24.3 Overall Evaluation

1. The result of EIA is summarized as follows.

Table 24-3-1 The Result of EIA

Table 24-5-1 The Result of Elit			
Item	Result of Evaluation		
Air, Noise and	No significant impact by Short Term Plan.		
Smell Quality	A new road bypassing the town area is		
	proposed.		
Water Quality	No significant impact by Short Term Plan.		
	Appropriate countermeasures such as		
	sewage processing system in inland areas		
	are expected to be realized as soon as		
	possible by all authorities concerned.		
Terrestrial Ecology	No significant impact by Short Term Plan		
	around the sites.		
Displacement of	No significant impact by Short Term Plan		
Villages and	(C-3)		
Facilities	Careful coordination is required especially		
	at the master plan stage concerning private		
	piers (B-3)		
Navigation Safety	Calling ships is limited in number.		
Others			
Marine Poliution	No specific problem is anticipated.		
Disposal of	No specific problem is anticipated.		
Dredged Material	Dredged material is carefully disposed not		
	to cause environmental pollution.		
	Appropriate monitoring should be		
	continued.		
Employment	Remarkable effect is expected on the whole.		

- 2. Impact of the project in the Short Term Plan on surrounding natural environment is small and negligible. On the other hand, direct and indirect employment will be created through its construction and operation.
- 3. The following environmental concerns and recommendations should also be noted:
- It is recommended that local government institutions establish a monitoring program of water quality in the bay area to evaluate the performance of their sewage treatment systems and solid waste programs.

- It is recommended that the local authorities initiate a large-scale reforestation program to restore native species.
- It is recommended that the local authorities initiate a program to recover some commercial marine fauna species, such as: *Anadara grandis* (Casco de Burro), *Palinurus sp.* (Lobster) which have been over exploited.
- It is recommended that the local authorities initiate an environment education program with the participation of environmental government organizations.
- The sunken ships and boats should be withdrawn from the areas where they could cause accidents in the future.
- The administrative office of the new port should establish and enforce specific rules for treatment of the sewage from the docking ships to avoid pollution in the port area.
- The administrative office of the new port should implement preventive measures to prevent oil spills from vessels, and prepare emergency response equipment and procedures to contain and clean-up accidental oil spills.
- The administrative office should stringently control vessel traffic during port construction to prevent serious accidents.
- It is strongly recommended to establish a program of cooperation with the respective government organizations of Honduras and Nicaragua to implement measures that will decrease the pollution of Fonseca Gulf.

25. OVERALL EVALUATION

- 1. Two alternatives, C-3 and B-3, are prepared and evaluated as the Short Term Plan. Main facilities are the same for both cases. They differ only in project site.
- 2. Viability of the project was evaluated from various points of view mentioned in the preceding chapters. These evaluations are summarized as follows.

25.1 Alternative C-3

3. Alternative C-3 is planned to the west of the existing Port of Punta Gorda, utilizing the area of the existing Port of Cutuco(CEPA-FENADESAL).

1) Engineering Soundness

- 4. The proposed construction site for new container and bulk berth at Cutuco is rational location due to calm marine condition throughout year as well as port access road. The topographic, bathymetric and geotechnical conditions have no significant engineering problems for construction of the port facilities. The adjacent high land located at the new port may be applied future expansion area after excavation as a borrow pit for the project.
- 5. Water area in front of the construction site is sufficient space for the work boats and maneuvering.

2) Economic Feasibility

- 6. The result of economic analysis in Chapter 22 indicates that EIRR of Case 1 and Case 2 is 18.2% and 17.0% respectively, which is sufficiently high from the economic viewpoint. A sensitivity analysis is conducted to check EIRR when basic conditions change. Even when costs increase by 10% compared with the base case and benefits decrease by 10%, EIRR registers 15.2% and 14.2% respectively.
- 7. Assuming the discount rate is from 8%-12%, NPV of Case 1 and Case 2 are US\$ 122 46 million and US\$ 107 37 million, while BCR of Case

1 and Case 2 is 2.13 - 1.55 and 1.99 - 1.44.

8. Accordingly, the short term development plan is economically feasible.

3) Financial Feasibility

- 9. The result of financial analysis in Chapter 23 indicates that FIRR of Case 1 and Case 2 is 9.3% and 8.7%, which exceeds the assumed weighted average loan interest rate. A sensitivity analysis is conducted to check FIRR when basic conditions change. Even when costs increase by 10% compared with the base case and revenue decreases by 10%, FIRR registers 6.9% and 6.3% respectively.
- 10. Accordingly, the short term development plan is financially feasible.

4) Environmental Aspect

- 11. There are no important or non-substitutive natural components in the project site of the Short Term Plan. The impact to environmental components in and around the site by the plan is small and negligible.
- 12. Appropriate control on disposal of dredged materials is recommended. Construction of a road bypassing the town area is also proposed. Regardless of the port project, in addition, a sewage treatment system to control inflows of inland pollutant should be realized as soon as possible with the cooperation of all authorities concerned.
- 13. On the other hand the Short Term Plan creates direct and indirect employment through its construction and operation, contributing to the regional development.

5) Conclusion

14. Based on the comprehensive judgment from various points of view including items mentioned above, Alternative C-3 is recommended for execution. The result of overall evaluation is summarized in Table 25-1-1.

Table 25-1-1 Overall Evaluation for Alternative C-3

Item	Result	Remarks
Engineering Aspect	Good	Berth construction sites are all in good condition for construction.
Economic Feasibility	Good	EIRR and related indices are good. Project greatly contributes to national foreign trade and regional development.
Financial Feasibility	Good	FIRR is good. Project has profitability.
Environmental Aspect	Good	Project has no significant environmental impact and contributes to local and national economy and social stability.

25.2 Alternative B-3

1. Alternative B-3 is planned to the east of the existing Port of Punta Gorda. Space for a marina (CORSAIN) and a power plant (CEL) is reseved.

1) Engineering Soundness

- 2. The proposed construction sites for new container and bulk berth are with favorable conditions. The topographic, bathymetric and geotechnical conditions have no significant problems for construction of the port facilities.
- 3. However, the proposed port site is located at comparatively shallow water and sea bottom layer with soft clay and silt. The dredging volume will increase compared with another site (C-3) for the basin notwithstanding short entering the port from ocean side.
- 4. Water area in front of the construction site is sufficient wide for work boats and maneuvering.

2) Economic Feasibility

5. The result of economic analysis in Chapter 22 indicates that EIRR of Case 1 and Case 2 is 17.3% and 16.1% respectively, which is sufficiently high from the economic viewpoint. A sensitivity analysis is conducted to check EIRR when basic conditions change. Even when costs increase by 10%

compared with the base case and benefits decrease by 10%, EIRR registers 14.4% and 13.4% respectively.

- 6. Assuming the discount rate is from 8%-12%, NPV of Case 1 and Case 2 are US\$ 117 41 million and US\$ 102 -32 million, while BCR of Case 1 and Case 2 is 2.03 1.47 and 1.90 1.36.
- 7. Accordingly, the short term development plan is economically feasible.

3) Financial Feasibility

- 8. The result of financial analysis in Chapter 23 indicates that FIRR of Case 1 and Case 2 is 8.7% and 8.2% respectively, which exceeds the assumed weighted average loan interest rate. A sensitivity analysis is conducted to check FIRR when basic conditions change. Even when costs increase by 10% compared with the base case and revenue decreases by 10%, FIRR registers 6.3% and 5.9% respectively.
- 9. Accordingly, the short term development plan is financially feasible.

4) Environmental Aspect

- 10. Careful coordination is required especially at the next stage, the master plan stage concerning private piers. There are no other important or non-substitutive natural components in the project site of the Short Term Plan. The impact to environmental components in and around the site by the plan is limited and small. Some private activities there could be relocated with an appropriate countermeasures if necessary.
- 11. Appropriate control on disposal of dredged materials is recommended. Construction of a road bypassing the town area is also proposed. Regardless of the port project, in addition, a sewage treatment system to control inflows of inland pollutant should be realized as soon as possible with all authorities concerned.
- 12. On the other hand the Short Term Plan creates direct and indirect employment through its construction and operation, contributing to the regional development.

5) Conclusion

13. Based on the comprehensive judgment from various points of view including items mentioned above, Alternative B-3 is recommended for execution. The result of overall evaluation is summarized in Table 25-2-1.

Table 25-2-1 Overall Evaluation for Alternative B-3

Item	Result	Remarks
Engineering Aspect	Good	Berth construction sites are all in good condition for construction.
Economic Feasibility	Good	EIRR and related indices are good. Project greatly contributes to national foreign trade and regional development.
Financial Feasibility	Good	FIRR is good. Project has profitability.
Environmental Aspect	Good	Project has no significant environmental impact and contributes to local and national economy and social stability. Some private activities there could be relocated with an appropriate countermeasures if necessary.

25.3 Conclusion

1. In order to select the best alternative, the comparative evaluation of two alternatives, B-3 and C-3, is summarized as shown in Table 25-3-1.

Table 25-3-1 Comparative Evaluation of the Alternatives

	Alternative Plans		
Evaluation	B-3	C-3	
Terminal Plan	0	0	
Land Access	0	©	
Water Area Plan	0	0	
Water Access	©	0	
73.00	Δ	0	
Effect on Existing Piers	Private piers		
II CALCULL anima Anna	0	(
Use of Neighboring Area		Old Cutuco(*)	
	©	©	
Future Expansion	Bulk terminal	Container	
		terminal	
	0	©	
Construction Cost	US \$ 101 million	US \$ 94 million	
Environmental Impact	0	0	
Tice (Odl D)	0	©	
Effect on Other Projects	Marina, Power plant	(Punta Gorda)	
Overall Evaluation	. 0	0	

Note1: © Good

O Fair

△ Poor

Note2: The existing Cutuco is fully available for the project already.

- 2. Basically, C-3 was prepared to facilitate project implementation if the site around the existing Cutuco became available for the Study. C-3 has become a valid alternative since no appropriate concession proposal was submitted for the said Cutuco. As a result, C-3 is selected due to its advantages in terms of cost and availability of the existing area of the Port of Cutuco (CEPA).
- 3. As well, the results of economic and financial analysis of C-3 are better than those of B-3 thanks to the more economical construction cost (7% less). In addition, it is not necessary to coordinate with private piers in C-3. For more details, please see the previous sections of 25.1 for C-3 and 25.2 for B-3, and Table 25-1-1 for the overall evaluation of alternative C-3.

CONCLUSIONS AND RECOMMENDATIONS

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CONCLUSIONS AND RECOMENDATIONS

- 1. The Study Team has formulated this report based on the findings and materials obtained through its own activities, cooperation with counterparts and interviews with many people related to this project. In the course of the Study, discussions within the team and counterparts have been held repeatedly to ensure a fruitful outcome.
- 2. While detailed explanation of results of the Study are expressed in the main parts of the text of the report, issues which are assumed to be most useful for considering the implementation of this proposed project are summarized here for the readers' convenience.

CONCLUSIONS

- 3. This Study has been executed in order to ensure the development and modernization of national ports, especially in La Union Province, and their contribution to the regional development of the eastern area, which are now included in the most important policies in the Republic of El Salvador.
- 4. In accordance with the scope of work between both governments of El Salvador and Japan, the Study Team has
- formulated the Master Plan for the Port of La Union with the target year 2015 for the development of container and bulk terminals and other related facilities, and
- (2) conducted a feasibility study of a Short Term Plan up to the target year 2005 within the framework of the Master Plan
- 5. Total cargo volume for the port forecasted by employing a future economic framework based on actual facts and related figures acquired during the Study, will be around 2.0-2.2 million tons in 2015. It includes container cargo volume of 130-158 thousand TEUs from the whole country, which Acajutla, sometimes affected by a swell, cannot handle. The other cargoes come from the said area.
- 6. To meet these demands, the development of new terminals with modern and efficient container handling systems will be essential to take

the advantage of geographical and natural conditions facing the La Union bay. (The existing Cutuco is too old to be reactivated, and the neighboring Punta Gorda has started to work as fishing base as originally planned.)

7. The necessary number of terminals estimated by the Team is as follows;

Onc(1) container terminal, equipped with two(2) gantry cranes Two(2) bulk terminals Other related facilities such as access channel and road

- 8. Settlement of Export Processing Zones (EPZs) are proposed as important measures closely related to the development of the port to activate the local economy, considering the good performance of those in the western/central region.
- 9. The cost needed for the development of the port is estimated to be around 150 million US dollars.
- 10. Public sector should retain the overall control of the port, providing basic infrastructure such as piers and creating an attractive and competitive environment for private participation. As to CEPA, its modernization is also required, which includes formulation of basic policy and plan for national ports, improvement of statistical system and reinforcement of organization.
- 11. In the Short Term Plan, the following development works will be necessary up to 2005. In particular, the container terminal must become operational as soon as possible.

One(1) container terminal, equipped with two(2) gantry cranes One(1) bulk terminal Other related facilities such as access channel and road

- 12. The quay walls of these two terminals are consecutive and constructed with almost the same specifications for flexible usage at need.
- 13. Among various sites, the two best sites have been selected and examined for the feasibility study. The construction cost for the above two terminals is estimated at 100 million US dollars, which also includes

access channel and road, container handling equipment and tug boats, etc. Over 20 % of the cost is estimated as the portion in local currency.

- 14. The Economic Internal Return Rate (EIRR) calculated based on the countable benefit is more than 13 %. The Financial Internal Return Rate (FIRR) is more than 5 %. Moreover, related indices are also highly evaluated. As a result, the project is judged as being feasible, both economically and financially.
- 15. No significant technical problems are found in the water area or concerning the soil conditions at the project site. Furthermore, the EIA revealed no significant unfavorable impact. Some private activities there could be relocated with an appropriate countermeasures if necessary.

Item Result Remarks Berth construction sites are all in good **Engineering Aspect** Good condition for construction. EIRR and related indices are good. Project greatly contributes to national **Economic Feasibility** Good foreign trade and regional development. FIRR is good. Financial Feasibility Good Project has profitability. Project has no significant environmental impact and contributes to local and Environmental national economy and social stability. Good Some private activities there could be Aspect relocated with appropriate an

Table-1 Overall Evaluation

16. Of the two project sites, that between the Port of Cutuco and Punta Gorda would be preferable in terms of cost and availability of the existing area of the Port of Cutuco (CEPA).

countermeasures if necessary.

17. The proposed project is a great expense to the government. However, it should be implemented, taking into consideration its importance to national port development and regional development and the favorable financing which can be utilized at present.

RECOMMENDATION

1. To ensure the smooth implementation of this proposed plan of the port of La Union, the Study Team recommends the following items.

Nature of Public Ports

- 2. Public ports should be considered as economic infrastructure, or social capital, or as a national asset, in such a country as El Salvador where they are vital in promoting the national economy and upgrading total welfare of the citizen. The Port of La Union will be the only one real container terminal in El Salvador. This kind of container terminal should be open for public use. Ports have to be controlled properly to preserve the national and regional benefit and keep fair use for public.
- 3. Under this concept, ports should be supervised by the public sector. At the same time, basic policy of port development and management and arrangement of basic facilities should be controlled by the public sector. The public sector also has an advantage in that it can obtain low interest loans from foreign organizations for the construction of basic facilities.
- 4. It is also very important to understand that the port services could be provided by private business entities in such well-cultivated fields where they can promote their economic activities freely under a liberalized competitive market seeking efficiency. The public sector as a supervisor and an owner of the port should take full responsibility for public profit.
- 5. In addition to the above mentioned points, it is also fairly justified that the land and water area as well as major port facilities should be supervised by the public sector to secure sound, effective and harmonized port development and activities coordinating with authorities and persons concerned.

Importance of the Master Plan

6. The basic role of the Master Plan is to act as a guideline for (1) development of port facilities, (2) port administration, and (3) coordination

with other plans and works.

- 7. The Master Plan should first be understood as the physical layout plan of port facilities and related land use to cope with the future demand. It shows not only rough requirement but also desirable zoning plan in the target year. All developments of various time spans from very urgent (2-3 years), short (5-10 years) to long term (10-20 years) are well coordinated under a long-term strategy. Based on the plan, efficient and organized port development can be achieved. Related development should be compatible with the plan to avoid haphazard development, the effects of which on a limited coastline may be irreversible
- 8. Similar to the above, proper administration system will be included in the Master Plan. In this sense, the functional allotment between public sector and private sector is an important issue. The functions of public sector and those of private sector will be specified and determined, depending on whether the corresponding port is designated as a public port, private port, commercial port or industrial port. As with the physical layout plan, a stage plan culminating in a long term vision is required. Furthermore, such information must be provided to the private sector in partially to ensure a competitive environment. However, alternative conditions for private investment should be secured under the overall supervision and administration of the public sector.
- 9. Finally, it should be emphasized that the port development is largely affected by surrounding national and regional development. The port can not demonstrate its full potential without the timely and proper arrangement of infrastructure such as roads and EPZs. In this regard, the plan could be utilized for coordination with other public plans work, even private ones. In this context, regional development will also be promoted and accelerated.

Concept of the Master Plan for La Union

- 10. As explained repeatedly, the Master Plan is a guideline for organized port development in future. Therefore, basic zoning plans for various activities are very important. As well, as much future expansion space as possible should be reserved for the Post-Master Plan stage.
- 11. In case of Alternative C-3, which has the lowest construction

cost among alternatives, cargo handling activities are planned to the west of Punta Gorda, while fishing activities would be well arranged around Punta Gorda. As to cargo handling, cargoes related to containers are handled at the west terminal, which could be expanded easily further west.

- 12. Remaining bulk cargoes are planned to be handled at two berths between this container terminal and Punta Gorda. To cope with the increase in cargo expected there, the introduction of modern efficient equipment would be the first option. Expansion of the terminal area would not be necessary until a later stage.
- 13. On the other hand, passenger cruisers are strongly expected to visit La Union. Therefore, a tentative mooring facility, utilizing the west revetment of the land reclamation, is planned to accommodate them as a minimum requirement. It could accommodate the ships of up to 15,000 GT at present. (However, it would not be available once the next expansion of the container terminal begins.)
- 14. Given the increase of passenger ship calls together with the tourism development of La Union, a passenger terminal should be planned properly in the Master Plan of the bay. It might be constructed around the east of Punta Gorda as part of the tourism development plan which is being studied by CORSAIN or, for example, in front of the town area around the existing passenger ports for islands. At any rate, construction of a passenger terminal in La Union should be incorporated into fundamental policy for tourism both nationally and of locally.
- 15. Finally, whether the container terminal can attract a large number of containers depends on the rapid implementation of the new by-pass road for urbanized area of the City of La Union from the Port of La Union. The existing principal road between the Cities of La Union and San Miguel should also be improved as soon as possible.

Systematic and Flexible Planning and Project Implementation

16. The system of port planning should be established. It is necessary that the nation-wide port development policy should be authorized at first and under that policy the plan of each port should be prepared.

- 17. In order to realize the proposed schemes of the plans, it is essential that CEPA promote full understanding of the plan, secure adequate financial support with proper budgetary arrangements and periodically review the plan to cope with national and regional changes.
- 18. All the facilities specified in the Master Plan reflect the forecast data of cargo demand together with type of cargo. However actual figures may deviate from the forecasts due to changes in various social and economic factors. Although a detailed study to cope with such changes would be required on such an occasion, following countermeasures may be useful to ensure future preparedness at time of need.
- (1) review of cargo forecast based on the latest data
- (2) review of the Master Plan
- (3) review of the implementation schedule
- (4) review of the progress of modernization program
- (5) review of the improvement of cargo handling efficiency

Importance of Surrounding Area for Port Related Activities

- 19. For a port to fulfill its function and to ensure economic success, good coordination with the surrounding area as well as the road network system is required. For that purpose, the port management body shall administrate and promote the use of the areas closely related to port activity under its basic policy.
- 20. In C-3, the areas just behind the port ^(*) are of course very important for the development of the port. In the Study, therefore, it is recommended that they should be used for future port related activities.
 - (*) The west part of the area is owned by CEPA and private citizens, while the east part is owned exclusively by CORSAIN. The cost of obtaining this land is not included in the project cost estimate in the Study.

Examples of land use are as follows;

- 1. Back-up area for cargo storage and distribution
 - a) oil tanks for expansion
 - b) silos and warehouses for expansion

- c) container storage yard for expansion
- d) cargo distribution center (car, etc.)
- 2. Port administration and related business
 - a) government offices and shipping agents
 - b) banks and insurance companies
 - c) service center for cruise passengers
 - d) commercial complex (including duty-free shops)
 - e) others
- 21. The appropriate land use could be guided (a) with good coordination between persons concerned, (b) under proper legal schemes or (c) through land acquisition by CEPA.
- 22. The most practical approach would be for CEPA to acquire the area and administrate it as the owner so that planned land use can be realized (see Figure 1).

Required functions for CEPA

- 1) Control of Port Area, Infrastructure and Facilities
- 23. CEPA should recognize the basic role and importance of master plan for the port development, and coordinate the overall projects concerned with port activities so that mutual interference will be avoided. In other words,
 - (1) CEPA should formulate basic policy for national ports and prepare plan concerning development and conservation of port area.
 - (2) Construction work, permission for usage of port infrastructure, facility and area should conform to the port policy and plan.
- 2) Organization improvement
- 24. In order to realize efficient port management and operation related to a basic policy and plan and ensure sound finance for the port development, it is necessary to introduce or reinforce sections which are in charge of the following functions:

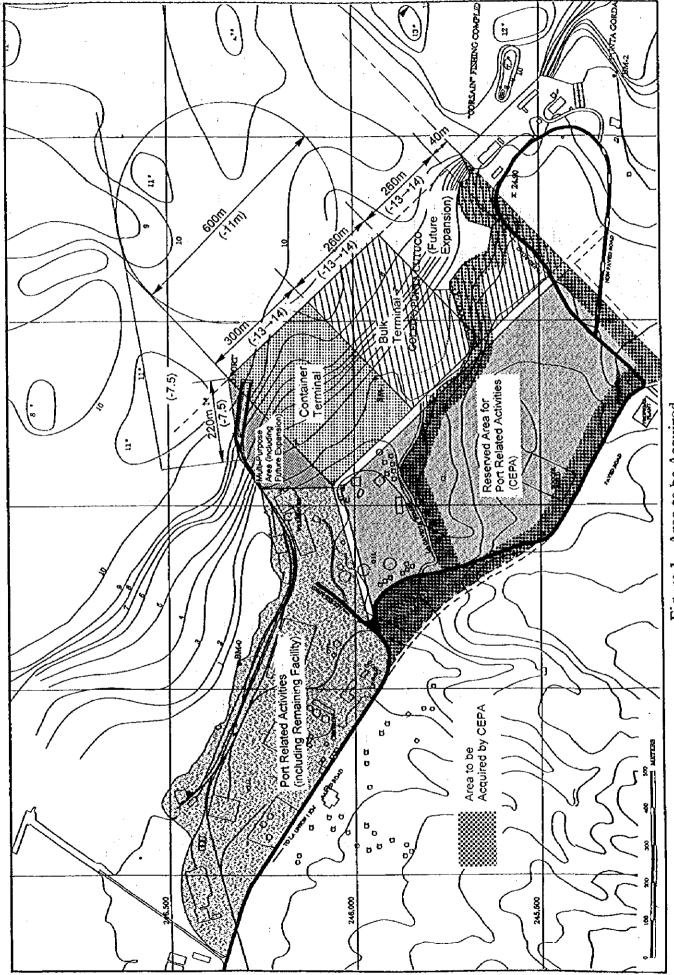


Figure 1 Area to be Acquired



Figure 1 Area to be Acquired

Table-2 Required Functions for CEPA

Expected Role	Background
Functional Port Planning and Arrangement Supervision of New Terminal Construction	 New Terminal in La Union ✓ Joint Participation of CEPA and Private Enterprise in the Port of Acajutla, ✓ Dry Cannal, EPZ
-Active Marketing and Port Promotion -Attractive Tariff and Efficient Cargo Handling	← Progress of Containerization ← Competition among the Neighboring Ports ← Modernization Program of Public Sector
·Environmental Administration	 ←Prevention of Sea Area Pollution ←Raising Environmental Consciousness
-Flexible and Effective Reorganization	←New Role & Function for the Progress of Port Development and Modernization Plan

Port Promotion Strategy

- 25. Port promotion or sales is one of the most important fields of activities for attracting port users. CEPA does not seem very active in pursuing potential clients. In this respect, the following actions are recommended in securing an adequate level of revenues from users at the Ports of La Union and private participation port activities.
 - 1) Establishment of port promotion strategy focusing on the respective target groups of users.
 - 2) CEPA staff should have meetings regularly for sales at shipping companies or shippers, through active appeals in getting their understanding on the real merits of utilization of the Port of La Union such as reliability, efficiency and competitive tariff.
 - 3) It is also useful for effective sales activities to prepare an attractive brochure in which the sales points including various advantages and merits for the corresponding target users are clearly explained.
 - 4) To hold seminars to introduce the Port of la Union to shipping companies or shippers of various countries especially on the Pacific, such as the west coast of U.S. and Asia, is another effective way to assist the promotion activities.

Private Participation Policy

26. Under the basic understanding on the nature of public ports illustrated in para.1, it is recommended that the following guidelines be taken into account when CEPA introduces private participation.

- 1) The ultimate objective of private participation in port operation is to maximize economic return from the target port activity for both the public and private sectors under careful consideration on effective removal of possible inefficiency of public sector as well as adverse effects of monopoly by private sector.
- 2) Port functions and activities to be provided by private sector should be limited within the areas where the private participation can be fully controlled under the administrative authority CEPA, and the areas where the effects of the private participation can be fully expected without any negative impact to sound performance of the port for the public use.
- 3) The target areas to which private participation will be introduced should be planned and arranged appropriately to guarantee the necessary conditions under which the free market system can be fully activated.
- 4) Basic port facilities and major cargo handling equipment should be owned by public sector and open to public use, but can be leased out to private firms on a contract basis for their exclusive use under appropriate conditions. This is also understood as an incentive for private participation as investment in facilities and equipment is not required and flexible operation is possible.
- 5) Practice of private participation should be step wise considering its applicability to the situation of each target stage including practicality, acceptability, and profitability of the intended private participation schemes so that they could fully contribute in securing the total efficiency of port administration and its performance.

Training of Terminal Operation Staff

27. Training of terminal staff including container handling workers is one of the areas that can not be achieved by improvement of physical facilities or cargo traffic control system. Since improvement of human ability requires a rather long time under a well designed systematic education and training program, it is recommended that CEPA should start the necessary action as soon as possible. From the early days before the port starts operation, it is one effective way to invite a long-term expert on port management from developed countries such as Japan.

28. It may also be useful for the Port of Acajutla staff in charge of cargo handling works to be moved to the Port of La Union in order to transfer the know-how of container handling to the private sector. The private sector would benefit from the knowledge of the actual port conditions that these employees will bring to the operation.

Suggestion on Procurement Policy for Required Funds

- 29. In constructing a public port, public funds should be utilized to the extent possible. These include funds allocated by the government for the project in the national budget, and the internal resources of CEPA. As well, the funds from international multi or bilateral financing agencies (ODA: Official Development Assistance), should be utilized. In many cases in developing countries the latter funds are fully utilized, considering that the national funds are usually limited and that concessional terms of such loans are favorable. (for example, OECF loan of Japan can be used to cover up to 75% of the project cost with an interest rate of 2.2% and a repayment period of 25 years)
- 30. In any case, however, interest free internal resources should be utilized as much as possible to minimize future debts. Fortunately, CEPA is also in charge of the international airport, which can generate substantial revenue through successful operation and expansion. This is also able to be considered as a good resource. At the same time, CEPA is also subject to a 25% income tax on profit, and then a further 25% contribution tax is levied on the balance, which also could be used to construct new port, as the project will promote regional development (The regional development is the responsibility of the government). In this sense, exempting CEPA from these kinds of taxes would improve the financial soundness of the project especially during construction and the early stage of operation.
- 31. Finally, the project may attract some private investment. In this case, these funds could be utilized after reviewing the nature of the investment. To safeguard the principle of public use, it is important to ensure that monopolistic practices do not arise. Taking into consideration the above, the feasibility of project together with well-balanced profits for each investment party has to be secured.

Effective Implementation Work of the Project

- 32. The subsoil conditions might be a little complicated based on the existing geographical conditions around the sites. In particular, the rock encounter to the alignment of the quay walls is one of the dominant elements for the project implementation. Detailed subsoil investigation covering whole the project site, including the dredging area of the channel, is desirable. A seismic refraction survey would also be considered efficiently.
- 33. As well, topographic maps at the sites for major structure such as port office, custom office and pumping station, should be prepared in scale of 1:1,000 and with contour intervals of 1.0m. Those covering proposed quarry sites for rock materials and borrow areas for reclamation materials are also necessary.
- 34. A lot of dredged materials will be produced in dredging the approach channel and turning basin or in getting rid of the soft clay under the quay structures. If sandy soils and gravels are found, they should be used as filling materials for the site from the viewpoints of environmental consideration and construction cost reduction.
- 35. In view of the existence of the soft clay layer at the landfill area, the filling work is desirable to be carried out as much as possible in advance at the first stage development so that the subsoil consolidation settlement can be expedited before the port operation starts. If possible, settlement observation at the site is desirable, although overlay could resolve the problem.
- 36. For smooth implementation of the project, proper engineering services in detailed designs, pre-construction services and construction supervision would be one of the key factors in accordance with the proposed schedule of the Study. The preparations for it should also be remembered, if necessary.

Establishment of Effective Maintenance System

37. In the case of the Port of Cutuco, there are several structures and facilities which require periodical maintenance work while some of them require urgent rehabilitation.

- 38. Maintenance work of structures can be divided into two categories, routine maintenance and urgent rehabilitation. The former consists of preventive measures and relatively small repairs in which cost is minor, however the latter consists of corrective measures against large scale damage and required cost is large. Past experiences reveal that if preventive maintenance is appropriately performed at adequate intervals of time, maintenance cost can be minimized.
- 39. In case of the Port of La Union, maintenance of channel depth might be one of the most important issues. Therefore, regular sounding survey and implementation of maintenance dredging, especially outside of the bay, should be done timely according to the result of the survey.

Promotion of Eastern Area Regional Development

- 40. The development of the Port of La Union should be planned according to the strategy for introducing port related industry and stimulating regional development in addition to reinforcement of maritime transport infrastructure. It is thus necessary to consider the relationship between regional development and port activity
- 41. At present, around the Port of La Union a concrete plan of eastern regional development has not been drawn up yet. Government should draw up a concrete plan of eastern area regional development as well as a road construction plan immediately. And then, these plans should be executed by the initiative of the government. Government should create an environment where the private sector can easily participate in major eastern area projects such as EPZ as well as port activities.

Economic Impact to Eastern Regional Development

- 42. As is commonly understood, a port is dependent on the various activities in its hinterland or surrounding areas. At the same time, such activities relating to the ports can not run well without the necessary port functions. In this case, the promotion of regional development with a port as its core is considered vital in maximizing economic and social benefits expected from the port activities.
- 43. According to the forecast cargo volume of El Salvadoran ports,

the present capacity of Acajutla port is insufficient for the future demand, even if cargo handling equipment is improved. It is necessary to radically transform. Acajutla port to cope with this demand. However, to convert Acajutla port into a competitive container terminal, it would be necessary to construct a large scale breakwater and a new container terminal with a container stacking area equivalent to that of neighboring foreign ports. On the other hand, it would not be necessary to construct any breakwater in planning a new port in La Union because the gulf of Fonseca is well sheltered by many isles and capes. In this regard, the investment cost in La Union is no more than the additional investment in Acajutla.

- 44. In addition, construction of La Union new port will accelerate economic development of the eastern region. It would have an impressive impact on the eastern region, as the social infrastructure has not been arranged sufficiently there yet. As a result, it will play a significant role in reducing the economic difference between both regions.
- 45. Since gulf of Fonseca faces Honduras and Nicaragua, La Union new port may also be able to attract cargoes from these countries and to function as a key regional distribution port and exchange base. The geographical advantage of La Union new port could be expected to promote economic and cultural exchange in Central America through trade and industrial relations.
- 46. Container port is a capital intensive industry where scale merit can be expected in terms of efficiency. As a large scale and efficient terminal attracts more ship services and more frequent ship services are more convenient for the exporter or consignee, to concentrate the Salvadoran container cargoes to La Union new port will heighten the efficiency of terminal operation and competitiveness of Salvadoran products.
- 47. Factories located in the port area such as EPZs can enjoy the full benefit of reduced transportation cost for getting materials and shipping products. Procurement of a huge volume of materials and equipment for new port construction and redevelopment of the eastern region will activate construction related industries. In addition, the eastern region will be able to take advantage of the many well-trained workers who gained valuable experience in the United States during the civil conflict. These workers are especially suited to the international

service sectors.

48. The smooth economic growth after the peace agreement reflects the favorable increase of trade volume. The construction of La Union new port will promote the rebuilding of the Eastern region and greatly contribute to the economic growth of the whole nation. Therefore, it is expected that the development of La Union new port will begin as soon as possible.

Environmental Consideration

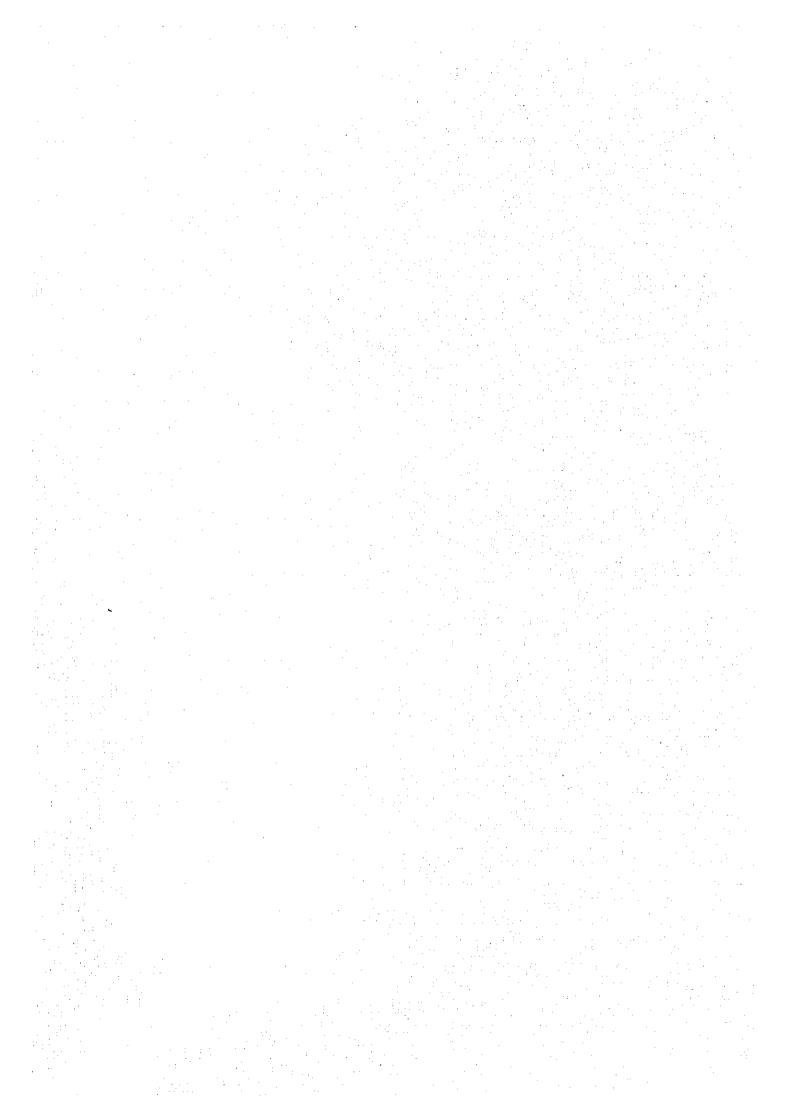
- 49. Environmental issues cover a wide scope. Therefore, the environmental policy should be comprehensive, covering institutional frame and technical know-how. Needless to say, the corresponding section should be established in CEPA as soon as possible. Some basic elements in the above policy are listed below.
- (1) Clear understanding of the present situation of environment
- (2) Estimation and forecasting of the impact and future situation
- (3) Possible countermeasure to prevent the impact
- (4) Process to acquire social consensus
- (5) Coordination with other organizations concerned
- 50. There are many kinds of environmental components related to the port. The water front zone, in particular, has various features from the environmental viewpoint. Therefore, one of the most important issues in the first stage is clearly understanding the environment of the port in question.
- 51. When planning port development projects, careful consideration should be given to the possible effects which may happen during the port construction stage as well as operation stage. If degradation of environment is forecasted, countermeasures should be taken to prevent the environmental burden.
- 52. Results of the environmental analysis sometime remains at a qualitative level. The evaluation of projects is often relative and decisions should be made through social consensus.
- 53. Environmental issues cover a wide scope, thus, the

countermeasures to the issues should be examined and carried out through coordinated efforts of related organizations such as the Ministry of Environment and Natural Resources and related local administrative organs.

54. The function of collecting information, understanding and evaluating what is happening and what will happen in the port, know-how on necessary countermeasures for environmental problems should be carried out by CEPA as with the project of the Study.

APPENDIX

APPENDIX 1



Appendix 1 ENVIRONMENTAL SURVEY - TABLES, MAPS AND PHOTOGRAPHS

Table	1	Flora Tree Species of the Study
Table	2	Flora Tree Species of Area and Surrounding
Table	3	Fauna Mammals and Reptiles of the Study Area
Table	4	Fauna Birds of the Study Area
Table	5	Fauna Fishes, Mollusks, Crustaceous and Batrachians of the Study
Exhibit	1	Organization Chart Ministry of Environment and Natural Resources
Exhibit	2	Municipalities of the Province of La Unión
Exhibit	3	Photograph - Old Vessels in Process of Sinking
Exhibit	4	Photograph - Pollution by Old Vessels
Exhibit	5	Settlements in the Study Area
Exhibit	6	Hydrography in the Area of the Study
Exhibit	7	Photograph - Polluted Area

Table 1 Flora Tree Species of the Study

NAME SCIENTIFIC COMMON NAME Cordia alba **Tihuilote** thevetia peruviana Chilindrón Bursera simaruba Palo Jiote Cassia grandis Carao Rhizophora mangle Mangle Spondias sp Jocote Mutingua calaburra Capulin Jatropha curcas Tempate Acacia comigera Iscanal Enterolobium adinocephalum Conacaste Ficus sp Amate Cecropia sp Guarumo

Table 2 Flora Tree Species of Area and Surrounding

FAMILY	SCIENTIFIC NAME	COMMON NAME
Anacardaceae	Anacardium occidental	Marañón
7 THOO WATER	Mangifera Indica	Mango
	Spondias sp	Jocote
Annonaceae	Annona cherimola	Anona poshte
Apocynaceae	Plumeria acutifolia	Flor de mayo
Aboolivations	Rauwolfia heterophylla	Matacoyote
	Stemmadeniaglabra	Cojón de puerco
Araliaceae	Sciadendron excelsum	Lagarto
Bignoniaceae	Arrabidaea millissima	.Chupachupa
Digitorii a	Crescentia alata	Morro
•	Crescentia cujete	Jícaro
•	Tabebuia chrysantha	Cortez amarillo
Bombaceae	Ceiba pentandra	Ceiba
Borraginaceae	Cordia alliodora	Laurel
	Cordia alba	Tihullote
Burseraceae	Busera simaruba	Glote
Caricaceae	Carica papaya	Papaya
Ceasalpinaceae	Bahulnia aculeata	Casco de venado
	Bauhinia ungulata	Pié de cabra
•	Cassia grandis	Carao
	Tamarindus indica	Tamarindo
Eleaocarpaceae	Mutingea calabura	Capulín
Euphorbiaceae	Astrotonium gravealeus	Ronrón
	Croton reflexiotolius	Copaichi
	Jatropha curcas	Chilamate
Flacourtiaceae	Casearia sylvestris	Huesillo
	Xylosoma flexuosum	Aguja de arra
Hemandiaceae	Gyrocarpus americanus	Tambor
Lurantahceae	Psittaconthus sp.	Matapalo
Malpichiaceae	Byrsonima crassifolia	Paraiso
1	Cedrela odorata	Cedro

Table 3 Fauna Mammals and Reptiles of the Study Area

COMMON NAME

SCIENTIFIC NAME

Tepesculntle
Mapache
Cusuco
Gato sonto
Gato montés
Zorrillo
Conejo
Tacuazín
Ardilla
Murciélago
Garrobo
Iguana

Dasyprocta punctata
Procyon lotor
Dasypus novemcinctus
Fells yagouaroundi
Urocyon cinereoargentus
Spilogale putorius
Sylvialagus floridanus
Sidelphis marsuplalis
Sciurus variegatoides
Glossophaga sp
Ctenosaura similis
Iguana iguana

Table 4 Fauna Birds of the Study Area

COMMON NAME

SCIENTIFIC NAME

Pelícano Fragata Zope común Gavilán Codornis Chacha **Alzaculito** Playerito

Paloma de mar

Tortolita Ala Blanca Chocoyo

Pericón verde

Catalnica Pijuyo

Plátano asado

Colibri Aurora Talapo Torogoz Golondrina Urraca Guacalchía Zenzontle

Pelecanus occidentales Fragata magnificens Coagyps atratus Ruteo brachyurus Colinus leucopogon Ortalis leucogastra Actitis macularia Calidris mauri Sterna nilotica Columbina talpacoti Zenaida asiatica Aratinga canicularis Aratinga holocchlora Brotegeris jugularis Crotophaga sulcirostris

Playa cayana Amaxilia rutila Trogon elegans Eumamota superciliosa

Momotus momota Progne chalybea Calocitta formosa

Campylorhynchus rufinucha

Turdus gravi

Table 5 Fauna Fishes, Mollusks, Crustaceous and Batrachians of the Study

FAMILY	SCIENTIFIC NAME	COMMON NAME
		•
Sciaenidae	Stelifer erycymba	Corvinillas
Sciaenidae	Stelifer sp	Corvinillas
Sciaenidae	Bairdiella chrysoleuca	Corvinilias
Gerreidae	Diaptrus peruvianus	Huesudas
Sphyraenidae	Spyraena ensis	Picudas
Sciaenidae	Larimus effulgeus	Guabinas
Stromateldae	Peprilus snyderi	Tilosas
Polynemidae	Polydactylus approximaus	Gatas
Tetraodontidae	Sphoeroides tricocephalus	Sapos
Dasyatidae	Dasyatis sp	Rayas
Pomadasydae	Pomadasys panamenses	Rucos
Arridae	Galeichtys peruvianus	Bagres
Arridae	Arius troschelli .	Guichos
Lutjanida e	Lutjanus gullatus	Pargos
Mullidae	Pseudupeneus grandisquamis	Palometa
Batrachoididae	Porichtys nautopaedium	Frayles luminosos
Centropomidae	Centropomus medius	Robalos
Spyrmidae	Sphyma lellini	Tiburones martillo
Loliginida o	Lolliguncula panamensis	Calamares
Portunidae	Portunus sp	Jaibas
Bothidae	Ertropus crossotus	Caites
Penaeidae	Penaeus stylirostris	Camarones blancos
Penaeidae	Penaeus brevirostris	Camarones rojos
Penaeidae	Penaeus vannamei	Camarones blancos
Portuneidae	Callenéctes sp	Jaibas
Palinuridae	Panulirus gracilis	Langostas
Mytilldae	Mitella guyanensis	Mejillones
Ostreidae	Ostrea iridescens	Ostras .

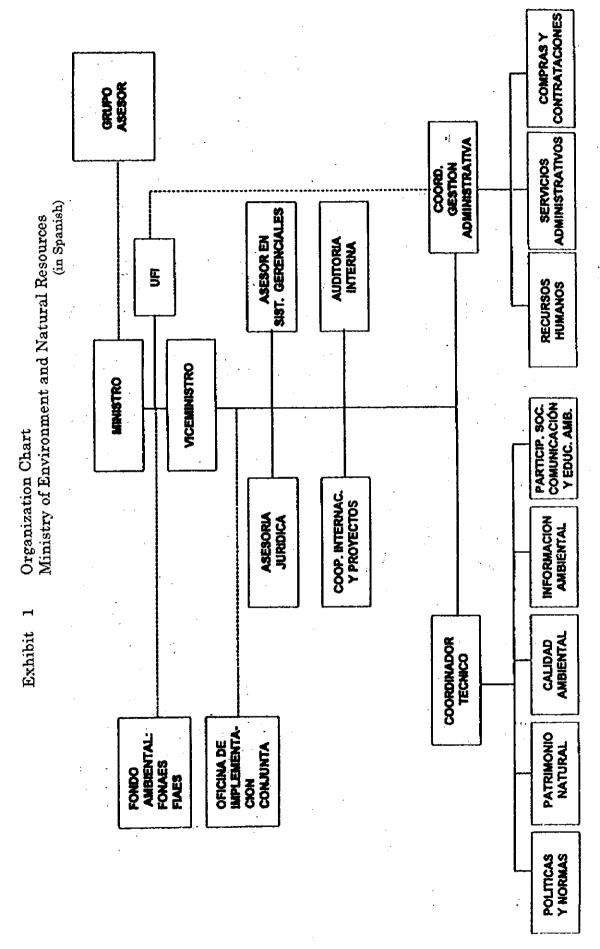


Exhibit 2 Municipalities of the Province of La Unión

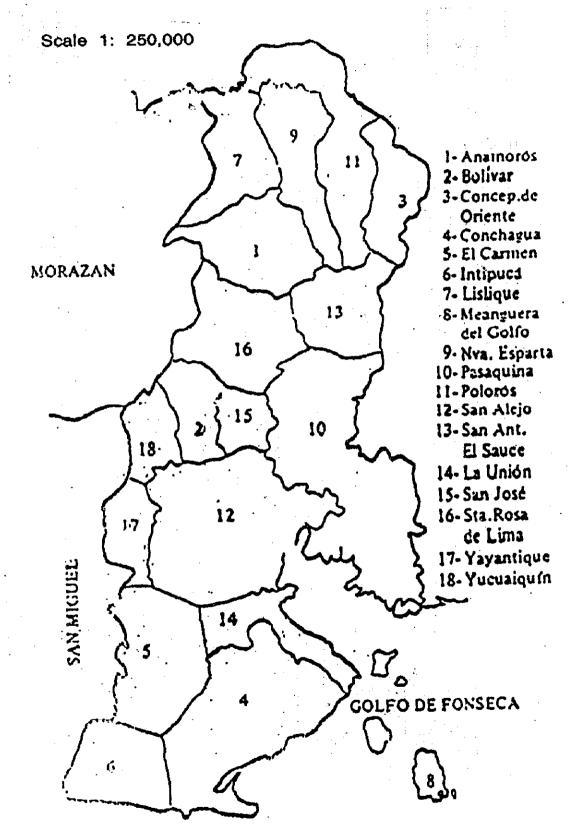


Exhibit 3 Photograph - Old Vessels in Process of Sinking

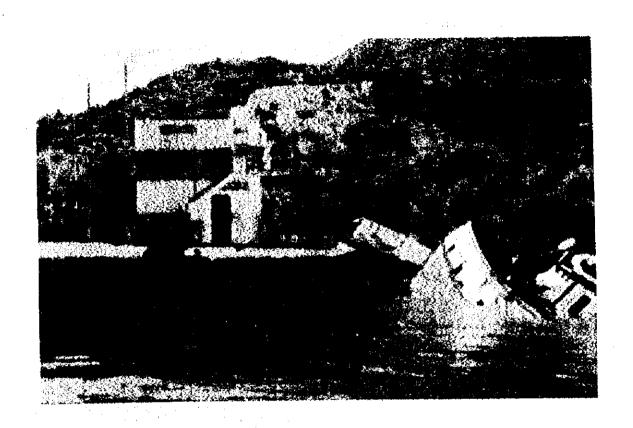


Exhibit 4 Photograph - Pollution by Old Vessels

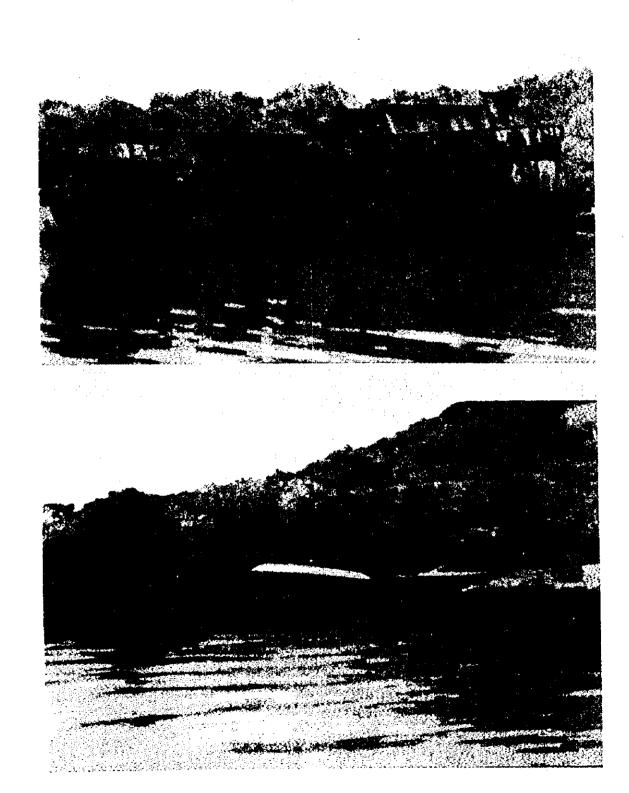
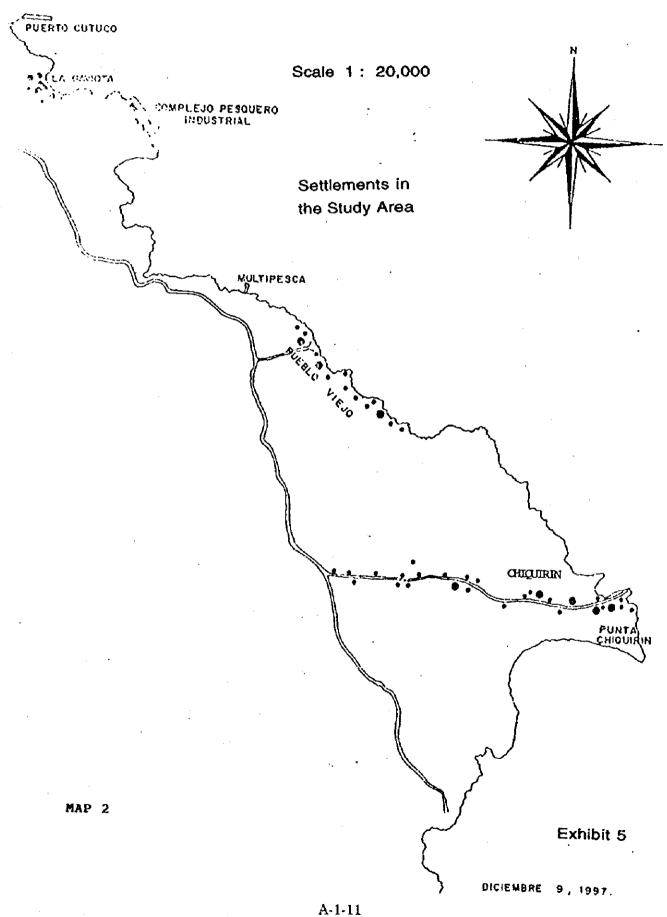


Exhibit 5 Settlements in the Study Area



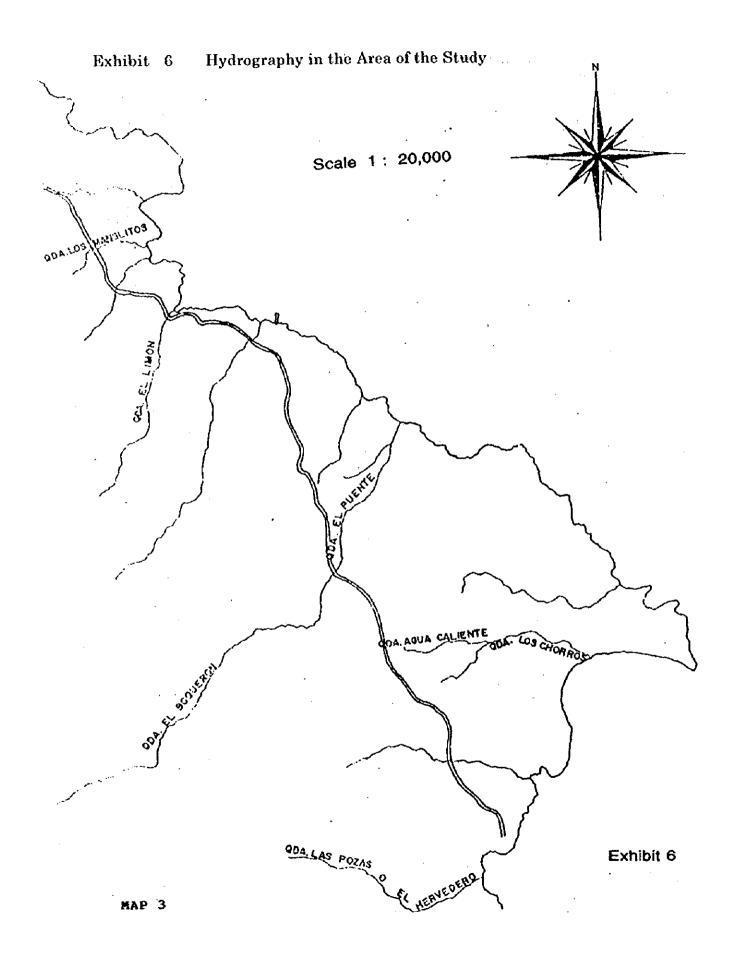


Exhibit 7 Photograph - Polluted Area





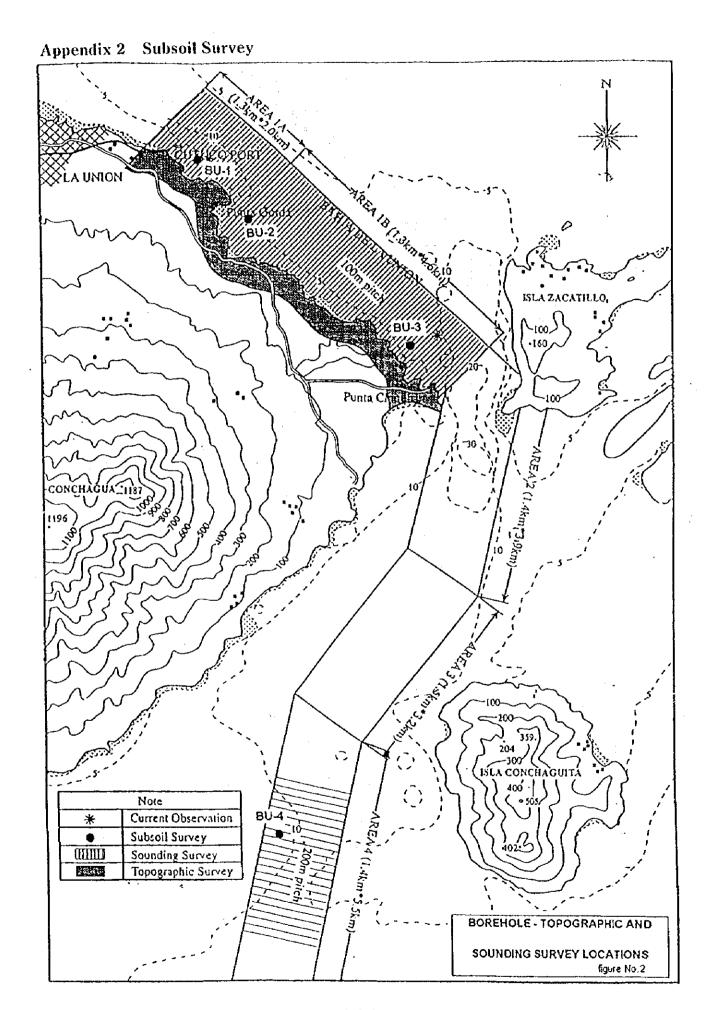
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APPENDIX 2



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		RT REACTIVA		SEA BOTTON ELEVATION: •9.50 m	- 1				OLFO			
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оертн м	ELEVATION: m	MATERIAL TYPE	8	CLASSIFICATION OF MATERIAL	# SAMPLE	SAMPLETYPE	RECOVERY %		SPT ⁻ राष्ट्रा		r \$\[\frac{1}{2}\]	N
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- 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9	-14.50	SHALLOW DEPOSITS		Clay, light gray, very soft, high plasticity and organic contents Clay, light gray, very soft, high plasticity 5.00 - 5.60 m Shelby tube sample was not recovered	SPT-1		100					1
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- - 11		CLASTIC SHALLOW DEPOSITS		10.00 - 10.80 m Shelby Tube sample was not recovered									
- 12 -				Clay - silty clay, dark brown, soft, medium to high plasticity, with organic contents (wood pieces and shell fragments)	SPT-5		100						4
13 - -				idem	SPT-6		100						,
14 - - 15	-24.50	,											
- - 16	-24.00												
 17				Clay, dark brown, very soft, high plasticity	SPT-7		100						
18					SH-8	1	100	11					
19 - - - -	-29 50	4		Sandy silt, light gray, medium stiff, low to medium plasticity, fine sand and clay traces, with some organic contents (pieces of wood)	SPT	•	67						

CEPA - JICA Study Team Swissboring Overseas Corp.Ltd. LOG OF BORING SHEET No. 3/3 **BORING No.: BU-1** DRILL RIG: LONGYEAR 34 COORDINATES: N 87 49' 00" - E 13 19' 50" LOCATION: GULF OF FONSECA SEA BOTTON ELEVATION: -9.50 m DRILLER: REGINALDO TELLO THE STUDY FOR PORT REACTIVATION LOGGED BY: RODOLFO ALVARADO V IN LA UNION PROVINCE, EL SALVADOR DATE STARTED-FINISHED: 4-5 / 12 /67 ELEVATION: SAMPLE TYPE ε MATERIAL 8 SPT TEST N CLASSIFICATION OF MATERIAL DEPTH 39YT Sand, dark brown, dense, medium to coarse CLASTIC SPT-10 36 SHALLOW grained, with traces of fine sand and gravel, some DEPOSITS pieces of schells <u>-</u>1 Sand, brown-gray, medium dense, fine to medium SPT-11 33 21 grained, with pieces of volcanic rock up to 1 cm in 22 Clayey silt - silty clay, reddish, hard, high plasticity. SPT-12 84 44 with traces of coarse sand and fine gravel (volcanic rocks up to 0.75 cm in size) 23 62 SPT-13 44 Idem, with mediun sand 24 Sandy silt, brown to reddish brown, very stiff - hard, 24 medium plasticity, with pieces of rock up to 1 cm SPT-14 44 în size <u>2</u>5 -34.50 idem. With little sand and fine gravel 40 56 SPT-15 -23 Silty sand, brown, medium dense to dense, fine SPT-16 36 33 and medium grained ldern, dense, with pieces of volcanic rocks up to a cm in size _ 27 SPT-17 45 56 28 80 0 ldem 33 SPT-18 • 29 SPT-19 86 44 idem. Very dense, fine to medium grained, not rock fragments O 25 SPT-20 Gravel ans sand, pieces up to 2.5 cm in size -39.70

END OF BORING AT 30.20 m

Swis	sborina O	verseas Corp.	Ltd.		CE	PA	ı - Ji	CAS	hidy	/ Tear	n	
		•		LOG OF BORING	CEPA - JICA Study Team							
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£	FION: B	MATERIAL	507	. CLASSIFICATION OF MATERIAL	# SAMPLE	SAMPLE TYPE	/ERY %		SPT	TES	 :Т	N
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- .3 - - - - 4				idem. Dark gray color 4.10 m. to 6.20 m. Shelby tube sample was not recovered	,SPT-2		.89					ţ
5 	-14.70 ·			ldem. Clay , dark gray, very soft, high plasticity, with shell fragments	SPT-3		100					•
- - - 9 - - - 10	-19.70			Shelby tube sample, pressure 30 kg/cm2	SHT-		10	3		-		

CEPA - JICA Study Team Swissboring Overseas Corp.Ltd. LOG OF BORING SHEET No. 2/3 **BORING No.: BU-2** COORDINATES: N 87 48' 31" - E 13 19' 20" LONGYEAR 34 LOCATION: GULF OF FONSECA SEA BOTTON ELEVATION: -9.70 m DATE STARTED-FINISHED: 8 - 10 / 12/97 **REGINALDO TELLO** ORILLER: THE STUDY FOR PORT REACTIVATION LOGGED BY: RODOLFO ALVARADO V IN LA UNION PROVINCE, EL SALVADOR # SAMPLE MATERIAL ٤ SPT TEST 8 Ν CLASSIFICATION OF MATERIAL TYPE CLASTIC SHT-4 SHALLOW DEPOSITS SPT-5 100 Clay, dark gray, very soft, high plasticity 12 SPT-6 100 ldem. 13 _ 14 14.00 m to 14.60 m. Shelby tube sample was not recovered 15 -24.70 -16 SPT-7 100 ldem. 17 SHT-8 Shelby tube sample, pressure = 30 kg/cm2 18 Clay, light gray, very soft to soft, high plasticity, with SPT-9 78 some organic contents (pieces of wood) 19

Silty clay, dark gray to black, very soft to soft, high

plasticity, with pieces of wood

-29.70

SPT-10

100

CEPA - JICA Study Team Swissboring Overseas Corp.Ltd. LOG OF BORING SPEET No. 3/3 **BORING No.: BU-2** COORDINATES: N 87 48 31" - E 13 19' 20" LOCATION: GULF OF FONSECA DRILL RIG: LONGYEAR 34 THE STUDY FOR PORT REACTIVATION REGINALDO TELLO SEA BOTTON ELEVATION: -9.70 m DRILLER: IN LA UNION PROVINCE, EL SALVADOR RODOLFO ALVARADO V LOGGED BY: DATE STARTED-FINISHED: 8 - 10 / 12 /97 SAMPLE ELEVATION: m RECOVERY E MATERIAL CLASSIFICATION OF MATERIAL SPT TEST Ν TYPE . DEPTH CLASTIC SHALLOW DEPOSITS idem. SPT-11 100 21 _ 22 23 1 Silty clay - clay, dark gray to black, very soft to soft, SPT-12 high plasticity, with organic contents _ 25 -34.70 SPT-13 100 26 ldem. 27 56 SPT-14 15 Gravet and sand, pieces of volcanic rock up to 1cm in size (sand was not recovery) 28 74 Silty sand to fine sand, dark gray, very dense, with SPT-15 38 traces of medium sand 29 SPT-16 63 >50 ldem. SPT-17 30

END OF BORING AT 30.20 m

39.75

Swis	sborina Ov	erseas Corp.L	ld.		CE	PΑ	· J	ČA S	tudy	Tean	1	
-,				LOG OF BORING								
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THE STU	JDY FOR P	ORT REACTIV	ATION	SEA BOTTON ELEVATION: - 8.20 m	DRILL				SINAL			
IN LA UN		NCE, EL SAL	VADOR	DATE STARTED FINISHED: 10/12/97	LOGG	3E0 1		ROC	OLFO	ALV.	ARAE	0 V
оертн т	ELEVATION: m	MATERIAL TYPE	823	CLASSIFICATION OF MATERIAL	# SAMPLE	SAMPLE TYPE	RECOVERY %	<u></u>	SPT		T : 50 >	N 50
		CLASTIC				T			+	П	\top	1
1		SHALLOW DEPOSITS		Clay, brown - gray, very soft, high plasticity, very wet	SPT-1		100					1
- - - -3 -4				ldem	SPT-2	2	100					1
 - - - _5	-13.20											-
_6 				Clay, dark gray, very soft, high plasticity, with	-SPT-	3	10	»				
- - - -8				fine sand traces Sandy clay with pieces of rocks (up to 2cm in size), hard, high plasticity	SPT	-4	2	2				4
- -9 				idem	SPT	r-5	\$	50			'	,
10	-18.2	0 *		END OF BORING AT 10.05 m	SPI	г-6	> (50				<u> </u>

Swis	sboring O	Ç	-PA	(- J	ICA	Stud	y Te	am		7			
				LOG OF BORING									
	-			BORING No.: BU-4						SĤ	ÈT!	ło. 1/	1
·		LF OF FONS		COORDINATES: N 87 49' 15" - E 13 13' 21"	ORILL								
		ORT REACTIV		SEA BOTTON ELEVATION: -9:30 m	DRILLER: REGINALOO TELLO LOGGED BY: RODOLFO ALVARADO								
INLAUN		INCE, EL SAL	VADOR	DATE STARTED-FINISHED: 15/12/97	LOGG	SEU		KO	OOL	OAL	VAR	AUO 1	
ОЕРТН М	ELEVATION: m	MATERIAL TYPE	901	CLASSIFICATION OF MATERIAL	# SAMPLE	SAMPLE TYPE	RECOVERY %	10	SP	ा १६ इन्ह		 ∞	N
 		CLASTIC		Sandy silt - Silty sand, dark brown, fine grained,	spie -1	\vdash			-	+	╁		{
- - - -1		SHALLOW DEPOSITS		low plasticity, with organic contents (little pieces of wood)	sole -2								
- - -				Silty sand, dark brown, fine grained			i						
_2 _3				Idem, With organic contents, pieces of wood and shell fragments	sple-3								
- -				Silty sand - fine sand, gray, not plasticity	spie-4		-						}
_4 _ _ _5	-14.30		/; /;		sple-5								
- -				Fine sand, gray, no silty sand traces, with little pieces of shell fragments	spie-5								
_6 				ldem.	sple-6								
- ₇ -					sple-7								
 _8 				ldem.									
- _ _9	-17.80			END OF BORING AT 8.50 m	spie -8								
- -		±							1		-		

APPENDIX 3

Appendix 3 Rough Cost Estimate

Comparative of Arternative Plan Port of Cutuco	Unit: *¥1000,000
2005 (-12.0m) 2015 (-13.0m)	

Order	25 5	,802 6	73 2	59 3	13 7	76 4	1 1
Total	23,225	24,8(19,873	20,559	25,013	22,776	18,792
	2	9	4	3	7	5	-
Long Term	5,128	682'9	5,564	5,134	6,825	6,641	4,325
Shart Tang I a least		THE STATE OF THE S		1000 1000 1000 1000 1000 1000 1000 100	E	16. 4. 17. 18. 18. 12. 12. 12. 12. 12. 13. 14. 14. 14. 14. 14. 14. 14. 14. 14. 14	7 1 10 10 13 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Plan	A1	8-1	B-2	B-3	<u>-</u> 0	C-2	C-3

(Note) Exchange Rate: 1 US Dollar = 8.75 Colon = 130 Yen

Appendix 3 Rough Cost Estimate

Comparative of Assernative Plan	Port of Cutuco
2005 (-12.0m)	2015 (-13.0m)

;				Unit: *¥1000,000	
Plan	Short Term.	Long Term		Total	Order
A-1	9 //60¦8#	5,128	2	23,225	5
B-1	18,013	6.789	9	24,802	9
8-2	14,369	5,564	4	19,873	2
B-3	15,425	5,134	3	20,559	3
<u>-</u> -	7	6,825	7	25,013	7
C-2	16,135	6.641	5	22,776	4
C-3	7. 1.9573	4,325	•	18,792	

(Note) Exchange Rate: 1 US Dollar = 8.75 Colon = 130 Nen

A-I

Short Term(-12m) 2005

Methication	O	Category	Wen Work Rema	Detailed Work Items	Unit	Quartity	Unit Cont	Cost	1	
Container Fernicat Ls	Plane			र्मकश्रमका स्थलका । विक्रमका		-xxxxxxx	- NE COR	1194 035 810	(Short Term 2005)	
Container	open took	M-CONTRACOL								
Ondering Removal of Sert. Set cum 321(0) 320 220(2)00		Can Total	Tall Day of the Control of the Contr						11:100:002:100	
Container What Cont			Ramount of Soft Soil		60.08	53 (00)	520		(
Container Whet Consistent State Sum 5.400 9.000 72.00 9.00 1.000 1.	Charles I								1 513 562 000	
L-000 m Concents Careeron Section Concents Section Sec	ħ								1	
L-900 m Concreta Cesseon Manufacture Guam 15,248 20,000 20,990	Į.						0	G	i	
Section Comment Section Sect	1			Manufacture		19 348	20,000	266,960,000	1	
Settle Peters Settle S				Transportation			300,000	4,500,000	1	
Serial Store Comm	1			Installation		15		1,500,000	1	
Destining Stores Comm \$4,000 \$300 20,000,000 Crown Committee Comm \$4,000 \$300 20,000,000 Agreen Operantia Sum 1,584 11,000 46,020 Crown Committee Sum 1,584 11,000 46,020 Crown Committee Sum 1,584 11,000 46,020 Intelligian of Fandar Intelligian Intelligian	l			Send Filling	C/A ITS	43 842	1,000	43,842,000]	
Copen Contents	İ		Backfilling Stone			54,000	5,000	270,000,000	3	
Convert Secretary of Number 2005 1,000 13,					çum	3,286	17,000	55,882,000	} '	
Establishe of Fender P. 15 20,000,000 300,000,000 Establishe of Moorins Bit Po					cum	1,566		26 622 000]	
Semination of Montring Ret Process Proce				de	CA CO	1,002			3	
Learl Reclamption Lard Restartion Lard Res	3									
Land Reclamption Land Reclam	1									
Parament Parament Sum 3,500 14,000 44,000,000 3,984,209,00 1,9				<u> </u>						1.105.922,000
Building September Septe				ļ						187,425,000
Utritics Utritics 15 169,210,450 1385,419			Pavement	}						441,000,000
Multi				 		1,500	20,000			30,000,000
Multi Personal of Seft Sed			Utrities	 	112		<u> </u>			199 210,450
Supplied		(2)S-A T-X-4						1353,619,450	4	3,553,419,450
Supplied					1				-	
East Revolution Foundation Rocks Contract Calgaron Mesufacture Court 23,113 5,000 142,700,000		Unsdaing						39,144,63		
Lef40 m Generate Calascon Manyfestory Cum 2,688 2,000 53,180,000 ditto	/urpose()	5 . 5								
Lef40 m ditto		East Nevetnent		Mark A. S.						
drito										
Seric Fifting County Cou		L-140 m								
Backfill Store		1								
Main Wharf Foundation Rocks Six C60 5000 28 090 000				2401344						
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Concrete Celebor Manufacture Quim 11588 20,000 231,290,000				 						•
L=280 m ditto		1		Mendeches		11.564	20,000	231 340 00	3	
dicto	1	li =280 m						3,900,00		
dista										
Restrict Stores										
Court Cour		j -		1						
Agree Construe Cum 1,357 1,1000 2,009,000 Installation of Forder no 13 20,000,000 250,000,000 Level Reclamption (Loand Reclamation Cum 320,000 1,5000 35,000,000 Personner Personner Cum 2,7300 1,5000 392,200,000 Bulletina Cum 2,7300 1,5000 392,200,000 Bulletina Cum 2,7300 1,5000 392,200,000 Uptice La		1		T						
Installation of Mooring Set Co 13 5000,000 5500,000		1	Apron Concrete	I	cum	1,357	17,000		3	
Installation of Mooring St. Co. 13 5,000,000 55,000,000		1	installation of Fender	T	no	. 13	20,000,000	280,000,00	3	
Revenuest		1	Installation of Mooring Bit.		ro	13	5,000,000	65,000,00	2	1,245,472,000
Revenuest		Land Reclamation	Land Reclamation		C4 m	529.000°	1.500	793 500 00	2]	793 500,000
Channel Channel Designs		Pavament	Peveriors		Ç/L/M			382 200 00	과	382,200,000
Channel Channel Designs		Building	2:16/mt	<u> </u>	انتعا	1.500	20.30	D	2 229 21 2 800	\$\\$000,000
Channel Dedging Channel Dedging Court 3,474,387 400 1,389,754,800				 .		ا۔ ــــــــــــــــــــــــــــــــــــ	<u> </u>	100 000	<u> </u>	39 6 3 0
Overlight		ــــــــــــــــــــــــــــــــــــــ	<u> </u>		_	<u> </u>	ļ	293917349	켈	2,039,173,440
Overlight			<u> </u>			!		 	4	
Berth Pocket Cum 994.300 3.450 3.255.511.700 Marission Aids Manustion Aids no 13 270,000.000 (4/Sub Total 1,000.000 1,000 270,000.000 Sub Total 270,000.000 270,000.000 270,000.000 (5/Sub Total 270,000.000 270,000.000 270,000.000 270,000.000 (5/Sub Total 270,000.000 270,000.000 270,000.000 270,000.000 270,000.000 (5/Sub Total 270,000.000 270,000.000 270,000.000 270,000.000 270,000.000 270,000.000 270,000.000 270,000.000 270,000.000 270,000.000 270,000.000 270,000.000 27	Channel			<u> </u>						1,389,754,800
Maringston Aids Marrastion Aids Co 18 270,000,000 (1/Sub Total 5,197,287,300 5,197,287,300 Road Access Road Access Road eg m 27,000 10,000 270,000,000 (1/Sub Total 7,000 10,000 20,367,292,8 (1/Sub Total 132,75,995,37] Engineering Fee LS 1,227,5995,37 Contingency LS 1,460,359,491 Contingency LS 1,460,359,491		Credeire		-						3,538,606,500
Configure Conf		1							뫽	434 463 504
Road Access Road Access Road eg.m 27,000 10,000 270,000,000 20,367,292,8 (1) (3) 1,344 (1) (3) 1,344 (1) (3) 1,344 (1) (3) 1,344 (1) (3) 1,344 (1) (3) 1,344 (1) (3) 1,344 (1) (3) 1,344 (1) (3) 1,344 (1) (3) 1,344 (1) (3) 1,344 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (3) 1,460,354 41 (1) (4) 1,460,354 41 (1) (4) 1,460,354 41 (1) (4) 1,460,354 41 (1) (4) 1,460,354 41 (1) (4) 1,460,354 41 (1) (4) 1,460,354 41 (1) (4) 1,460,354 41 (1) (4) 1,460,354 41 (1) (4) 1,460,354 41 (1) (4) 1,460,354 41 (1) (4) 1,460,354 41 (1) (4) 1,460,354 41 (1) (4) 1,460,354 41 (1) (4) 1,460,354 41 (1) (4) (4) 1,460,354 41 (1) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4		1 avention Autu	Next patient Avils	}		14	 			270,000,000
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15 15 15 15 15 15 15 15	S	1	 	 		1 22.000		970.000	ᆏ .	
(1) (5) Total 13.275 995.371 Ensinearing Fee LS 1 1.327.5995.371 Total 14.003.594.398 Contingency LS 1 4.003.594.394	rioed .		TAECESE MOSO		- 10 m	27,000	10,00			270,000,000
Engineering Fee L.S 1.227.595.531 1.000.794.905 1.000.794.905 Contingency L.S 1.600.354.401		(13.54D (50)	 		+	 				5100000000
Total 14,003,594,906		E17 (37 1 254	 	+	1.5	! .	+			
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Loedina Equip's U.S. 1 2030,450,000 Grand Total 18,087,414,799	WHAT EDIAN C	Court Total	 	 	+	 	+			
See 144 (200) 41-133		125 CO. 1050	1	 	1	! 	+	183487.414.33	4	

(-12m^{*}-12m)

A-1 Long Term(-13m) 2015

							Unit. Y	_	
Pince	Cetatory	Main Work Items	Detailed Work items	Unit	Quantity	Unit Cost	Cost	Ĭ	
Hobilitation	Mobilization .	Mobilization		. 10	1		140 775 680	(Short Term 2005)	
	1	Lamporary Facilities		1			14.077.548		
	(L)Sub Total	4 4 4					154,053,240	1.501.720.000	
Container	Onedging	Removal of Soft Soil				E20			
DQ TEST IN	S. 4.4	Starting Hard Rock		CULT	<u>-</u>	520			
	C			Sum.	<u>.</u> 9	19,000	9		
	Container Wherf	Foundation Rocks		SUM.	이	1,000			
		Displacement of Sol		€U M		<u>0</u>	0	ļ	
	L=300 m	Congreta Calegon	Manufacture	€um	0	20,000]	
		ditto	Trensportation		0	300,000		1	
		ditta	Installation	rg.	ōī	100,000	ű		
	1 1	ঠ ণা ও	Sand Filling	cum		1,000	Ö		
		Backfilling Stone	3		- ăi	5,000			
		Crown Concrete		CUM					
				Cri III		17,000			
		Apron Concrete		cum	Q	17,000	0		
		Crana Foundation of Land S	de	cum	0	18,000			
	į	Installation of Funder	L		. 0	20,000,000		3	
	1	Installation of Mooning Bit.		2	0	5,000,000	. C		
		Laving Rel		Terta:	0	20,000			0
	Land Reclamation	Land Reclamation		gu m	ò	1,500	0		ŏ
	Pavement.	Parement		cum	ò	14,000	0		ŏ
	Building					20,000			
	Utilities	Utilities		so m					0
		Advises			<u> </u>		<u>.</u>		0
2.5	(2)Sub Total]	0
								1	
Muhi	Dredging	Removal of Soft Soil		eum		520	O	1	
Purposs(1)		Steeting Hard Rock		cum	1	10,000	Ö		
	East Revetment	Foundation Rocks		CUART	-	8.000			
	1	Concrete Caleson	University		- V				
	L=140 ns	árto.	Tenance	CUM.		20,000			
		5.4.	Transportation	70		150,000			
	I	Φtto	tratalistion		0	50,000			
		ditto.	Sand Filling	Crim	0	1,000	9	3	
	<u></u>	Back58 Stone		CUM	0.	5,000		1 0	
	Main Wharf	Foundation Rocks		cum	. 0	5,000			
		Displacement of Soil		570	ŏ	1.500	0		
		Concrete Caisson	Varyfacture		Ŏ	20,000		i	
	L=260 m	ditto		CH W	ď	20,000			
	1		Transportation			300,000			
	1	₫tto	installation		0	100,000			
]	\$tto	Send Filling	crw	O	1,000			
	1	Backfill Stone		CLLTD	0	5 000	0	4	
	i .	Crown Concrete		Crim	0	11,000	C	1	
	i	Apron Concrete		CUM	ō.	17000	C	1	
	ŀ	Installation of Fender			- 6	20,000,000	Č	1	
	1	Installation of Mooring Sit.		<u> </u>	i — - ši	5,000,000		4	
	Land Reclamation			.∾			C		Ō
		Land Rectametion		CUM	Q Q	1,500		1	0
	Pavement	Paveners		Ç4 M	0	14,000			0
	Pilding	Building		347	·e	20.00		1 0	0
		i hiti o	l	$\Box \mathbf{L} \Box$,			.	õ
1. 74	G2Sub Total			T			7	1	Ď
		I		1		_		1	•
Charre!	Oredging	Channel Dredging		—	1,155,580	400	497 200 000	3	**** *** ***
	Oredging		·	cum	1,133,300		462,232,000		482,232,000
	Cherthia.	Turning Sagin		CA LO	336,437	400	134,574,800		675.524,800
	l.,	Berth Pocket		4.00	155,000	3,490	540,950,000		
\ <u>.</u>	Navigation Aids	Mavigation Aids	<u></u>	i no			270,000,000	31	270,000,000
	(4)Sub Total	L	1.				1,407,756,800	3	
5 5 5 5 5 5	Section 2015							วั	
Road	Access Road	Access Road		90,70	1	10,000		d .	
	(5)S to Total			1 ~	 		· · · · ·		0
	(1) (5) Total			 	 	 			V
E	11.7.157.1508			 	<u> </u>	<u> </u>	1,592,510,04		
Engineering Fee				L LS	<u> </u>		156,261,006	1	
	lota			<u> </u>	<u> </u>	<u> </u>	1.711.671.053	£ i	
Contingency		1	L	LS			171.887,103	s)	
Loading Equip t	<u> </u>	1		LS	0	1	(51	
	Grand Total	1		1	· · · · · · · · · · · · · · · · · · ·		1,890,758,658	i i	
Mobilization	Mobilization	Mobifization		LS	 	····	241,045,329	2.410.453 290	
1	1		 		1 :				
	(I)Sub Total	Temporary Facilities	 	<u> . us</u>			2410453		
				├		· · · · · · · · · · · · · · · · · · ·	285,149,88	3	
Multi	Drodeine	Removal of Soft Soil	<u> </u>	CUM.	74 443	520	39.J48.800	2	
Purpose(2)	Ļ	Blesting Hard Rock	L .	CHIT	4 110	16 000	48,100,000	3	
	Main Whart 2)	Foundation Rocks	L	¢¥ m	4,660	8,000	28 080.000	51	
	1	Concrete Ceiveon	Manufacture	Cu m	11,568	29,000			
I		ditto	Transportation		13				
I	1	\$ to		÷≞					
1			Sand Silver		17 204	30,500		S	
l	t	ditto	Send Filting	CUM.	31 995			i	
Ī		Seckfill Stone	l	1 cum	48 900		<u> </u>	4	
l		Ortens Concrete		CHA	2.848	17,000	48,416,000	2 1	
i	<u> </u>	Apron Congrete		Cum	1.357	17,000	23,089,00	SI C	
!	L	Installation of Fender	1	ng	13	20 000 000	260,000,00		
l		installation of Mooning Bit	T	no	13	5,000,000	\$5,000,00	1	
I	Land Reclamation	Land Reclamation	1						
1	Perement		 	- enu	575,000	1 500			
1		Perement	 	Ma m	21,300	14 000			
l	Building	 	 	89.70	1,500	20,000			
ļ <u> </u>	Utilities		<u> </u>	L3	ī		114,753,49		
	(2) Sub Total	.1 .	1	Τ	1 · · · ·	1	2 413 453 29		
	Total	1	1	 	1	† 	2815 80 10	1	
Engineering Fee	T	1	 	110	 ;		2,675,603) 5	쉼	
4	T	†	† 	. է ֆ.	1	 -	267,566 31:	8	
C		 	 -	+ -	 		2943,193,46		
Continuency	Grand Total	 		4.5	↓	ļ	254,315,34		
							3.237.479.81		

PLAS

(-12m²-13m)

B-1 Short Terrid-12m) 2005

PORT OF CUTUCO
QUANTITY CALCULATION SHEET

hit, V
Cost.
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1189 727.1140 Detailed Item Unit Quantity Unit Cost Van Work Catagory Place Mobilization Vobilization Temporary Facilities l e IX-b Total 520 6,000 29,000 150,000 50,000 Removal of Soft Soil Foundation Rocks Concrete Coisson 55 57 E 54 E 54 E 914,100 13,654 1,390 Dredging West Resourcent lanulactura. L=80 m Transportation Installation Sand Filling 318 \$0,000 1,000 11,000 \$,000 1,500 20,000 100,000 cum cum cum ditto
Crown Concrete
Backfilling Stone
Foundation Rocks
Olso'scement of Soil
Concrete Calenn 96 1192 114 000 214 500 13 246 Packfilling Stone 147 559 000 Revet Manufacture L=300 m CUIT Fransportation Installation Sand Filling 15 15 43.842 ditto Backfilling Stone 43 842 000 259 950 000 55 842 000 26 622 000 18 005 000 300 000 000 11 200 000 1 564 335 000 Bachfilling Stone
Crown Concrete
Agron Concrete
Agron Concrete
Crare Foundation of Land Sido
Argaliston of Fonder
Installation of Mouring Bit
Land Reclamation
Zendmunt,
Backfilling
Utilities 17,000 18,000 20.006.000 5.000.000 no neter cum cum sum 2,069 222,000 Wharf 550 1 042 896 31 500 1 500 20,000 1,500 14,000 20,000 Payament Building Utilities (2)Sub Total 4,727,448,000, 4,983,800,850 520 6 000 20 000 150 000 50 000 1 000 5 000 350,172,800 Removal of Soft Soil Foundation Rocky Concrete Caisson 992,540 Hulti Purpose(1) Dredging East Revetment CUM cum cum Manufacture
Transportation
Installation
Sand Filling (=)m ÇU M ditto
Backfill Stone
Foundation Rocks
Displacement of Soil
Concrete Caisson
ditto 0 cum 592 800 000 278 850 000 231 380 000 3 900 000 1 300 000 31 995 000 225 230 000 Vain Wharf ÇU P CU TO Vanufacture Transportation Installation Sand Filling L=260 m ditto ditto Backfill Stone 37 996 45 056 2 8 48 1 35 7 €ų m 31,996,000
225,290,000
48,416,000
71,069,000
68,00,000
1,856,000,000
382,200,000
30,000,000
209,817,690
4,406,171,490 CQ M 5,000 17,000 17,000 20,000,00 5,000,000 14,000 20,000 Packet Store
Crown Control
Apron Control
Store
Land Store of Monning Con
Land Performation cu n no no no 1 787 981 000 Makes 1.104.000 27.300 1.500 Land Reclamation Pavement Suiding Utilities (3)Sub Total Pavement Building CU M sq m €198,353,800 - 4,408,171,490 Utilea 1 357 040 400 690 458 400 270 000 000 2 317 498 800 Charnel Oredging Turning Berth Pocket Navigation Aids cum cum 3 392 801 1 725 146 Nevigation Aids (4)Sub Total no. 216 000 000 216 000 000 13 205 970 965 Access Road (5)Sub Total (1) (5) Total 10,000 Access Road 90 m 21,000 11 897 271 140 1.320.597.097 14.326.568.062 1.452.556.806 2.033.490.000 18.012.664.358 L\$ Engineering Fee Total LS LS Compressor Loading Equal t

(-12m~13m)

B-1

Long Term (-13m) 2015

Prece obilization	Category Mobilization	Man Work Mobils zion Temporary Facilities	Detailed Item	Unit I	Quantity	Unit Cost	Cost 24.728.640 5.476.664	(Short Term 2005) 547,668,400
	(LISA) Total						71 240 304	
ontainer	Oredona	Removal of Soft Soil		.cu m	0	520	0	
- 1	West Revotment	Foundation Rocks Concrete Caisson	Manufactura	CALM	0	8,000	0	
- }	L=80 m	ditta	Freneportation	e u m	0	29,000 150,000	<u>v</u>	
l		ditio	Installation	00	Ô		- v	
		ditto	Send Filling	C# III		1,000	C	
		Crown Concrete		cym	0	17000	0	
1	0 5 197 . 6	Backfilling Stone	Sackfilling Stone	cum			0	
- 1	Container Wharf	Foundation Rocks		<u>cum</u>			0	
- 1	L×300 m.	Displacement of Soil Concrete Caleson	Very festure	ÇU,∏R ¢V FR	C	1,500 20,000	······································	
i		d 132.	Transportation	no	· · ·		ŏ	
	·	4tto	Installation	nφ	0		0	
		ditto	Sand Filling	cum	ç		0	
		Back filling Stone		¢um.	0		<u> </u>	
		Crown Concrete	· · · · · · · · · · · · · · · · · · ·	SUM			0	
		Apron Concrete Crane Foundation of Land Side		cum	<u>C</u>			
	Ī	installation of Fender		no	ě.		- Š	
	İ	Installation of Mooring Bit		no	C		0	
		Laying Rail		meter	G		0	
		Land Reclamation	ļ	C/T W	<u> </u>	1,500	0	
	Perement 9. delec	Payement	 	CUM	0		ç	
	Suilding Utilities	Building Guillian		,16.15) 1	Ç		0	
	(2)Sub Total	<u> </u>	L	T	. 0			
	L	<u> </u>			C			
<i>#</i> 6	Orodene	Semoval of Soft Soil		cum	0	520	<u> </u>	1
rpose(1)	East Revelment	Foundation Rocks Concrete Caisson	1000	cum	0		0	
	t=0 m	ditto	Manufacture Transportation	Sym.	2		- 0	1
	l	ditto	Installation	no		50,000		
	1	ditte	Sand Filling	cum			9]
	<u> </u>	Backfill Stone		çum	0	5,00C) 0
	Main Wharf	Foundation Rocks	 	cu m	0	\$ 000	0	
	l ·	Orselectment of Soil		cum	<u>Ş</u>			
	1.=260 m	Concrete Calason ditto	Manufacture Transportation	Cu m	0			
	C-200 M	deto	Installation	~ ~	L. S			
		ditto	Sand Filling	Cum				1
	1	Backfill Stone		¢⊯m				
	!	Crown Corcrete		Eu m				
	1	V pron Concrete		Ç un				
	1	Installation of Mooring Ca	 					ં અજ્ઞાહ
	Land Rectamation	Land Reclamation	 	<u>~~</u>				
	Pavement	Parement	 	cum cum		14,000		
	Building	Suilding		sq.m				
	Utilities	Utilities		10				
	(3)Sub Total		ļ	Į	<u> </u>			4
harriel	Oredging	Channel Dredging	 	 		400	480 000 000	1
(ATTE)	Dredging	Turning Berth Pocket	 -	cum	1,155,580 463,586	Z 400	482,732,000 185,434,400	
	Navigation Aids	Nevigetion Aids	f	700	722.70		(
	(4)Sub Total	l					647,666,400	
	<u> </u>			_				Į
œd	Access Road	Accese Road	 	30 m		10,000	<u></u>	
	(5)Sub Total (1) (5) Total	.	-	╅┈	} -	 	718,909,704	647,656,400
ngineening Fee	1	 	 	ŧς	<u> </u>		71,890.97	
1 1 1 1 1 1 1	Total	1	1	! **			790,600,674	
ontinency				L\$			79,080,66	4
······	Grand Total			1			509,850,747	4
lubilization	14.45	te and and	 	1.0	 	 	240 71 7 7 1	/1 com Tarres 20:153
~~************************************	Mubifization	Mubolization Temporary Facilities	1	LS LS	1 -	H	440,717,315	(Long Term 2015) 4.407,173,190
	(1)Sub Yotal	1	1	1,,	<u> </u>	1	484 789 05	
iyiti	Constant	Removal of Soft Soil		CV.TO	790,144	520	410 872 80	
Ús. ≱∵"	F H. 7. 10 1.	Franks Mar		33.7			\$15,000,000	
	1	Eurore's Caston	Manufacture	- Cum	5,79	20,000	115,800,000	
	.≒300 m	ditto	Transportation	no.	3		5,550,000	
		ditto	Sand Filling	CHO			1 6 359,000 1 6 359,000	
	1	Crown Concrete	1	Cum			6,120,00	
		Backfill Stone	L	Çu m			123,800,00	
	Main What	Foundation Rocks	-	Cum	56,80	6,000	592,800,000	
		Displacement of Soil		cum			278 850 000	
	1,=280 m	Concrete Caisson	Manufacture	Cu m			231 360 000	
		ditto ditto	Transportation Installation	1.00	1		3,900,00	
		dimo	Será Fillica	cum			3799500	
4	1	Beckfill Stone		Cum			225 290 00	
•		Crown Congrete		Ç4 M	2.64	17,000	48,415,00	2
	1	Apron Concrete		€ g ra			23 069 00	
		Installation of Ferder		1.00	!!		200,000,00	21
	Land Reciemation	Installation of Mooring Sit. Land Reclamation	1	700	748,65		85,000,00 1,122,975,00	0,787,986,000 Mul-S
	Pavement	Paysment	†*	cum sq.m			382 200 00	
	Building	Building		99.0			30,000,00	
	Utilities	Utilities			1	1	209 1 15 39	
	(2)Sab Total				1	1	4407 173 19	
redeing	1/200 1 = 1	Berth Pocket	·	S M.T	1	400	L	¥
	(1) (3) Tetal				 	- 	486655	2] 4,407,173,330
ne nearon Fa-	NO 107 1000	+	+	+	+		4891902.24	
mineering Ege	(4) Total	 	 -	L.S	 	!	489 196 22 5 381 158 49	
	- PV-1994	1		LS	 	1	538 115 14	
entine psy								
iontine psy	Grand Total		1	\mathbf{I}	1		<u> 5,9 9,274</u> .38	1]
certing pay	Grand Total			ĹŚ	 		5.919.274.31	<u> </u>

PLAN B-2 (-12m^{*}-13m³

Short Term (-12m) 2005

						11 10 4		The second second second	
Fisce.	Catalitary	Mein Work	Ortoled Item	Uvit	Qventity	Unit Cost	Cost	(Short Farm 2005)	
Additivation	Mobilization	Mobilization		LS			91394280	9.139.427.950	
4		Temporary Facilities		L 3					
	Sub Total				481,000	630	1.005.337.075 251,160,000	4	
Container	Omedone	Removel of Soft Soil		cum		520	42 120,000	4	
i	West Revetment	Foundation Rocks		cum	7.020	6,000		1	
1		Concrete Casson	Varviecure	C/TW	2.126	20,000	43,960,000	1	
	L=150 m	ditto	Transportation	.0	13	150,000	2,250,000	4	
		ditto	Installation	0	15.	50 000	750,000		
		ditto	Sand Filling	Su.m.	4,645	1,000	0,645,000		
		Crown Concrete		sum	[44	11000	2 448 000		104 632 204
			Backfilling Stone	Çum	6.420	5,000	32,100,000		128 273,000
	Container Wharf	Foundation Rocks		Çu m	21,600	6,000	29,600,000		
		Displacement of Soil		cnlu	25,200	1,500	37,800,000		
	€×300 m	Concrete Ceiseon	Manufacture	ርቁጥ	13,348	20,000	266,960,000		
		distr	Transportation		15	300 000	4,500,000		
	1	ditto	Installation	1-9-	15	100,000	1,500,000		
		Sitto	Sand Filling	cum	43.842		43,642,000		
	Į.	Backfilling Stone		cum	\$1,990		259 950 000		
	ļ	Crown Concrete		GU MI	3 250		55.862.000		
	1	Apron Concrete	<u> </u>	CA W	1,566	12,000	20.022.000		
	i	Crane Foundation of Lare	See	E4M	1,002		18 03 8 000		
	Į.	Installation of Ferder		Tre_	15				
	İ	Installation of Mooring Br		~0	15		25,000,000		
ļ		Levine Rei		meter	560		11,200,000		
	Land Reclamation	Land Reclamation		cu.m	467,700	1 500			
i	Pevement	Perament		cum	31,500	14,000	441,000,000)] :	
	Building	Building		99.FP	1,500	20,000	30,000,000		
	Uti6ties	Utilities		1.10.	1	1	139 142 750		2542564750
	(2)Sub Total	T		T		1	2.921.997.75	2 /	
U Jbi	Dredeine	Removal of Soft Soil		Gum	540,900	520	333 268 00	0]	
Purpose(1)	East Sevetment	Foundation Rocks		cum		6,000	· · · · · · · · · · · · · · · · · · ·	Q].	
	1	Concrete Caisson	Manufacture	Çum	1	20,000)	0}	
	L=0	ditto	Transportation	l no	1	150,000		()	
	1-1	Sitto	Installation	.00	1	50,000		6]	-
t	į.	ditta	Sand Filling	cum				ō.	
1	1	Backfill Stone		CUM	1 - 0	5.000	>	0 [0	
1	Main Warf	Foundation Rocks		Çum	70,720	8,000	424,320.00	0	
	1	Displacement of Soil		cum			256,620,00	o]	
i.		Concrete Ceiseon	Manufacture	cum					
i	£=250 m	ditto	Transportation	7.00	13				
	JC-2-0-07	ditto	installation	700	13			0	
1	1	otto	Send Filling	EU.T				ōl .	
ļ.	I	Backful Stone	32.21.00	Cu m					
i	1	Crown Concrete	 	cum					
1	Į.	Aprile Concrete	t	cum					
j	i	installation of Fernian		700	13				
	j			72	+ i			2	1,5/7,271,60%
1	3. 10. 10 m	n Land Raciemetica	т — —	Gum					
I .	Pavement	Payement	 -	gum.					
	Building	Building	}	10.7				.,	
		Vulices	 	1 1	1.30	``	161,418 20		3,056,514,200
<u></u>	Utilities	C GILORS		4-3.	+	`\	3 389 782 20		4,402.00
1	(3)S-A Total	-	 	+-	+	+	2.002.04.5	~(
Chennel	Tondair-	Channel Oredging	·	Cun	3,485,18	40	0 1,394,065,60	হা	
Cuente.	Oredging	Turning & Borth Pocket	 					ৰ্থী	
j	Dredging		i 	640		ši	270,000,00	~	
}	Nevigation Aids	Nevigation Aids	+	- 1.00	- 	* -	2,863,648,00		
	(4)Sub Total	 	 	+-	1	+		***	
<u> </u>	 	1	+	+	16.40	0 10.00	(64,000.00	20	
Road	Appens Road	Access Road	+	- 1-32	18.4	~ ,334	164,000,0		
ļ	(1) (5) Total		+		+				
	(1) (5) Total	·· · · · - · · · · · · · · · · · · · · · · · · ·	+	+	+-		10 144 765 0		
Engineering Fee			+	LS	4	' 	1.014.476.5		
	Total			4	 		11.159.24).5		
Continuency				LS			1,115,9241		
Loading Equip 1	. [4	1	2,033,460,0		
	Commit Total		1				14 308 825 6	BU1	

{-12m~-13m}

B=2 Long Term(=13m) 2015

	· · · · ·	r · · · <u>/</u> ; ; · · · · ·					Unit: X		
Place ob-lization	Category Mobilization	Main Work Mobilization	Detailed Item	Yak.	Chartity	Unit Cost	Cost	(0	
op 1-1 at ou	Mobilization	Temporary Facilities		S	!		60 859 880	(Short Term 2005) 666 598,800	
	Sub Total						9,685.988 73,545.868	000 380,000	
nteiner	Dredging	Removal of Soft Soil		cum		520	C		
	West Revelment	Foundation Rocks	4	EMW.	<u> </u>	4,000			
	L=150 m	Concrete Caisagn ditto	Manufacture Transportation	CUM:	- 0	20,000	Q		
		ditto	Installation	.re .ro	ŏ	150,000 50,000	ŏ		
		dtta	Sand Filling	eu m	Ö	1,000	Ç		
		Crown Concrete		cum	0	(1000	0	į	
	Container Wherf	Beckfitting Stone Foundation Rocks	Backfilling Stone	CM m	<u>-</u>	5,000		٥	0
	Container 11:481	Displacement of Soil		cum cum		8 000 1 500	0		
	€×300 m	Concrete Calegon	Manufacture	Sy.m		20,000	Ŏ		
	1	4 tto	Transportation		0	200,000	C	ĺ	
	1	ditto	Installation	<u>™</u>	0	100,000	0		
		Backfilling Stone	Sand Filling	Cum Cum	- 0	1,000 5,000	0		
		Crown Concrete		çu.m	0	17 000	ŏ	1	
	1	Apron Concrete		cum		17 500	. 0	}	
	l .	Crane Foundation of Land installation of Fender	Side	cum	· · · · · · · · · · · · · · · · · · ·	18 000	Ş	į.	
	!	Installation of Mooring Bri		~	0	20 000 000 5,000 000	. 0	1	
	<u></u>	Lexing Red		meter	0	20,000			
	Land Reclamation			cum	0	1 500		ţ	
	Pevernent.	Pavement Building		84m	0	14,000			
	Building Utilities	Utilities		39 m	<u>c</u>	20,000	0		4
	(2)Sub Total	1					ŏ		•
lulti	Crodence	Removal of Safe Soil		cu.⊓i	0				
'urpose(t)	East Revetment	Concrete Caisson	Um fact	Cum					
	L=0	ditto	Manufacture Transportation	CU M	0		0	1	
	1	J-tto	Installation	70	- 6			1	
	i	dirto	Sand Filting	¢4m	0	1,000	0	}	
	Main Wharf	Backfill Stone		sym					
	NEED IT/SET	Foundation Rocks Displacement of Soil	 	cum cum	0				
	· ·	Concrete Casson	Marefacture	Cum	ŏ		i č		
	L=280 m	ditto	Fransportation	70	0		0		
		ditto	Installation		9				
	1	ditto Beckfill Stone	Sand Filling	cum	. 0				
	i	Crown Concrete	 	cum					
		Apron Concrete		cum	0	17,000	3		
	!	'netaliat in of Fender	<u> </u>		 	3,000,00		j	
	Pacing at a	Istalium of Marice for Land Rectamation		Sym	<u>i</u>			1	(
	Pavement	Pavement		Cu m	ŏ				
	Building	Building		90.77	0				
	Utilities	Utilities	 	1.15			9		
	(3)SA Total	 	 	 		 	<u> </u>	4	
Chemet	Oredging	Channel Dredging		Cum	1,155,580	400	462,232,000	1	
	Oredging	Turning & Berth Pocket		cum	515917		205 365 800		
	Navigation Aids (4)Sub Total	Navigation Aids		_ n o	<u> </u>	\		4	
	17-70-170	- 	 		 	 	664,564,800	1	
Roed	Access Road	Accese Rond		99,00	. 0	10,500	× 0	ภ์	
	(SS b lot-		<u> </u>					<u>1</u>	
Engineering Fee	(1) (5) Your		 -	1	 	ļ	742 144 568		
	(otal		 	LS	 -	1	74 214,467 816,359,135		
Continuoney				1-1-2		+	1,81,41,7		
	Grand Total			1 69			h 81 835 913	\$ 1 .	
Mobilization				LS			81,535,913 897,995,046		
WOOD WIZE COOM	N. A.Y C	N-15					897,995,046		
	Mobilization	Mobilization Temporary Facilities		LS			897,995,046 347,384,100	(Locg Ferm 2015)	
		Mobilization Temporary Facilities			1		897,995,046 347,384,100 34,738,416	(Long Ferm 2015) 3.473,841.090	
	(I)Sub Total Dredging	Temporary Facilities Removal of Soft Soil		LS LS	727,300	52	347,384,100 347,384,100 34,738,410 382,122,510 0 378,196,000	(Long Form 2015) 3,473,841,090	
	(I)S-to Total	Removal of Soft Soil Foundation Rocks	West Co.	LS LS cum	727,300	52	897,995,046 247,364,106 34,738,416 342,122,516 0 278,196,000 0 198,720,000	(Long Ferm 2015) 3,473,841,000	
	(I)Sub Total Dredsing East Revetment	Removal of Soft Soil Foundation Rocks Congrets Circum	Wasterdary Transcolution	LS LS cum cum	727,300 33,120 4,85	52	897,995,046 247,384,106 34,738,410 382,122,510 0 278,196,000 0 397,720,000 2 39,720,000	1 (Long Ferm 2015) 3 473,841,000	·
	(I)Sub Total Dredging	Removal of Soft Soil Foundation Rocks	Transportation	LS LS cum	727,300	52 600 5.50 50,00	897,995,046 347,384,106 34,738,410 34,738,410 0 378,196,000 0 397,20,000 2 4,5(4,2) 0 1,500,000	(Long Ferm 2015) 3,473,841.000	
	(I)Sub Total Dredsing East Revetment	Temporary Facilities Removal of Soft Soil Foundation Rocks Concrets Cossion ditto ditto		LS LS cum cum ro no	727 300 33 120 4 85- 30 30 11,542	52 50 5.50 5.50 1.00	\$31,995,046 241,364,105 34,738,410 342,122,510 0 278,182,000 0 398,720,000 0 398,720,000 0 45,6,72 0 1,500,000 0 1,642,000	(Long Ferm 2015) 3,473,841,090	
	(I)Sub Total Dredsing East Revetment	Removal of Soft Soil Foundation Rocks Company Cosson dita ditta Crown Congrete	Transportation	LS LS cum cum no no cum	727,300 331,20 4,65 30 30 11,542 268	52 53 53 53 53 53 53 53 100 1100	\$31,995,045 147,384,105 34,738,410 32,122,516 0 276,196,000 0 198,720,000 0 45,6,2 0 1,500,000 11,842,000 0 482,000 0 482,000 0 483,000	(Long Farm 2015) 3,473,841,090	90,3 43 = 00
	Oredains Dredains East Revetment C=240 m	Temporary Facilities Removal of Soft Soil Facilities Rocks Corpers Classon ditto ditto Coven Constate Sachiff Stone	Transportation	LS LS CUM CUM PO PO CUM CUM	727300 33 120 4 855 30 30 11 542 266 14 802	52 2	\$31,995,045 241,384,105 34,738,410 322,122,510 0 278,194,000 0 198,720,000 198,720,000 1 4,54,52 1 5,00,000 0 11,842,000 0 4,949,000 0 4,949,000 0 9,949,000 0 9,949,000 0 9,949,000 0 9,949,000 0 9,949,000	(Long Form 2015) 3,473,841,090	397.378.00
	(I)Sub Total Dredsing East Revetment	Removal of Soft Soil Foundation Rocks Company Cosson dita ditta Crown Congrete	Transportation	cum cum cum cum cum cum cum	727,300 33,122 4,855 30 30 11,542 2,888 14,902 70,720	52 2	\$31,995,045 347,364,105 347,38,410 347,38,410 0 379,195,000 0 139,720,00 0 14,56,2 0 15,000 0 14,62,00 0 4,896,00 0 83,940,30 0 44,320,00 0 44,320,00	(Long Form 2015) 3,473,941,090	397.378.00
	Oredains Dredains East Revetment C=240 m	Removal of Soft Soil Foundation Rocks Concerts Cleason ditto ditto Coronic Concerts Reckill Stone Foundation Rocks Opposite Foundation Rocks Opposite Concerts Concer	Transpoliation Installation Sand Filling Menufacture	LS LS CUM CUM PO PO CUM CUM	727 300 33 120 4 855 30 30 11 542 266 1 802 70 720 171 066	52 52 53 53 53 53 53 63 63 63 63 63 63 63 63 63 6	\$31,995,045 341,364,105 34,738,4105 342,122,510 378,195,020 431,62 431,62 11,500,000 61,142,000 61,434,20,000 61,434,20,000 61,434,300,000 61,336,000	(Long Ferm 2015) 3,473,941,090	297,378,00
	(US-b Total Dredging East Revetment L=240 m	Temporary Facilities Removal of Soft Soil Facilities Roses Generats Crission data data data Crown Concrete Backliff Stone Foundation Rocks Opplement of Soil Generate Celeson data	Transportation installation Send Filling Menufacture Transportation	LS LS CUM CUM CUM CUM CUM CUM CUM CUM CUM	727.300 33.120 4.55* 30 30 11.542 288 14.502 70.72 171.08 11.589 11.595 11.595 11.595 11.595	52 52 53 53 53 53 53 53 53 53 53 53	\$31,995,040 241,084,00 342,384,01 342,22,51 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(Long Form 2015) 3.473.841.090	29 7.3 78.00
	(US-b Total Dredging East Revetment L=240 m	Vergorary Facilities Removal of Soft Soil Foundation Rocks Concerts, Cireson ditto ditto Coroni Concerts Caschill Stone Foundation Rocks Obselectorement of Soil Concerts Cereson ditto ditto displacement of Soil Concerts Cereson ditto ditto	Transpartation Sand Filling Menufacture Transportation Installation	LS LS CUM CUM PO CUM CUM CUM CUM CUM CUM CUM	727300 33120 485 30 50 11542 268 11502 70725 171,060 11592 151	50 50 50 50 50 10 10 10 10 10 10 10 10 10 1	\$31,995,040 141,394,105 34,738,410 34,212,510 0 378,196,000 1,58,200 1,58,200 1,58,200 1,58,200 1,58,200 1,58,200 1,58,200 1,58,200 1,58,200 1	(Long Form 2015) 3,473,841,090 9,000 9,000 9,000 9,000 9,000 9,000 9,000 9,000 9,000 9,000 9,000 9,000 9,000 9,000	393,378,00
	(US-b Total Dredging East Revetment L=240 m	Temporary Facilities Removal of Soft Soil Foundation Rocks Consents, Classon ditto ditto Coron Consents Foundation Rocks Congent Foundation Rocks Congent Consent of Soil Congent Consent of Soil Congent Consent of Soil Congent of Soil Congent of Soil Conget of	Transportation installation Send Filling Menufacture Transportation	Cum Cum Cum Cum Cum Cum Cum Cum Cum Cum	727.300 33 /20 4 65* 30. 31.524 284 11.524 70.725 11.539 11.539 11.539 11.539 11.539 11.539	50 52 52 52 52 52 52 52 52 52 52 52 52 52	\$31,995,040 241,384,105 34,238,410 34,238,410 2318,195,000 2318,195,000 24,376,200 211,040,000 24,330,000	(Long Form 2015) 3.473.841.090	393.378.00
	(US-b Total Dredging East Revetment L=240 m	Removal of Soft Soil Foundation Rocks Foundation Rocks Concepts Cleason ditto ditto Comm Concrete Sachill Stone Foundation Rocks Oppliesment of Soil Concrete ditto ditto Control Concrete Concrete Concrete Concrete Comm Concrete Concrete Concrete Concrete Concrete Comm Concrete Comm Concrete	Transpartation Sand Filling Menufacture Transportation Installation	LS LS CUM CUM PO PO CUM CUM CUM CUM PO PO PO PO PO PO PO PO PO PO PO PO PO	727.300 33 120 4 85- 30 11 542 2 888 10 800 17 10 800 11 1500 11 1500 11 1500 11 1500 11 1500 11 1500 12 15 15 16 16 16 16 16 16 16 16 16 16 16 16 16	52 5 50 5 50 5 50 6 50 6 50 6 50 6 50 6 50 6 50 6 50 7 50 8 70 8	\$31,995,044 341,364,100 342,122,311 342,122,311 342,122,311 343,122,312 343,1	(Long Ferm 2015) 3.473.841.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	393.378.00
	(US-b Total Dredging East Revetment L=240 m	Temporary Facilities Removal of Soft Soil Foundation Rocks Convents, Cresson ditto ditto ditto Crown Consente Cachell Stone Foundation Rocks Ospleagment of Soil Consents Celeson ditto ditto ditto ditto ditto Gental Stone Cachell Stone Cach	Transpartation Sand Filling Menufacture Transportation Installation	LS LS CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	777.300 31.722 4.854 5.00 3.00 3.00 3.00 3.00 3.00 3.00 3.00	52 5 52 5 59,99 7 1,00 1 1,00 2 1,00 3 1,00 5 5,99 6 6,90 9 22,00 9 22,00 9 190,99 9 190,99 9 5,99 9 1,00 9 1,0	\$31,995,040 241,084,00 342,384,01 342,22,51 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(Long Form 2015) 3.473.841.090 2.473.841.090 2.473.841.090 2.473.841.090	393.378.00
	(US-b Total Dredging East Revetment L=240 m	Removal of Soft Soil Foundation Rocks Foundation Rocks Concepts Cleason ditto ditto Comm Concrete Sachill Stone Foundation Rocks Oppliesment of Soil Concrete ditto ditto Control Concrete Concrete Concrete Concrete Comm Concrete Concrete Concrete Concrete Concrete Comm Concrete Comm Concrete	Transportation Send Filling Menufacture Transportation Installation Send Filling	LS LS CUM CUM PO CUM CUM CUM CUM CUM CUM CUM CUM PO CUM CUM PO PO PO PO PO PO PO PO PO PO PO PO PO	727.300 33 1/20 4 65* 30. 11.542 2484 11.002 70.702 171.006 11.599 1.59 2.59 2.59 2.64 2.84 1.35	52 52 53 53 53 53 53 53 53 53 53 53	\$31,995,045 141,364,105 34,738,410 34,212,510 0 318,196,000 1,196,200 1	(Long Form 2015) 3,473,841,090 9,673,841,090 9,000 9,0	391 378 O
	(1) Sub Total Declarity East Revetment C=240 m Main Wharf E=260 m	Temporary Facilities Removal of Soft Soil Foundation Rocks Concerts, Cresson ditto ditto Coven Concrete Foundation Rocks Orspleasment of Soil Congrete Cresson ditto ditto Coven Concrete Foundation Rocks Coventa College ditto di	Transportation Send Filling Menufacture Transportation Installation Send Filling	LS LS CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	777.300 33 172 4 854 5 555 11.544 14.505 17.060 17.	52 52 53 53 53 53 53 53 53 53 53 53	\$31,995,040 241,084,00 34,238,41 34,238,41 34,228,51 25,378,780,00 25,378,780,00 25,378,780,00 26,378,780,00 26,378,780,00 27,37	(Long Form 2015) 3.473.841.000 3.473.841.000 3.473.841.000	393.378.00
	(1) Sub Total Deading East Revetment L=240 m Main Wharf L=280 m	Temporary Facilities Removal of Soft Soil Foundation Rocks Concerts, Cleason ditto ditto Comm Concrete Sachill Stone Foundation Rocks Opplemented of Soil Concrete Softo Otto Generate Agent Concrete Agent Concrete Installation of Fonder Installation of Fonder Installation of Fonder Installation of Receiver Installation	Transportation Send Filling Menufacture Transportation Installation Send Filling	LS LS CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	777.300 33 172 4 854 5 50 11.542 288 11.500 7772 171.000 11.500 1	52 52 53 53 53 53 53 53 53 63 63 63 63 63 63 63 63 63 6	\$31,995,040 241,264,100 342,122,511 342,1	(Long Ferm 2015) 3.473.841.000 3.473.841.000 3.473.841.000 3.473.841.000 3.473.841.000	397.378.00
	(1) Sub-Total Desdary East Revetment L=240 m Main Wharf L=260 m Land Rectamente Pavement Sublime	Temporary Facilities Removal of Soft Soil Foundation Rocks Convents, Classon ditto ditto ditto Crown Consente Sathill Stone Foundation Rocks Osselectorer of Soil Consenta Celeson ditto	Transportation Send Filling Menufacture Transportation Installation Send Filling	LS LS CUM SWM CUM PO CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	777.300 31.720 31.720 4.854 30. 30. 30. 11.544 266 11.500 171.066 171.	52 52 53 53 53 53 53 53 53 63 63 63 63 63 63 63 63 63 6	\$31,995,040 241,384,103 342,184,103 342,182,510 0 758,198,000 0 198,726,727 0 434,737 0 11,042,000 0 44,370,000 0 24,370,000 0 23,370,000 0 24,370,000 0 25,370,0	(Long Form 2015) 3.473.841.090 3.473.841.090 3.473.841.090 3.473.841.090 3.473.841.090 3.473.841.090 3.473.841.090 3.473.841.090 3.473.841.090 3.473.841.090 3.473.841.090 3.473.841.090 3.473.841.090 3.473.841.090 3.473.841.090	
	(1) Sub Total Declarity East Revetment L=240 m Main Wharf L=260 m Land Reclamation Parameter Subtries Outdoor	Temporary Facilities Removal of Soft Soil Foundation Rocks Concerts, Cleason ditto ditto Comm Concrete Sachill Stone Foundation Rocks Opplemented of Soil Concrete Softo Otto Generate Agent Concrete Agent Concrete Installation of Fonder Installation of Fonder Installation of Fonder Installation of Receiver Installation	Transportation Send Filling Menufacture Transportation Installation Send Filling	LS LS CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	777.300 31.720 31.720 4.854 30. 30. 30. 11.544 266 11.500 171.066 171.	52 52 53 53 53 53 53 53 53 63 63 63 63 63 63 63 63 63 6	\$31,995,044 341,264,100 342,122,511 342,122,511 342,122,511 343,1	(Long Ferm 2015) 3,473,841,000 3,473,841,000 3,000 3,000 3,000 3,577,271,000 3,000 4,577,271,000	
Purpose(2)	(1) Sub-Total Desdary East Revetment L=240 m Main Wharf L=260 m Land Rectamente Pavement Sublime	Temporary Facilities Removal of Soft Soil Foundation Robal Constraint Cresson ditto ditto ditto Corone Constrate Eschill Stone Foundation Robal Ossiscament of Soil Constraint Celeson ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto constraint Celeson ditto ditto constraint Celeson ditto ditto Commission Commission constraint Celeson ditto ditto Commission constraint retailigned Macrine E nutalligned Macrine E nutalligned Macrine E nutalligned Macrine E Residers Land Paciemetion Commission Transportation Send Filling Menufacture Transportation Installation Send Filling	LS LS CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	777.300 31/20 31/20 485- 485- 30 30 30 30 30 30 30 30 30 30 30 30 30	52 52 53 53 53 53 53 53 53 63 63 63 63 63 63 63 63 63 6	\$31,995,040 241,084,00 342,184,100 342,122,511 251,122,511 251,122,512 251,12	(Long Ferm 2015) 3,473,841,000 3,473,841,000 3,000 3,000 3,000 3,577,271,000 3,000 4,577,271,000		
	(1) Sub-Total Declarity East Revetment C=240 m Main Wharf E=250 m Land Reclamato Pavement Subfine D'Urion (2) Sub-Total	Temporary Facilities Removal of Soft Soil Foundation Rocks Convents, Classon ditto ditto ditto Crown Consente Sathill Stone Foundation Rocks Osselectorer of Soil Consenta Celeson ditto	Transportation Send Filling Menufacture Transportation Installation Send Filling	LS LS CUM SWM CUM PO CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	777.300 31/20 31/20 485- 485- 30 30 30 30 30 30 30 30 30 30 30 30 30	52 52 53 54 55 55 50 50 51 53 53 53 54 55 50 60 60 60 60 60 60 60 60 60 6	\$31,995,040 241,384,105 34,238,410 34,238,410 2318,195,000 2318,195,000 24,343,000 24,332,000 24,332,000 24,332,000 24,332,000 24,332,000 24,332,000 24,332,000 24,332,000 24,332,000 24,332,000 24,332,000 24,332,000 24,332,000 24,332,000 24,332,000 24,332,000 24,332,000 24,332,000 25,332,000 26,332,000	(Long Form 2015) 3.473.941.000 3.473.941.000 3.473.941.000 3.473.941.000 3.473.941.000	
Purpose(2)	(1) Sub Total Declaring East Revolutent L=240 m Main Wharf L=260 m Land Rectamatic Pavement Subfree Utilides (2) Sub Total (1) (3) Total	Temporary Facilities Removal of Soft Soil Foundation Robal Constraint Cresson ditto ditto ditto Corone Constrate Eschill Stone Foundation Robal Ossiscament of Soil Constraint Celeson ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto constraint Celeson ditto ditto constraint Celeson ditto ditto Commission Commission constraint Celeson ditto ditto Commission constraint retailigned Macrine E nutalligned Macrine E nutalligned Macrine E nutalligned Macrine E Residers Land Paciemetion Commission Transportation Send Filling Menufacture Transportation Installation Send Filling	LS LS CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	727.300 32120 33120 4.85* 30. 30. 11.544 264 19.900 171.066 11.589 15.31.992 45.054 2.844 2.845	52 52 53 54 55 55 50 50 51 53 53 53 54 55 50 60 60 60 60 60 60 60 60 60 6	\$31,995,040 241,384,03 34,238,41 342,122,51 0 758,195,000 1 758,195,000 1 758,195,000 1 758,195,000 1 758,195,000 1 1042,	1 (Long Form 2015) 3.473.841.000 3.473.841.000 3.000 3.000,420.000 0.000 3.473.841.000		
Purpose(2)	(1) Sub Total Declarity East Revetment L=240 m Main Wharf L=260 m Land Reclamation Parameter Subfire Utificial (2) Sub Total (1) (3) Total	Temporary Facilities Removal of Soft Soil Foundation Robal Constraint Cresson ditto ditto ditto Corone Constrate Eschill Stone Foundation Robal Ossiscament of Soil Constraint Celeson ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto constraint Celeson ditto ditto constraint Celeson ditto ditto Commission Commission constraint Celeson ditto ditto Commission constraint retailigned Macrine E nutalligned Macrine E nutalligned Macrine E nutalligned Macrine E Residers Land Paciemetion Commission Transportation Send Filling Menufacture Transportation Installation Send Filling	LS LS CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	727.300 32120 33120 4.85* 30. 30. 11.544 264 19.900 171.066 11.589 15.31.992 45.054 2.844 2.845	52 52 53 54 55 55 50 50 51 53 53 53 54 55 50 60 60 60 60 60 60 60 60 60 6	\$31,995,044 341,264,100 342,122,511 342,122,511 342,122,511 343,122,511 343,122,511 343,122,511 343,123,123 343,1	(Lorg Ferm 2015) 3,473,841,000 3,473,841,000 0,0		
Dredsins Ensiceering Equ	(1) Sub Total Declaring East Revolutent L=240 m Main Wharf L=260 m Land Rectamatic Pavement Subfree Utilides (2) Sub Total (1) (3) Total	Temporary Facilities Removal of Soft Soil Foundation Robal Constraint Cresson ditto ditto ditto Corone Constrate Eschill Stone Foundation Robal Ossiscament of Soil Constraint Celeson ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto constraint Celeson ditto ditto constraint Celeson ditto ditto Commission Commission constraint Celeson ditto ditto Commission constraint retailigned Macrine E nutalligned Macrine E nutalligned Macrine E nutalligned Macrine E Residers Land Paciemetion Commission Transportation Send Filling Menufacture Transportation Installation Send Filling	LS LS CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	777.300 31.722 4.854 4.854 2.864 11.542 2.866 11.542 2.7020 2.7020 2.71266 2.7	52 52 53 54 55 50 50 50 51 50 51 50 51 50 60 60 60 60 60 60 60 60 60 6	\$31,995,046 241,394,106 342,122,511 342,122,511 342,122,511 342,122,511 342,122,511 342,122,511 342,122,511 343,122,511 343,122,511 343,122,511 343,122,511 343,122,511 343,122,511 343,122,511 343,122,511 343,122,511 343,122,511 343,122,511 343,122,511 343,122,511 343,122,511 343,122,511 343,122,511 343,124,100 342,122,512 343,124,100 342,124,100	1 (Long Form 2015) 3.473.841.000 3.473.841.000 3.000 3.000.420.000 0.000 0.000 0.0000 0.0000 0.0000 0.00000 0.000000		
	(1) Sub Total Declarity East Revetment L=240 m Main Wharf L=260 m Land Reclamation Parameter Subfire Utificial (2) Sub Total (1) (3) Total	Temporary Facilities Removal of Soft Soil Foundation Robal Constraint Cresson ditto ditto ditto Corone Constrate Eschill Stone Foundation Robal Ossiscament of Soil Constraint Celeson ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto constraint Celeson ditto ditto constraint Celeson ditto ditto Commission Commission constraint Celeson ditto ditto Commission constraint retailigned Macrine E nutalligned Macrine E nutalligned Macrine E nutalligned Macrine E Residers Land Paciemetion Commission Transportation Send Filling Menufacture Transportation Installation Send Filling	LS LS CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	777.300 31/20 31/20 485/ 85/ 11542 2886 11000 70.720 171.080 11.591 15.591	52 52 53 54 55 50 50 50 51 50 51 50 51 50 60 60 60 60 60 60 60 60 60 6	\$31,995,044 341,264,100 342,122,511 342,122,511 342,122,511 343,122,511 343,122,511 343,122,511 343,123,123 343,1	1 (Long Ferm 2015) 3.473.841.000 1.577.221.000 0.00 0.00 0.00 0.00 0.00 0.00 0	397 378 00 2 694,267,00	

PLAN B-3

(-12m -13m)

Short Term(-12m) 2005

PORT OF CUTUCO QUANTITY CALCULATION SHEET

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Webligation

Temporary Facilities Dotated from Unit Category Mobilization Place - 12 - 12 - 12 Mubilization Sch Total Removal of Soft Soil
Foundation Recha
Concrete Casseon
ditto
ditto 768 540 36 210 4 791 520 5000 20,000 150,000 50,000 CV (P Oredone West Revetment Contact CHES Manufacture cum CUM CUM CUM Transportation Installation Sand follog L=350 m 33 10 303 31, 16 563 21,800 1 650 000 10 303 000 5 304 000 82 810 000 123 600 000 235 035 000 256 550 000 ditto
Grown Consersts
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Conserst Consen
ditto Backfilling Stone 418.457.000 418 453 000 Container What CUP 156 890 Menufacture Transportation Installation Sand Ellins L=300 m 255 550 000 4,500,000 1,500,000 CUM CUM CUM CUM 43,842 51,990 3,286 1,566 1,002 ditto Backfilling Stone Backhong Stone
Crown Concrete
Agron Concrete
Come Foundation of Land Side
Invalidation of Fender
Invalidation of Mooring Bit
Laving Rail com com com 18 000 20 000 000 5 000 000 15 560 987 025 31 500 1 500 What 1,428,107,000 1,428,107,000 20,000 1,500 14,000 20,000 Land Reclamation Payament Building Utilities (2)Sub Total Land Reclamation Cy IT 4.197,742.300 10 4.407.829.415 cum cum 520 6,000 20,000 150,000 50,000 374,192,000 719.600 Dredging East Pavetment Multi Purpose(1) Manufacture Fransportation Installation Sand Filling L≂0 m 112 270 000 112 370 000 211 350 000 3900 000 1 300 000 37 996 000 225 220 000 43 41 1000 226 000 000 55 000 000 55 000 000 56 000 000 30 125 000 30 1 0 5,000 6,000 1,500 20,000 1,000 1,000 1,000 11,000 11,000 11,000 11,000 11,000 11,000 11,000 11,000 18 720 208 234 11 568 Main Wharf CNLT Menufacture Fransportation Installation Sand Filling ¢u m L=250 m Aproxy synergia institution of Mooning Bit Institution of Mooning Bit Land Reclamation Pavement Building Utilities 1,321,002,000 Multi ____ 483 750 27 300 1,500 Land Reclamatic Pave ment Building Unificial (3)Sub Total cum CU TO 2.840.519,000 1331 123 200 828 581 800 270 000 000 2 430 064 800 Dredging Dredging Yavigation Aids (4)Sub Total 3 327 808 2 072 404 Channel Dredging
Turning&Berth Pocket CUM Cherrel cum Vavigation Aids nφ 150 600 000 150 000 000 11065 98 773 1 106 858 787 12 173 586 440 1 2 17 368 644 2 033 460 000 15 424 515 085 Access Road (5)Sub Total (1) (5) Total Access Road 84 m 15.00X 10 00 9 970 255 165 Road LS noneering Fee To at LS LS Continuency Loading Equip t

PLAN 8-3

(-12m⁻-13m) PORT OF CUTUGO
Long Term(-13m) 2015 QUANTITY CALCULATION SHEET
Unit Value Control Contro

~ ~ T					· · - 		Unit 8	
Place Aubilization	Cetegory Mobilization	Mein Work Vobilization	Detailed Item	Unit	Queruby .	Unit Cost	Cost	fre . T cones
MODIFICACION 1	Arching Tites	Temporary Facilities		-			1,426,968	(Short Term 2005) 742,698,800
	(I)Sub Total						81,090,048	7-12-00-000
ontainer [<u>Dredning</u>	Removal of Soft Soil		cum	0		C	-
ĺ	Hest Revetment	Consists Crisese	Man dank an	EU (B)	- 0		. 0	
j	L=350 m	Concrete Calason	Vendecture Transportation	no Fum		20,000 150,000	0	
1		dirto	Installation	100	Ċ		ŏ	
		ditto	Sand Filling	Cy m	0		0	
1		Crown Concrete		C4 M	0	17,000	0	
	2	Backfilling Stone	Seckliffing Stone	cum			. 0	0 0
	Container Wharf	Foundation Rocks		£4.03	<u> </u>		<u> </u>	
1	L≠300 m	Displacement of Soll Concrete Calseon	Hery/actors	£⊬m.	- C		<u> </u>	
	C-200 III	ditto	Transportation	CH MI				
		ditto	Installation	no	Ŏ		ŏ	
		ditto	Sand Filling	cum	Ó		. 0	
i		Backfilling Stane		Cum.	0	5,000	0	
1		Crown Concrete		SUD	<u>0</u>		<u>0</u>	
		Apron Concrete Crane Foundation of Land S		CUM	0		<u> </u>	
		Installation of Fender		cum no	V V		0	
1		installation of Mooring Bit		_^o_	O		0	
		Laving Rail		meter	6	20,000	Ö	
ļ		Land Reclamation	<u></u>	cum	0	1 500	0	
	Prement	Pavement		< um			0	
1	Building	Building	 	, \$0. 50			<u> </u>	_
	(2)Sub Total	Un Hea	}	<u> '•</u> -	¢	 	8	O
	X25000 - VG	1		 		 		•
Aulti	Oradaina	Removal of Soft Soil	L	cu m	0	520	0	
Purpose(1)	East Revetment	Foundation Rocks	L	cum		6 000	0	
		Concrete Caisson	Manufacture	enm	0	20,000		
	L=Om	1000	Transportation	200	0	50,000	2	
		deto deto	Installation Send Eiling	/A0	0			
	ł	Beckfill Stone	Sand Filling	cum cum			0	
i	Vain Wharf	Foundation Rocks		cum	0		Ö	Ū
	•	Displacement of Soil		Cum.	Ŏ		ō	
		Concrete Caisson	Manufacture	cum	0	20,000	9	
	L=2 8 0 as	dicto	Transportation	70		300,000		
		404	institution					
		Back fit Stone	Sand Filling	cum	- 0			
	ļ	Crown Concrete	 	en tu				
	İ	Aprila Concrete	1	Çust				
		- 10 left - 1 le be		_no		2700	ž	
	<u> </u>	ir stallation of Mooning Bit				5,000,000	1 0	
	Land Reclamation		<u> </u>	CUB				
	Pavement Building	Pavement Building		Çum				
	Utilities	Utilities		90.43			0	0
	(3)Sub Total	100,000				4	1	
		1		1		†	† <u>'</u>	f ·
Channel	Dredging	Charine! Oredains	L	(un	1,155,580	400	462 232 000	i ·
	Dredging	Turning&Berth Pocket		cum	326,182	400	930,464,800	
	Navigation Aids	Nevigetion Aids		, no		¥	0	ł
	(4)Sub Total	 		-		ļ	592 696 800	1
Road	Access Road	Access Road		99 m	15,000	10,000	160,000,000	742 695 800
	(5)Sub Total	ACCUSE NO.		120	13,00	4	150,000,000 150,000,000	
	(5)Sub Total (1) (5) Total	İ	1	1		1	824 393 448	
names ring Fee				LS		1	62,439,345	
	Total						906,832,793	
Contingency	ļ <u></u>	_	ļ	LS		·	90 683 279]
	Grand Total			+			997,511,072	4
Mobilization	Mobilization	Mubilization	 	LS	<u> </u>	 	307 542 745	{
·······································		Temporary Facilities	 	LS	·	 	307 963 740 30,796 374	
	(1)Sub Total	.l				T	338 760 114	1
Muhi	Oredeine Eart Role in int	Removal of Soft Soil		cum	666.907		346,768,000	346.788.000
Purpose(2)	Earl Str. mink	Sarriote Pale	،	C-LT	22 10	300	143,290,033	
	C=140 m	to reside is a pro-	Mark seture	Cun:	2:31			
	1	ditto	Transportation Installation	1 ~	17			
	•	ditto	Send Filling	Cum	8,59			
	1		4444					
		Crown Concrete	1	Cum	1 134	81 17.QXX		
		Grown Concrete Sackfill Stone		cum cum	10.825	5 17,000 5 5,000		3 SOS CHOICAGO LIGARAT
	Main Wherf	Crown Concrete Sackfill Stone Foundation Rocks			10,825	5 5,000 5 6,000	\$4,145,000 112,320,000	
	1	Crown Concrete Sackfill Stone Foundation Rocks Displacement of Sol		cum cum	10.825 18,720 208.23	5.000 6.000 4 1.500	54,145,000 112,320,000 312,351,000	7.22
	Wein Wherf L=260 m	Crown Concrete Sackfill Stone Foundation Rocke Disclarament of Soil Concrete Cereson	Manufacture	chu chu chu	10,825 18,720 208,234 11,559	5 5000 6 6000 4 1 500 8 26 000	54,145,000 112,320,000 312,351,000 231,360,000	
	1	Crown Concrete Backfill Stone Foundation Rocke Displacement of Soll Concrete Cerson ditte	Transportation	cum cum cum	10 825 18,720 208 23- 11,550	5 5,000 6,000 6 1,500 8 26,000 9 300,000	\$4,145,000 112,320,000 2 312,351,000 2 231,360,000 3 900,000	7. 82
	1	Crown Concrete Seckfill Stone Foundation Rocke Displacement of Soil Concrete Corseon data data	Transportation Installation	cum cum cum cum no	10 825 18,720 208 23- 11,550 11	9 5,000 0 6,000 4 1,500 8 26,000 9 300,000 0 100,000	\$4,145,000 112,320,000 2 312,351,000 2 231,360,000 2 3,500,000 1,500,000	vv ad
	1	Grown Concrete Seckfill Stone Foundation Rocke Displacement of Soil Concrete Consoon ditto	Transportation	cum cum cum cum	10 825 18 720 208 23- 11 5 50 11 11 3 7 9 9	9 5,000 0 6,000 4 1,500 8 26,000 9 300,000 0 1,00,000 6 1,900	\$4,145,000 112,320,000 312,351,000 231,360,000 1,300,000 1,300,000 37,996,000	2. 82 2
	1	Crown Concrete Seckfill Stone Foundation Rocke Displacement of Soil Concrete Corseon data data	Transportation Installation	cum cum cum cum no	10 82: 18,72(208.23- 11,59 1: 37,99- 45,05	5 5 000 6 000 4 1 500 8 20 000 9 300 000 9 100 000 6 1 500 9 5 000	54.145.000 2 172.320.000 2 377.351.000 2 37.360.000 2 3.900.000 2 1.900.000 2 1.900.000 2 3.994.000 2 25.290.000	2.00
	1	Grown Concrete Sectiff Store Foundation Rocke Deplement of Sol Concrete Cerson dotte dotto dotto dotto Backfil Store Concrete Anno Concrete Anno Concrete Anno Concrete Anno Concrete	Transportation Installation	cum cum cum cum no cum cum cum	10 82* 18.72* 208.23- 11.59 11. 37.99* 45.05- 2.64 1.35	9 5,000 0 6,000 4 1,500 8 20,000 9 300,000 0 1,000 0 5,000 8 17,000 7 17,000	2 \$4,145,000 2 112,220,000 2 212,331,000 2 231,390,000 2 3,900,000 3 3,900,000 2 37,990,000 2 37,990,000 2 46,416,300 2 23,009,000 2 23,009,000	
	1	Coom Concrete Seathfil Store Foundation Rocks Delicement of Sol Concrete Cerson ditto ditto ditto Backfil Store Coom Concrete Apon Concrete Apon Concrete Apon Concrete Apon Concrete Apon Concrete Apon Concrete Apon Concrete	Transportation Installation	CUM CUM CUM CUM CO CUM CUM CUM CUM CUM	10 82: 18 720 208 23 14 59 11 37 39 45 054 1 35	9 5,000 0 6,000 4 1,500 3 300,000 0 1,00,000 0 1,500 0 5,000 1,70	54 145 000 1 12 220,000 2 31,231,000 2 31,360,000 3 300,000 1 300,000 2 31,560,000 2 31,560,000 4 44,18,000 2 31,960,000 2 31,960,000 2 31,960,000	Taylas 1 - Taylas 1 - Taylas
	4.≠240 m	Crown Concrete Sectiff Storie Foundation Rocke Displacement of Soil Concrete Cereson ditto ditto ditto ditto Commissione Commissione Commissione Commissione Annon Concrete Installation of Fender Installation of Mooring 8r	Transportation Installation	CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	10 82: 18 72: 208 23: 14 59: 11: 37 99: 45 05: 2 54: 1 35:	9 500 0 600 4 150 9 3000 9 3000 0 1000 6 120 6 500 6 1700 7 1100 9 200000 9 30000	2 142,000 112,220,000 2 317,351,000 2 313,360,000 3 300,000 1 300,000 2 37,360,000 2 37,360,000 2 37,360,000 2 37,360,000 2 37,360,000 2 37,360,000 2 37,660,000	1,321,002,000 Main
	L=240 m	Coom Concrete Searchill Store Foundation Rocks Designment of Sol Concrete Cereon date date date Coom Store Coom Concrete Aprin Concrete Aprin Concrete Installation of Forder Installation of Reder Land References	Transportation Installation	CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	10,82: 18,72(208,23) 11,59 11,59 45,05: 2,54 1,35 1,	5.00 6.00 6.00 6.00 6.20 9.30 9.00 9.00 9.00 9.00 9.00 9.00 9.00 9.00 9.00	2 54.145.000 2 112.325.000 2 312.331.000 2 313.390.000 2 3.390.000 2 3.390.000 2 37.596.000 2 225.220.000 2 44.115.000 2 25.0000.000 2 56.000.000 5 589.550.000	1.321.002.000 Main
	t=240 m Land Reclamation Payament	Coom Concrete Sackill Store Foundation Rocks Distinguishment of Sol Concrete Cereon deta deta deta Backill Store Coom Concrete Apon Concrete Apon Concrete Installation of Mooring Bre Land Reclamation	Transportation Installation	CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	10,82: 18,72(208,23) 11,59 11,11,11,11,11,11,11,11,11,11,11,11,11,	5,00 6,00 6,150 8,26,30 9,30,00 1,00	2 54,145,000 2 112,325,000 2 212,351,000 2 213,390,000 2 1300,000 3 3996,000 2 225,320,300 2 44,418,000 2 26,000,000 3 26,000,000 3 288,830,000 3 388,830,000 3 388,830,000	1.321.002.000 Main
	L=240 m Land Reclamation Payment Suitifum	Grown Concrete Sectiff Stone Foundation Rocks Displacement of Sol Congrete Conson ditto ditto ditto Backfill Stone Conents Aprin Concrets Aprin Concrets Installation of Mooring Bit Land Rectaments Beakfill Backfill ansportation Installation	CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	10,82: 18,72(208,23) 11,59 11,59 45,05: 2,54 1,35 1,	500 600 61 150 8 2630 9 3000 10 100 10 1	0 \$4,145,000 2 112,320,000 2 312,331,090 2 313,390,000 3 3500,000 3 37,996,000 2 46,116,000 2 46,000,000 3 6000,000 3 6000,000 3 6000,000	1.321.002.000 Main	
	L=240 m Land Reclamation Pavement Suiting	Coom Concrete Sackill Store Foundation Rocks Distinguishment of Sol Concrete Cereon deta deta deta Backill Store Coom Concrete Apon Concrete Apon Concrete Installation of Mooring Bre Land Reclamation	Transportation Installation	CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	10,82: 18,72(208,23) 11,59 11,11,11,11,11,11,11,11,11,11,11,11,11,	5,00 6,00 6,150 8,26,30 9,30,00 1,00	54,145,000 2 112,351,000 2 112,351,000 2 113,351,000 3 3500,000 3 3500,000 3 3500,000 4 4,410,000 2 25,200,000 2 26,000,000 2 36,000,000 3 56,000,000 3 56,000 3	1,321,002,000 Main 2,932,965,000
Desdains	Lend Reclamation Pavement Subfines Unifices (2)Sub Total	Crown Concrete Sectiff Storie Foundation Rocks Displacement of Sol Concrete Cersion ditto ditto ditto ditto Commissione Commissione Commissione Annon Commission Installation of Hooring Br. Land Reclamation Baskfiret Baskfiret Utilities	Transportation Installation	CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	10.82: 18.702 208.23: 11.59: 11.59: 45.05: 2.54: 1.35: 1.1: 1.35: 2.33: 2.33: 2.33: 1.50:	9 500 6 600 4 150 8 2600 9 3000 9 1000 9 500 9 500 9 500 9 1100 9 1100 9 1400 9 1400 9 2000	0 \$4.145.000 0 112.250.000 213.251.000 233.250.000 0 3900.000 0 3994.000 0 225.200.000 0 2600.000 0 588.550.000 0 588.550.000 0 380.000 0 380.000 0 380.000 0 380.000 0 380.000 0 380.000 0 380.000 0 380.000	1,321,002,000 Main 2,932,965,000
Drodnina.	L=240 m Land Reclamation Parament Suiding Usfries (25cb Total	Grown Concrete Sectiff Stone Foundation Rocks Displacement of Sol Congrete Conson ditto ditto ditto Backfill Stone Conents Aprin Concrets Aprin Concrets Installation of Mooring Bit Land Rectaments Beakfill Backfill ansportation Installation	CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	10.82: 18.702 208.23: 11.59: 11.59: 45.05: 2.54: 1.35: 1.1: 1.35: 2.33: 2.33: 2.33: 1.50:	9 500 6 600 4 150 8 2600 9 3000 9 1000 9 500 9 500 9 1200 7 1200 9 500 9 500 9 500 9 1400 9 1400 9 2000	0 \$4.145.000 0 112.250.000 213.251.000 233.250.000 0 3900.000 0 3994.000 0 225.200.000 0 2600.000 0 588.550.000 0 588.550.000 0 380.000 0 380.000 0 380.000 0 380.000 0 380.000 0 380.000 0 380.000 0 380.000	1,321,002,000 Main 2,932,965,000	
	L=240 m Land Reclamation Pavement Suiting	Crown Concrete Sectiff Storie Foundation Rocks Displacement of Sol Concrete Cersion ditto ditto ditto ditto Commissione Commissione Commissione Annon Commission Installation of Hooring Br. Land Reclamation Baskfiret Baskfiret Utilities	Transportation Installation	cum cum cum cum cum cum cum cum cum cum	10.82: 18.702 208.23: 11.59: 11.59: 45.05: 2.54: 1.35: 1.1: 1.35: 2.33: 2.33: 2.33: 1.50:	9 500 6 600 4 150 8 2600 9 3000 9 1000 9 500 9 500 9 1200 7 1200 9 500 9 500 9 500 9 1400 9 1400 9 2000	5 \$4,145,000 2 12,250,000 2 12,351,000 2 31,390,000 2 1,390,000 2 1,390,000 2 1,390,000 2 1,390,000 2 1,390,000 2 25,300,000 2 20,300,000 3 20,000,000 3 20,000 3	1.321.002.000 Main 2.932.965.000 3.079.837.400
Oradgins Ecopingsing Fee	L=290 m Land Reclamation Pavement Suitines (Utifices (Utifices) (3)Sub Total (1) (3) Total	Crown Concrete Sectiff Storie Foundation Rocks Displacement of Sol Concrete Cersion ditto ditto ditto ditto Commissione Commissione Commissione Annon Commission Installation of Hooring Br. Land Reclamation Baskfiret Baskfiret Utilities	Transportation Installation	CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	10.82: 18.702 208.23: 11.59: 11.59: 45.05: 2.54: 1.35: 1.1: 1.35: 2.33: 2.33: 2.33: 1.50:	9 500 6 600 4 150 8 2600 9 3000 9 1000 9 500 9 500 9 1200 7 1200 9 500 9 500 9 500 9 1400 9 1400 9 2000	5 \$4,145,000 2 12,250,000 2 12,351,000 2 31,390,000 2 1,390,000 2 1,390,000 2 1,390,000 2 1,390,000 2 1,390,000 2 25,300,000 2 20,300,000 3 20,000,000 3 20,000 3	1.321.002.000 Main 2.932.985.000 3.079.837.400
Engineering Fee	L=240 m Land Reclamation Parament Suiding Usfries (25cb Total	Crown Concrete Sectiff Storie Foundation Rocks Displacement of Sol Concrete Cersion ditto ditto ditto ditto Commissione Commissione Commissione Annon Commission Installation of Hooring Br. Land Reclamation Baskfiret Baskfiret Utilities	Transportation Installation	Cum Cum Cum Cum Cum Cum Cum Cum Cum Cum	10.82: 18.702 208.23: 11.59: 11.59: 45.05: 2.54: 1.35: 1.1: 1.35: 2.33: 2.33: 2.33: 1.50:	9 500 6 600 4 150 8 2600 9 3000 9 1000 9 500 9 500 9 1200 7 1200 9 500 9 500 9 500 9 1400 9 1400 9 2000	0 \$4.145.000 2 112.220.000 2 12.351.000 2 21.350.000 2 300.000 2 300.000 2 300.000 2 300.000 2 300.000 2 300.000 2 300.000 2 300.000 3 300.000 3 300.000 3 300.000 3 416.595.300 3 416.595.300 3 416.595.310	1.321.002.000 Main 2.932.585.000 3.079.837.400
	Lend Reclamation Pavement Surface Uniform (2)Sub Total (3) Total (4) Total	Crown Concrete Sectiff Storie Foundation Rocks Displacement of Sol Concrete Cersion ditto ditto ditto ditto Commissione Commissione Commissione Annon Commission Installation of Hooring Br. Land Reclamation Baskfiret Baskfiret Utilities	Transportation Installation	cum cum cum cum cum cum cum cum cum cum	10.82: 18.702 208.23: 11.59: 11.59: 45.05: 2.54: 1.35: 1.1: 1.35: 2.33: 2.33: 2.33: 1.50:	9 500 6 600 4 150 8 2600 9 3000 9 1000 9 500 9 500 9 1200 7 1200 9 500 9 500 9 500 9 1400 9 1400 9 2000	5	1.321.002.000 Main 2.932.565.006 3.079.837.400
Engineering Fee	L=290 m Land Reclamation Pavement Suitines (Utifices (Utifices) (3)Sub Total (1) (3) Total	Crown Concrete Sectiff Storie Foundation Rocks Displacement of Sol Concrete Cersion ditto ditto ditto ditto Commissione Commissione Commissione Annon Commission Installation of Hooring Br. Land Reclamation Baskfiret Baskfiret Utilities	Transportation Installation Sent Films	Cum Cum Cum Cum Cum Cum Cum Cum Cum Cum	10.635 18.722 206.23 11.58 11.58 11.59 13.59 14.59 13.	9 500 6 600 4 150 8 2600 9 3000 9 1000 9 500 9 500 9 1200 7 1200 9 500 9 500 9 500 9 1400 9 1400 9 2000	0 \$4.145.000 2 112.220.000 2 12.351.000 2 21.350.000 2 300.000 2 300.000 2 300.000 2 300.000 2 300.000 2 300.000 2 300.000 2 300.000 3 300.000 3 300.000 3 300.000 3 416.595.300 3 416.595.300 3 416.595.310	1.321.002.000 Main 2.932.965.000 3.079.837.400

PLAN 0-1

(-12m²-13m)

(-12m -13m) Short Term(-12m) 2005

PORT OF CUTUCO QUANTITY CALCULATION SHEET Voice V Cost Cost

				****			ONE	in the second
Place	Catagory	Wein Work	Detailed Rem		OHE VIV	100 001	Con	(Short Term 2005)
obilization 1	Mobilization	Nuo Tartion		LS.				12.027.009.502
		Tamporary Facilities		1.5	·		120 2 15,090	12,027,000,302
	USA Tala			+	80.000	520	1,323,043,654 31,699,200	
	Oradeine	Removal of Soft Soil		Ç L M	60,960	520 6000	141,120,000	,
[1	West Revetment	Foundation Rocks		cum	21 520			
1		Concrete Cession	Mendecure	¢um:	7.491	20 000 150 000	141,020,000	
1	L≏400 m	6.00	Trunsportation	~~	<u>50</u>		1,500,000	
į.		ditto	Installation	. 10	50	50,000	2,500,000	
•		dita	Sand Filling	CU M	16 176	1,000	18 126 000	
		Crown Concrete		cum	480	17,000	8 (60 000	423,365,000 Revi
1		Backfilling Stone	Seckfilling Stone	ÇV m	19 992	5,000	99,960,000	
ſ	Container Wharf	Steel Pre Pile		ton	3,773	228,060	860 244 000	
		Stoel Street Pica Pila		- 129	3181	219,000	999 639 000	ł
i i	L×300 m	Steel Pige Pile for Grane		100	70	221,000	15,980,000	ł
ļ.		Inclined Steel Pige Pile	L	100	1.120	262,200	293 664 000	ł
		Concrete of Super Structure	l	SUP.	5.280	20,000	105 600 000	
		Crown Concrete		cum	638	17,000	27,843,000	4 .
		Beckfill Stone		ÇU,M	53,720	5,000	318.600,000	į.
		Foot Protection Store	<u> </u>	cum	25 092	6,000	150 552 000	ł
		Installation of Fender	<u></u>	_re	15	20,000,000	300,000,000	4
•		installation of Mooring Bit		no.	15	5,000,000	75,000,000	
		Lanna Rail		meter	560	20,000	11 200 000	2.855.305.000 Who
	Land Reclamation	Land Reclamation	l	cum	918,750	1,500	1 378 125 000	4
	Perement	Pevernort		cum	31,500	14,000	441 000 000	
	Baiding	Building		140 m	1,500	20,000	20,000,000	
	Utilities	Utilities		1.	1		251,975 880	5 (59 517 200
	(2)Sub Total						5,417,493,00.	4
	100	1		T			I	}
Vulti	Oredains	Removal of Soft Soil		SNO	52,832	520	27.472.64	<u>.</u>
Purpose(1)	East Revetment	Foundation Rocks		CULTO	0	6,000		
rurposes 17	Care Nove Charac	Concrete Caisson	Manufacture.	Cum	C	20,000		2
	k=om	4 tto	Transportation	100	0			ดิ
	n5 m	4tto	Installation	.00	0			3
	i	ditto	Send Filling	cum	C			3 .
	ļ	Backful Stone	A	C4 m				51 0
	Main Wherf	Steel Pipe Pile	 	LO1	3.323			51
	Williams	Steel Sheet Pipe Pile	 	ton	2,757		603,753,00	51
	€=260 m	Steel Pige Pile for Crene		ten			1	51:
	C-100 W	Inclined Steel Pipe Pile	1	ten.	970		254,334,00	51
	1 '	Concrete of Super Structur		CU IN	1.575			
	l .			cum.	1,420			
	i	Crown Concrete	· - · · · · · · · · · · · · · · · · · ·	cum	55 224			
	I	Backfill Stone	1	cum	21,746			
	į	Foot Protection Stone	· 		13			
	[Installation of Funder	 	- 29	1 13			
	<u></u>	Installation of Mooning Bit		70	_682,000			
		Land Reclamation	-,					1
	- Personal	Personant		455			30000	
	Building	C. Sing	+	*5.73	1.30	3	211 284 4	
	Utilities	Utilities	 	+ 10	1	4	4,430,974,12	
	(3)Sub Total	<u> </u>	 		.	+	2-202/3/4	4
		 	+	+		40	1,408,594,80	ন
Chancel	Oredging	Channel Oredone	 	Cu m	3,521,48			
	Credging	Turrica Casin		cum				
	New section Ands	Navigation Aids				¥	270,000,00	
* * , "	(4)Seb Total	1			<u></u>		202320240	
Roed	Access Rost	Access Road	T	34 m	15,00	0 10.00	C 150,000.00	<u>vo</u> ;
	(5)S.A Total					1	150,000.00	
	(1) (5) (at-			1	1		13,353,113,23	16
Engineering Fee	1	 	1	LS	T		1,335,071,33	4
T. B. S. S. S. S. S. S. S. S. S. S. S. S. S.	Total	 	1	1	T	T	14.665.784.5	K)
			· , · · · · · · · · · · · · · · · · · ·	-	T	11	1,468,578,4	
Continuous	1	l .	1	1 (.)				
Continuency Loading Equip's	1		 	LS		 	2,033,460.0	

Londing Equip t

(-12m²-13m)

PORT OF CUTUCO

QUANTITY CALCULATION SHEET Long Term (-13m) 2015 C-1 UNL V Cetegory Mobilization Place Mobilization Main Work Detailed item Unit Quantity Unit Cost Cost 62.915.280 6.291.528 69.208.868 Main Work
Mobilization
Temporary Facilities ort Tarm 2005) 629,152,600 LS LS (1)Sub Total Removal of Soft Soil Foundation Rocks Congrets Calason ditto cum cum 5000 20000 50000 Container Oredeine West Revetment Yanufacture L=400 m Transportation Installation Sand Filling no d two ro ditto
Grown Concrete
Backfilling Stone
Steel Pige Pile
Steel Sheet Pige Pile
Steel Sheet Pige Pile
Steel Sheet Pige Pile
Steel Sheet Pige Pile
Concrete of Super Structure
Grown Concrete
Backfill Stone
Foot Protection Stone
Installation of Funder
Installation of Funder
Land Residention
Presented
Land Residention
Presented d tto ር μ PM 100 Sackfilling Stone \$000 228,000 219,000 228,000 C Revet Container Wharf L=300 m ton ÇU.M CU II CU II CU II 20,000,000 5,000,000 no 0 Wheel 20 000 1 000 26 000 meter Land Reclamation Perement Building Utilities (2)Sub Total avergent Building Cult 14 m ٥ Removal of Soft Soil cum Multi Purpose(1) 520 Oredaine East Revetme Foundation Rocks Concrete Caisson CUM \$ 000 Manufacture Transportation Installation Sand Filling cum i an m litto Backfill Stone Steel Pice Pile 0 ton Vain Wharf Steel Pige Pile
Steel Steet Pige Pile
Steel Pige Pile for Creat
Inclined Steel Pige Pile
Coronists of Super Structure
Crown Concrete
Backfill Stone
Foot Protection Stone
Installation of Moning Bit
Land Re Limetion 228,000 219,000 ton L≃260 m ton 262 200 20 000 17 000 5 000 cu m ÇU II \$ 000 20 000 000 5 000 000 1 500 26 000 CU ITS 70 70 64.4 and Poclamet in Surens Building and Restamation ¢u m f count dusting Utilities ئدىر 20 m 0 Utilities (3)Sub Total Oredging Dredging 1155 580 Channel Oradging 400 482 232 000 166,929,800 Charge cu m Turning Basin Navigation Aids Navigation Aids ne. (4)Sub Total Access Rose (5)Sub Total (1) (5) Total 629 152 800 lecass Road Road sg m 10.000 629 152 800 0698 359 508 69 835 961 768 195 599 78 819 557 545 015 126 Engineering Fee Total LS Continuency Grand Total 445 229,467 44,896,131 489,925,598 Mobilization Mobilization vg Torm 2015) 4,452.294,672 Mobilization Temporary Facilities ĻŞ 1)Sub Four 52 832 17.052 5.366 36 Removel of Soft Soit Ç4.M 27,472,640 102,312,000 107,320,000 M is Oredeine East Revetment 520 6,000 Purpose(2) Foundation Rocks
Concrete Casson cum 64 m 64 m denufacture Frameportation natallation and Faling 1 = 290 m ditto
ditto
ditto
ditto
ditto
ditto
Crown Concrete
Scal File Store
Steel Pice Pile
Steel Stree Pile of Crow
Inclined Street Pipe Pile
Concrete of Super Streeture
Crown Concrete
Backfill Store
Foot Protection Stune
Installation of Fender
Installation of Moning Bit
Land Peciliarytion 5.400 00C 1.800 00L 36 11 622 348 13 636 3 323 \$915000 6815000 751844000 803,783,000 302,591,000 Revet 5,000 228,000 219,000 CQ IT Man What ton 2.75 ton ton cum cum t =260 m 254 334 000 91 520 000 24 140 000 276 120 000 130 475 000 262 200 29,000 17,000 5,000 6,000 916 457/ 1420 55 22/ 21 74/ cu m 280 000 000 65 000 000 1 005 000 000 382 200 000 212 014 002 4452 234 672 20 000 00 5 000 00 no cum 2,463,017,000 Multi Land Reclamation Pavement Suitding Utilities (2)Sub Total #90 000 27 300 1 500 and Peclametic Pavement Building Utilities 14 000 20 000 4,240 260 540 90 or 1,8 Berth Pocket Oredains END (3)Sub Total (1) (3) Total 4 452 294 672 4 942 220 270 494 222 02 5 439 442 29 543 544 23 5 990 089 52 Engineering Fee LS Total LS Continuency Grand Fotal

LS

825 101 853

Installation of Gargoy Cranes

(-12m²-13m)

Short Term(-12m) 2005

PORT OF CUTUCO QUANTITY CALCULATION SHEET

Q-2 Cost 1049 935 363 1049 935 363 104993 330 1154 928 900 Uni Cost Detailed Harn Unit Quantity Catemory Mobilization Main Work Piaca. Mobilization Mobilization Femporary Facilities (I)Sub Total Oradone West Revetment çu m cu m \$20 6,000 20,000 150,000 50,000 Removal of Soft Soil
Foundation Rocks
Concrete Casson 61 002 000 70 320 000 3 600 000 1 200 000 7 661 000 51 984 11.172 3.516 24 2.6 1.661 2.28 8.930 3.773 3.151 1.120 5.280 1.630 63.720 25.092 1.530 1.530 63.720 25.092 1.530 25.092 1.530 25.092 25.092 1.530 25.092 25. Manufacture Transportation Installation Sand Filling ditto
ditto
ditto
Crown Concrete
Beckfilling Storie
Steal Pies Rie
Steal Sheet Rie
Steal Sheet Rie
Steal Sheet Rie
Coccrete of Steal Pies Rie
Coccrete of Steal Pies Rie
Crown Concrete
Beckfill Storie
Foot Protection Storie
Installation of Footer
Installation of Mooring Bit
Laring Rei
Laring Rei
Building
Utilities
Utilities L=430 m ditto 70 ... cum cum cum ton ton 1,00 31,505 \$60,244,000 \$95,253,000 13,563,000 231,644,000 21,646,000 21,646,000 311,800,000 300,000,000 11,200,000 11,200,000 11,200,000 41,000,000 41,000,000 220,140,359 422,360,380 194 514 954 Revet 5,00 228,00 219,00 228,00 Backfilling Stone ! ≥300 m 262.20 20.00 ton C LL M \$ 000 \$ 000 20 000 000 \$ 000 000 20 000 2 555 305 000 Wharf 588,000 31,500 1,500 Land Reclemation Pevernent Building Utilities (2)Sub Total 1 500 14 000 20 000 4,402,819,984 Removal of Soft Soil
Foundation Rocks
Concrete Casson
ditto William Oredains East Revet Cum urpose(1) cum cum cum cum cum Manufacture Transportation Installation Sand Filling t≕0 m ditto
deta
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Benkfil Stone
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Delities 0 757.644.000 603.783.000 3 32 2 75 228.00 219.00 Vain Wherf ton ton ton cum cum L=260 m 262,200 20,000 17,000 5,000 4,000 20,000,000 2,000,000 970 4575 254,334,000 91,520,000 91,520,000 24,140,000 275,120,000 130,476,000 200,000,000 95,000,000 28,000,000 38,000,000 178,850,550 3,756,071,850 Ç4.IT 8 8 3 3 5 2,480,017,000 Muhi (5° 00° - 130° - 150° 14,000 20,000 5 of Peclaration Psysment Building Utilities (3)Sub Total 3 577 217 000 Oredging Oredging 3.525,481 729.300 4X 1,406,594,800 Channel Bradeire Turning Berth Pocket Charriel CATA rig 400 291,720,000 270,000,000 1,970,314,509 Newsetion Aids New setion Aids (4)Sub Total Access Road (5)Sub Total (1) (5) Total 1970 3(4 509) 150,000 000 150,000 000 11 654 282 533 11 85,428 253 42,819,710,786 1281 971,079 2 093,466 000 15135,141 855 15,000 10,000 Access Road 99, m Road 10,499,353,633 Engineering Fee Total LS

(-12m²-13m)

C-2 Long Term(-13m) 2015

	2:			F 2			Unit: V	.
Place !	Category Mobilization	Main Work	Detailed Rem		gvervor	Unit Cost	Cost	(e) w model
ODIIZAOON I	MODIFICE POUT	Mubifization Temporary Excilities		LS			8,521,526	(Short Yarm 2005) 652,152,600
	I Sub Total	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					71.736.5G8	W04, 132, 000
oritainer (i	Ondere	Removal of Soft Soil		cum	. 0	520	Ç	
į,	Wort Revolment	Foundation Rocks		Cu m	- 0	0.000	0	
١,	L=400 m	Concrete Careson	Were/ecure	c+m	<u>Ş</u>	20 000	. 0	
ľ	C-4CO III	d-tto	Transportation Installation	70	0	150,000 50,000	<u>0</u>	
		d-tro	Send Filling	sum.	, ol	1,000		
ļ		Crown Concrete		£um.	Ö	17,000	Ö	
}.		Backfilling Stone	Backfilling Stone	cum	0	5,000	0	9 Revet
i'	Container Wharf	Steel Pipe Pile		, von	Ç.	228.00C	0	
l,	L×300 m	Steel Sheet Pice Pile Steel Pice Pile for Crans		ton ton	<u> </u>	219.000 228.000	0	
4	2 000	Inclined Steel Page Pile		1921	- 6	262,200	ŏ	
		Concrete of Super Structure		cum	, ol	20,000	C	
		Crown Concrete	ļ <u></u>	cum:	- 0	17,000	¢	1
		Saci-56 Stone	·	e ru	<u>Q</u>	5.000		
Ì		Foot Protection Stone Installation of Fender	 	eum m	- 8	8 000 20 000 000		
		Inetal ation of Majorine Bit		no	Ö	5,000,000	0	
ļ		Laying Rail		meter	- C	20,000		0 Wha
		Land Registration		C/L/L/L		1 500		ŀ
	Pavement Suiding	Pavement Building		CUM	- 0	14,000 20,000		
ŀ	Utilities	Usidoe		20 m	 	20,000	9	
3 10 1 20	2.54b Total						, v	
								!
lubs .	Oredaina	Removal of Soft Soil	 	cum	9	520		,
-pabose(1)	East Revetment	Foundation Rocks	Name of the last	Saw.		5 000	<u>\$</u>	1
i	L=0 m	Concrete Caisson	Manufacture Transportation	cum	0	20,000 150,000		1
		ditto	installation	- ~	ŏ	50,000	ŏ	
		ditta	Sand Filling	cum	0	1,000	C	}
ļ	4 P = 1 1 1 1 1 2	Beckfil Stone	 	cum		5,000	0	
l	Main Wharf	Steel Pipe Pile Steel Sheet Pipe Pile	 	ton	<u>s</u>	228,000	2	
	L=260 m	Steel Pipe Pile for Crane	 	ton ton		219 000	9	
		inclined Steet Pice Pile		ien	, ol	282,200		
		Concrete of Super Structure	0	cum	Ö	20,000		
	İ	Crown Concrete		cum	0	17,000	0	
		Sackfill Stone Foot Protection Stone		C+m	0	5,000		
		installation of Fender	 			20,000,000		
		Instaliation of Mooring 35		70	ő	5,000,000		
į	Lord Pert antion	Lind her am Jun]	¢um.	O.	1.50		
i	- eve tent	ومستنام ساسطنتنجي وإلا	!	cum		14.0w	i	4
i	Buiding Utilities	Building Utilities	 	1 29.17	0	20,000	 	
	(3)Sub Total	133334	 	1.8	č		 	•
				1-1			 	1
Channel	Onedging	Channel Dradging		ou m	1,155,580	\$00		
	Oredaine	Turning Berth Pocket		C# ED	474,802	400	189,920,800	4
	Navigation Aus	Navigation Aids		12	- 0		ļ	4
	(4)Sub Yotal	 	 				652,152,800	4
Road	(5)Sub Total	Access Road	 	#q m	<u> </u>	10,000	4	652,152,800
	(1) (5) Total	-		1			723,583,606	
Engineering Fee	T			LS			72,388,961	1 .
	Total			1			796,278,569	
Солборител				ί.5	<u> </u>		19,621,657	
	Grand Total	 	 	1 1	- 1		875,908,426	4
Mobilization	Mab Kzation	Mobilization	 	र इ			629 264 670	(Long Term 2015)
		Temporary Facilities			· · · · · · · · · · · · · · · · · · ·			
	Make a Table			LS	L 1 k		42,926,667	
	(1)Sub Total				<u> </u>		42,926,667 472,193,337	<u> </u>
Multi	⊘odeine	Removel of Soft Soil		C/LET	21,000	520	472 193 337	
Multi Purposs(2)		Foundation Rocks	Ven fer	eru.	20,580	5.000	472 193 337 30 920 000 122 490 000	
Purposs(2)	⊘odeine	Foundation Rocks Concrete Caisson	Manufacture Transportation	erw erw	20.580 0.475	\$.000 20,000	472 193 337 30 920 000 0 123 490 000 0 129 520 000	
Purposs(2)	Oredaine East Revetment	Foundation Rocks	Manufacture Fransportation	on Grad Grad	20,580	1000 2000 150,000	472 193 337 30 920 000 0 122 450 000 0 129 520 000 0 6 600 000 0 2 200 000	
Purposs(2)	Oredaine East Revetment	Foundation Rocks Concrete Caleson ditto ditto	Transportation	erw erw	20,580 6,475 44 44 14,117	1,000 20,000 150,000 10,4	472 193 337 10 920 000 0 122 490 000 0 129 520 000 0 6 600 000 7 2 200 000 0 15 112 000	
Purposs(2)	Oredaine East Revetment	Foundation Rocks Concrete Carston ditto ditto control Crown Concrete	Transportation	CALL CALL CALL CALL CALL CALL CALL CALL	20 580 6 475 44 - 44 14 117 420	\$000 20,000 150,000 50,000 10,4	472 193 337 0 10 920 000 0 122 480 000 0 129 520 000 0 2 200 000 0 2 30 000 0 1410 000 0 1410 000 0 1410 000	
Purposs(2)	Dradaina East Revetment L<050 m	Foundation Rocks Concrete Cairmon ditto ditto Crown Concrete Cachill Stone	Transportation	CAU CAU CAU CAU CAU CAU CAU CAU CAU CAU	20 580 6 475 44 - 44 14 117 420 17 493	\$000 2000 15000 5000 104 1700 5000	472 193 337 9 19 920 000 122 480 000 123 480 000 2 6 600 000 7 2 200 000 2 7 143 1200 7 145 300 2 87 455 000	370.517.000 Rev
Purposs(2)	Oredaine East Revetment	Foundation Rocks Concrete Cairson ditto ditto ditto Crown Concrete Backfill Storie Start Pipe File	Transportation	CAU CAU CAU CAU CAU CAU CAU CAU CAU CAU	20,580 - 44 - 49 14,117 - 420 17,493 3,323	\$000 2000 15000 5000 104 1700 5000 223,000	472 193 337 0 1930 000 0 122 490 000 0 129 530 000 0 6 600 000 0 2 200 000 0 13 112 000 0 87 465 000 0 757 644 000 0 757 644 000	370,517,000 Rev
Purposs(2)	Dradaina East Revetment L<050 m	Foundation Rocks Generate Ceimen ditte ditte ditte ditte Crown Generate Seathfill Stone Steal Free File Steal Street Foo File Steal Free File Steal Free File	Transportation	Cum Cum Cum Cum Cum	20 580 6 475 44 - 44 14 117 420 17 493	\$000 2000 15000 5000 104 1700 5000	472 193 337 0 1930 000 0 122 490 000 0 129 530 000 0 6 600 000 0 2 200 000 0 13 112 000 0 87 465 000 0 757 644 000 0 757 644 000	370,517,000 Rev
Purposs(2)	Orodoine East Revetment L±350 m Main Wharf	Foundation Rocks Connect Calmon data data data Coun Concrets Backfill Stone Stall Pac Pile Steel Start Pac Pile Steel Pac Pile Start Pac Pile Start Pac Pile	Fransportation	CAM CAM CAM CAM CAM CAM CAM CAM CAM CAM	20,580 4179 440 14,117 420 17,493 3,322 2,151 6 9,70	\$000 29,000 150,000 50,000 11,000 50,000 223,000 219,000	472 193 37) 2 19 930 900 2 122 490 900 2 123 490 900 2 123 490 900 2 3 680 900 2 3 200 900 2 14 112 900 2 7 14 900 2 37 144 900 2 900 783 900 2 254 334 900 2 254 334 900 2 254 334 900	370,5+7,000 Rev
Purposs(2)	Orodoine East Revetment L±350 m Main Wharf	Foundation Rocks Concrete Cairson date date date Count Concrete Backfill Store Steel Pee Pile Steel Pee Pile Steel Pee Pile Steel Pee Pile Counted Steel Pee Pile Concrete of Steel Store Concrete of Concrete of Steel Store Concrete of	Fransportation	25 25 25 25 25 25 25 25 25 25 25 25 25 2	20,580 0,475 44 64 14,117 420 17,493 3,323 2,151 9,70 4,575	\$.000 29.000 150.000 50.000 1 0.4 17.000 223.000 219.000 262.200 20.000	472 193 37) 0 1990000 0 122 480000 0 123 520000 0 6 800000 0 18 112 000 0 7 140 000 0 87 465 000 0 900 783 000 0 254 334 000 0 91 520 000 0 91 520 000 0 91 520 000 0 91 520 000	370,5+7,000 Rev
Purposs(2)	Orodoine East Revetment L±350 m Main Wharf	Foundation Rocks Commits Californ ditto ditto ditto Crown Capariss Sant Page Pile Steel Sheet Pile Pile Steel Sheet Pile Pile Inclined Steel Pipe Pile Commits of Super Shouts Commits of Super Shouts Commits of Super Shouts Commits of Super Shouts Commits of Super Shouts Commits of Super Shouts	Fransportation	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	20,580 0,476 44 420 17,493 3,323 2,151 0 9,70 4,575 1,490	\$.00 2000 50,00 \$0,00 \$1,00 \$1,00 23,00 21,90 21,90 20,00 11,00	472 193 37) 2 193 290 200 2 122 490 200 2 123 490 200 2 123 490 200 2 123 124 200 2 71 400 200 2	370.5+7.000 Re-
Purposs(2)	Orodoine East Revetment L±350 m Main Wharf	Foundation Rocks Connected Calmon deta deta deta Count Calmon deta deta Count Calmot deta Stati Por Pile Stati Por Pile Stati Por Pile Stati Por Pile Stati Por Pile Connected of Surger Structus Count Connected Connec	Fransportation	24 E C C C C C C C C C C C C C C C C C C	20,580 0,475 441 11,172 420 17,493 2,323 2,151 0 9,70 4,575 1,420 55,5224	\$000 20000 55000 50000 10.5 17.00 223.00 219.00 2000 11.00 5.00	472 193 37) 2 10 930 000 2 122 490 000 2 123 490 000 2 123 490 000 2 13 13 12 000 2 13 11 12 000 2 13 13 13 000 2 13 13 13 000 2 13 13 13 000 2 13 13 13 000 2 13 13 13 000 2 13 13 13 000 2 13 13 13 000 2 13 13 13 000 2 13 13 13 000 2 13 13 13 000 2 13 13 13 000 2 13 13 13 000 2 13 13 13 000 2 13 13 13 000 2 13 13 13 000 2 13 13 13 000 2 13 13 13 13 13 13 13 13 13 13 13 13 13	370,5+7,000 Rev
Purposs(2)	Orodoine East Revetment L±350 m Main Wharf	Foundation Rocks Connected Calmon data data data Coun Concrets Backfill Stone Stall Page Rils Steel Steet Plan Pile Steel Steet Plan Pile Steel Steet Plan Pile Concrets of Super Structus Cown Concrets Each III Stone Foot Protection Stone Foot Protection Stone Foot Protection Stone Foot Protection Stone Foot Protection Stone Foot Protection of Fender	Fransportation	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	20,580 0,476 44 420 17,493 3,323 2,151 0 9,70 4,575 1,490	\$.00 2000 50,00 \$0,00 \$1,00 \$1,00 23,00 21,90 21,90 20,00 11,00	472 193 37) 1 99 390 900 2 122 490 900 2 123 490 900 2 480 900 2 300 900 2 111 112 900 2 111 112 900 2 114 112 900 2 114 112 900 2 114 112 900 2 114 112 900 2 114 114 900	370,517,000 Rev
Purposs(2)	Crodeine East Revennent U-250 m Main Wharf U-260 m	Foundation Rocks Concrete Cairmen dria dria dria dria Grown Concrete Backfill Stone Steal Page Pile Steal Steat Pine Pile Steal Steat Pine Pile Steal Pine of Corne Inclined Steal Pipe Pile Concrete of Stear Stouctus Concrete of Stear Stouctus Concrete Steal Pine Pile Toncrete of Stear Stouctus Concrete Stear Stear Installation of Feder Installation of Hoborins St.	Fransportation	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	20,580	\$000 29,000 \$50,000 \$1	472 193 37) 2 193 280 200 2 122 450 200 2 123 450 200 2 133 112 200 2 131 112 200 2 141 112 200 2 141 112 200 2 151 112 200 2 151 152 200 2 151 152 200 2 151 152 200 2 151 152 200 2 151 152 200 2 151 152 200 2 152 153 155 200 2 153 155 200 2 153 155 200 2 155 155 200 2 155 155 200 2 155 155 200 2 155 155 200 2 155 155 200 2	370,517,000 Re-
Purposs(2)	Credition East Revenuent L<050 m Wain Wharf L=000 m Land Rectampton	Foundation Rocks Commits Ceimon ditto ditto ditto Commits Ceimon ditto Commits Ceimon Secreta Seathal Stone Steel Pres Pile Steel Sheet Pros Pile Steel Sheet Pros Pile Steel Sheet Pros Pile Commits of Super Structus Commits of Super Structus Commits of Super Structus Commits of Super Structus Commits Commits Each III Stone Foot Protection Stone Installation of Fender Installation of Fend	Fransportation	20 C C C C C C C C C C C C C C C C C C C	20,580 9,475 441 443 11,112 17,493 3,323 2151 C 9,70 1,575 1,575 1,575 1,120 1,	\$000 93000 \$2000 \$2000 \$100 \$100 \$23000 \$1900 \$23000 \$1900 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$	472 193 37) 2 19 930 900 2 122 490 900 2 122 490 900 2 123 490 900 2 123 124 900 900 2 124 900 900	370,517,000 Rev
Purposs(2)	Credition Lat Rectamptor Lat 80 m Lat 80 m Lat 80 m Lat 80 m	Foundation Rocks Concrete Ceiseon date date Count Concrete Beach People Steel Poer Pile Steel Steet Poer Pile Steel Steet Poer Pile Steel Steet Poer Pile Inclined Steel Pipe Pile Concrete of Steel Stock Count Concrete Beach Pile Store Foot Protection Store Installation of Fender Installation of Fender Installation of Fender Installation of Store Lead Reclamation Lead Reclamation	Fransportation	CARE CARE CARE CARE CARE CARE CARE CARE	20,580 9,472 443 420 17,493 3,323 2,151 0 9,70 4,575 1,420 55,224 21,749 13 25,440 27,300	\$000 2000 \$2000 \$1000 \$100 \$100 \$100 \$2300 \$1100 \$2220 \$1100 \$500 \$500 \$500 \$500 \$500 \$500 \$5	472 193 37) 1 93 930 900 2 172 450 900 2 172 50 900 2 173 50 900 2 173 50 900 2 174 50 900 2 174 50 900 2 174 50 900 2 174 50 900 2 175 544 900 2 175 544 900 2 175 544 900 2 175 544 900 2 175 544 900 2 175 544 900 2 175 544 900 2 175 544 900 2 175 544 900 2 175 544 900 2 175 545 900 2 175 545 900 2 175 545 900 2 175 175 90	270,517,000 Re-
Purposs(2)	Crediting East Revenuent L<050 m Wen Wharf L<050 m Land Rectanation Payment Suifring Suifring	Foundation Rocks Concrete Cairmon ditto ditto ditto ditto Count Concrete Sankill Stone Steal Pres Pile Steal Steat Pros Pile Steal Steat Pros Pile Steal Steat Pros Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Contracted of Steal Installation of Facility Page Pipe Page Pipe Page Pipe Pipe Pipe Pipe Pipe Pipe Pipe Pipe	Fransportation	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	20,580 9,475 441 443 11,112 17,493 3,323 2151 C 9,70 1,575 1,575 1,575 1,120 1,	\$000 93000 \$2000 \$2000 \$100 \$100 \$23000 \$1900 \$23000 \$1900 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$	472 193 37) 1 99 390 900 2 122 490 900 2 122 490 900 2 480 900 2 3 112 900 2 112 112 900 2 112 112 900 2 114 900 2 1	370,517,000 Re- 370,517,000 Re- 2483,617,000 M- 4,068,254,000
Purposs(2)	Credition Earl Newtoners L2050 m Main Wharf L2050 m Land Rectamation Payments Subtring (Uption)	Foundation Rocks Concrete Ceiseon date date Count Concrete Beach People Steel Poer Pile Steel Steet Poer Pile Steel Steet Poer Pile Steel Steet Poer Pile Inclined Steel Pipe Pile Concrete of Steel Stock Count Concrete Beach Pile Store Foot Protection Store Installation of Fender Installation of Fender Installation of Fender Installation of Store Lead Reclamation Lead Reclamation	Fransportation	CARE CARE CARE CARE CARE CARE CARE CARE	20,580 9,472 443 420 17,493 3,323 2,151 0 9,70 4,575 1,420 55,224 21,749 13 25,440 27,300	\$000 2000 \$2000 \$1000 \$100 \$100 \$100 \$2300 \$1100 \$2220 \$1100 \$500 \$500 \$500 \$500 \$500 \$500 \$5	472 193 37) 2 19 930 900 2 122 490 900 3 122 490 900 3 123 490 900 3 2 300 900 3 2 300 900 5 14 112 900 5 14 10 900 6 3 7 485 900 6 3 15 15 44 900 6 3 15 15 44 900 6 2 24 4 34 4 900 6 2 25 4 34 4 900 6 2 25 4 35 4 900 6 2 25 4 35 4 900 6 2 25 4 35 4 900 6 2 25 4 35 4 900 6 2 25 4 35 4 900 6 2 25 4 35 4 900 6 2 25 4 35 4 900 6 2 25 4 900 6 2	2.483.617.000 Mad
Purposs(2)	Crediting East Revenuent L<050 m Wen Wharf L<050 m Land Rectanation Payment Suifring Suifring	Foundation Rocks Concrete Cairmon ditto ditto ditto ditto Count Concrete Sankill Stone Steal Pres Pile Steal Steat Pros Pile Steal Steat Pros Pile Steal Steat Pros Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Contracted of Steal Installation of Facility Page Pipe Page Pipe Page Pipe Pipe Pipe Pipe Pipe Pipe Pipe Pipe	Fransportation	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	20,580 9,472 443 420 17,493 3,323 2,151 0 9,70 4,575 1,420 55,224 21,749 13 25,440 27,300	\$000 2000 \$2000 \$1000 \$100 \$100 \$100 \$2300 \$1100 \$2220 \$1100 \$500 \$500 \$500 \$500 \$500 \$500 \$5	472 193 37) 1 99 390 900 2 122 490 900 2 122 490 900 2 480 900 2 3 112 900 2 112 112 900 2 112 112 900 2 114 900 2 1	2.483.617.000 Mad
Purposs(2)	Credition Latinophilitis Latinophilitis Main Wharf Latinophilitis	Foundation Rocks Concrete Cairmon ditto ditto ditto ditto Count Concrete Sankill Stone Steal Pres Pile Steal Steat Pros Pile Steal Steat Pros Pile Steal Steat Pros Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Contracted of Steal Installation of Facility Page Pipe Page Pipe Page Pipe Pipe Pipe Pipe Pipe Pipe Pipe Pipe	Fransportation	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	20,580 9,472 443 420 17,493 3,323 2,151 0 9,70 4,575 1,420 55,224 21,749 13 25,440 27,300	\$000 2000 \$2000 \$1000 \$100 \$100 \$100 \$2300 \$1100 \$2220 \$1100 \$500 \$500 \$500 \$500 \$500 \$500 \$5	472 193 37) 2 19 930 900 2 122 490 900 3 122 490 900 3 123 490 900 3 2 300 900 3 2 300 900 5 14 112 900 5 14 10 900 6 3 7 485 900 6 3 15 15 44 900 6 3 15 15 44 900 6 2 24 4 34 4 900 6 2 25 4 34 4 900 6 2 25 4 35 4 900 6 2 25 4 35 4 900 6 2 25 4 35 4 900 6 2 25 4 35 4 900 6 2 25 4 35 4 900 6 2 25 4 35 4 900 6 2 25 4 35 4 900 6 2 25 4 900 6 2	2.483.617.000 Mad
Purposed 2)	Credition Earl Newtoners L2050 m Main Wharf L2050 m Land Rectamation Payments Subtring (Uption)	Foundation Rocks Concrete Cairmon ditto ditto ditto ditto Count Concrete Sankill Stone Steal Pres Pile Steal Steat Pros Pile Steal Steat Pros Pile Steal Steat Pros Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Contracted of Steal Installation of Facility Page Pipe Page Pipe Page Pipe Pipe Pipe Pipe Pipe Pipe Pipe Pipe	Fransportation	CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	20,580 9,472 443 420 17,493 3,323 2,151 0 9,70 4,575 1,420 55,224 21,749 13 25,440 27,300	\$000 2000 \$2000 \$1000 \$100 \$100 \$100 \$2300 \$1100 \$2220 \$1100 \$500 \$500 \$500 \$500 \$500 \$500 \$5	472,193.37 1930,000 1930,000 1122,490,000 1935,80,000 1935,80,000 1935,80,000 1935,80,000 1937,85,000	370,517,000 Rev 370,517,000 Rev 2,483,617,000 Mag 4,088,254,000
Purposs(2)	Credition Earl Revenuent L=350 m Main Wharf L=260 m Lend Rectamation Parameter Sustaina (2004) Total	Foundation Rocks Concrete Cairmon ditto ditto ditto ditto Count Concrete Sankill Stone Steal Pres Pile Steal Steat Pros Pile Steal Steat Pros Pile Steal Steat Pros Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Contracted of Steal Installation of Facility Page Pipe Page Pipe Page Pipe Pipe Pipe Pipe Pipe Pipe Pipe Pipe	Fransportation	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	20,580 9,472 443 420 17,493 3,323 2,151 0 9,70 4,575 1,420 55,224 21,749 13 25,440 27,300	\$000 2000 \$2000 \$1000 \$100 \$100 \$100 \$2300 \$1100 \$2220 \$1100 \$500 \$500 \$500 \$500 \$500 \$500 \$5	472,193.37) 1 93.800.00 2 172.450.00 2 173.450.00 2 6 800.00 2 181.17.00 2 181	2.483.517.000 Mag 2.483.517.000 Mag 2.483.517.000 Mag 2.483.517.000 Mag 2.483.517.000 Mag 2.483.517.000 Mag 2.483.517.000 Mag 2.483.517.000 Mag 2.483.517.000 Mag
Purpose(2) Engineering Fee	Credition Latinophilitis Latinophilitis Main Wharf Latinophilitis	Foundation Rocks Concrete Cairmon ditto ditto ditto ditto Count Concrete Sankill Stone Steal Pres Pile Steal Steat Pros Pile Steal Steat Pros Pile Steal Steat Pros Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Contracted of Steal Installation of Facility Page Pipe Page Pipe Page Pipe Pipe Pipe Pipe Pipe Pipe Pipe Pipe	Fransportation	CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	20,580 4,175 440 14,172 420 17,143 13,23 13,23 14,20 14,	\$000 2000 \$2000 \$1000 \$100 \$100 \$100 \$2300 \$1100 \$2220 \$1100 \$500 \$500 \$500 \$500 \$500 \$500 \$5	472,193.37, 1 99.30,000 2 192,450,000 2 193,580,000 2 6,000,000 2 7,140,000 2	2,483,517,000 Mag 2,483,517,000 Mag 2,483,517,000 Mag 2,483,517,000 Mag 2,483,517,000 Mag 2,483,517,000 Mag 2,483,517,000 Mag 2,483,517,000 Mag
Purposel 2)	Credition Earl Revenuent L=350 m Main Wharf L=260 m Lend Rectamation Parameter Sustaina (2004) Total	Foundation Rocks Concrete Cairmon ditto ditto ditto ditto Count Concrete Sankill Stone Steal Pres Pile Steal Steat Pros Pile Steal Steat Pros Pile Steal Steat Pros Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Pile Concrete of Steal Pipe Contracted of Steal Installation of Facility Page Pipe Page Pipe Page Pipe Pipe Pipe Pipe Pipe Pipe Pipe Pipe	Fransportation	CUM CUM CUM CUM CUM CUM CUM CUM CUM CUM	20,580 9,472 443 420 17,493 3,323 2,151 0 9,70 4,575 1,420 55,224 21,749 13 25,440 27,300	\$000 2000 \$2000 \$1000 \$100 \$100 \$100 \$2300 \$1100 \$2220 \$1100 \$500 \$500 \$500 \$500 \$500 \$500 \$5	472,193.37) 1 93.800.00 2 172.450.00 2 173.450.00 2 6 800.00 2 181.17.00 2 181	370,517,000 Re

PLAN C-3 (-12m)-13m)

Short Term(+12m) 2005

P!oc o	Category	Main Work Items	Detailed Work Items	Unit	Quantity	Unit Cost	Cost	
Achitzation	Modification	Mobilization		1.0	1		925 735 149	(Short Term 2005)
	L	Temporary Facilities		. 18.	1		92 5 7 3 5 1 5	9.257.351,490
	(1)Sub Total						1,018,308,664	
ONTAINER	Oredone	Removal of Soft Soil	•	EV FF	168,475	520	87,607,000	
	Hast Revet't	Foundation Rock		SWD.	40,320	6,000	241 920 000	
	, [Concrete Caisson	Manufacture	cum.	4867	20,000	97,340,000	
	L≈300 m	ditto	Transportation		35	150,000	5,250,000	
	!	ditto	Installation		35	50,000	1,750,000	
]	₫tto .	Sand Filling	السنا	11,039	1,000	11,129,000	
	!	Beciniting Stone		cum	37400	5000	989 000 000	
		Crown Concrete		Cum	330	17,000	5,7)2,000	552,111,000 Revet
	Container What	Foundation Rocks		cum	6,100	6,000	48,600,000	
		Displacement of Soil		cum		1 500	0	
	L-300 m	Concrete Calagon	Marylacture	cum	16,500	20,000	332,000,000	
	1	র্ব হয়ত	Fransportation	no	[5]	300,000	4,500,000	
		dete	installation	no	15	100,000	1,500,000	
	. !	ditto	Sand Filling	SR M	43 542	1,000	43 542 000	
		Backfilling Stone		CHES	54,000	1.000	270 000 000	
	1	Crown Concrete		64.10	3 266	17,000	55,862,000	
	l I	Agran Contrete		gu m	1,500	17,000	28 822 000	
		Crene Foundation of Land 5	ide	Çu.m	1,002	18,000	13 036 000	
		installation of Fender		~o	15	20,000,000	300,000,000	,
	i	Installation of Mooring Bit		.0		5,000,000	75 000 000	1 1
	1	Lavina Rail		erater.	560	20,000	11 200 000	1,183,162,000 Wherf
	Land Registration	Land Rectamation		€#M	831200	1,500	1 255,800 000	
	Peverment.	Pavement		QU.FR	31,500	14,000	441 000,000	
	Building	Building		\$41.FT	1,500	20,000	30,000,000	3,553,580,000
	Utilities	Utildias		T a	1		177 684 000	
	(2)Sub Total	f					3,731,364,000	
			· · · · · · · · · · · · · · · · · · ·					
MATI	Oredaine	Removal of Soft Soil		cum	80,840	520	31,638,800	ĺ
		Starting Hard Rock		CN TO	0	000.01	Ó	31,636,600
PURPOSE(1)	East Revolment	Foundation Rocks		¢um	0	6,000	C	
		Concrete Caiseon	Menufacture.	CMD	0		0	
	L=0 m	ditto	Trereportation	no	ō		Ö	
	1	ditto	Installation	no	0	50,000	0	· ·
]	di,to	Send Filling	CH.ITA	ō	1000	0	1
	1	Beckfill Stone		Cum	Ö	5,000	O	i 0
	Main Wharf	Foundation Rocks		CUM	7,020		42,120,000	1
		Displacement of Soil		.cum	0	1,500	0	1
	1	Concrete Caisson	Varufacture	cum	11.586	20,000	231 360 000	1
	L-230 m	ditto	Transportation	100	13	300,000		1
		ditto	inetal etion	70	13	100,000	1,300,000	1
	ı	dita	Sand Filling	¢y m	37,999		37,995,000	1
	i	Backfill Store	1777	Ç4 m	48 800	5,000	234,000,000	i
	i	Crown Con gree	1	Eu.m	2,848	17,000	48,416,000	
	1	April Carcrete		Taum	357	17.000	23 (49,000	
	1	Installation of Funder	}	70	,3		260,000,000	
		installation of Mooring Sit		700	1 13	5,000,000	65,000,000	
	Land Reclamation		 	cum	1,235,000		1 852 500 000	
	Pavement	Pevement	1	CY M	21,300	14,000	382,200,000	
	Building	Building	1	99 m	1.500		30 000 000	
	Utilities	Usites	† 	t a	 	1	162174890	
	(3)Sub Total	44,044	<u> </u>	 	<u> </u>		3,405,672,690	
	17.70m. 17.70m.	 	†	1	1	<u> </u>	*******	1
CHANNEL	Dredone	Cherrel Dredging	1	Cum	3,521,457	40X	1,408,594,800	1
	Dredging	Tyring Berth Pocket	 	67.57	729 300			1
	Nevization Aids	Nevigation Aids	T	100	19		270,000,000	1
	(4)Sub Total		1		† <u>-</u>	†	1,970,314,800	1
The Page of the	17-7-17-17-17-17-17-17-17-17-17-17-17-17	 	†	 	† · · · · · ·	†***	1	1
ROAD	Access Road	Access Road	T	19.70	15 0X	10 000	150 000 000	
	(5)S-4 Total	CANADA PARA	·	- 	1	1	150,000,000	
	(J) (5) Tetal	 	 	+	+	1	10.276.660.164	
Engineering Fee	- P-/- 0/ 1994	 	 -	tis	t	1	1 027 506 015	
	Total	 	1	+ **	 	·	11.303.223.10	
Continuency	110500	+		LS	 	 	1,130,322,51	
	+	+	1		 	1	2.033,460,020	
Coding Equals			<u> </u>	LS	+		2000,000,00	4

(-12m^{*}-}3m)

PORT OF CUTUCO
QUANTITY CALCULATION SHEET Long Farm(+13m) 2015

Place A	Category łob kanton	Main Work Rems Wobilization	Detailed Work Items	1.4.1.	Quantity	Unit Cost	Cost 81,005,280 (Sh	ort (Ferm 2005)
		Temporery, Facilities		1,0			6 100 526	610:062 800
	L)Sub Total Xedaina	Removal of Soft Soil		ÇU 4D		\$20	67.105.808] G	
NIAMEN D	Vest Revetit	Foundation Rock		cum		8.000		
	-300 m	Concrete Casson	Manufactura	647	<u>Ş</u>	20,000	<u> </u>	
ľ	-5,600 m	ditto	fransportation Installation	+ +	- 0	150,000 \$0,000		
į.	j	ditto	Send Filling		0	1.000	0	
		Bachfilling Stone		cum	- 0	5,000 17,000	CI O	0 Revet
i.	Container Wherf	Crown Concrete Foundation Rocks		cum mus	ő	6,000		O MEYER
		Displacement of Soil		gy m	0	1,500	Q	
ľ	_*300 m	Concrete Calason	Manufacture Transportation	Sum	0	20,000	0	
- 1		ditto	irstalistion	700	Ŏ	100 000	č	
i i		ditto	Send Filling	cum	٥.	1 000	Ç	
		Backfilling Stone Crown Concrete		cum	0	17,000	G D	
1		Apron Concrete		cum	Q.	17 00C	0	
		Crane Foundation of Land S Installation of Funder	×¢e .	c/w	- 0	18 000 20 000 000	0	
į	100	Installation of Mooring Bit		70	ě	5,000,000	č	
.	- 12	Laying Rei		meter	9	20,000	<u>Q</u>	0 What
	Land Reclamation Persment	Card Reclamation		Çum Çum	0	1500 14,000		
	Building	Suldice		89.0	Q	20,000	0	0
	Utilities	Utilities					<u>c</u>	
	2)Sub Total			+ +			c	•
JLT1	Dredging	Removel of Soft Soil	L	EUM	2	520	0	_
JRPOSE(1)	East Revelment	Starting Hard Rock		Eu m	0	10 000 5 000	- 9	0
TH 33CO-DAIL	Cast Havetment	Foundation Rocks Concrete Caleson	Manufacture	CA W	0	20,000	0	
	L=On	deta	Transportation	- 100	O.	150,000	c	
- 1		ditto	Installation Send Filling	ro i	0	50,000 1,000	<u>0</u>	
		Sackful Stone		cum	Ô.	5 000	Ö	0
	Main Wharf	Foundation Rocks		cum	, ol	000.6	<u>0</u>	
		Displacement of Soil Congrete Caisson	Manufacture	cum cum	0	20,000	<u>\</u>	
1	L=260 m	dicto	Transportation	70	ō	300,000		
		dr.o.	Installation		- 0	100,000	<u>C</u>	
•		State Backin Store	Sand Filling	Cum Cum	0	1,000 5,000		
		Crown Voyyer	Í	cu m	0	1700		
		~ on ~ carlo	ļ	cur.		20,000,000		
<u> </u>		Installation of Funder installation of Mooring Bit		- <u>ro</u>	C	5.000.000	0	o Muki
	Land Regiametion	Land Reclamation		cu m	0	1,500	0	
	Pavement Building	Pavement Building	ļ	<u>670</u>	0	14,000 26,000	0	0
	Utilities	Utilities	 	ls	ő	****	ō	,
	(3)Sub Total						ę.	
HANNEL	Dredging	Channel Oredana	 	çu m	1,155 580	420	462,232,000	
ADOMOL	Dredging	Turning/Berth Pooket		SU.TO	369,552	400	147,829,830	
	Nevigation Aids	Nevisation Aids	ļ	~	0		0	:
	(4)SA Total	-	 	+			610,052,800	
CAO	Access Road	Access Road		90.00	Ó	10 000	Ö	
	(5)Sub Total (1) (5) Total	 	·				677_154_508	1 220 105 600
nameoring Fee	17137.184		† ·-	LS	1		87,715,881	
	Total						344,874,469	
- Actions JeA	Grand Total			LS.			74 487 447 619 361 915	
	1						412.48:-314	
hobitization	Mobilization	Mobilization		ĻŞ.			261 033 864 (L	ong Tarm 2915)
	iciki di Total	Temporary Facilities	 	LS	 '	!	26103,365 267,137,250	2,610,338,640
Multi	IL PORTE	Remové d' so	T	<u>CV 711</u>	بر زنک	- 5.5i	4.3130	
Purpose (2)	East Revolment	Foundation Rock	in a	Cum		·	43 200 300	
	L=50 m	Concrete Caleson	Varyfacture Transportation	cum cum	800-	20,000 350,000	11,380,000 900,000	
	[]	4:30	installation	Çum		50,000	300,000	. *
	!	fitto	Sand Filling		1.989		1 989 000 1 020 000	
	1	Crown Concrete Backfill Stone	 	Cum Cum	60 6,750	17,000 5,000	33,750,000	98,539,000 Rev
	Main Wharf (2)	Foundation Rocks		cum.	7,050		42,120,000	
	U=250 m	Displacement of Soil	Manufacture	EV.M	11,568	20,000	231 360 000	
	Cozon m	Contrate Caisson	Transportation	0 0	11.300		3,900,000	
	I	ditto	Installation	no	13	160,000	1,300,000	n
	1	Back St Stone	Sand Filling	ÇU.M	37,996 45,800		37,996,000 234,000,000	
•	1	Crown Concrete		ÇUM	2.548	17,000	48,416,000	
		Agron Concrete		Cum:	1,357	17,000	21,069,000	
	1	Installation of Funder Installation of Mooring St	- 	- 10	13		260,000,000 65,000,000	947,151,000 Mu
	Land Reclamation	on Land Reclamation		cum	640.000	1,500	990,000,000	# 11.1 #1.2 #W TO 1
	Pavement	Pavement.	1		21,300	14,000	382,200,000	4 (44 And 40A
	Building Utilities	Suiding Utilities	+	10 PO	1.500	29,000	30,000,000 (24,301,840	2,486,006,800
	(2)Sub Total			上"	1	1	2,610,338,840	
Dradaine		Berth Pocket		E s til	1	4	Ğ	
	(1) (2) Tetal				 -	 	2.697.475.69C	
Engineering Fee	1000			LS		1	289,747,589	
	(1) Total						3 (87 223 479	
Continuency	Grand Yotal			LS	+	' 	318 722 348 3 305 945 827	
	a serational				-4	1	4.2/4.353.54/	
		1		ı	•	,		

PORT OF CUTUCO

Original Plan Short Term(-12m) to Long Term(-13m)
DREDGING VOLUME

1	Turning Basin	2005		· · · · · · · · · · · · · · · · · · ·	2015	
Plan	Existing Average Depth (m)	Turning Basin Dredging Volume (cu.m)		Dredging Volume Volume (cu.m)	Planned Dimension	*Additional 1m cutting (cu.m)
A-1	10.4	431,242	Depth: -12 m	767,679	Depth: -13 m	338,437
8-1	8.5	1,049,012	Width: 600 m	1,371,348	Width: 600 m	322,336
8-2	7.3		Slope:1:5	1,772,016	Slope: 1:5	400,667
8-3	1.2		,	1,806,097		269,662
C-1	10.0			891,702		307,052

2	Berth Pocket	2005		1 1	201		Alternative
Plan	Existing Depth	Dredging Volume	Planned	Oredging Volume	Planned	Dendaling Volum	
	(m)	(cum)	Dimension	(cu.m)	Dimension	7 / A (96 (9)	
A-1		964,330	Depth: -13 m	155,000	*Additional		
B-1		677,134	Width: 50m	141,250	Im cutting		99
B-2		1,127,607	Stope: 1:5	115,250			
B-3		535,969		58,500		500	
C-1		276,869	Basin	110,250	Basin		
C-2	1	547,620	Depth:-12 m	187,750	Depth: -13 m		
C-3		144,650		62,500		113.0	

3	inner Channel				
Plan	Existing Depth	Inner Channel Dredging Volume	Length of Channel	Planned Dimension	Planted Chicken Value Greeners
	(m)	(cu.m)	<u>(m)</u>	<u> </u>	
A-1	7.4 22.0	2,217,747	4,800	Depth: -12 m	
8-1	6.4 22.0	2,195,961	3,250	_) Width:150 m	A.C. (200)
8-2	6.4 22.0	2,286,524	3,400	Slope: 1:5	2000 12
ದ-3	64 22.0	2,131,138	3,200	i	34 34
G-1	7.4 22.0	2,324,847	5,400	<u></u>	

4	Outer Channel					
Plan	Existing Depth (m)	Outer Channel Bredging Volume (cu.m)	Length of Channel (m)	Planned Dimension	Gradus Services	Planed Strengen
Ī	10.3 ~ 13.0	1,196,640	6,500	Depth:-12 m Width:150 m Slope:1:3	- 40.53	Depth 115 m
	10.3~13.0	2,352,220	8,000	Depth: -13 m Width: 150 m Slope: 1:3		*Additional Oredging

5	Short Term Dev	elopment (2005)					
Plan	Turning Basin	Berth Pocket		Inner Channel	Outer Channel		Total Volume
	(-120)	(-13m)	Sr.o Total	(-12·n)	(-12m)	Sub Total	
	(cu.m.;	(ca.m)		(cum)	(cu.m)		(cum)
A-1	431,242	984,330	1,395,572	2,277,747	1,196,640	3,414,387	4,869,959
8-1	1,049,012	677,134	1,728,146	2,195,961	1,198,640	3,392,601	5,118,747
8-2	1,371,349	1,127,607	2,498,956	2,288,524	1,196,640	3,485,164	5,984,120
8-3	1,536,435		2,072,404	2,131,168	1,196,640	3,327,808	5,400,212
C-1	584,650		861,519	2,324,847	1,196,640	3,521,487	4,383,006
C-2	584,650		1,132,270	2,324,847	1,196,640	3,521,487	4.653,757
C-3	584,650		729,300	2,324,847	1,196,640	3,521,487	4,250,787

Plan	Long Term Deve	Berth Pocket		Inner Channel	Outer Channel		Total Volume
Fian	(-13m)	(-13m)	Sub Total	(-12m)	(-13m)	Sub Total	
	(cu.m)	(cu.m)	2 1	(cu.m)	(cu.m)		(cu.m) :
A-1	336,437	155,000	491,437	0	1,155,580	1,155,580	1,647,01
B-1	322,336	141,250	463,586	Ó	1,155,580	1,155,580	1,619.16
8-2	400,867	115,250	515,917	0	1,155,580	1,155,580	1,671,49
8-3	269,662	56,500	326,162	0	1,155,580	1,155,580	1,481,74
C-1	307,052		417,302	0	1,155,580	1,155,580	1,572,88
C-2	307,052		474,802	0	1,155,580	1,155,580	1,630,38
C-3	307,052		369,552	0	1,155,580	1,155,580	1,525,13
	*Additional	*Additional		*Additional	*Additional		*Additional

PORT OF CUTUCO

Original Plan Short Term(-12m) to Long Term(-13m) OREDGING VOLUME

i	Turning Basin	2005			2015	
Plan	Existing	Turning Basin	Planned	Dredging Volume	Planned	*Additional
l .	Average Depth	Oredging Volume	Dimension	Volume	Dimension	1m outting
	(m)	(cum)		(cu.m)		(cum)
A-1	10.4	431,242	Depth: -12 m	767,679	Depth: -13 m	336,437
B-1	8.5	1,049,012	Width: 600 m	1,371,348	Width: 600 m	322,336
8-2	7.3	1,371,349	Slope: 1:5	1,772,016	Slope:1:5	400,667
8-3	7.2	1,536,435		1,806,097		269,662
C-1	10.0	584,650		891,702		307,052

2	Berth Pocket	2005		·	2015		Alternative
Plan	Existing Depth	Dredging Volume	Planned	Dredging Volume	Planned	Dradging Volume	Planted Depth.
l	(m)	(cum)	Dimension	(cum)	Dimension	(com)	
A-1	1	964,330	Depth: -13 m	155,000	*Additional	822,295	
B-1		677,134	Width: 50m	141.250	1m cutting	606 509	
8-2	Ţ	1,127,607	Slope : 1 : 5	115,250		1,069,992	
B-3	Ī	535,969		56,500		507,719	
C-1		216,869	Basin	110,250	Basin	221,749	Basin
C-2	}	547,620	Depth: -12 m	167,750	Depth: =13 m	463,745	Depen: 115 m
C-3		144.650		62,500		113,400	

3	Inner Channel				
Plan	Existing Depth	Inner Channel Dredging Volume (cu.m)	Length of Channel (m)	Planned Dimension	Planned Oredging Volume determinen
A-1 8-1	7.4 22.0 6.4 22.0	2,217,741 2,195,961	4,800 3,250	Depth : -12 m Width : 150 m	1,906,947 Osenth:::11.5 m 1,944,899
8-2 6-5 C-1	64 22 0 74 22 0	2.286.524 2,131,138 2.324.847	3,400 3,200 5,400		2,030,%24 1,27,159 1,490,547

4	Outer Channel					
Plan	Existing Depth	Outer Channel Dredging Volume (cu.m)	Length of Channel (m)	Planned Dimension	Oredging Volume (03.51)	Planned Okression
}	10.3 ~ 13.0	1,196,640	6,500	Depth : -12 m Width : 150 m Slope : 1 : 3	494. 515	Depth::-115 m
	10.3~13.0	2,352,220	8,000	Depth: -13 m Width: 150 m Slope: 1:3		*Additiona) Oredging

5	Short Term Dev	elopment (2005)					
Plan	Turning Basin	Berth Pocket		Inner Channel	Outer Channel		Total Volume
1	(- (2)-)	(-13m)	Si Total	(-12m)	(=12m)	Sub Total	
ŀ	(cum)	(can) j		(cum)	(cum)	i	(cu.m)
A-1	431,242	964,330	1,395,572	2,211,147	1,196,640	3,474,397	4,869,959
B-1	1,049,012	677.134	1,726,145	2,195,951	1,198,640	3,392,601	5,118,747
8-2	1,371,349	1,127,607	2,498,956	2,288,524	1,196,640	3,485,164	5,984,120
8-3	1,538,435	535,969	2,072,404	2,131,168	1,195,640	3,327,808	5,400,212
C-1	584,650	276,869	861,519	2,324,847	1,196,640	3,521,487	4,383,006
C-2	584,650	547,620	1,132,270	2,324,847	1,196,640	3,521,487	4,653,757
C-3	584,650	144,650	729,300	2,324,847	1,195,640	3,521,487	4,250,187

Plan	Turning Basin	Berth Pocket		Inner Channel	Outer Channel		Total Volume
	(-13m)	(-13m)	Sub Total	(-12m)	(-1 3 m)	Sub Total	:
	(cu.m)	(cum)		(cum)	(cu.m) ·		(cu.m)
A-1	336,437	155,000	491,437	0	1,155,580	1,155,580	1,647,017
B-1	322,336	141,250	463,586	0	1,155,580	1,155,580	1,619,166
8-2	400,667	115,250	515,917	0	1,155,580	1,155,580	1,671,497
8-3	269,662	56,500	326,162	O	1,155,580	1,155,580	1,481,742
C-1	307,052	110,250	417,302	0	1,155,580	1,155,580	1,572,882
C-2	307,052	167,750	474,802	0	1,155,580	1.155.580	1,630,382
C-3	307.052	62.500	369,552	0	1,155,580	1,155,580	1,525,137
	*Additional	*Additional		*Additional	*Additional		*Additional