

1207 137-54

UNCLASSIFIED

UNITED STATES  
INTERNATIONAL DEVELOPMENT COOPERATIVE AGENCY  
AGENCY FOR INTERNATIONAL DEVELOPMENT  
WASHINGTON, D.C. 20523

PROJECT PAPER

EGYPT  
SAFAGA GRAIN SILO COMPLEX

PROJECT NO. 263-0165

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT  
PROGRAM DATA SHEET

1. TRANSACTION CODE

A = Add  
 C = Change  
 D = Delete

Amendment Number

DOCUMENT CODE

3

2. COUNTRY/ENTITY

Egypt

3. PROGRAM NUMBER

1263-0165

4. BUREAU/OFFICE

NE/PD

03

5. PROGRAM TITLE

Safaga Grain Silos Complex

6. PROGRAM ASSISTANCE COMPLETION DATE (PACD)

MM DD YY  
| | | | 8 | 7 |

7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4)

A. Initial FY 8 | 2 |

B. Quarter 4

C. Final FY | | |

8. COSTS (\$000 OR EQUIVALENT \$1 = LE1.00)

A. FUNDING SOURCE	FIRST FY			LIFE OF PROGRAM		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	( 80,000 )	( )	( 80,000 )	( 80,000 )	( )	( 80,000 )
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S.						
1.						
2.						
Host Country		7,000	7,000		30,400	30,400
Other Donor(s)						
<b>TOTALS</b>	80,000	7,000	87,000	80,000	30,400	110,400

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROGRAM	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) SA	159	063				80,000		80,000	
(2)									
(3)									
(4)									
<b>TOTALS</b>						80,000		80,000	

10. SECONDARY TECHNICAL CODES (maximum 5 codes of 3 positions each)

11. SECONDARY PURPOSE CODES

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code

B. Amount

13. PROGRAM PURPOSE (maximum 480 characters)

To provide adequate and efficient handling, storage and distribution for food grains for the needs of the people of the Arab Republic of Egypt, principally Upper Egypt.

14. SCHEDULED EVALUATIONS

Interim MM YY MM YY Final MM YY

15. SOURCE/ORIGIN OF GOODS AND SERVICES

000  941  Local  Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a page PP Amendment)

17. APPROVED BY

Signature

Title

Owen Cylke  
Acting Director, USAID/Egypt

Date Signed

MM DD YY  
0 8 2 3 8 2

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION

MM DD YY  
| | | | 8 | 1 |

UNCLASSIFIED

Department of State  
Agency for International Development  
Washington, D.C. 20523

Project Paper

Proposal and Recommendations

EGYPT - Safaga Grain Silos Complex

AID-DLC/P

UNCLASSIFIED

EGYPT - Safaga Grain Silos Complex

Table of Contents

	<u>Page</u>
I. Summary and Recommendations	1
II. Background	4
III. Project Description	8
IV. Technical Analysis And Cost Estimate	9
V. Economic Analysis and Justification	19
VI. Source and Application of Funds	28
VII. Environmental Considerations	29
VIII. Implementing Arrangements	29
IX. Evaluation	30
X. Draft Authorization	30
- Conditions Precedent	30
- Congressional Notification	30

ANNEXES

A. Letter of Application	
B. Statutory Checklist	
C. Section 611(e) Certification	
D. Draft Project Authorization	
E. Memorandum of Understanding	
F.1. A.R.E. Flour Mill Sites	
F.2. Proposed Grain Distribution System	
G. Safaga Design Drawings	
H. Safaga Implementation Schedule	
I. Internal Rate of Return (IRR) Calculations	
J. Environmental Review	

UNCLASSIFIED  
AID-DLC/P  
\_\_\_\_\_, 1982

MEMORANDUM FOR THE WORKING GROUP ON BILATERAL ASSISTANCE:

SUBJECT: Egypt      Safaga Grain Silos Complex

Attached for your review is a recommendation to authorize a grant to the Government of Egypt (the "Grantee" or "G.O.E.") of an amount not to exceed \$80,000,000 to assist in financing certain foreign exchange costs of goods and services needed to supply equipment for and erection of a 100,000 metric ton grain silo storage complex at Safaga, Egypt.

  
Owen Cylke  
Acting Director  
USAID/Egypt

EGYPT: Safaga Grain Silos Complex

1. SUMMARY AND RECOMMENDATIONS

- 1.01 Grantee: The Government of the Arab Republic of Egypt. (GOE)
- 1.02 Implementing Entity: The Ministry of Trade and Supply.
- 1.03 Beneficiary/Operating Entity: The General Company for Silos (GCS) of the Ministry of Trade and Supply.
- 1.04 Proposed Grant Amount: \$80,000,000
- 1.05 Project Description: The Grant will assist in financing the foreign exchange costs of consulting engineering services and a full turn-key construction services contract, both with U.S. firms, as required to furnish equipment, construct and put into operation a 100,000 metric ton grain silo complex at Safaga, Egypt. (For details refer to article III.)
- 1.06 Cost of Project: The total cost of the grain silo complex is estimated by the consulting engineer to be \$99,581,816. Of this amount, the foreign exchange costs which are to be funded by this Grant are estimated to be \$71,972,723 and the Egyptian pound costs which are to be funded by the GOE are estimated to be equivalent to \$27,609,093 (at the rate LE 1 = \$1). For a detailed analysis of costs, see article 4.04. The major cost components are summarized as follows:

Cost Item	Funding Source (\$ Millions)	
	AID Grant	GOE
U.S. Turnkey Construction Contractor	68.0	26.8
U.S. Engineering Services	4.0	.8
Contingency	<u>8.0</u>	<u>2.8</u>
	<u>80.0</u>	<u>30.4</u>

1.07 Environmental Consideration: An environmental assessment of the Safaga grain silo complex, as a subproject of the Grain, Tallow/Oils/Fats Storage and Distribution Project (Loan No. 263-K-041/Project No. 263-0037), was made in 1977. That negative assessment remains valid.

1.08 Issues:

a. The Need for the Safaga Grain Silo Complex.

Grain imports at Safaga have increased from 800,000 MT in 1979 to 1,200,000 MT in 1981. As there is no storage capability at Safaga, open storage results in substantial losses. Also, given the increasing demand for grain in Upper Egypt and the difficult, long and expensive alternative of transshipment from Mediterranean ports, transportation cost savings from construction of a modern grain storage facility could be substantial. The economic rate of return is a very favorable 17.45%.

b. The Need for 100,000 Metric Tons Storage Capacity.

The 1978 Master Plan projections of imported grain off-loaded at Safaga by the year 1985 was 670,000 MT annually. That level was vastly underestimated. Actual throughput in 1981 was in excess of 1,200,000 MT. At the technically optimum turnover rate of 13/times, a storage capacity of 90,000 to 115,000 MT is needed now.

c. The Capacity of the GOE to Implement the Project.

Given the experience with the GASC and Egyptian prime contractors on earlier projects, it is proposed to move to U.S. prime contractors on a full turnkey basis, as in the case of the TOF facilities at Alexandria. This approach has proven successful there and at Abu Sultan (i.e. a 450 MW steam turbine generator plant). Consequently, for the Safaga project, USAID has negotiated a Memorandum of Understanding with the Ministry of Investment and International Cooperation, the central government office responsible for coordination of U.S.

assistance, as well as the Ministry of Supply. The document, attached to this project paper as Annex E, records our agreement with the GOE on the principal project implementation procedures which will be followed in carrying out this Project: a U.S. consulting engineering firm; a U.S. construction contractor on a full turnkey basis; establishment of a fulltime Project Implementation Office by the GOE including a fulltime Project Manager and a fulltime Construction Superintendent at the Safaga site; timely approval of contract documents by the GOE; timely provision of construction materials from domestic market or provision of hard currency to procure such materials offshore; and timely provision of any additional resources that may be required to carry out the Project, other than AID's contribution under this Grant. USAID is confident that these pre-implementation clarifications of responsibilities are adequate commitments by the parties to reasonably assure the timely and successful implementation of the Project.

1.09 Mission Recommendation: USAID/Cairo recommends that this grant be authorized.

USAID Project Committee:

<u>OFFICE</u>	<u>NAME</u>
DRPS/IDPS	A. de Graffenreid, Project Officer
DRPS/IDPS	R. Cook, Project Engineer
DRPS/IDPS	W. Fraser, Office Director
LEGAL	P. Ramsey, Legal Officer
DPPE/PAAD	J. Chang/H. Sternberger, Economists

## II. BACKGROUND

### 2.01 History - Original Project:

The original project, funded by AID Loan No. 263-K-041 in 1977, consisted of five independent subprojects, four of which were located in Alexandria. They included the Tallow, Oil and Fats facility (\$9.3 million), Quay 81/82 bagging system (\$6.7 million), Conveyors (\$0.6) and Laboratory Equipment (\$0.1). The fifth subproject was the 50,000 MT Safaga Grain Silo project, estimated then to cost some \$24.2 million and LE 10.8 million.

The four subprojects in Alexandria are in the final stage of completion and all are scheduled to be operational by early 1984. As cost overruns have exhausted all but \$8.0 million, we plan to retain this amount in the original project to assure successful completion of those subprojects. The Safaga subproject is now being pursued as a completely separate, independent project.

### 2.02 Safaga Site Selection:

The "Master Plan for the Development of Egyptian Storage and Distribution System for Food Grains" was prepared by the engineering consultant, Black and Veatch International (BVI), in 1976. The Master Plan, as revised in 1978, selected the Safaga port as the site for a new grain silo facility to serve Upper Egypt because of its favorable geographic location relative to existing and proposed distribution networks for Upper Egypt as compared to other ports.

The use of Safaga port will reduce ocean transit time and inland transshipment costs of grain to Upper Egypt. Also, Safaga will accommodate vessels with a draft of up to 73 feet, as compared to Alexandria which can only accommodate a 47 foot draft.

### 2.03 Current Grain Handling Conditions at Safaga:

Currently, all wheat offloaded at Safaga is either put on barges offshore, and lightered to the quay or, with the assistance of four small pneumatic grain unloaders, put in

small surge bins or on the ground at the pier. All of the wheat is then bagged by hand for shipment to mills in Upper Egypt. The bagging operation involves two shifts working the year around.

#### 2.04 Grain Throughput Forecasts:

The 1978 Master Plan had forecast a throughput of 650,000 MT tons of wheat at Safaga by 1985, which could be handled by a 50,000 MT facility with an annual turnover of 13 times (the optimal operating criterion). According to official GOE import statistics, Safaga had a throughput in excess of 1,100,000 MT by 1979. In 1981, an estimated 1,200,000 MT to 1,500,000 MT of wheat was expected to be offloaded at Safaga. Using the same turnover rate of 13 times, a storage capacity of 90,000 to 115,000 MT is needed now.

Even more importantly, Safaga port will be the rail terminus for an important new phosphaste mine investment in Upper Egypt. The demands on the port arising from this new investment make the construction of a new grain silo complex absolutely necessary.

The original estimate for grain imports was based on a projection from grain imports starting in 1977. Prior to that time, the Safaga port was a GOE naval facility and was not available for grain imports; once the port reverted to civilian authorities, grain previously offloaded at Port Suez was diverted, at an increasing rate, to Safaga. The previous forecast could not take such a dramatic diversion into account because there was no prior data on which to substantiate a projection of the current magnitude of grain imports. It should also be noted that the import level at Safaga can be raised or lowered through government intervention by diverting grain tankers to Safaga to maintain maximum use of the proposed facility. Based on analysis by GASC and its consultants, the levels of wheat off loaded at Safaga can be expected to rise in the future.

These grain import levels reflect both the growing consumption due to population increase and the continuing

changing cropping patterns in Egypt. The import levels also reflect the growing demand for baked products. Although there is no current data available which analyzes these projected demand patterns, the GASC has noted that the current demand now exceeds the projected demand levels for wheat that were forecast in the 1978 BVI Master Plan. The 1978 study forecast a net wheat deficit of 4.6 million metric tons (MMT) in 1981, which proved accurate, and a deficit of 5.3 MMT in 1985 and 9.7 MMT by 2000. GASC expects these deficits will grow as consumption patterns reflect increased use of wheat in the Egyptian diet. GASC does not expect local production to decrease this deficit significantly and therefore believes that the Safaga facility has a long-term utility.

2.05 U.S. Grain Shipments:

Grain exported to Egypt by U.S. suppliers is usually offloaded at Mediterranean ports such as Alexandria. To enable U.S. grain exporters and shippers to use the Safaga port, the GOE has expressly agreed to include U.S. shippers in its grain freight tenders for Safaga.

The agreement by the G.O.E. to permit U.S. Shippers to bid on grain shipments to Safaga port should meet the interests of the American Wheat Grainers Association in expanding the number of Egyptian ports open to U.S. grain shippers.

The capacity to store grain at Safaga will: (a) enable larger amounts of grain to be handled at Safaga; and, (b) enable U.S. suppliers to ship to Safaga from West Coast ports on larger vessels.

2.06 Relationship to Egyptian Agricultural Strategy and Prospects:

Mission is keenly attuned to the issue of public sector role in grain procurement. A major thrust of our new agricultural programming relates to structural reforms in Egyptian Government policy on cereal pricing and cereal marketing. The silo capacity to be funded in this project relates strictly to Egyptian imports of grain and will play no role in the domestic production/procurement/storage/marketing and distribution system for handling the produce of Egyptian farmers. There is no prospect in the foreseeable future that Egypt will cease to import grain. The Mission's policy thrust

in this area is liberalization of the domestic grain market, moving towards world market prices and privatization of the domestic grain trade. Mission believes that this project is strictly neutral with respect to those objectives. The basic impact of the project is the enhanced efficiency in the handling of grain imports. This goal is equally important under the present situation of illiberal domestic grain trade or under our preferred scenario of a liberalized domestic grain trade. Mission's analysis suggests that Egypt's long-term comparative advantage in agriculture lies in moving away from grains and into higher value crops. Under this scenario, grain imports become even more important, and the efficiency of the import-handling infrastructure become concomitantly greater. In the event that Egypt does liberalize the domestic grain market, the project is fully compatible with an internal distribution and marketing system in private hands.

### III. PROJECT DESCRIPTION

#### 3.01 The Project:

The Project consists of a complete grain offloading, storage and handling complex. Two 600 MT/hour pneumatic ship unloaders will serve vessels up to 75,000 MT. The conveyor system capacity will be 1,200 MT/hour to handle peak offloading.

The 100,000 MT storage facility will consist of 64 concrete bins, each 10 meters in diameter, 32 bins on opposite sides of a central headhouse. Two truck bulk loading spouts and one rail bulk loading spout are planned. Twenty bagging stations will also be erected. The system will have the capability of loading direct from ship to trucks, to rail cars, to bagging stations and directly into storage bins.

A training program will be included in the prime contract, as required, for key plant management and operation personnel.

See Technical Section IV for additional Project description.

#### 3.02 Project Related Investments at Safaga:

The engineering design is virtually complete and the IFB for the U.S. turnkey construction contractor services is being prepared. This work was financed under the Grain/TOF Loan 263-K-041.

During the past year, the GOE has made significant investments at Safaga in anticipation that the grain silo complex would be built. In addition to completing major dredging at the port, a new deep water quay has been under construction for some time and is nearing completion. Rock interference in the approach channel has also been removed. These improvements will permit two ships to be offloaded simultaneously thus eliminating barge offloading.

Other GOE investments include a 10 MW gas turbine power facility which is in operation. Also, a rail link between Safaga and Qena 200 km away is under construction, is about 60% complete and is expected to be operational by 1985.

#### IV. TECHNICAL ANALYSIS AND COST ESTIMATE

##### 4.01 Design:

###### a. General:

The design is standard and does not incorporate any unusual features for facilities of this type. It is practical, of adequate capacity, incorporates modern safety features and allows for good operational flexibility.

###### b. Structural:

As stated in the section on soil conditions, the heavy structures will be supported by piling. The conveyor towers will be pile supported with adequate reinforcement to transmit tensile loads caused by uplift. Because of the proximity of earthquake epicenters, the fill behind the new quay wall is given special consideration and the interior crane rail is placed on a continuous pile supported foundation beam.

The one and two story ancillary light weight structures will be on spread footings.

###### c. Capacity and General Design of Facilities:

1. The expanded facility will be served by two (2) modern pneumatic ship unloaders. Each unloader is fitted with two (2) 150 MT pipes with an average unloading capacity of 600 MT/hour. The unloaders are designed to serve carriers up to 75,000 MT (DMI) and although the unloading times vary between 12 to 24 hours, depending on ship size and configuration, demurrage costs should be reduced considerably. The conveyor system capacity will be 1200 MT/hour to handle peak unloading requirements.

2. The 100,000 MT storage facility will consist of a total of sixty-four (64) concrete bins each of which will be 10 meters in diameter. Thirty-two (32) bins will be placed on opposite sides of a central headhouse, and will be individually constructed and spaced (not grouped), to maximize venting. This arrangement will minimize the potential for any spread of an explosion. The head house is of open design with maximum use of sloping conveyors and minimum use of bucket

elevators. The head house design will further minimize conditions known to be explosion sensitive.

3. Two (2) bulk truck loading spouts and one (1) bulk rail loading spout will be constructed. Twenty bagging (20) stations will also be erected. The system will have the capability of loading directly from ship to truck/rail/bagging stations and of loading directly into storage bins.

4. The design incorporates all necessary backup components to reasonably assure continuous and orderly operation.

5. Design criteria used is as follows:

a. Structural line loads Grain 60 LB/BU, Platforms and floor 100 LB/Sqft.

b. Impact loads: Elevators 100%, Machinery 20-50%, Wind loads and seismic loads as defined in ANSI A58.1 and U.B.C.

c. Mechanical Equipment in accordance with AGMA, SAE, ASME and CEMA with special consideration for dust and local ambient conditions. Equipment also to handle soybean meal, edible rice, pelleted feeds and minerals.

d. Electrical equipment will be in accordance with Class II, Group G, Div. I hazardous location per article 500 NFPA-70 for bin installation and outdoor weather proof or indoor industrial for other locations.

d. Operation and Maintenance:

The project includes adequate provisions for ease of operation and maintenance, as well as a training program for maintenance operations and repair of the project equipment. Personnel to operate and maintain the facility will be recruited locally.

e. Project Location:

The project site is located at Safaga port on the Red Sea about 600 km southeast of Cairo and 200 km east of the Nile River near Qena. It imposes no special construction problems. It is clear and generally level. The silos will be located in a fenced area north of the port limits. The belt conveyors, scale house and ship unloaders will be located within the port compound, and will be separated from the rest of the port area by a fence.

f. Site Access and Utilities:

A good, surfaced road connects Safaga to Qena 200 km west which is on the main north south highway and on the Nile River for barge access. There is at present no railroad serving Safaga. However, the government is currently constructing a rail connection between Safaga and Qena. Space at the site has been reserved for future use as a railroad right of way.

The port facility is operational and is available for receiving construction equipment and materials for this Project.

The government is constructing a water pipeline from Qena to Safaga. However, until the pipeline is completed, water will have to be trucked or barged to the site for construction purposes. The project includes 200,000 gallons of water storage and an associated distribution and pumping system.

Electricity for construction will be supplied by a new 10 megawatt power facility which is presently in operation.

g. Soil Condition:

A satisfactory geotechnical investigation has been performed which concludes that because of the loose sand stratum generally encountered on the site, pile foundations would be required for the heavy structures, such as the silos; headhouse; bagging station; administration building; and conveyor towers. Ground water is not anticipated to be a problem.

h. Seismic Situation:

The site is in earthquake zone 2 and thus adequate seismic precautions were included in the design. This is the main reason for pile supports under the interior crane rail for the ship unloader.

The technical aspects of the Project were considered during the original project selection process. The proposed Project is considered technically feasible within the meaning of Section 611(a), FAA.

4.02 Justification for a U.S. Contractor:

The Ministry of Supply has agreed to use a U.S. "whole-of-the-works" (or "turnkey") contractor for the Project. Egyptian firms will have opportunities to participate as subcontractors. AID experience in Egypt reveals that contracts between two public entities does not usually result in an arms length relationship. A turnkey contract with a private U.S. contractor places the construction of this activity into the commercial market place where the terms of contract will rule. A fully funded turnkey contract will assure financing continuity, the lack of which mars Egyptian construction practice. Another major advantage of a U.S. turnkey contractor is that equipment procurement by the U.S. firm rather than by GASC should permit better scheduling and control while minimizing potential claims. Finally, while the proposed turnkey costs appear to be more costly than earlier estimates for Egyptian construction, such costs more accurately reflect the economical benefits and costs for timely completion, i.e. incentives and penalties are included to reflect the true economic value of timely completion. In summary, a U.S. turnkey contractor will assure quality control and timely completion of construction as well as ease of equipment procurement.

The recommendation to use a U.S. turnkey contractor is based primarily on AID and GOE's experience in implementing the grain silo complexes at Shoubrah and Alexandria under Loan No. 263-K-028. The civil works for the two grain silos are being managed and constructed solely by Egyptian firms. Both subprojects are over two (2) years behind schedule. Procurement has been complex, involving administrative delays

and difficulties in approving contracts and opening Letters of Credit. This complexity goes beyond project design and relates to the unfamiliarity of the Egyptian contractors with AID procurement rules and sound contracting procedures. The burdens that have been placed on USAID and the GOE to rectify these problems have been disproportionately large and have forced USAID, at least, to expend staff time to address problems that should have been resolved by the contractor. Construction was slow because of insufficient project management and supervision, and was hampered by inattention to quality control. More importantly, both silo complexes have encountered delays even though they are adjacent to major commercial centers where labor, material and logistical support are easily obtained and from where construction supervision should be easily applied. The remote site at Safaga presents procurement and management problems which, based on the above, are unlikely to be surmounted by Egyptian contractors.

A U.S. turnkey contractor in lieu of an Egyptian prime contractor would provide a number of advantages, such as: (a) improved construction management; (b) skilled and constant contractor supervision; (c) coordination of procurement and construction activities; and, (d) better assurance of timely project completion given contractual incentives and penalties.

Benefits of some \$24 million per annum can be realized, as noted in para 5.04 supra, by using a turnkey contractor and thereby completing the Project on or ahead of schedule. These benefits occur from reductions in the costs of demurrage, grain losses, and transportation.

#### 4.03 Implementation Plan

##### a. Administrative Arrangements:

The Grantee will be the Ministry of Trade and Supply (MTS) for the Arab Republic of Egypt. The General Authority for Supply and Commodities (GASC) of the MTS will implement the Project. Some of the special arrangements mutually agreed to with the GOE to effect the timely implementation of the Project are set out in a Memorandum of Understanding attached as Annex E. In addition to the staffing of the Project Implementation Office by the GOE (and of the engineering and construction contracts) which is discussed in the following paragraphs, the GOE has also agreed to expedite

the review and approval of all Project documents. Also, to assure coordination among all parties (GOE, AID, Consulting Engineer, Construction Contractor), a monthly meeting will be held to review the status of the Project and to resolve any impediments to the scheduled completion of the Project.

A full time Project Manager, with adequate full time staff support including engineers, financial officers and accountants, will be vested with authority to direct the Project and to put into place all financial mechanisms to support the Project. Responsibility and authority over daily Project activities on site will be vested with a full time, on-site, Construction Superintendent. A U.S. consulting engineering firm (Black and Veatch International) will be vested with authority to supervise, on behalf of the GOE under the direction of the Construction Superintendent, the construction works in accordance with the Project design.

b. Engineering Consultants:

Since June 1978 GASC has had a contract with the consulting engineering firm of Black and Veatch International (BVI). The BVI scope of work includes responsibility for the design of the grain silo complex at Safaga and for supervision of construction. Therefore, the question of competitive procurement waiver does not arise. BVI will provide on-site personnel and will be vested with authority to supervise construction on behalf of the GOE under the direction of the Construction Superintendent. The Ministry of Supply believes that the most cost effective way to complete the design and ensure consistent engineering, including construction supervision, is to retain BVI. USAID agrees.

c. Construction Contracting and Procurement:

With a view to assuring the timely completion of the project, a U.S. turnkey contractor will be given primary responsibility for the Safaga Project. Egyptian firms may participate as subcontractors. The U.S. turnkey contractor will have sufficient control of the Project and have authority to ensure quality performance and to finalize procurements.

To expedite prompt delivery of equipment, the GOE has agreed that all equipment and supplies procured outside Egypt will be shipped directly to Safaga. Also, the

availability of local materials such as cement and rebar on a timely basis in accordance with the construction schedule has been assured by GOE. U.S. turnkey contractor will procure the materials. The GOE will include a unit price estimate in Egyptian pounds for such materials in the IFB. This will ensure a more uniform evaluation of bids and will enable the GOE to better estimate local currency costs. To the extent that the actual purchase price of these local materials exceeds the GOE stated unit prices, the GOE has agreed to use the Special Account to fund any increased costs. In the event such materials are not locally available when needed, foreign exchange will be made available by GOE to timely procure these materials off-shore.

d. Implementation Schedule:

NEAC Approval	September 1982
CN Expiration	August 1982
Grant Authorization	September 1982
Grant Negotiated and Signed	September 1982
Construction Contract executed	April 1983
PACD	January 1987

e. Project:

Final design for the complex is 98% complete. A construction services contract with a U.S. firm could be awarded by April 1983. Construction, equipment installation and turn over of an operational facility could be completed in approximately three and one-half years from the effective date of the contract.

f. A.I.D. Implementation Responsibilities:

In addition to current Project implementation activities, USAID will enter into an AID-direct contract funded by this Grant for the full time services of a grain silo construction engineer to be located at USAID/Cairo and reporting to the Office Director for Infrastructure. This engineer will perform oversight responsibilities (principally construction and procurement) for the Safaga Project as well as the Grain Silos projects at Cairo and Alexandria. Some of the activities USAID will undertake are:

1. review and approve all final design and construction plans;
2. review and approve all primary contracts;
3. participate in periodic project implementation meetings with GOE agencies and Project contractors;
4. make frequent site inspections; and
5. review progress reports and initiate appropriate actions.

4.04 Cost Estimate:

A major effort has been undertaken in compiling this cost estimate and assuring its accuracy. A detailed quantity takeoff was made from the drawings. All major equipment suppliers have been contacted resulting in up to date prices. The most current prices for labor and material based on recent cost experience in Egypt has been used. A number of prospective contractors have already expressed interest in this Project so adequate competition is expected. Local factors such as harsh living conditions, isolation and attendant logistic problems have been considered and evaluated. It is our opinion that the following cost estimate is accurate.

Under the U.S. turnkey construction contract, estimated to cost some \$68.0 million and some LE 26.8 million, the contractor will construct all facilities including the silos, procure and install the prescribed equipment and materials and put the complex into commercial operation. The cost of materials and equipment are estimated at about \$43.0 million. The contractors services, which includes its expatriate staff costs, overhead, profit and mark-up on the equipment procured, is estimated at \$25.0 million.

TABLE 1  
ESTIMATED CAPITAL INVESTMENT  
100,000 MT GRAIN RECEIVING, STORAGE AND OUTLOADING  
FACILITY - SAFAGA  
AUGUST 1982

<u>Item</u>	<u>Labor</u>	<u>Equipment</u>	<u>U.S. Dollars</u> <u>Materials</u>	<u>Freight</u>	<u>Total</u>	<u>Egyptian Pounds</u> <u>Total</u>
<u>1. Site Preparation</u>						
Roads and Grading		79,120	874,538	172,914	1,106,572	2,477,377
<u>2. Receiving System</u>						
a) Dock Modifications	12,976	175,400	282,429	72,755	543,560	1,165,143
b) Pneumatic Ship Unloaders	300,000	90,000	5,102,000	1,045,000	6,537,000	554,507
c) Conveyors Bridge	4,760	75,140	2,577,194	441,187	3,098,281	334,058
d) Receiving Tower	-	3,520	191,372	28,915	223,807	38,331
e) Receiving Equipment	31,500	95,360	2,844,828	558,137	3,529,825	297,798
f) Electrical	-	-	839,270	100,662	939,932	308,618
<u>3. Headhouse</u>						
a) Civil	32,600	126,630	495,369	146,295	800,894	614,011
b) Equipment	21,350	24,000	1,573,591	327,655	1,946,596	241,456
c) Electrical	-	2,000	1,899,929	226,048	2,127,977	322,553
<u>4. Storage</u>						
a) Civil	295,250	2,197,255	8,070,705	2,134,717	12,697,927	7,723,425
b) Equipment	17,500	32,000	2,859,471	236,618	3,145,589	198,702
c) Electrical	-	-	1,473,699	291,125	1,764,824	371,725
d) Miscellaneous Metal		INCLUDED ABOVE				
<u>5. Bagged System</u>						
a) Civil	3,200	43,780	123,787	27,375	198,142	231,892
b) Equipment	61,050	8,200	1,297,110	48,184	1,414,544	83,466
c) Electrical	-	-	324,260	26,300	350,560	110,087
<u>6. Truck Scale</u>	3,500	1,800	114,786	7,842	127,928	99,556

TABLE 1 (Continued)

ESTIMATED CAPITAL INVESTMENT  
100,000 MT GRAIN RECEIVING, STORAGE AND OFFLOADING  
FACILITY - SAFAGA  
AUGUST 1982

Item	Labor	Equipment	U.S. Dollars			Egyptian Pounds Total
			Materials	Freight	Total	
7. <u>Bulk Loading</u>						
a) Civil		600	111,710	19,715	132,025	3,948
b) Mechanical	-	240	47,343	9,468	57,051	898
c) Electrical	-	-	59,285	8,280	67,565	17,666
8. <u>Ancillary Facilities</u>						
a) Laboratory and Office	2,880	36,420	117,787	26,479	183,566	577,944
b) Maintenance Shop	-	1,000	652,100	36,165	689,265	384,460
c) Trucker's Welfare	-	-	-	-	-	213,000
d) Staff Houses	-	980	357,799	45,549	404,328	116,659
e) Other Substations	17,500	1,460	556,789	32,390	608,139	59,918
f) Fumigation Building	-	-	50,484	6,800	57,284	72,287
g) Site Electrical	-	-	135,009	19,455	154,464	492,000
8. <u>Representatives</u> Spare Parts, Tools, and Training		(INCLUDED ABOVE)				
9. Labor Benefits		(INCLUDED ABOVE)				
SUBTOTAL (1-9)	804,066	2,994,905	33,032,644	6,096,030	42,907,645	17,081,485
10. Contractor's Services Overhead, Profit, Mark-up on Equipment	9,478,484	1,828,700	1,105,250	1,324,690	25,090,078	9,777,608
SUBTOTAL (1-10)	10,282,550	4,823,605	34,137,894	7,420,720	67,997,723	26,859,093
11. Engineering Services					3,975,000	750,000
TOTAL					<u>71,972,723</u>	<u>27,609,093</u>

## V. ECONOMIC ANALYSIS AND JUSTIFICATION

### 5.01 Introduction:

Egypt is currently importing approximately 1.2 to 1.5 million metric tons of wheat through the Safaga port to meet wheat demand in Upper Egypt. At present, no silo storage facilities exist at the port.

This Project proposes a 100,000 MT grain silo facility at the Safaga port. Excluding contingencies, total economic costs for the 100,000 MT facility are \$99.6 million, consisting of \$72.0 million of foreign exchange and \$27.6 million equivalent in local currency. Local currency is converted at an estimated shadow exchange rate of L.E. 1.00 = \$1.00.

The absence of these facilities raises substantially the economic costs of wheat deliveries to Upper Egypt. In brief, the economic savings that would result from the provision of silo and associated facilities are in four major areas - reduction in wastage, demurrage charges, sack and labor costs and reduction in unit transport costs:

Wastage: Wastage and spoilage due to the absence of modern storage and offloading facilities are conservatively estimated at 5% of deliveries.

Demurrage Charges: Current contracts for wheat delivery at the port include provision for a port stay averaging 17.72 days. Egypt is currently paying demurrage charges for port stays in excess of the 17.72 days. The length of port stay is expected to be reduced by modern storage and offloading facilities. More rapid unloadings attributable to this project could lead to the earning of bonuses for ships unloaded in fewer days than the contractual port days.

Sack and Labor Cost Savings: Shifting from sacked to bulk movements generates savings since both sack purchases and with labor requirements/costs associated with sacking decrease.

Transport Costs: Ocean freight costs per ton of wheat are generally lower when grain is transported on larger ships. Modern silo/storage facilities would substantially increase the ability of Safaga to offload large capacity carriers. This will reduce unit transport costs to Safaga.

Other economic benefits are thought to be substantial as well. They include freeing of port facilities for other trade activities, insuring adequate wheat supply to Upper Egypt, and reducing grain losses at flour mills.

A cost-benefit analysis for the construction of a 100,000 MT facility gives an internal rate of return conservatively estimated at approximately 17.5%. A favorable set of assumptions raises the IRR to 21%. The least favorable set of assumptions results in a 16% IRR.

#### 5.02 Background:

The Safaga port is ideally located to receive wheat for distribution to Upper Egypt. Transportation costs from Safaga to flour mills in Upper Egypt are far less than from Alexandria. During 1979 and 1980, Safaga accommodated a throughput of about 1.2 million MT of wheat, but the operation has been costly due to the lack of bulk handling facilities for the large quantity of wheat throughput. According to the General Company of Silos (GCS), the normal offload capacity at the port is 2,500 MT per day. At this rate, it would take 480 days per year to offload 1.2 million MT; obviously this would be an impossible task. Instead of operating at its normal capacity, the port has been unloading at more than 3,500 MT per day using various inefficient and expensive means, such as offloading to barges and at times on the ground at dock side. The Black and Veatch Master Plan estimated that about 5% of grain offloaded at Safaga has been lost due to inadequate grain handling. The wastage from poor handling and infestation could well exceed 7%. In addition, the GASC paid approximately \$875,000 as demurrage charges during the three months period between December 12, 1980 and March 12, 1981 for unloading delays.

Construction of the 100,000 MT silo facility is expected to be sufficient to meet the projected imported wheat demand in Upper Egypt in the near term with significant savings in terms of lowered throughput costs.

### 5.03 Economic Benefits

Major economic benefits of constructing the 100,000 MT facility come from reduction in wheat losses, demurrage, the possible generation of bonus payments, and ocean transportation costs. There are also savings from reduced sacking requirements.

#### 1. Reduction in Wheat Loss

Because of port congestion and inadequate facilities, the consultant Black and Veatch estimates that about 5% of 1.2 million MT annual throughput has been lost due to wastage at the port. On the basis of more recent discussions; wastage might well exceed 7%. With the construction of 100,000 MT facility with a series of self-propelled pneumatic unloading gantries and modern bagging facilities, the loss is conservatively projected to fall to 2% of throughput. <sup>1/</sup> Given the current throughput of 1.2 million MT per annum and the average C&F value of \$208<sup>2/</sup> per ton of wheat, the cost saving amounts to \$7.5 million annually for a three point drop in wastage rate from 5% to 2%. On the other hand, cost savings amount to \$12.5 million assuming a five point drop from 7% to 2%.

#### 2. Reduction in Demurrage and Idle Time Charges

Ocean freight contracts specify the number of days required to unload cargo. If the unloading takes longer than the contracted time, GASC must pay demurrage charges of \$10,000 to \$13,000 per day. On the other hand, if the unloading is completed within the allowed time period, GASC receives rebates determined by the remaining unused contracted time.

---

<sup>1/</sup> Some observers claim that the loss rate on bulk handling will be as low as 1%. This means that the savings in loss rate would be even higher than the 2 to 5% estimates used in this analysis.

<sup>2/</sup> July-December 1981 C&F prices is quoted in Ag Attachee Report EG 2015, Annual Agricultural Situations Report, 1981, page 57.

During the representative period between December 12, 1980 and March 12, 1981, GASC paid demurrage charges at the port under 13 contracts of about \$875,000 while offloading 381,803 MT of wheat. These penalty payments were a direct result of inadequate port facilities. At that rate, total demurrage charges to offload 1.2 million MT would amount to \$2.75 million a year. The 100,000 MT facility with an 8,000 MT average offloading capacity (12,000 MT peak capacity) per day should eliminate demurrage charges. The port will be able to offload in less time than contracted, thus eliminating demurrage charges and possibly generating rebates. During the above mentioned three months period, the Consultant has reported that the average contracted port stay per ship was 17.72 days. Using the 8000 MT unloading capacity per day, the port should be able to reduce port stay days by 47%. (During the above three months, the port unloaded on the average at 4242 MT per day. With the 8000 MT capacity it would take only 53% of the time.) The opportunity cost of reducing the port stay time by 8.33 days for each of 13 vessels at \$13,000 per day is worth \$1.41 million to the ship owners.<sup>1/</sup> At a \$8,000 per day demurrage charge (a figure cited by an official of GCS), the reduced port stay has a value of \$3.46 million or a total gain of \$6.22 million. For the year, it would amount to \$5.64 million. New ocean freight contracts should cost GASC \$5.64 million less due to the reduced time in port. Total estimated benefits from reduced penalty payments and from rebates would total some \$8.39 million per year.

### 3. Reduction in Transportation Costs

During the first three months of 1981, the port as mentioned earlier, managed to offload a throughput of 381,803 MT that was shipped in 17 different vessels. The average size of the shipments was 22,500 MT. GASC paid an average freight cost of \$48 per MT. At this rate, transportation costs alone totaled \$57.6 million in 1981 for the 1.2 million MT of wheat which passed through the port. Transportation costs could be cut substantially by using larger bulk shipments than the average size of 22,500 MT. Given the larger offloading and storage capabilities planned under this Project, GASC could purchase wheat for delivery in much larger quantities, i.e. much larger ships better unit costs.

---

<sup>1/</sup> At a \$10,000 per day demurrage charge, the reduced port stay has a value of \$4.33 million annually or a total gain of \$7.08 million in the Base Case.

Assuming that transportation costs could, conservatively, be reduced by 10% by doubling the average size of shipments, total saving would amount to \$5.76 million for 1.2 million MT.

4. Reduction in Costs of Sacks:

If a sack were used only once, approximately 10 sacks would be required to move one ton of grain. Since the practice now is to use a sack three times, only 3.33 sacks are required. The savings in shifting from sacked to bulk movements of grain is estimated at \$3.0 million per annum assuming a price per sack of \$0.75 and a movement of 1.2 million MT of grain per year. However, 25% of the throughput will continue to be sacked in the near term according to GASC officials. Therefore, the saving in sack purchases is estimated at \$2.25 million.

5. Labor Efficiency:

The proposed project does mechanize some operations that were formerly more labor intensive; however, technically and economically this is essential to eliminate the significant economic wastage currently being experienced at Safaga. The cost of labor in moving sacked grain is far higher than in the case of bulk transport. The GSC figures suggest that the labor cost of unloading, sacking, and transferring sacked grain is \$1.70 per ton or \$6800 per day. Gross savings are estimated at \$2.0 million per annum. Since 25% of the throughput will continue to be sacked and labor will be required for bulk operations, the Project generates a labor savings of roughly \$1.3 million.

It is important to note that the construction of a new port facility is only a part of the broader development of Upper Egypt and the important Red Sea city. Employment opportunities will result from this important development at Safaga.

6. Secondary Economic Benefits:

In addition, there are secondary economic benefits not included in the IRR calculation that are thought

to be substantial in magnitude but generally unquantifiable at this time.<sup>1/</sup> They are:

a. Freeing of Port Facilities for Other Uses -- The current inefficient method of offloading 1.2 million MT ties up the Safaga port all year long. With the 100,000 MT silo facility, the port will be capable of offloading, an average of 8,000 MT per day. With the careful planning of wheat delivery schedules, the demand for wheat in Upper Egypt can be met in 150 days of port operation a year, leaving 215 days for other port activities. The economic benefits that could be derived from the use of the port the other seven months out of a year could be very substantial. Obviously, future economic gain will depend on how fast the Egyptian economy, particularly the economy of the Upper Egypt area, develops.

b. Insuring adequate Wheat Supply -- The primary purpose of constructing the 100,000 MT storage capacity is to facilitate the flow of wheat to flour mills in Upper Egypt in a timely manner with reduced wastage. While the primary purpose is not to store wheat for emergency purposes, the storage capacity, nevertheless, can be used for insuring that an adequate wheat supply is available in a timely manner to Upper Egypt.

c. Reduction of Wheat Loss at Mills -- With no storage facilities at the port, offloading operation requires trucking of the bagged wheat directly from dock side to the mills regardless of availability of storage facilities at the mills. Often bags are piled up outside the mills for days before they are processed. There are no estimates of wheat losses at the mills, but it is believed to be substantial.

---

<sup>1/</sup> In the Internal Rate of Return calculation, we assumed that costs of operation before and after the construction of the grain silo remain relatively unchanged. This assumption was used primarily due to lack of reliable data on costs of operations. However, the Black and Veatch consultant has estimated that operations costs would decline to \$1.6 million after the completion of the silo facility from the current estimated cost of \$4.22 million. To the extent this is true, the Internal Rate of Return should be substantially higher.

With bulk storage capability of 100,000 MT at the port, deliveries could then be spaced so as to decrease the delayed processing time and thereby decrease wheat losses at the mills. This economic gain is difficult to measure as mill level statistics are not available; however, at a minimum it shifts a major labor input from the development world to Egypt with substantial positive impact on job creation in Egypt.

#### 5.04 Cost-Benefit Analysis

##### 1. Time Phasing of Expenditures.

Total economic costs of \$99.6 are expected to be spent over five years, \$2.04 million in the first year, \$26.60 million in the second year, \$34.80 million in year three, \$28.50 million in the fourth year, and, \$7.6 million in the fifth year.

##### 2. The Structuring of Benefits.

It is anticipated that total benefits will begin to accrue in the sixth year and extend at this level over the next 40 years during the life of the facility.

##### 3. Sensitivity Analysis.

The level of annual benefits varies with the underlying set of assumptions (see Annex J). The following table summarizes the assumptions:

#### STRUCTURE OF ASSUMPTIONS USED IN THE CONSTRUCTION OF THE SAFAGA PROJECT

<u>Cost/Benefits</u>	<u>Base Case</u>	<u>High</u>	<u>Low</u>
<u>Wheat Loss</u>			
1. % Reduced Loss	3	5	2
2. Value of Savings \$ Million	7.5	12.5	5
<u>Demurrage Charge</u>			
1. Daily charge	10,000	13,000	8,000
2. Annual Value \$ Million	7.07	8.39	6.22
Transport \$ Million	5.76	5.76	5.76

<u>Cost/Benefits</u>	<u>Base Case</u>	<u>High</u>	<u>Low</u>
Sacks and Labor	3.55	3.55	3.55
TOTAL	23.88	30.2	20.53
IRR	17.5	21.0	15.5

a. The base case estimate presents a conservative and probable set of assumptions. Annual benefits are estimated to be \$23.8 million. The assumed demurrage charge in this case falls roughly between the reported low of \$8,000 per day demurrage charge and the high of \$13,000 per day. The assumed base case of \$10,000 per day demurrage charge generates an annual total savings level (includes the estimated decline in demurrage payments and new bonus earnings made possible by more rapid unloadings) of \$7.1 million. The reduced wheat loss in the base case example is estimated to be 36,000 tons valued in \$7.5 million.

b. The optimistic set of assumptions generates a correspondingly high benefits level. The estimate assumes a \$13,000 per day demurrage charge. The annual project benefit from this source is estimated at \$8.38 million. The high wheat loss is estimated to be 5 percent with a value of \$12.5 million. The high case generates total annual benefits estimated at \$30 million.

c. A "least favorable" set of assumptions such as a 2% reduction in the wheat loss and a daily demurrage charges at the \$8,000 level generates a total annual project benefits estimated at a still impressive \$20.4 million.

d. All cases assume a constant level of savings for the transport, sack and labor gains of the Project. This simplifies the analysis and directs attention to the key benefits of the Project.

#### 4. The IRR Calculation.

The IRR for the base case is estimated to be 17.5%. The most unfavorable set of assumptions generates a 15.5% rate of return. If the assumed price of wheat is

raised by ten percent, the IRR rises marginally to 15.8%. The very favorable set of assumptions generates an IRR of 21%.

5.05 Observation:

On the basis of the foregoing analysis we conclude that this project satisfies the requirement for the economic rate of return set forth in Section 611(a), FAA.

VI. SOURCE AND APPLICATION OF FUNDS

6.01 The foreign exchange cost of this 100,000 MT grain silo complex is estimated at \$72.0 million. Given the uncertainty of today's markets, an 11% contingency of \$8.0 million has been included. The AID contribution will not exceed \$80.0 million.

6.02 The Egyptian pound cost is estimated at LE 27.6 million. Including some 10% contingency of LE 2.8 million, the GOE contribution will be LE 30.4 million. In addition, however, the GOE has agreed to provide, on a timely basis, any additional funds that may be required to carry out the Project, whether foreign exchange or local currency.

6.03 The following tabulation summarizes the source and application of funds required to carry out the Project:

Source/Application of Funds  
(In Millions of U.S. Dollars)

	<u>AID Grant</u>	<u>GOE Contribution</u> <sup>1/</sup>	<u>\$ and LE</u>
U.S. Turnkey Construction Contract	68.0	26.8	
U.S. Engineering Services Contract	<u>4.0</u>	<u>.8</u>	
Estimated Cost of Project	72.0	27.6	<u>99.6</u>
Contingency	<u>8.0</u>	<u>2.8</u>	
TOTAL	<u>80.0</u>	<u>30.4</u>	

---

<sup>1/</sup> Shadow price rate of exchange LE 1.00 = \$1.00

## VII. ENVIRONMENTAL CONSIDERATIONS

8.01 No significant adverse effects on the environment will occur as a result of the grain silo complex at Safaga. Consequently, the original environmental analysis of 1977 which resulted in a negative determination remains valid. Nevertheless, an updated Environmental Analysis is attached as Annex J.

## VIII. IMPLEMENTING ARRANGEMENTS

9.01 A separate Safaga Project Implementation Office under the overall control of the Ministry of Supply will be established. The Ministry has agreed to expedite the creation of this unit. A.I.D. will require this unit to be operational before expending project funds for other than engineering services.

The pre-implementation arrangements with the GOE call for (1) the establishment of the Project Implementation Office, (2) prompt contract approvals, (3) guaranteed availability of construction materials, (4) timely availability of any additional resources needed to carry out the project, and (5) eligibility of U.S.-flag vessels for ocean freight tenders that call for delivery at Safaga's port. The text of the Memorandum of Understanding with the GOE covering these arrangements is attached as Annex E.

## IX. EVALUATION

9.01 The evaluation will determine: (a) whether construction and operation of the silo complex was carried out in accordance with the approved design and technical standards; (b) whether the Project purposes were met and, (c) whether the turnkey-type construction contract and special Project Implementation Office materially contributed to satisfactory implementation of the Project. One evaluation should be made mid-way through implementation and a second evaluation after the complex is put into commercial operation.

## X. DRAFT AUTHORIZATION

10.01 A draft project authorization is attached in Annex D.

10.02 Conditions Precedent:

Standard conditions precedent will be incorporated into the Grant Project Agreement. In addition, contracts with U.S. firms for engineering services and turnkey construction services. A detailed implementation plan will also be required, including all the implementation arrangements set out in the Memorandum of Understanding (Annex E).

10.03 Decennial Liability:

To protect the U.S. construction contractor from extended liability, a clause will be added to the Standard Grant Agreement to exempt the Safaga Project from the G.O.E. decennial liability statute.

10.04 Congressional Notification:

A Congressional Notification (CN) was sent to the Congress on August 10, 1982 for the amount of \$80.0 million in grant funds.

ANNEX A

UNCLASSIFIED

ACTION COPY

Department of State

INCOMING TELEGRAM

PAGE 01 CAIRO 21378 261253Z 5351 025312 AID7291 ACTION AID-00

ACTION OFFICE NEPD-04 INFO NEDP-03 NETC-04 FM-02 ENGR-02 NEE-03 AGRI-01 RELO-01 TELE-01 MAST-01 /022 A2 026 INFO OCT-00 INR-10 EB-08 NEA-07 AMAD-01 INRE-00 /061 W 070601 261259Z /38

O 261246Z AUG 82 FM AMEMBASSY CAIRO TO SECSTATE WASHDC IMMEDIATE 1254

UNCLAS CAIRO 21378

AIDAC

E. O. 12356: N/A SUBJECT: SAFAGA, GRAIN SILOS II, GOE REQUEST FOR ASSISTANCE

1. FOR FRASER, NE/PE. OFFICIAL GOE REQUEST FOR AID FINANCING OF GRAIN SILOS II PROJECT AT SAFAGA RECEIVED TODAY. TEXT IS AS FOLLOWS: QUOTE:

DEAR MR. CYLKE:

THE MINISTRY OF INVESTMENT AND INTERNATIONAL COOPERATION AND THE MINISTRY OF SUPPLY HEREBY RECONFIRM THEIR INTERES IN OBTAINING U. S. DDLLAR FUNDING FOR THE ENGINEERING, EQUIPMENT AND CONSTRUCTION OF THE 100,000 METRIC TON GRAIN STORAGE COMPLEX AT THE PORT OF SAFAGA. PLEASE CONSIDER THIS COMMUNICATION AS A RECCNFIRMATION OF OUR REQUEST FOR US GRANT FUNDS IN THE AMOUNT OF U. S. DOLS 80 MILLION FOR THIS PROJECT.

THE GOVERNMENT OF EGYPT IS PREPARED TO COMMIT THE NECESSARY FUNDS OF LOCAL CURRENCY, TOWARDS THE SAFAGA SILO COMPLEX TO BE INCLUDED IN THE BUDGETS OF THE COMING FINANCIAL YEARS. THIS COMMITMENT IS IN ADDITION TO OTHER CAPITAL CONTRIBUTIONS ALREADY BEING PROVIDED BY OUR GOVERNMENT, SUCH AS LAND, ELECTRICITY AND WATER, AND RAIL AND ROAD SYSTEMS.

WITH REGARD TO THE MANAGEMENT REQUIREMENTS, WE ARE ALSO PREPARED TO EXECUTE THE MEMORANDUM OF UNDERSTANDING REGARDING IMPLEMENTAT' C. OF THE SAFAGA GRAIN SILO COMPLEX. WE BELIEVE THIS WILL ESTABLISH AN EFFECTIVE IMPLEMENTATION PROCEDURE FOR THIS PROJECT. YOUR FAVORABLE CONSIDERATION AND ACCEPTANCE OF THIS REQUEST FOR FUNDING FOR THE SAFAGA GRAIN SILO FACILITY WOULD BE MOST APPRECIATED.

SINCERELY YOURS,

SGD. FOUAD ISKANDAR ADMINISTRATOR OF THE DEPARTMENT FOR ECONOMIC COOPERATION WITH U. S. A. END QUOTE.

2. COPIES BEING POUCHED. PRECHT

5C(2) - PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A. includes criteria applicable to all projects. Part B. applies to projects funded from specific sources only: B.1. applies to all projects funded with Development Assistance Funds, B.2. applies to projects funded with Development Assistance loans, and B.3. applies to projects funded from ESF.

CROSS REFERENCES: IS COUNTRY CHECKLIST  
UP TO DATE? HAS  
STANDARD ITEM CHECKLIST  
BEEN REVIEWED FOR  
THIS PROJECT?

Yes

A. GENERAL CRITERIA FOR PROJECT

1. FY 1982 Appropriation Act  
Sec. 523; FAA Sec. 634A;  
Sec. 653(b).

(a) Describe how authorizing and appropriations Committees of Senate and House have been or will be notified concerning the project;

(b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that amount)?

(a) Congressional notification will be made in accordance with usual AID practice.

(b) The intended obligation is within the level of funds appropriated for Egypt for FY 1982.

2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be  
(a) engineering, financial and other plans necessary to carry out the assistance

(a) Yes

- and (b) a reasonably firm estimate of the cost to the U.S. of the assistance? (b) Yes
3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance? No further legislative action is required.
4. FAA Sec 611(b); FY 1982 Appropriation Act Sec. 501. If for water or water-related land resource construction, has project met the standards and criteria as set forth in the Principles and Standards for Planning Water and Related Land Resources, dated October 25, 1973? (See AID Handbook 3 for new guidelines.) N/A
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project? Yes. See Annex C.
6. FAA Sec 209. Is project susceptible of execution as part of regional or multilateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. The project is not susceptible to execution as part of a regional or multilateral project.

7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to:
- (a) increase the flow of international trade;
  - (b) foster private initiative and competition; and
  - (c) encourage development and use of cooperatives, and credit unions, and savings and loan associations;
  - (d) discourage monopolistic practices;
  - (e) improve technical efficiency of industry, agriculture and commerce; and
  - (f) strengthen free labor unions.
- By opening Port Safaga to grain of U.S. source/origin, the Project will: encourage the shipment of U.S. grain to Egypt; foster competition between U.S. grain exporters and foreign shippers; foster private initiative in the creation of service industries at Port Safaga; encourage savings and the development of the cooperatives by local workers by providing new sources of income and new employment opportunities; improve technical efficiency in handling of grain shipments; and, strengthen labor unions by creating new opportunities for employment and employees associations.
8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).
- All goods and services financed under the grant will be of U.S. source and origin.
9. FAA Sec. 612(b), 636(h);  
FY 1982 Appropriation  
Act Sec. 507. Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.
- The Egyptian Government will provide local currencies necessary for the project, approximately \$30.2 U.S. dollars.
10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?
- All U.S.-owned excess foreign currency in Egypt is now devoted to non-project purposes.

11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise? Yes
12. FY 1982 Appropriation Act Sec. 521. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity? N/A
13. FAA 118(c) and (d). Does the project comply with the environmental procedures set forth in AID Regulation 16? Does the project or program take into consideration the problem of the destruction of tropical forests? Yes  
N/A
14. FAA 121(d). A Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (dollars or local currency generated therefrom)? N/A

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance  
Project Criteria

a. FAA Sec. 102(b), 111, 113, 281(a). Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?

N/A

b. FAA Sec. 103, 103A, 104, 105, 106, . Does the project fit the criteria for the type of funds (functional account) being used?

N/A

c. FAA Sec. 107. Is emphasis on use of appropriate technology

N/A

(relatively smaller, cost-saving, labor using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has latter cost-sharing requirement been waived for a "relatively least developed" country)?

N/A

e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"? (m.o. 1232.1 defined a capital project as the "construction, expansion, equipping or alteration of a physical facility or facilities financed by AID dollar assistance of not less than \$100,000, including related advisory, managerial and training services, and not undertaken as part of a project of a predominantly technical assistance character

N/A

f. FAA Sec. 122(b). Does the activity give reasonable promise of

N/A

contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

g. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental processes essential to self-government.

N/A

2. Development Assistance Project  
Criteria (Loans Only)

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, at a reasonable rate of interest.

N/A

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

N/A

3. Project Criteria Solely  
for Economic Support Fund

a. FAA Sec. 531(a). Will this assistance promote economic or political stability? To the extent possible, does it reflect the policy directions of FAA Section 102? Yes  
Yes

b. FA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities? No

c. FAA Sec. 534. Will ESF funds be used to finance the construction of the operation or maintenance of, or the supplying of fuel for, a nuclear facility? If so, has the President certified that such use of funds is indispensable to nonproliferation objectives? No

d. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made? N/A

5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement

1. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed? Yes
  
2. FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him? Yes
  
3. FAA Sec. 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will commodities be insured in the United States against marine risk with such a company? N/A
  
4. FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a). If offshore procurement of agricultural commodity or product is to be financed, N/A

is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)

5. FAA Sec. 604(g). Will construction of engineering services be procured from firms of countries otherwise eligible under code 941, but which have attained a competitive capability in international markets in one of these areas? N/A
  
6. FAA Sec. 603. Is the shipping excluded from compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates? Yes
  
7. FAA sec. 621. If technical assistance is financed, to the fullest extent practicable will such assistance, goods and professional and other services be furnished from private enterprise on a contract basis? If the facilities of other Federal agencies will be utilized, are they particularly Yes

suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?

N/A

8. International Air Transport. Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will provision made that U.S. carriers will be utilized to the extent such service is available?

Yes

9. FY 1982 Appropriation Act Sec. 504. If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States?

N/A

B. Construction

1. FAA Sec. 601(d). If capital (e.g., construction) project, are engineering and professional services of U.S. firms and their affiliates to be used?

Yes

2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?

Yes

3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million (except for productive enterprises in Egypt that were described in the CP)?

Yes

C. Other Restrictions

1. FAA Sec. 122(b). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter? N/A
2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights? Yes
3. FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries? Yes
4. Will arrangements preclude use of financing:
  - a. FAA Sec. 104(f). (1) To pay for performance of abortions as a method of family planning or to, motivate or coerce persons to practice abortions; Yes
  - (2) to pay for performance of involuntary sterilization as a method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization; (3) to pay for any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; Yes
  - (4) to lobby for abortion? Yes

- b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property? Yes
- c. FAA Sec. 660. To provide training or advice or provide any financial support for the police, prisons, or other law enforcement forces, except for narcotics programs? Yes
- d. FAA Sec. 662. For CIA activities? Yes
- e. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained. Yes
- f. Continuing Resolution Sec. 504. To pay pensions, annuities retirement pay, or adjusted service compensation for military personnel? Yes
- g. FY 1982 Appropriation Act Sec. 505. To pay U.N. assessments, arrearages or dues? Yes
- h. FY 1982 Appropriation Act Sec. 506. To carry out provisions of FAA section 209(d) (Transfer of FAA funds to multilateral organizations for lending)? Yes
- i. FY 1982 Appropriation Act Sec. 510. To finance the export of nuclear equipment fuel, or technology or to train foreign nationals in nuclear fields? Yes
- j. FY 1982 Appropriation Act Sec. 511. For the purpose

of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?

No

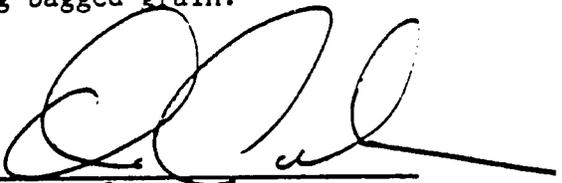
k. FY 1982 Appropriation Act Sec. 515. For publicity or propaganda purposes within U.S. not authorized by Congress?

Arrangements will preclude financing for these purposes.

ANNEX C

CERTIFICATION PURSUANT TO  
SECTION 611(e) OF THE  
FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED

I, Owen Cylke, the principal officer for the Agency for the International Development in Egypt, having taken into account, among other things, the maintenance and utilization of projects in Egypt previously financed or assisted by the United States, do hereby certify that in my judgement Egypt has both the financial capability and human resources capability effectively to maintain and utilize the capital assistance to be provided for the construction of a grain unloading and storage facility at Safaga, Egypt, as well as to effectively maintain and utilize portable conveyors for handling bagged grain.

  
\_\_\_\_\_  
Owen Cylke

8/23/82  
\_\_\_\_\_  
Date

ANNEX D

DRAFT

PROJECT AUTHORIZATION

Name of Country: Arab Republic of Name of Project : Safaga Grain Silos  
Egypt Complex

Number of Project: 263-0165

1. Pursuant to Section 531 of the Foreign Assistance Act of 1961, as amended (the "Act"), I hereby authorize the Safaga Grain Silos Complex Project (the "Project") for the Arab Republic of Egypt ("Cooperating Country") involving planned obligations not to exceed Eighty Million United States Dollars (\$80,000,000) in grant funds for project activities continuing over a period of five years from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing the foreign exchange and local currency costs of goods and services required for the Project.

2. The Project will assist the Cooperating Country to provide adequate and efficient handling and storage facilities at Safaga, Egypt, for imported grain destined primarily for the people of Upper Egypt.

3. The Project Agreement, which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. regulations and delegations of authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

a. Source and Origin of Goods and Services

Goods and services, except for ocean shipping, financed by A.I.D. under the Project shall have their source and origin in the United States, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Project shall, except as A.I.D. may otherwise agree in writing, be financed on flag vessels of the United States.

b. Conditions Precedent to Disbursement

(1) First Disbursement

Prior to any disbursement or to the issuance of any commitment documents under the Grant, the Cooperating Country shall, except as the Parties may otherwise agree in writing, furnish to A.I.D. in satisfactory form and substance:

(a) A statement of the names and titles of the persons who will act as the representatives of the Cooperating Country, together with a specimen signature of each person specified in such statement;

(b) Evidence that the Ministry of Supply has entered into an engineering services contract with a U.S. firm; and

(c) A detailed implementation plan adequate to carry out the project.

(2) Additional Disbursements

Prior to any disbursement or to the issuance of any commitment documents under the Grant for the procurement of goods and services other than engineering services, the Grantee shall, except as the Parties may otherwise agree in writing, furnish to A.I.D., in satisfactory form and substance, evidence that the Ministry of Supply has entered into a turnkey-type contract with a U.S. firm for the construction and procurement of commodities required for the Project.

---

Administrator

---

Date

MEMORANDUM OF UNDERSTANDING  
REGARDING  
IMPLEMENTATION OF  
THE  
SAFAGA GRAIN SILO COMPLEX

The Government of Egypt ("GOE"), acting through the Ministry of Investment and International Cooperation and the Ministry of Supply, and the Government of the United States of America, acting through the Agency for International Development ("A.I.D."), recognize that each party will be responsible for certain actions to implement the Safaga Grain Silo Project, one of the sub-activities of the Grain, Tallow, Oil and Fats Project (A.I.D. Project 263-0037).

In order to clarify the responsibilities of the parties and their commitments to prompt and effective implementation of this activity, this memorandum sets forth mutual understandings regarding the subject Project as follows:

1. The Government of the United States of America is currently considering assistance of \_\_\_\_\_ Million United States Dollars (\$ ,000,000) and the Government of Egypt is considering providing \_\_\_\_\_ Million United States Dollars (\$ ,000,000) or local currency equivalent in funds and in-kind contributions for the design, construction and supervision services of a 100,000 metric ton grain silo

facility at Port Safaga, Egypt. A detailed cost estimate upon which these commitments are made is attached as Annex A.

2. The GOE will provide, on a timely basis, any additional funds that may be required to carry out the Project. The Special Account will be used to the extent necessary to cover any local currency costs which have not been budgeted.
3. To expedite the decision-making and review process for a more effective implementation procedure, the GOE agrees to take the following management actions:

- a. Contract Review. The Ministry of Supply will expedite the review and approval of contract documents. Where approval of the High Purchasing Committee is required, the Ministry of Supply will endeavor to obtain such approval within a sixty (60) day period.

- b. Project Implementation Office. The Ministry of Supply will establish a Project Implementation Office headed by a full time Project Manager vested with authority to direct the work and to put into place all financial mechanisms (including requests for Letters of Commitment and opening Letters of Credit) to support the Project. The Project Manager will expedite review and approval of all implementation documents to keep the Project on schedule. The Project Implementation Office will include the necessary staff to carry out this function, including at a minimum a full time Financial Officer and an on site Construction Superintendent.

c. Engineering Services. The GOE will enter into an engineering services contract with a U.S. consulting engineering firm which will be vested with authority to supervise, on behalf of the GOE under the direction of the Construction Superintendent, construction works in accordance with the design.

d. Meetings. The Project Implementation Office will hold monthly meetings with A.I.D., the consulting engineer, and construction contractors to review the status of project implementation and to resolve any impediments to the scheduled completion of the Project.

4. Procurement and construction of the Safaga Grain Silo Project will be undertaken by a single 'whole of the works' (turnkey) U.S. construction contractor. Eligible local firms will be given preferential consideration in the award of subcontracts. To enhance timely completion of the Project, the construction contract will contain a liquidated damages provision to cover delayed completion and an incentive bonus clause should the Project be completed ahead of schedule.
5. The GOE agrees to provide the timely supply of certain construction materials as needed, according to the construction schedule, including cement and concrete reinforcing bar (re-bar). In the alternative, the GOE will include in its IFB's a unit price estimate in Egyptian Pounds for such construction materials. To the extent that the actual purchase price of such materials exceeds the unit prices quoted, the GOE agrees to utilize the Special Account to fund such excess costs. If such construction

materials are not locally available when needed according to the construction schedule, as certified by the Consulting Engineer, the GOE will authorize the conversion of local currency available for such purpose in the contract to foreign exchange and will provide additional amounts of its own foreign exchange to timely procure such materials off-shore.

6. The turnkey contractor will construct support facilities for all Egyptian personnel involved in the construction and management of the Project to expedite start-up activities, enhance recruitment of an adequate labor force and facilitate timely implementation of the Project.
7. Equipment and materials acquired outside of Egypt for the Project will be shipped directly to Port Safaga; where this is not feasible, the Ministry of Supply will arrange for prompt barge transshipment of such materials from the port of offloading to Port Safaga.
8. Non-Egyptian employees and personnel of the companies engaged in the Project will be in the number needed to implement the Project. The Parties recognize, however, that non-Egyptian personnel may be subject to entry screening procedures required to meet the national security needs of Egypt.

9. The GOE agrees that ocean-freight tenders for shipments to Port Safaga will include U.S. flag vessels as eligible ocean carriers. The GOE also agrees that grain of U.S. origin may be delivered and off-loaded at Port Safaga.

Agreed to this \_\_\_\_\_ day of July, 1982.

FOR THE UNITED STATES OF AMERICA

FOR THE GOVERNMENT OF EGYPT

\_\_\_\_\_  
ACTING DIRECTOR, AID

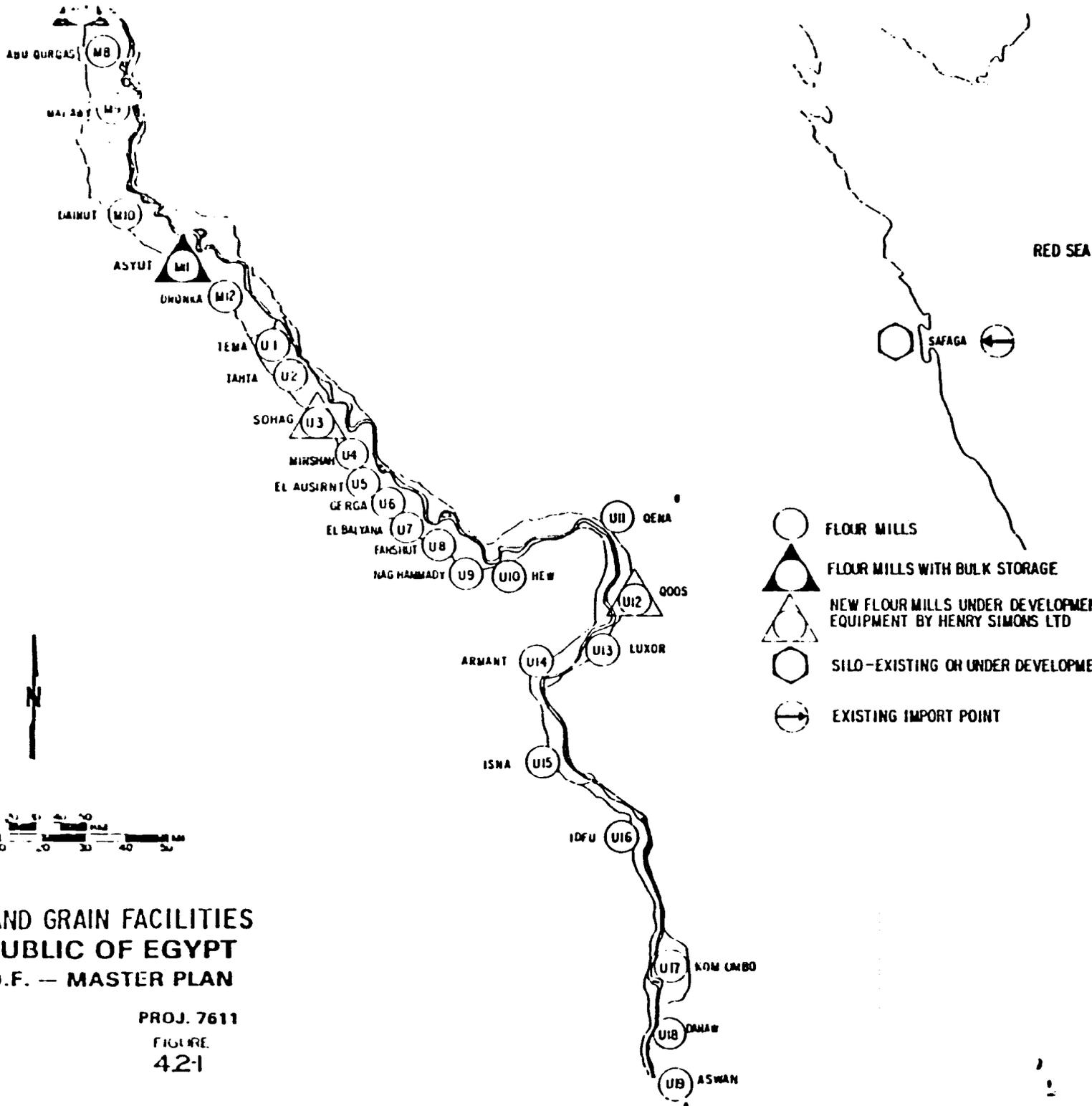
\_\_\_\_\_  
SENIOR UNDER SECRETARY OF  
STATE FOR ECONOMIC  
COOPERATION WITH THE USA

\_\_\_\_\_  
DATE

\_\_\_\_\_  
DATE

\_\_\_\_\_  
MINISTER OF SUPPLY

\_\_\_\_\_  
DATE



**FLOUR MILLS AND GRAIN FACILITIES  
ARAB REPUBLIC OF EGYPT  
GRAIN & T.O.F. — MASTER PLAN**

BRUCE & WELCH  
INTERNATIONAL

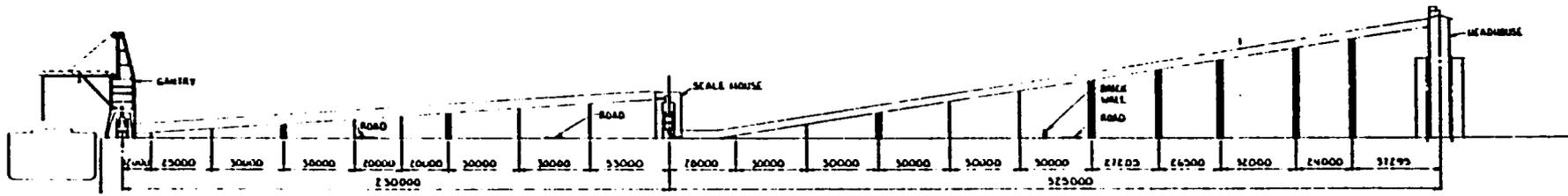
SEPTEMBER, 1978

PROJ. 7611

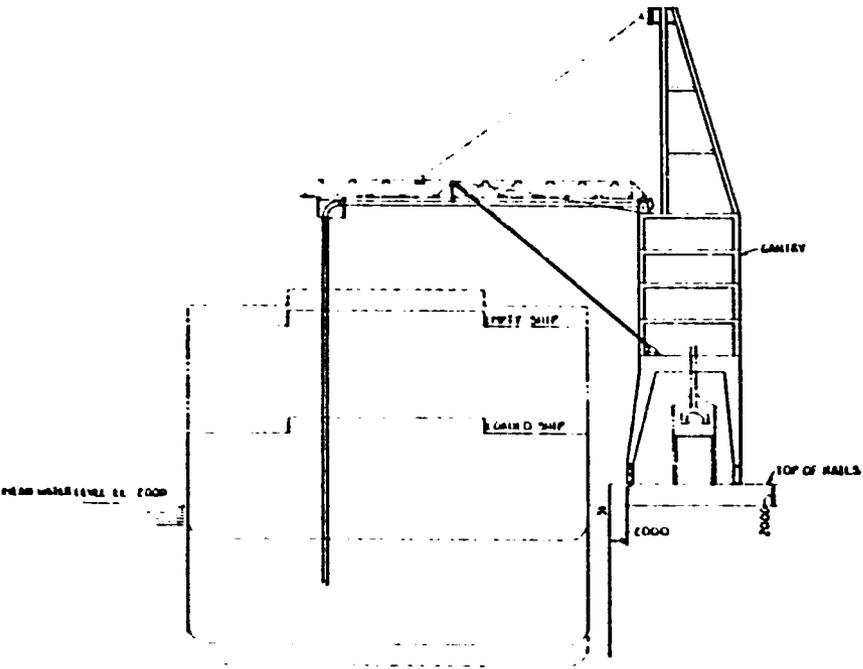
FIGURE  
421







RECEIVING BRIDGE ELEVATION  
SCALE 1/1000

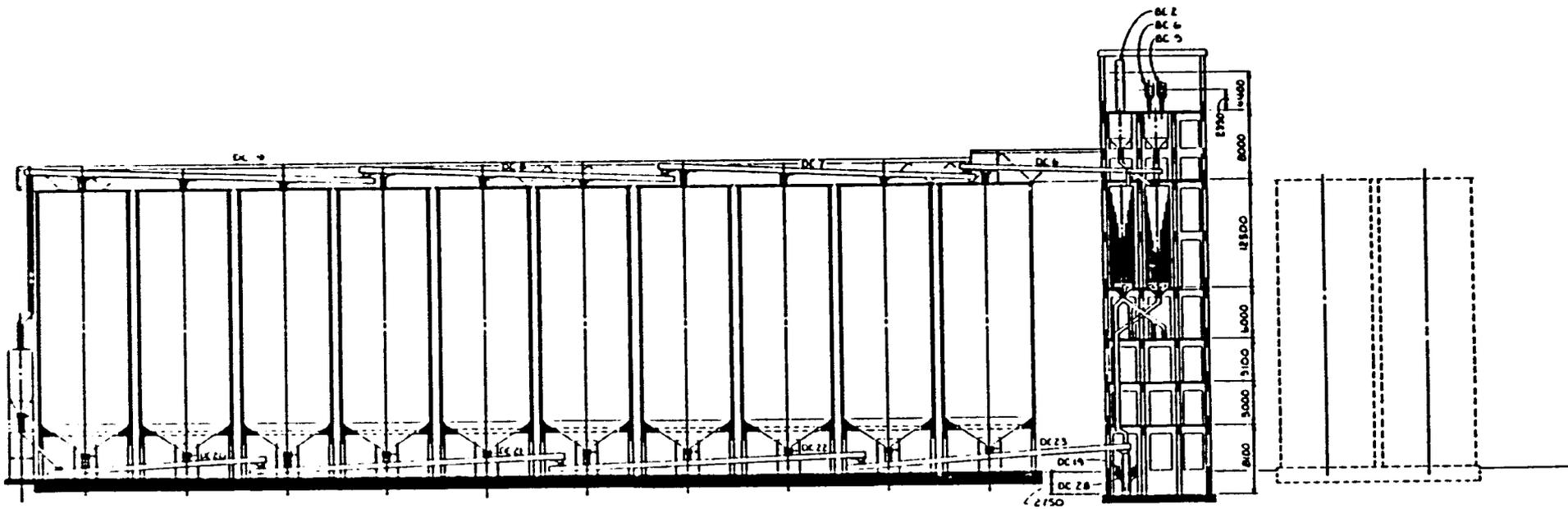


SECTION THRU GANTRY  
SCALE 1/150

2

PLATE 3

NOT TO BE USED  
FOR CONSTRUCTION



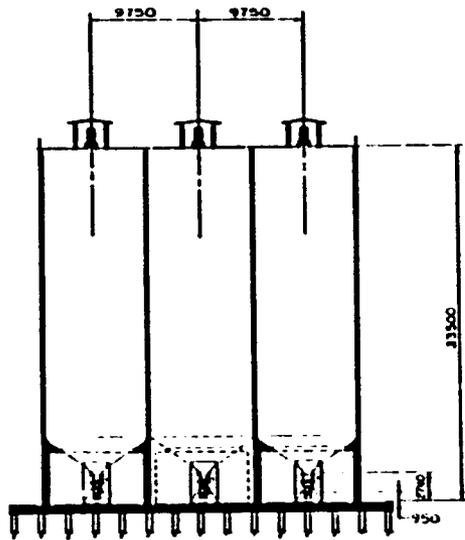
SECTION 3

3

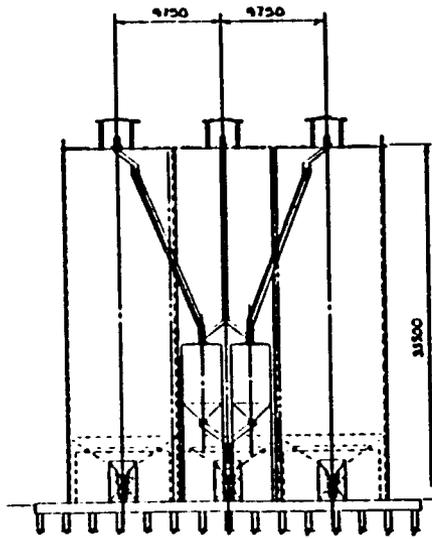
ANNEX G

NOT TO BE USED  
FOR CONSTRUCTION

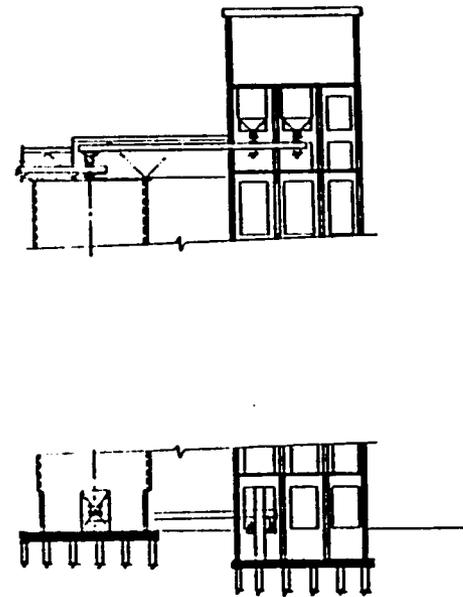
<p>GENERAL AUTHORITY FOR SUPPLY COMMODITIES MINISTRY OF SUPPLY SAFAGA</p>	<p>SAFAGA</p>	<p>SCALE 1:200 SCALE TO MILLIMETERS</p>	<p>BLACK &amp; VEATCH INTERNATIONAL PROJECT 0152</p>	<p>GENERAL AUTHORITY FOR SUPPLY COMMODITIES MINISTRY OF SUPPLY SAFAGA</p>	<p>LONGITUDINAL SECTION PORT SILO</p>	<p>4A-2003</p>
---	---------------	---	--	---	---	----------------



SECTION 4  
REF DWG. 4A-2004  
4A-2002



SECTION 5  
REF DWG. 4A-2004  
4A-2002



SECTION 6  
REF DWG. 4A-2004  
4A-2002

4

ANNEX 5

NOT TO BE USED  
FOR CONSTRUCTION

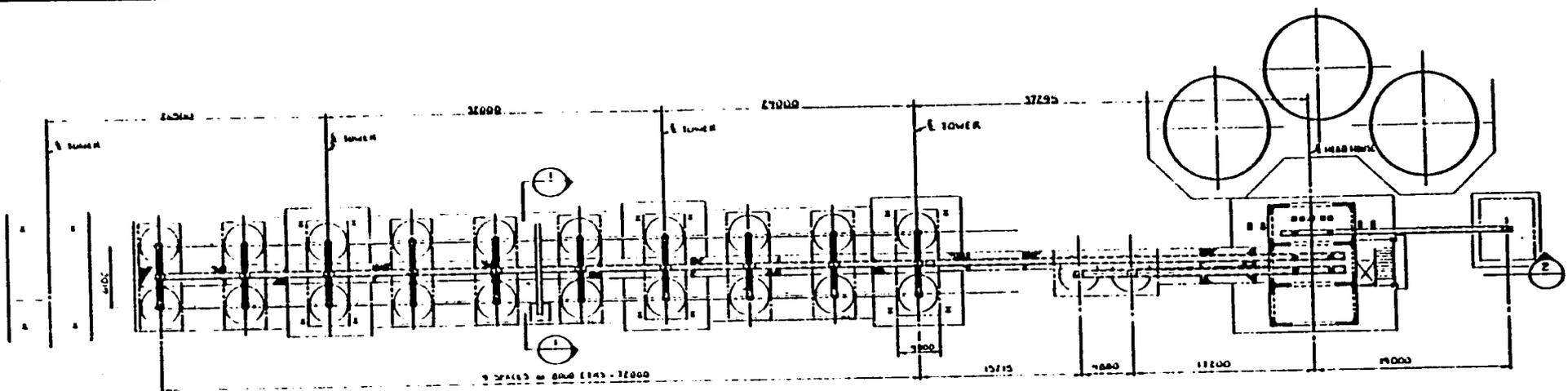
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



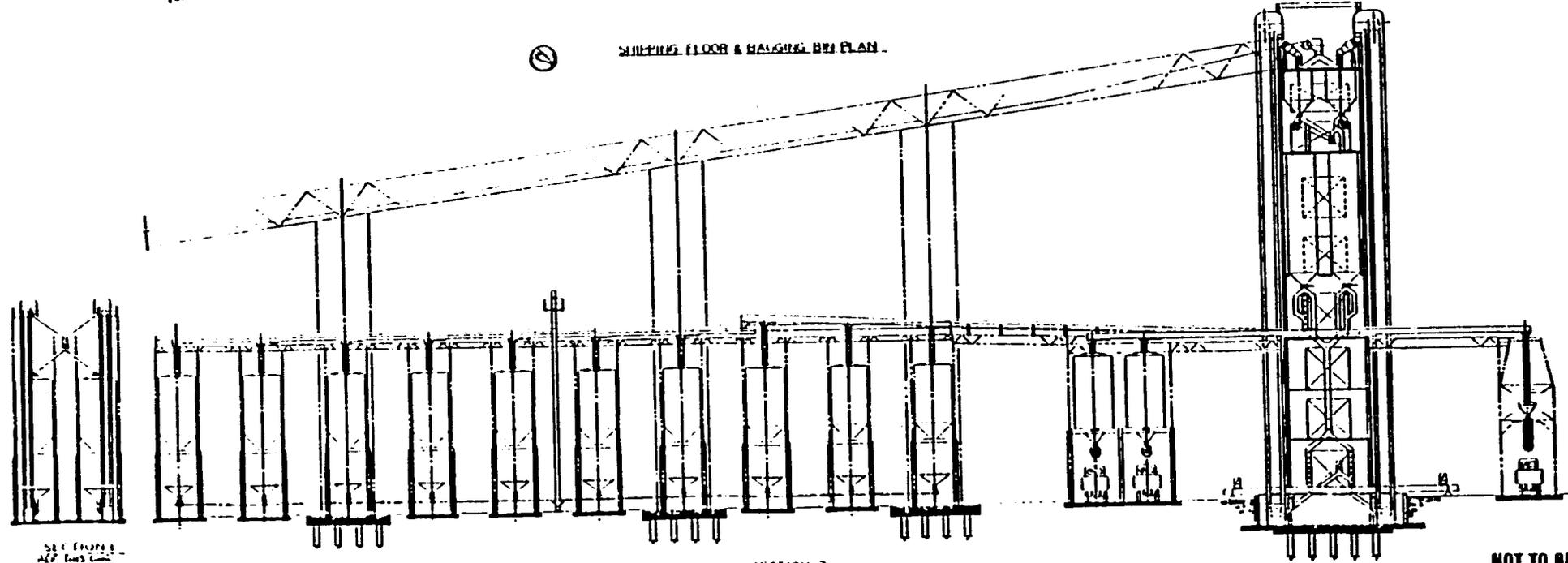
**BLACK & VEATCH INTERNATIONAL**  
FORMER BVE

**GENERAL AUTHORITY FOR SUPPLY COMMODITIES**  
MINISTRY OF SUPPLY  
ARAB REPUBLIC OF EGYPT  
SAPADA  
PORT SUEZ  
CROSS SECTIONS

4A-2004



SHIPPING FLOOR & HANGING BAY PLAN



SECTION 1  
REF THIS DRAW

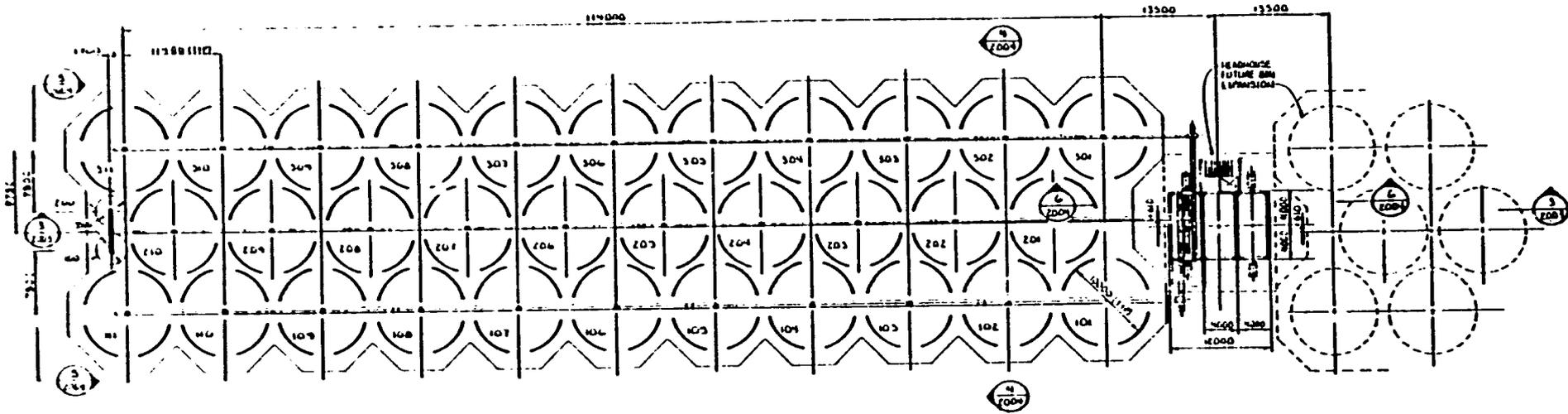
SECTION 2  
REF THIS DRAW

NOT TO BE USED  
FOR CONSTRUCTION

5

ANNEX C

<p>GENERAL AUTHORITY FOR SUPPLY COMMUNITIES MINISTRY OF SUPPLY SAFAGA</p>	<p>SCALE: 1/100</p>	<p><b>BLACK &amp; VEATCH INTERNATIONAL</b> PORT SAID</p>	<p>GENERAL AUTHORITY FOR SUPPLY COMMUNITIES MINISTRY OF SUPPLY SAFAGA</p>	<p>PLAN AND SECTIONS HANGING AREA</p>	<p>4A-2005</p>
---	---------------------	--	---	---	----------------



6

ANNEX G

NOT TO BE USED FOR CONSTRUCTION

<p>GENERAL ARRANGEMENT OF PLAN GROUND LEVEL</p>	<p>SCALE 1/8" = 1'-0"</p> <p>SCALE</p>	<p><b>BLACK &amp; VEATCH INTERNATIONAL</b> FOUNDED 1902</p>	<p><b>GENERAL AUTHORITY FOR SUPPLY COMMUNITIES</b> DIVISION OF SUPPLY</p>	<p>GENERAL ARRANGEMENT OF PLAN GROUND LEVEL</p>	<p>4A-2002</p>
---	--	---	---	---	----------------





TABLE I COSTS & BENEFITS OF SAFAGA PROJECT

BASE CASE (MILLION DOLLARS)

YEAR	PROJECT COSTS		EST. PROJECT BENEFITS				NET CASH FLOW		
	TOTAL CAPITAL	OPER. & MAINT.	TOTAL	WHEAT LOSS	DEMURAGE	TRANS-PORT		SACKS & LABOR	
1	2.04	2.04						-2.04	
2	26.6	26.6						-26.6	
3	34.8	34.8						-34.8	
4	28.5	28.5						-28.5	
5	7.6	7.6						-7.6	
6	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
7	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
8	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
9	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
10	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
11	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
12	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
13	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
14	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
15	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
16	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
17	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
18	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
19	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
20	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
21	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
22	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
23	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
24	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
25	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
26	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
27	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
28	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
29	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
30	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
31	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
32	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
33	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
34	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
35	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
36	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
37	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
38	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
39	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
40	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
41	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
42	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
43	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
44	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768
45	.1		.1	23.868	7.488	7.07	5.76	3.55	23.768

IRR 17.45%  
+++++

RESIDUAL -.03082

TABLE I. COSTS & BENEFITS OF SAFAGA PROJECT

LOW CASE (MILLION DOLLARS)

YEAR	PROJECT COSTS		EST. PROJECT BENEFITS				NET CASH FLOW		
	TOTAL CAPITAL	OPER. & MAINT.	TOTAL	WHEAT LOSS	DEMURAGE	TRANS-PORT		SACKS & LABOR	
1	2.04	2.04						-2.04	
2	26.6	26.6						-26.6	
3	34.8	34.8						-34.8	
4	28.5	28.5						-28.5	
5	7.6	7.6						-7.6	
6	.1		.1	20.53	5	6.22	5.76	3.55	20.43
7	.1		.1	20.53	5	6.22	5.76	3.55	20.43
8	.1		.1	20.53	5	6.22	5.76	3.55	20.43
9	.1		.1	20.53	5	6.22	5.76	3.55	20.43
10	.1		.1	20.53	5	6.22	5.76	3.55	20.43
11	.1		.1	20.53	5	6.22	5.76	3.55	20.43
12	.1		.1	20.53	5	6.22	5.76	3.55	20.43
13	.1		.1	20.53	5	6.22	5.76	3.55	20.43
14	.1		.1	20.53	5	6.22	5.76	3.55	20.43
15	.1		.1	20.53	5	6.22	5.76	3.55	20.43
16	.1		.1	20.53	5	6.22	5.76	3.55	20.43
17	.1		.1	20.53	5	6.22	5.76	3.55	20.43
18	.1		.1	20.53	5	6.22	5.76	3.55	20.43
19	.1		.1	20.53	5	6.22	5.76	3.55	20.43
20	.1		.1	20.53	5	6.22	5.76	3.55	20.43
21	.1		.1	20.53	5	6.22	5.76	3.55	20.43
22	.1		.1	20.53	5	6.22	5.76	3.55	20.43
23	.1		.1	20.53	5	6.22	5.76	3.55	20.43
24	.1		.1	20.53	5	6.22	5.76	3.55	20.43
25	.1		.1	20.53	5	6.22	5.76	3.55	20.43
26	.1		.1	20.53	5	6.22	5.76	3.55	20.43
27	.1		.1	20.53	5	6.22	5.76	3.55	20.43
28	.1		.1	20.53	5	6.22	5.76	3.55	20.43
29	.1		.1	20.53	5	6.22	5.76	3.55	20.43
30	.1		.1	20.53	5	6.22	5.76	3.55	20.43
31	.1		.1	20.53	5	6.22	5.76	3.55	20.43
32	.1		.1	20.53	5	6.22	5.76	3.55	20.43
33	.1		.1	20.53	5	6.22	5.76	3.55	20.43
34	.1		.1	20.53	5	6.22	5.76	3.55	20.43
35	.1		.1	20.53	5	6.22	5.76	3.55	20.43
36	.1		.1	20.53	5	6.22	5.76	3.55	20.43
37	.1		.1	20.53	5	6.22	5.76	3.55	20.43
38	.1		.1	20.53	5	6.22	5.76	3.55	20.43
39	.1		.1	20.53	5	6.22	5.76	3.55	20.43
40	.1		.1	20.53	5	6.22	5.76	3.55	20.43
41	.1		.1	20.53	5	6.22	5.76	3.55	20.43
42	.1		.1	20.53	5	6.22	5.76	3.55	20.43
43	.1		.1	20.53	5	6.22	5.76	3.55	20.43
44	.1		.1	20.53	5	6.22	5.76	3.55	20.43
45	.1		.1	20.53	5	6.22	5.76	3.55	20.43

IRR 15.5%  
←←←←← \*\*\*\*\*

RESIDUAL -.08002

TABLE I COSTS & BENEFITS OF SAFAGA PROJECT  
HIGH CASE (MILLION DOLLARS)

YEAR	PROJECT COSTS		EST. PROJECT BENEFITS					NET CASH FLOW	
	TOTAL CAPITAL	OPER. & MAINT.	TOTAL	WHEAT LOSS	DEMURAGE	TRANS-PORT	SACKS & LABOR		
1	2.04	2.04						-2.04	
2	26.6	26.6						-26.6	
3	34.8	34.8						-34.8	
4	28.5	28.5						-28.5	
5	7.6	7.6						-7.6	
6	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
7	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
8	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
9	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
10	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
11	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
12	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
13	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
14	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
15	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
16	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
17	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
18	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
19	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
20	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
21	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
22	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
23	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
24	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
25	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
26	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
27	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
28	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
29	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
30	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
31	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
32	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
33	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
34	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
35	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
36	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
37	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
38	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
39	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
40	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
41	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
42	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
43	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
44	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1
45	.1		.1	30.2	12.5	8.39	5.76	3.55	30.1

IRR 20.85%  
\*\*\*\*\*

November 1, 1981

# memorandum

NE/PD/PDS, Stephen F. Lintner, Bureau Environmental Coordinator *SFL*

Egypt - Grain, Tallow, Oil and Fats Storage Project, Amendment No. 1  
(263-0037) - Environmental Clearance.

NE/PD/Egypt, B. Donald Reese, Project Chairperson

I have reviewed Amendment No. 1 to the subject project and find that implementation of environmental protection safeguards identified in the Environmental Assessment prepared for this project will fulfill the requirements of 22 CFR 216, "A.I.D. Environmental Procedures."

cc:

GC/NE:TCarter

AID/Cairo:W McAleer, Mission Environmental Officer

AID/Cairo:LMHager, Senior Legal Advisor

AID/Cairo:ADeGraffenried, Mission Project Officer



## ANNEX J

### ENVIRONMENTAL ASSESSMENT

#### SAFAGA PORT SILO

##### 1.0 Project Description:

The project consists of the construction of a 50,000 metric ton capacity silo complex to be built near the Red Sea port city of Safaga. The silo will be of reinforced concrete construction and will have a head house, central panel, duct control system, aeration system, fumigation equipment, weighing facilities and a sacking facility rated at 7,000 metric tons per year. Three self-propelled ship unloading gantries each equipped with two 100 metric ton pneumatic unloading systems will be provided. An office building and laboratory, maintenance shop and workers welfare building will also be constructed.

##### 2.0 Environmental Impacts:

###### 2.1 General:

The project significantly increases the capacity of the Port of Safaga to handle grain imports and provides with this a controlled storage capacity, which does not presently exist. There are no modifications to the harbor consequent on this Project, nor will any dredging or land fills be required. The environmental factors considered in the placement of a grain storage and handling facility at the Port of Safaga include air, water, flora and fauna. Of these factors, air quality maintenance is the most significant because atmospheric emissions are the greatest source of potential environmental damage. Consequently, most of the discussions will be devoted to this. Resource linkages; physical, sociocultural and public health impacts have been considered, the areas of concern are discussed below:

2.2. Resources Linkages:

2.2.1 Effects on Aquatic Life:

Since no changes to the port will result from the construction, there would be no direct changes. Frequency of ship visits to port will increase, more efficient handling will reduce the turn around time. The visits, per se, will not significantly change the aquatic environment existing. The negligible amounts of dust and solid wastes which can be anticipated at the proposed facility are not sufficient to pose an environmental hazard to underground water sources or seawater. This statement presupposes ordinary precautionary measures being undertaken and the rare occurrence of extraordinary accidents, the risks are negligible if prompt corrective actions, including clean-up, are undertaken.

2.2.2. Site Selection:

The site has been chosen to make the most efficient use of the existing quay, and to provide adequate space for rail and truck handling. It has been chosen so that adequate room will be available for future expansion of the storage facilities. The site is not vulnerable to natural disaster. No alternate uses of the site have been proposed.

2.2.3. Adjacent Land Use:

Because this project provides facility for food component handling, subsequent development will have to be designed to prevent contamination.

2.2.4. Utilities:

Safaga is a small isolated port, with few facilities. The loan agreement requires that all utility requirements will be provided by the GOE as necessitated by the project construction schedule.

2.2.5. Transportation:

Safaga is at the junction of the north south coastal road and a road to the Nile at Qena. The road to Qena is through mountains and will be the channel to the Upper Egypt flour mills. The road is adequate for traffic generated by

this project. A rail line is under construction from Qena to Safaga. At this time, construction completion is about 20 percent. It is assumed that this transport mode will be available shortly after the completion of this project. It is concluded that present and future transport facilities are adequate and that the project requirements, per se, will not affect the environment.

2.3. Physical Aspects:

2.3.1. Pollution:

There are three pollution modes of concern, (a) air pollution, (b) marine pollution from the imported goods and (c) pollution from transport modes used.

Atmospheric emissions from a grain storage and handling facility result from the handling or movement of grains. Most of the sources are of a "fugitive" nature, that is, emissions which become airborne because of ineffectual or nonexistent pollutant containment systems, rather than those which penetrate an air-pollution control device. Emissions vary considerably according to specific operations being performed and, consequently, are subject to day-to-day variations. The main particulate emission sources of a grain handling and storage facility are:

- a. Grain unloading
- b. Grain loading
- c. Grain drying
- d. Grain cleaning
- e. Garner and scale bins
- f. Elevator legs
- g. Belt conveyors
- h. Transfer points
- i. Bin vents

Table 1 presents data on rates of dust emission from grain handling operations at terminal port facilities. These data are based upon limited observations and should be considered as indications rather than absolute values.

TABLE 1  
PARTICULATE EMISSIONS FROM GRAIN HANDLING AT  
A TERMINAL PORT GRAIN FACILITY

<u>Emission Source</u>	<u>Range of Emissions (kg/mt)</u>
Shipping and Receiving	
Rail	0.50 - 1.50
Truck	0.40 - 1.74
Ship	0.50 - 1.74
Transferring, Conveying, etc.	1.00 - 1.24
Screening and Cleaning	2.50 - 3.47
Drying	2.00 - 4.00

The amount of dust emitted during various operations depends on the type of grain being handled, quality of the grain, moisture content of the grain, and the speed of the conveying equipment. Grain dust emitted from these sources is composed of approximately 70 percent organic material, about 17 percent free silicon dioxide, and specific materials in the dust including particles of grain kernels, spores of smuts and molds, insect debris, pollens, herbicides, and dirt. Grain dust suspended in the air inside the grain facility consists mainly of highly dispersed particles measuring less than 5 $\mu$ m in diameter.

Dust emitted from grain handling operations may cause irritation of skin and eyes or respiratory ailments. At normal low ambient particulate concentrations (100 mg/m<sup>3</sup>) no evidence exists for adverse effects of healthy people. However, persons with pre-existing respiratory disorders may be affected by continued exposure to concentrated levels of particulate grain dust.

Inside the confined areas of the facility, dust emissions create most housekeeping, working environment, and safety problems than atmospheric pollution problems. Of particular significance is the safety problem. Grain dust is potentially explosive if exposed to open flame or electrical spark and safeguards to prevent this possibility are mandatory.

Spontaneous combustion is another potential hazard which must be guarded against.

Outside the facility, dust emissions create more of an appearance problem than an actual threat to surrounding flora and fauna because of the high proportion of organic materials involved. With proper dust control systems installed, nearly 90 percent of the dust emissions from a grain facility can be effectively captured, using fabric filter devices or cyclones at points where major emissions are generated. The approximate 10 percent which cannot be captured is nominal (about 1.819 kg/MT of grain handled) and much of this precipitates inside the storage facility. Consequently, the resultant environmental atmospheric pollution is not generally considered a problem provided dust control devices are regularly maintained.

For the proposed facility, it is required that dust control devices be installed at certain critical points, particularly where grain is dumped from one conveyor to another as it is moved deside to the storage facility. The collected dust may be added to the grain stream or sold as animal feed. The more common practice is to add the dust back into the grain stream, since much of the material is not considered a contaminant.

The plant will be designed to contain grain dust within controlled covered, handling equipment and silos. There will remain interface points from ship to unloader and from plant to distribution mode (truck, rail), where grain dust will be present. These areas are localized, the dust itself is organic and will have no long lasting or harmful effects, except where inhaled by workers with existing respiratory problems.

Grain dust is organic and would not be harmful to marine life. In the unlikely case of a major spill, the movement and volume of water in the area will dissipate the spill content quickly.

Of more concern is pollutants resulting from POL spills or dumping the ship waste. These cannot be controlled directly by this project, since it is dependent on the port controller's power to impose appropriate disciplines.

2.3.2 Local Law:

Law No. 93/1962 states that, "It is permitted to discharge all kinds of wastewaters into the sea if they do not contain any matter which may harmfully affect the beaches, navigation establishments, fish and other aquatic life". Plant discharges will not violate the law.

2.3.3. Safeguards Against Fauns:

Design of the storage and handling facilities will specifically prevent the access of rodents and insects to the grain as far as this is economically and technically possible. The application of fumigants will be designed into the system. This will considerably reduce the present losses due to rodents and insects. One of the more serious environmental concerns of a grain handling and storage facility is related to the grain itself. Since the grain is often processed into products for consumption by humans and animals, it is essential that measures be undertaken to avoid potential spoilage from contamination. Excessive moisture is the principal source of contamination, and preventive measures should be undertaken where exposure can be anticipated. Storage spaces and grain conveyors should be watertight. Temperature detection equipment should be installed in the storage bins for readily accessible observation. In the event of spoilage, contaminated grain should be promptly removed from the immediate area of the facility.

2.4. Plant Safety:

The initial layout of the facility will identify those points in the handling and storing procedures which are hazardous from either a physical aspect (accidents) or a general health aspect (inhalation of fumes, dust, etc.). Particular attention will be given to the possibility of explosions where concentrations of flour dust might accumulate. The design will specifically provide safeguards against the identified hazards.

2.5. Socio-Cultural Aspects:

Safaga is a small port town. The project includes three houses for management personnel. It is known that at busy periods in the port, workers are transported from nearby

areas and returned there on completion of the job. Ship unloadings are sporadic. However, the port has been used increasingly for grain shipments. When this project is completed continuous work will be available throughout the year. Work force availability is not a problem and a growth of the area is expected. This project will contribute to this growth trend but, in itself, will not significantly change present patterns. There are no mores or monuments which would be affected by this project.

2.6. Public Health Aspects:

2.6.1. Pollution Effects on Local Inhabitants:

The facility is being designed to minimize dust in the air or settling on the water. Of the amount that may escape the area of the facility itself will receive the greatest deposit. Dust will have no significant effect on local inhabitants.

2.6.2 Disease Vectors:

Pathways for disease vectors could be spores of smuts and found on imported grain. Insects and rodents also are carried via ship. The port is already being used and there is no evidence that these channels of possible disease have caused problems. However, plant design and operating procedures will address this potential problem. An increase in use of the port will increase the potential.

2.6.3. Worker Safety:

Grain dust is a potential explosive and poses a major hazard if exposed to open flames or electrical spark. A related hazard is spontaneous combustion. The design and operating procedures will provide safeguards against these eventualities and will state the statistical possibility of major accident with the design details proposed.

2.6.4. Chemical Storage:

The primary chemical used in an insecticide, "Phostoxin". A special storage area will be provided for this and other chemicals which may be used. In addition, correct procedures will be provided for the use of the chemicals.