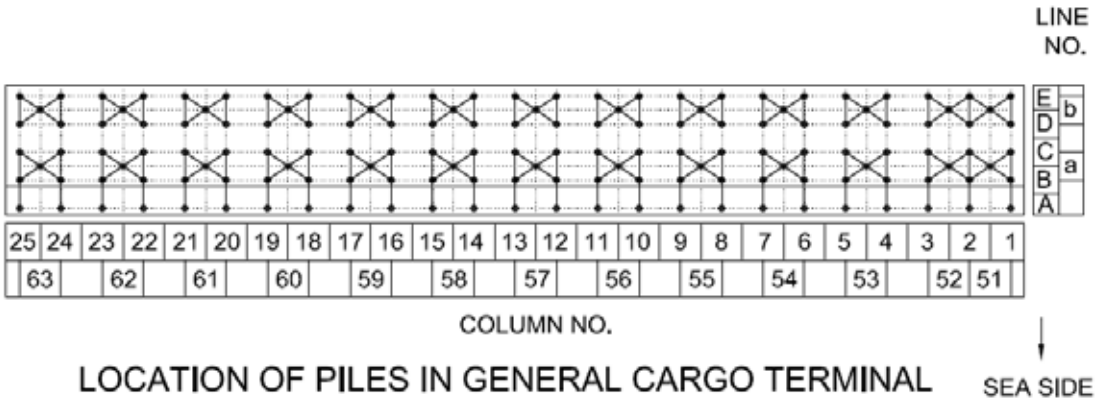
Apêndice-7

Photos of Piles and Props under General Cargo Terminal



Slab nearby Pile 1B

Pile 1B

Wall and Slab nearby Pile 1C

Pile 1D

Pile 1E

Slab bet. Pile 1E & 2E

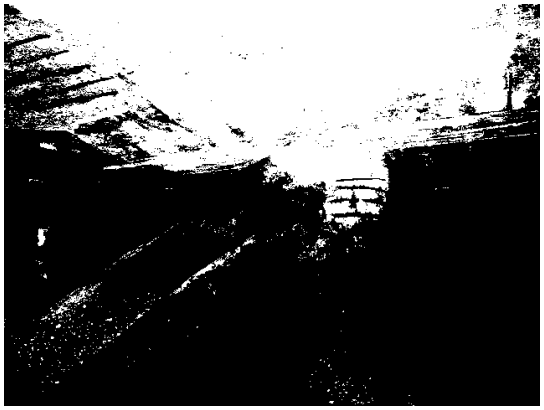
Pile 2B-1

Pile 2B-2

Pile 2C

Pile 2E

Pile 3B



Pile 3C-1

Pile 3C-2

Pile 3D-1

Pile 3D-2

Pile 3D-3

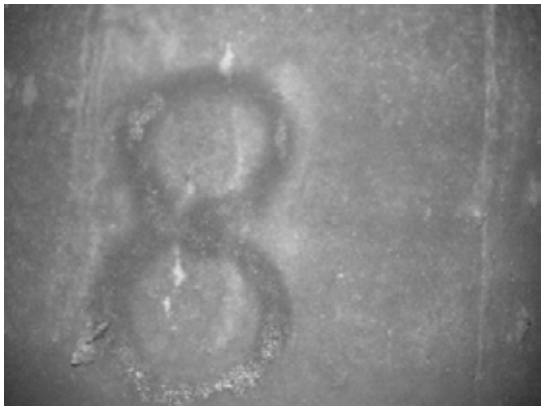
Pile 4B ~ Pile 4C

Pile 4D ~ Pile 4E

Pile 6B ~ Pile 6C

Pile 6C

Pile 6D



Pile 8C-1

Pile 8C-2

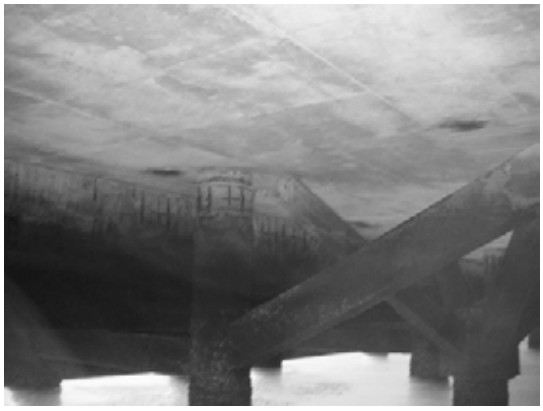
Pile 8C-3

Pile 8D ~ Pile E

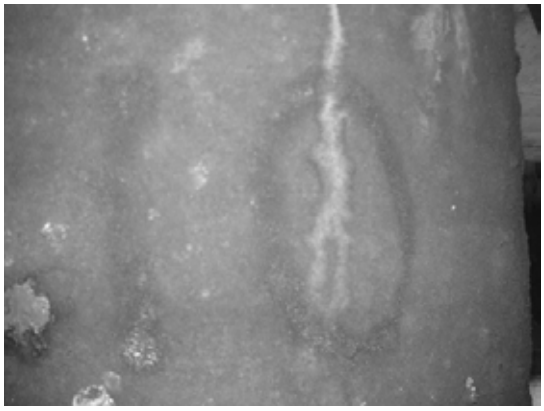
Wall bet. Pile 8E ~ Pile 9E

Pile 9C

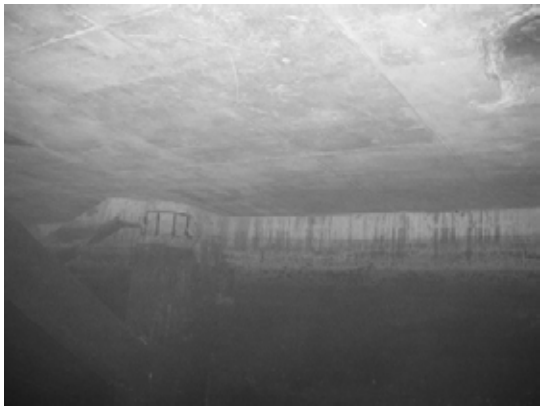
Pile 9E



Pile 10B



Pile 10C



Pile 10E

Pile 11C-1

Pile 11C-2

Pile 12C

Pile 12D-1

Pile 12D-2

Pile 12D ~ Pile 12E-1

Pile 12D ~ Pile 12E-2

Pile 13C

Pile 14B ~ Pile 14C

Pile 14C-1

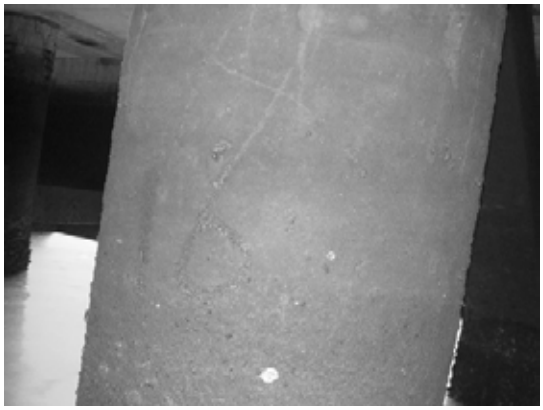
Pile 14C-2

Pile 14E

Pile 15C

Pile 15D

Pile 15E



Pile 16C

Pile 16E-1

Pile 16E-2

Pile 17C

Pile 17D ~ Pile 17E

Pile 18B ~ Pile 18C

Pile 18C-1

Pile 18C-2

Pile 18E

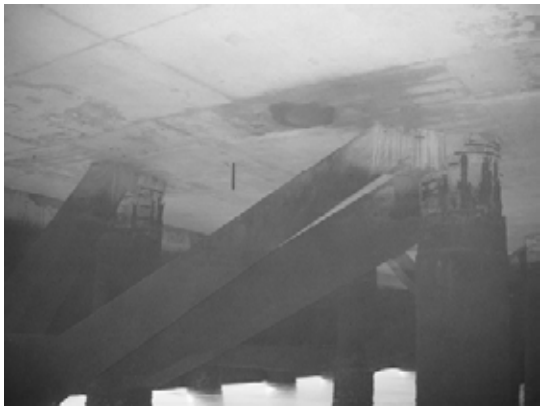
Pile 19C

Pile 19E

Pile 20B ~ Pile 20C

Pile 20C

Pile 20E



Pile 21C

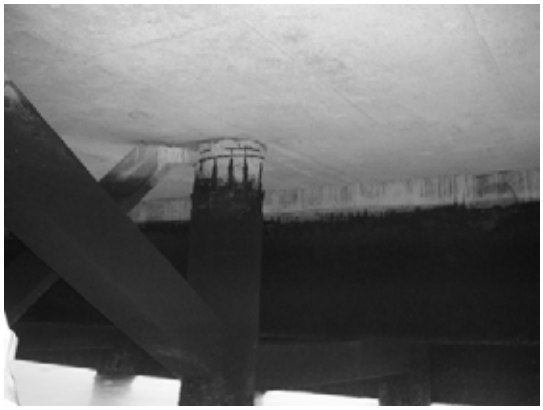
Pile 21D

Pile 21E

Pile 22C-1

Pile 22C-2

Pile 22D



Pile 23B

Pile 23C

Pile 23E

Pile 24C

Pile 24C ~ Pile 24D

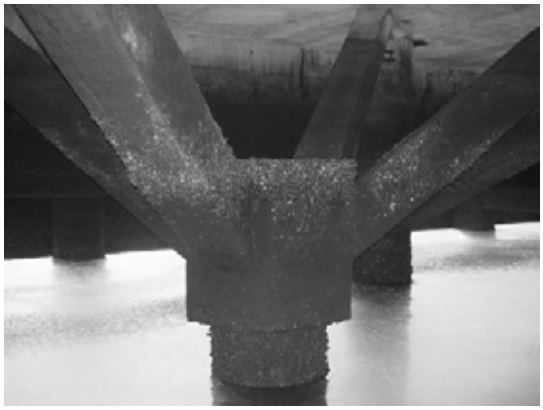
Pile 25C ~ Pile 25D

Pile 24E

Wall nearby Pile 25C

Pile 25D

Pile 25D ~ Pile 25D



Pile 104a

Pile 105a

Pile 107a

Pile 109a

Apêndice-8

Results of scoping

Item			Project stage	Rating	Reason
Social Environment:	1	Involuntary Resettlement	P, C, O	D	There will be no resettlement.
	2	Local Economy such as Employment and Livelihood, etc	P	D	No impacts expected.
			C	B+	Generation of construction related employment.
				B-	Possible reduction in fish catch due to disturbances from marine construction works.
			O	B+	Generation of operation related employment.
	3	Land Use and Utilization of Local Resources	P	D	No impacts expected.
			C, O	B-	Some fishermen use the adjacent coastal area for fishing (e.g. beach seine) and boat parking.
	4	Social Institutions such as Social Infrastructure and Local Decision - making Institutions	P, C, O	D	No impacts expected.
	5	Existing Social Infrastructures and Services	P, C, O	D	No impacts expected.
	6	The Poor, Indigenous and Ethnic people	P, C, O	D	No impacts expected.
	7	Misdistribution of Benefit and Damage	P	D	No impacts expected.
			C	B+	Possible benefits in regards to local employment, economy and so on.
				B-	Possible hindrance to fishing activities due to marine construction works.
			O	B+	Possible benefits in regards to local employment, economy and so on.
				B-	Possible hindrance to fishing activities due to increase in shipping traffic.
	8	Cultural heritage	P, C, O	D	There are no cultural heritages in the project site.
	9	Local Conflicts of Interest	P, C, O	D	No impacts expected.
	10	Water Usage or Water Rights and Communal Rights	P, C, O	D	No impacts expected.
	11	Sanitation	P	D	No impacts expected.
			C	B-	Human wastes of construction workers could degrade local sanitary conditions.
			O	D	No impacts expected.
	12	Hazards (risk) Infectious Diseases such as HIV/AIDS	P	D	No impacts expected.
			C	B-	Construction workers could spread communicable diseases (e.g. AIDS) into the local community.
			O	D	No impacts expected.
Natural Environment	13	Topography and Geographical Features	P, C, O	D	No impacts expected.
	14	Soil Erosion	P, C, O	D	No impacts expected.
	15	Groundwater	P	D	No impacts expected.
			C, O	A-	Groundwater could become contaminated if the contaminated dredged spoil is disposed inappropriately.
	16	Hydrological Situation	P, C, O	D	No impacts expected.
	17	Coastal zone	P	D	No impacts expected.
			C, O	D	The bypass access road will slightly alter the shape of the coastline. However, impact should be negligible due to the limited alteration.

Item			Project stage	Rating	Reason
	18	Flora, Fauna and Biodiversity	P	D	No impacts expected.
			C	A-	Marine construction works could have a range of impacts on marine fauna/flora as it may cause: - Loss of benthic habitat - Degradation of water quality (i.e. increase in turbidity) - Dispersion of contaminated sediments
			O	A-	Uncontrolled discharge of ballast water could introduce invasive species into the bay, which consequently could have devastating impacts on the bay's ecosystem.
	19	Meteorology	P, C, O	D	No impacts expected.
	20	Landscape	P	D	No impacts expected.
			C, O	D	The bypass access road will slightly alter the landscape. However, impact should be negligible as the area is located in an industrial area with limited landscape value.
	21	Global Warming	P	D	No impacts expected.
			C, O	D	CO_2 emission from the port will likely increase during the construction and operation stages, but their contribution to global warming should be insignificant.
Pollution	22	Air Pollution	P	D	No impacts expected.
			C	B-	Deterioration of air quality due to fugitive dust and exhaust emissions from construction activities and construction vehicles.
			O	B-	Deterioration of air quality due to exhaust emissions from cargo trucks.
	23	Water Pollution	P	D	No impacts expected.
			C	A-	Deterioration of water quality due to marine construction works such as dredging. Impact could be significant as sediments in the dredging site are contaminated.
			O	A-	Possible contamination of seawater and groundwater if the contaminated dredge spoil is disposed inappropriately.
	24	Soil Contamination	P, C, O	D	No impacts expected.
	25	Waste	P	D	No impacts expected.
			C	A-	Dredging will generate large quantity of contaminated dredge spoil.
			O	D	The type of wastes should not differ from present, which can be treated/disposed with existing practices.
	26	Noise and Vibration	P	D	No impacts expected.
			C	B-	Noise from pile-driving works and construction trucks could have adverse impacts on the local residents.
			O	B-	Noise from cargo trucks could have adverse impacts on the local residents.
	27	Ground Subsidence	P, C, O	D	No impacts expected.
	28	Offensive Odor	P, C, O	D	No impacts expected.
	29	Bottom Sediment	P	D	No impacts expected.

Item			Project stage	Rating	Reason
			C	A-	Dredging work could contaminate the surrounding bottom sediments as it will resuspend and disperse the contaminated sediments at the dredging site.
			O	B-	Contamination of bottom sediment through leaching of pollutants (e.g. TBT) from ship anti-fouling paint.
	30	Accidents	P	D	No impacts expected.
			C	B-	Higher risk of maritime and road accidents due to marine construction works and traffic of construction trucks.
			O	B-	Higher risk of maritime and road accidents due to increase in shipping and cargo-truck traffic.

Legend of project stage
P: Pre-construction Stage
C: Construction Stage
O: Operation Stage
Rating criteria
A-: Major negative impact
B-: Moderate negative impact
C-: Impact uncertain
D: No impact expected. No need for further assessment
A+: Major positive impact
B+: Moderate positive impact

Apêndice-9

Draft TOR of sediment quality survey

1. Objective

The objective of the sediment quality survey is to understand the sediment quality status at the proposed dredging site.

2. Scope of work

The sediment quality survey includes field works (sediment sampling), laboratory analysis and reporting. Details are described below.

2.1 Sampling quantity

Sampling should be conducted at twelve (12) sites within the proposed dredging area (approx 50,000 m^2). Samples should be taken from the surface and subsurface layers (-1 m) for all the sites.

2.2 Analytical parameter

The following parameters should at least be analyzed for both the surface and -1 m layers:

1) Specific gravity
2) Ignition loss
3) Moisture content
4) Particle size distribution
5) Total Organic Carbon (TOC)
6) Arsenic (As)
7) Cadmium (Cd)
8) Chromium (Cr)
9) Copper (Cu)
10) Lead (Pb)
11) Mercury (Hg)
12) Nickel (Ni)
13) Zinc (Zn)
14) Total DDT
15) Total PCBs
16) Tributyltin (TBT)

Analysis should be conducted at a nationally or internationally certified laboratory.

2.3 Report

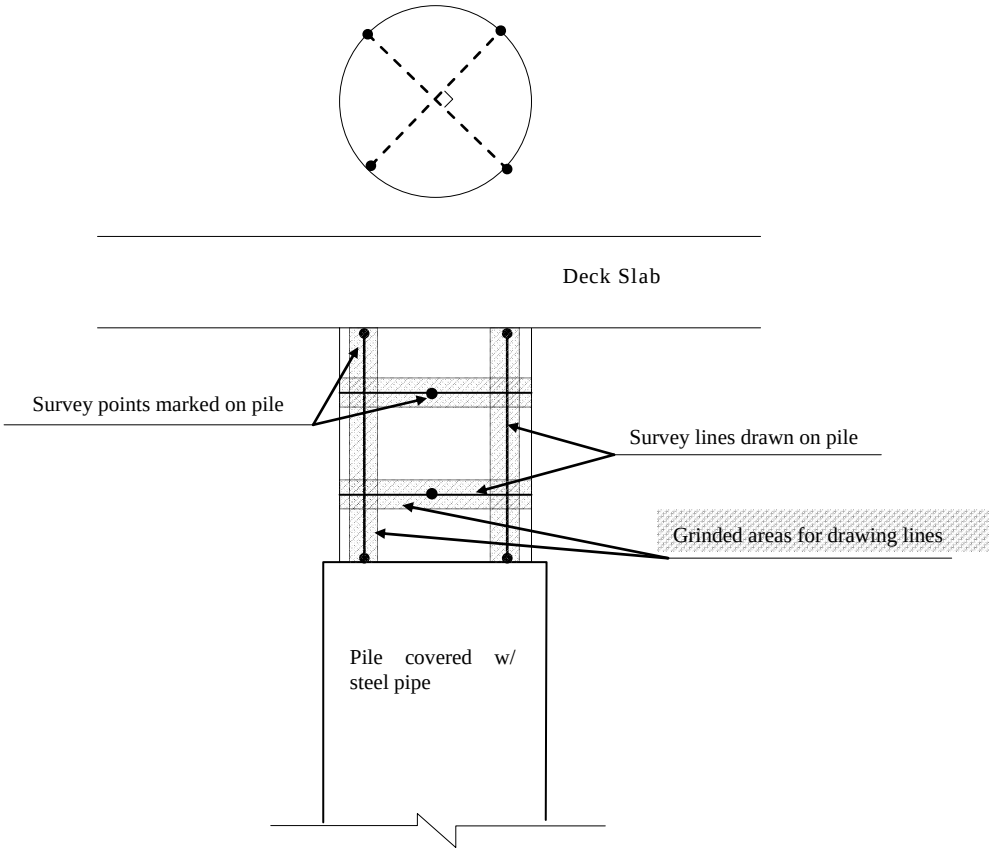
The report should at least contain the following information:

- Methodology (e.g. preservation/transportation method, analysis method, quantification limit, QA/QC)
- Analysis results
- Discussion (e.g. comparison with appropriate sediment quality standard, uncertainties with the results)

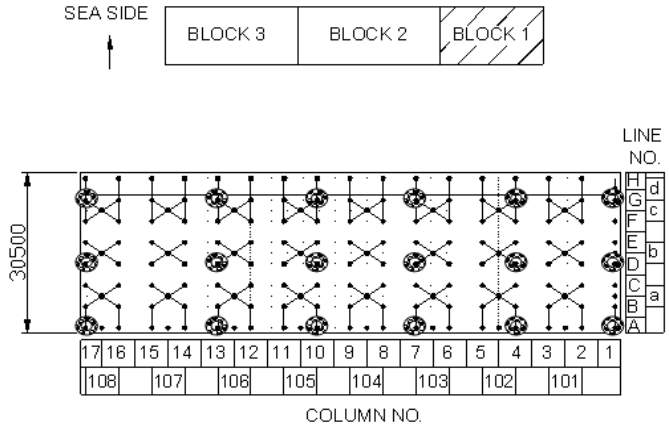
Apêndice-10

(1) Details of monitoring methods for changes of piles

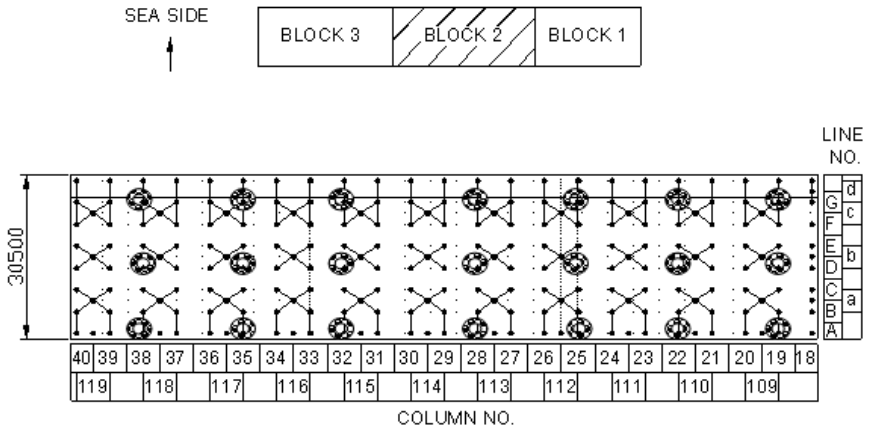
Details of survey lines and points on a pile



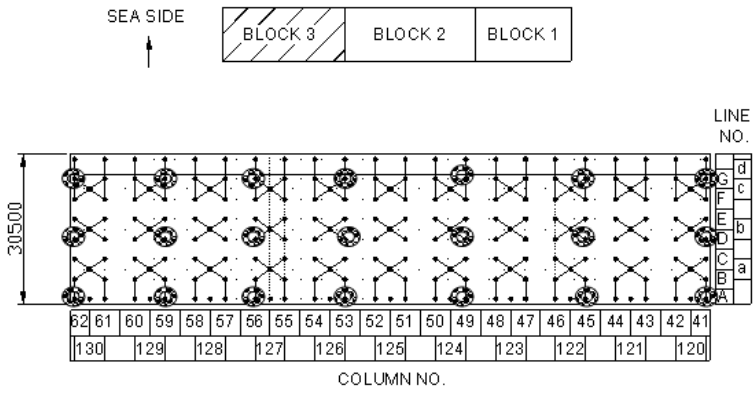
Locations of survey piles



LOCATION OF PILES IN CONTAINER TERMINAL BLOCK 1



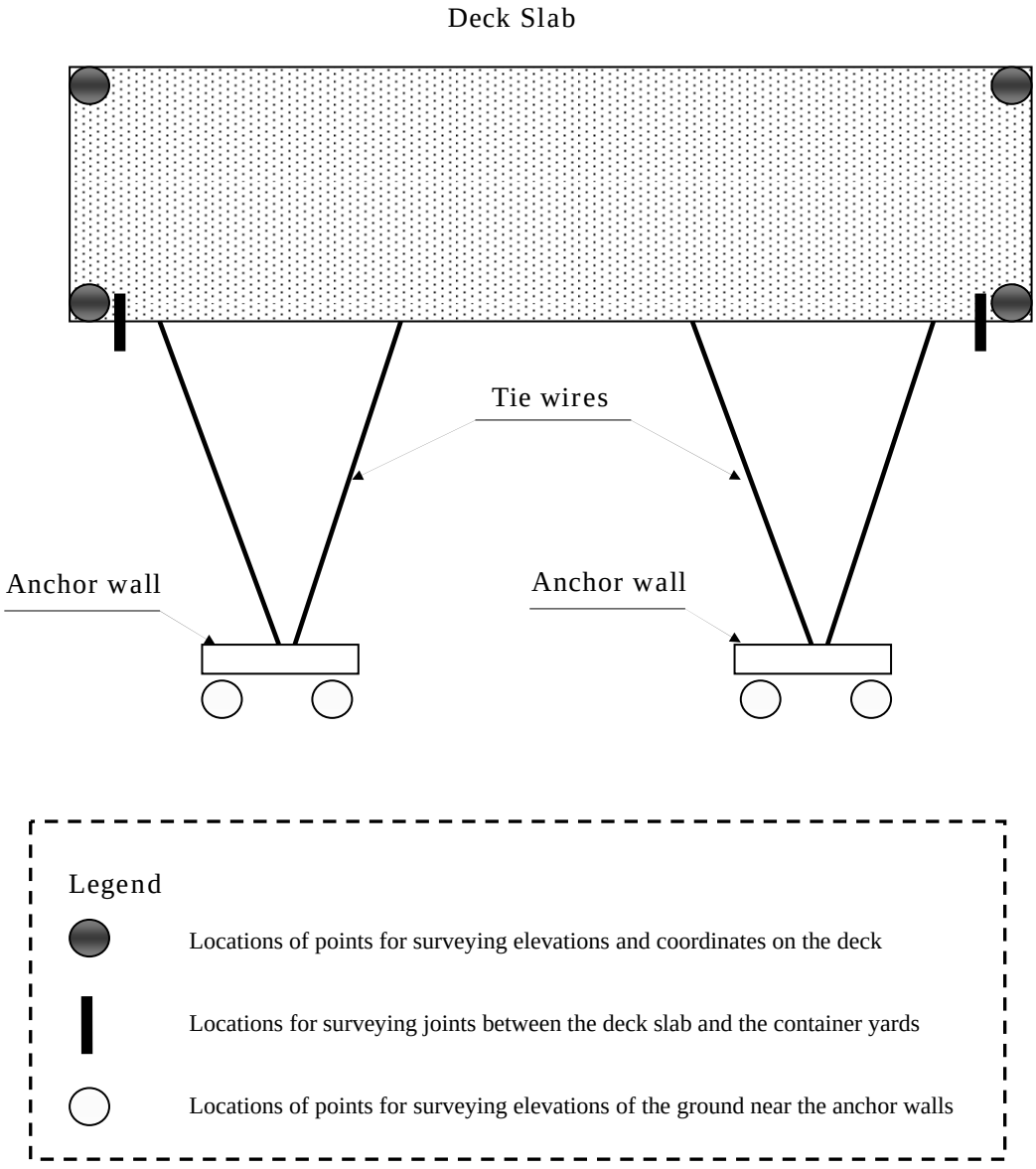
LOCATION OF PILES IN CONTAINER TERMINAL BLOCK 2



LOCATION OF PILES IN CONTAINER TERMINAL BLOCK 3

(2) Survey locations on the decks and the container yard

Details of survey points on a deck



Apêndice-11

Environmental Checklist

Environmental Checklist（1）

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
1 Permits and Explanation	(1) EIA and Environmental Permits	(a) Have EIA reports been already prepared in official process? (b) Have EIA reports been approved by authorities of the host country's government? (c) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? (d) In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	(a) N (b) N (c) N (d) N	(a) The project proponent is currently in the process of selecting the EIA consultant through a tendering process. They plan to submit the EIA to the EIA authority at around October 2011. (b) See above. (c) See above. (d) There are no environmental permits required other than the EIA.
	(2) Explanation to the Local Stakeholders	(a) Have contents of the project and the potential impacts been adequately explained to the Local stakeholders based on appropriate procedures, including information disclosure? Is understanding obtained from the Local stakeholders? (b) Have the comment from the stakeholders (such as local residents) been reflected to the project design?	(a) Y (b) Y	(a) During the preparatory survey, three stakeholder meetings were conducted to obtain their opinions about the proposed development plan. A consultation meeting was also held specifically with the local fishermen. In general, the stakeholders were fully supportive of the project. There were no objections from the fishermen as well. A public consultation meeting will also be held as part of the EIA process. (b) No opinions were raised during the above mentioned stakeholder meetings that required any changes to the project design.
	(3) Examination of Alternatives	(a) Have alternative plans of the project been examined with social and environmental considerations?	(a) Y	(a) Alternatives were examined in regards to the location of the new container terminal, by taking into account aspects such as environmental impacts, cost, construction constraints, port operation and so on.
2 Pollution Control	(1) Air Quality	(a) Do air pollutants, such as sulfur oxides (SOx), nitrogen oxides (NOx), and soot and dust emitted from ships, vehicles and project equipments comply with the country's emission standards? Are any mitigating measures taken?	(a) Y	(a) There are no emission standards for ships, vehicles and project equipments. However, the port will need to strengthen its environmental management to minimize air pollution from port activities, especially regarding bulk cargo handling, exhaust emissions from trucks and fugitive dust emission from stockyard. These should be considered further in the EIA. See 5(1) for recommended countermeasures during the construction phase.

Environmental Checklist（2）

2 Pollution Control	(2) Water Quality	(a) Do effluents from the project facilities comply with the country's effluent and environmental standards? (b) Do effluents from the ships and other project equipments comply with the country's effluent and environmental standards? (c) Does the project prepare any measures to prevent leakages of oils and toxicants? (d) Does the project cause any alterations in coastal lines and disappearance/appearance of surface water to change water temperature or quality by decrease of water exchange or changes in flow regimes? (e) Does the project prepare any measures to prevent polluting surface, sea or underground water by the penetration from reclaimed lands?	(a) N/A (b) N/A (c) Y (d) Y (e) Y	(a) In general there will be no major effluent sources from the port. However, effluent from the confined disposal facility will be monitored if there are any. Appropriate effluent standards should be applied in such case. See 2(3) for details on the confined disposal facility. (b) All ships should be required to comply with regulations and standards stipulated in the MARPOL convention. (c) There will be no major additional sources of oil and toxicant leakages. The project will also install a new oil loading/unloading arm, which should reduce the risk of oil spillage from the oil loading/unloading operation. (d) The construction of the new access road and stockyard will result in some alteration in the configuration of the coastline and disappearance of approx. 6.7 ha of surface water. However, it should not have any significant impact on water quality as it should not decrease water exchange or flow regime to any significant degree. (e) Contaminated dredge soil is planned to be disposed inside a confined disposal facility, which will be constructed inside the new stockyard. The confined disposal facility will be designed to prevent any contamination of
	(3) Wastes	(a) Are wastes generated from the ships and other project facilities properly treated and disposed of in accordance with the country's regulations? (b) Is offshore dumping of dredged soil properly disposed in accordance with the country's regulations? (c) Does the project prepare any measures to avoid dumping or discharge toxicants?	(a) Y (b) Y (c) Y	(a) All wastes generated from port activities should be treated and disposed in accordance to the relevant regulations and norms. (b) All dredged soil will be used as landfill material for the new stockyard. Contaminated dredged soil will be disposed inside a confined disposal facility. Therefore, there will be no offshore dumping. (c) All contaminated dredged soil will be disposed inside a confined disposal facility. Apart from dredged soil, there should be no dumping or discharge of toxicants.
	(4) Noise and Vibration	(a) Do noise and vibrations from the vehicle and train traffic comply with the country's standards?	(a) N/A	(a) There are no noise and vibration standards for vehicle and train traffic. However, the port will need to strengthen its environmental management to minimize noise emissions, especially from cargo trucks. These should be considered further in the EIA. See 5(1) for recommended countermeasures during the construction phase.
	(5) Subsidence	(a) In the case of extraction of a large volume of groundwater, is there a possibility that the extraction of groundwater will cause subsidence?	(a) N	(a) There will be no extraction of groundwater.
	(6) Odor	(a) Are there any odor sources? Are adequate odor control measures taken?	(a) N	(a) There will be no major odor sources.
	(7) Sediment	(a) Are adequate measures taken to prevent contamination of sediments by discharges or dumping of hazardous materials from the ships and related facilities?	(a) N/A	(a) Anti-fouling paints used by ships may continue to contaminate sediments. The port should therefore encourage ships to refrain the use of harmful anti-fouling paint. Ratification of the AFS Convention is also recommended.

Environmental Checklist（3）

3 Natural Environment	(1) Protected Areas	(a) Is the project site located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?	(a) N	(a) There are no protected areas in the vicinity of the project site.
	(2) Ecosystem	(a) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? (b) Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? (c) If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem? (d) Is there a possibility that the project will adversely affect aquatic organisms? Are adequate measures taken to reduce negative impacts on aquatic organisms? (e) Is there a possibility that the project will adversely affect vegetation or wildlife of coastal zones? If any negative impacts are anticipated, are adequate measures taken to reduce the impacts on vegetation and wildlife?	(a) Y (b) N (c) Y (d) Y (e) Y	(a) There are small patches of mangrove, seagrass and tidal flat in or near the project site. (b) There are no protected habitats of endangered species in the vicinity of the project site. (c) Dredging and construction of the container terminal, access road and stockyard will result in loss of sand-silty marine habitat. While it is not possible to accurately predict how the above losses will affect the local ecosystem, it is likely that impacts will remain within negligible levels due to the following reasons: - In terms of surface area, the sand-silty habitat that will be lost comprises only a minor fraction of the entire sand-silty habitat area in Nacala Bay. - No endangered species have been identified to inhabit the construction sites. - The revetments of the new marine structures should function as a new rocky-type habitat for various marine organisms. Nevertheless the significance of the above mentioned impacts on the ecosystem should be assessed in the EIA. Another concern is the introduction of invasive species through ship ballast water. The port should therefore encourage ships to exchange balla (d) In addition to the loss of marine habitat, dredging activities may affect a (e) Some vegetation including mangrove, will need to be cleared to constru
	(3) Hydrology	(a) Do the project facilities affect adversely flow regimes, waves, tides, currents of rivers and etc if the project facilities are constructed on/by the seas?	(a) Y	(a) The new access road and stockyard will result in some alteration in the flow regime near the port. However, its alteration should be very limited.
	(4) Topography and Geology	(a) Does the project require any large scale changes of topographic/geographic features or cause disappearance of the natural seashore?	(a) Y	(a) Approximately 500 m of natural seashore will be lost due to the construction of the new access road and stockyard.

Environmental Checklist（4）

4 Social Environment	(1) Resettlement	(a) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement? (b) Is adequate explanation on compensation and resettlement assistance given to affected people prior to resettlement? (c) Is the resettlement plan, including compensation with full replacement costs, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement? (d) Are the compensations going to be paid prior to the resettlement? (e) Are the compensation policies prepared in document? (f) Does the resettlement plan pay particular attention to vulnerable groups or people, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples? (g) Are agreements with the affected people obtained prior to resettlement? (h) Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan? (i) Are any plans developed to monitor the impacts of resettlement? (j) Is the grievance redress mechanism established?	(a) N (b) N (c) N (d) N (e) N (f) N (g) N (h) N (i) N (j) N	(a) There will be no involuntary resettlement. (b) Not applicable. (c) Not applicable. (d) Not applicable. (e) Not applicable. (f) Not applicable. (g) Not applicable. (h) Not applicable. (i) Not applicable. (j) Not applicable.
	(2) Living and Livelihood	(a) Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary? (b) Is there a possibility that changes in water uses (including fisheries and recreational uses) in the surrounding areas due to project will adversely affect the livelihoods of inhabitants? (c) Is there a possibility that port and harbor facilities will adversely affect the existing water traffic and road traffic in the surrounding areas? (d) Is there a possibility that diseases, including infectious diseases, such as HIV will be brought due to immigration of workers associated with the project? Are considerations given to public health, if necessary?	(a) Y (b) Y (c) N (d) Y	(a) The construction vehicles that travel through the access road may cause nuisance (e.g. air pollution, noise) to the local residents. See 5(1) for recommended countermeasures. (b) The fishing activities of the local fishermen could be affected through for example: - loss of fishing ground due to construction of access road and stockyard - presence of construction vessels - increase in maritime traffic However, no objections or complaints have been raised by the local fishermen during the fishermen consultation meeting and stakeholder meetings. Nevertheless, the project proponent should consult regularly with the local fishermen throughout the construction and operation phases, to discuss if the port construction or activities are causing any problems. (c) The new access road will alter the existing road traffic movement. However, this should in general have a positive impact as it should alleviate traffic congestion. (d) Implementation of regular health checks and education programs are recommended to reduce the risk of spreading of infectious diseases.

Environmental Checklist（5）

4 Social Environment	(3) Heritage	(a) Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage? Are adequate measures considered to protect these sites in accordance with the country's laws?	(a) N	(a) There are no heritages in or near the project site.
	(4) Landscape	(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	(a) N	(a) Impacts on the landscape should be negligible as the project area lies under a designated port/industrial area.
	(5) Ethnic Minorities and Indigenous Peoples	(a) Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples? (b) Are all of the rights of ethnic minorities and indigenous peoples in relation to land and resources respected?	(a) N/A (b) N/A	(a) There are no ethnic minorities and indigenous peoples near the project site. (b) See above.
	(6) Working Conditions	(a) Is the project proponent not violating any laws and ordinances associated with the working conditions of the country which the project proponent should observe in the project? (b) Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials? (c) Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public health) for workers etc.? (d) Are appropriate measures taken to ensure that security guards involved in the project not to violate safety of other individuals involved, or local residents?	(a) N/A (b) N/A (c) N/A (d) N/A	(a) Not considered in the preparatory survey. Should be considered in the EIA or D/D stage. (b) See above. (c) See above. (d) See above.

Environmental Checklist（6）

5 Others	(1) Impacts during Construction	(a) Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)? (b) If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts? (c) If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?	(a) Y (b) Y (c) Y	(a) Various measures are planned to prevent or minimize pollution from construction activities. Following are some of the planned countermeasures: [Air pollution measures] - Use of well maintained trucks and implementation of regular vehicle maintenance. - Covering of truck loading space with sheet cover to minimize dust spills [Noise pollution measures] - Use of low noise pile-driver - Use of well maintained trucks and implementation of regular vehicle maintenance - Strict abidance of speed limit and avoidance of unnecessary revving - Avoidance of night-time travelling of trucks whenever possible [Water pollution measures] - Installation of silt curtains around the dredging site. - Use of dredger with frame-type silt curtain. - Use of enclosed-type grab bucket. - Implementation of water quality monitoring. (b) See 3(2)(c). (c) Various pollution measures are planned to prevent or minimize impact
	(2) Monitoring	(a) Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts? (b) What are the items, methods and frequencies of the monitoring program? (c) Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)? (d) Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	(a) N/A (b) N/A (c) N/A (d) N/A	(a) The preparatory survey recommends monitoring of the following items: - Fishermen (2/year and 1/year in the construction and operation phases respectively) - Water quality during dredging (daily during construction phase) - Effluent water from confined disposal facility (prior to discharge) The detailed monitoring program should be finalized in the EIA or D/D stage. (b) Should be finalized in the EIA or D/D stage. (c) Should be established in the EIA or D/D stage.

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6 Note	Note on Using Environmental Checklist	(a) Where necessary, impacts on groundwater hydrology (groundwater level drawdown and salinization) that may be caused by alteration of topography, such as land reclamation and canal excavation should be considered, and impacts, such as land subsidence that may be caused by groundwater uses should be considered. If significant impacts are anticipated, adequate mitigation measures should be taken. (b) If necessary, the impacts to transboundary or global issues should be confirmed, if necessary (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	(a) N/A (b) N/A	(a) Not applicable. (b) Not applicable.

1) Regarding the term “Country's Standards” mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are required to be made.
In cases where local environmental regulations are yet to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan's experience).
2) Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which it is located.