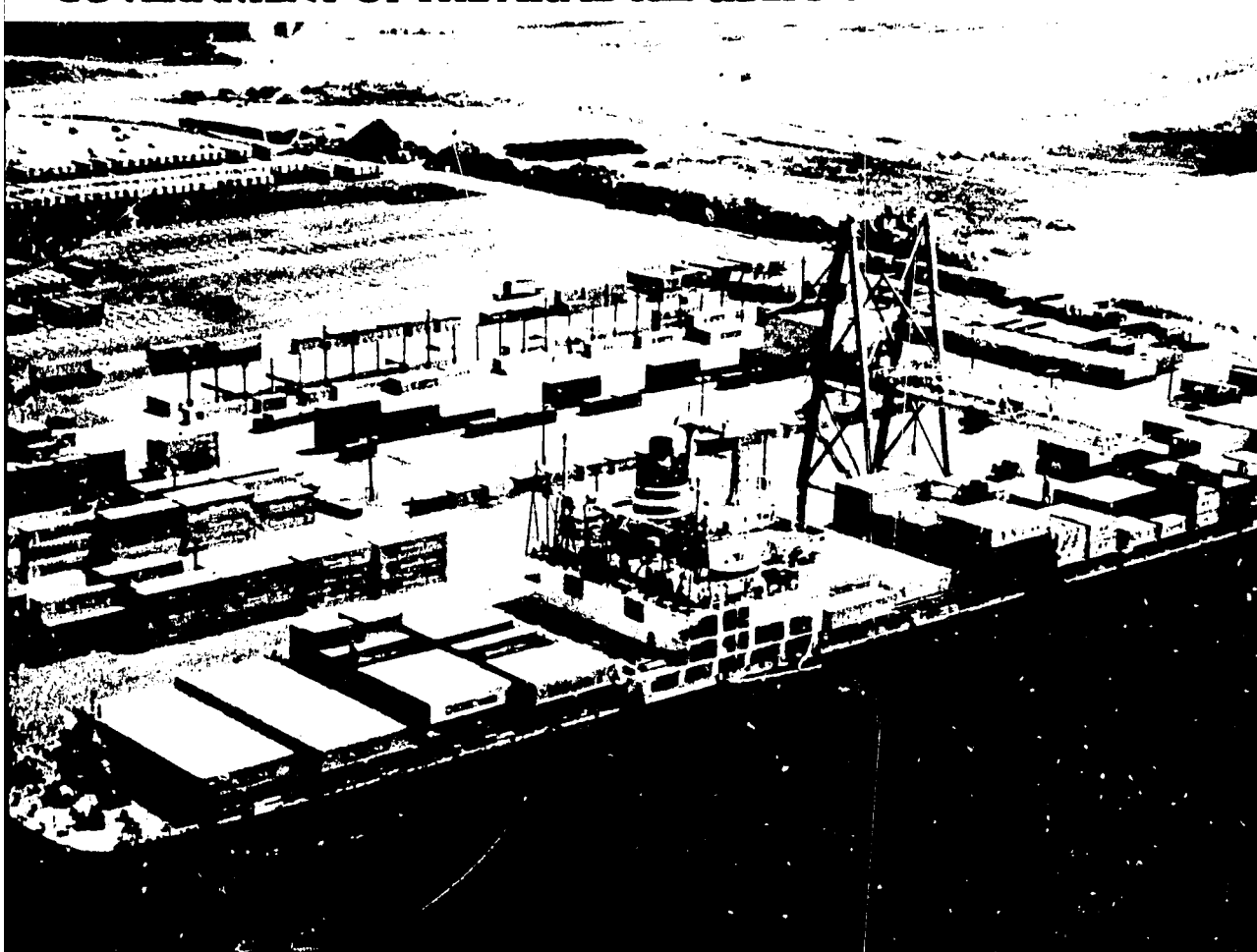
# Feasibility Analysis and General Review for the Adabiya Free Zone

**Prepared for**

**GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES**
**MINISTRY OF ECONOMY AND ECONOMIC COOPERATION**
**GOVERNMENT OF THE ARAB REPUBLIC OF EGYPT**



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## EXECUTIVE SUMMARY

The purpose of the Free Zone project (No. 263-0042) is twofold: 1) to offer a comprehensive basis upon which the Free Zone Sector of the General Authority for Investment and Free Zones could improve its operations; and 2) to evaluate the feasibility of a new free zone at Adabiya (Suez). This summary reviews the highlights of the Phase I analysis and presents the results of the Phase II feasibility study.

### BACKGROUND - THE FREE ZONE CONCEPT AND ITS ROLE IN EGYPT

Free zones throughout the world are considered "public utilities" in that they are designed to serve the needs of the particular host country in which they are located; specifically, they serve those needs that relate to the attraction and retention of commerce, employment, and free foreign currency, as well as the introduction of new technology which will benefit the overall economic goals of the host country.

Within Egypt, the Open Door Policy was initiated to stimulate foreign investment for the express purpose of developing the national economy. As a major part of this policy, both public and private free zones have been established within the country under the legal guidelines of Law 43, as amended in 1977.

By the end of 1979, private free zone projects in operation represented a total capital of L.E. 98.6 million. At that time also, the newly-created four public free zones--El Nasr City, El Ameria (Alexandria), Port Tawfik at Suez, and Port Said--represented capital expenditures of L.E. 95.1 million (Table ES-1).

Despite a slowing down of new activities in the public free zones since 1976, progress to date has been encouraging. With completion of the necessary infrastructure, these zones are anticipated to experience a significantly increased growth rate and provide a viable and increasingly important means for providing foreign investment and general local employment. A summary of free zone projects awaiting infrastructure completion as of November 1979 is attached (Appendix 9).

### EVALUATION OF THE EXISTING FREE ZONES

The simultaneous development of the four public free zones has not been without difficulties. The major problems faced by the free zones are as follows:

#### Financial

The uncertainty of funding the infrastructure at each free zone has led to considerable delays. These delays have reduced investor certainty and have had an adverse effect upon planned investments.

TABLE ES-1

EGYPT FREE ZONE ANALYSIS

CUMULATIVE CAPITAL INVESTMENT IN THE PRIVATE INDUSTRIAL SECTOR

1970 - 1984

(LE MILLIONS)

| Year | Non-Law 43 Companies (Approved) | Law 43 Companies (In Production) | | | Total | Pct. Public Free Zones Investment To Total |
|---|---|---|---|---|---|---|
| | | Public Free Zones | Private Free Zones | Inland Investments | | |
| 1970 | 5.0 | - | - | - | 5.0 | - |
| 1971 | 6.9 | - | - | - | 6.9 | - |
| 1972 | 8.6 | - | 0.5 | - | 9.1 | - |
| 1973 | 16.7 | - | 10.3 | 3.7 | 30.7 | - |
| 1974 | 19.1 | - | 17.6 | 8.4 | 45.1 | - |
| 1975 | 67.1 | 22.7 | 59.5 | 9.9 | 159.2 | 14.3 |
| 1976 | 94.8 | 56.5 | 87.8 | 10.9 | 250.0 | 22.6 |
| 1977 | 106.8 | 67.2 | 97.1 | 39.1 | 310.2 | 21.7 |
| 1978 | 164.0 | 74.8 | 99.9 | 62.5 | 401.2 | 18.6 |
| 1979 | 169.0 | 95.1 | 98.6 | 122.4 | 485.1 | 19.6 |
| 1980 (Est.) | 224.0 | 106.4 | 98.6 | 162.4 | 591.4 | 18.0 |
| 1981 (Est.) | 264.0 | 117.2 | 98.6 | 202.4 | 682.2 | 17.2 |
| 1982 (Est.) | 305.0 | 126.3 | 98.6 | 242.4 | 772.3 | 16.4 |
| 1983 (Est.) | 355.0 | 140.6 | 98.6 | 282.4 | 876.6 | 16.0 |
| 1984 (Est.) | 424.0 | 159.6 | 98.6 | 312.4 | 994.6 | 16.0 |

TABLE ES-1 (Continued)

EGYPT FREE ZONE ANALYSIS

CUMULATIVE CAPITAL INVESTMENT IN THE PRIVATE INDUSTRIAL SECTOR

1970 - 1984

(LE MILLIONS)

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Notes: No projection for GAFI investments have previously been made.
Private free zones may be absorbed into the public free zones over the next five years, depending upon location factors (i.e., can the private free zone project operate other than in their existing locations). The year 1979 was the first year that the cumulative capital investments of the private free zones decreased.

Source: 1970-1977 data: Ministry of Industry and Mining, General Organization for Industry: Industrial Activities of the Private Sector, August 1978.
1978-1984 data: derived from Ministry of Planning: The Five Year Plan, 1978-1982, August 1977; and from General Authority for Investment and Free Zones: Annual Report, February 1980.
General Authority for Investment and Free Zones. Inland investments include only industrial projects. They are projected to maintain a LE 40 million annual growth. Free zone data reflects approved investment totals for 1975-1979. 1980-1984 projected using RSH anticipated land absorption in free zones. Private free zone data assumes no further granting of new permits.

## Organization and Staffing

The Free Zone Sector has a high dependence upon the General Authority for management approvals and promotion. This is considered to have contributed to delays and has hindered possible development opportunity. The Department of Engineering Service currently has too little staff and does not have sufficient authority to aggressively implement the development programs, which are critical at this phase in the free zone's growth. Further complications arise with regard to the management of contractor activities. Other organizational problems include a need for more staff in the accounting functions; and the degree of autonomy of each free zone, resulting in regional versus national development.

## Engineering

It was noted that the existing free zones appear to be overbuilt in terms of infrastructure investment. This has been caused by a lack of development phasing and over-design by the engineers and contractors under commitment to the Free Zone Sector. In addition, there has been a general lack of coordination among contractors in implementing a phased development of construction activities. The existing "cost-plus" system has resulted in overruns in costs and time schedules.

## Operations

There are a number of operational areas recommended for review, including: customs - free zone coordination; investor application process; rental rates and duty collections; free zone - Free Zone Sector communications; and licenses and penalties.

In summary, the major recommendations for creating attractive investment situations for free zone development were.

1. Finishing construction of infrastructures at existing free zones.

2. Initiation of a sound promotional campaign for investor attraction.

3. Training for engineering and operations personnel.

4. Development of alternative funding mechanisms to insure continuity for development.

5. More autonomy and authority to match responsibilities.

The Phase I report noted that each free zone appears to compete on a regional basis for similar industries. It was recommended that the regional emphasis be combined with an overall targeting of preferred industries for the free zones, with each free zone promoting its particular advantages for certain types of activities.

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The existing infrastructure at each free zone, as well as proposed additional infrastructure, should be phased in a stronger manner, thus avoiding excessive pre-investment and also allowing more timely acceptance of investors' projects. Special emphasis was given to Alexandria in this regard because of its large land area. Specifically, it was recommended that a brief analysis of Alexandria's in-place infrastructure be immediately performed in order to accurately define the needed timing and monies for completion. It was recommended that the USAID be approached for grant/soft loan support to complete Alexandria on logical, phased basis.

It was also recommended that the Port Said Free Zone infrastructure be put into place prior to the initiation of any additional expansion or landfill operations. This is necessary in order to present a completed product to potential investors. If the infrastructure completion is delayed because funds are not readily available from the Government, the Free Zone Sector was encouraged to approach USAID for support of equipment needs at the free zones and to approach commercial institutions for local infrastructure support.

The General Authority for Investment and Free Zones has acted upon the first three (3) recommendations in order to begin to improve its operations. USAID response has been encouraging with regard to possible infrastructural equipment support and training support.

ISMAILIA FREE ZONE

During the course of the Adabiya analysis, a new free zone in Ismailia was considered by the General Authority. This free zone was analyzed, on a prefeasibility basis, by the Contractor.

The Ismailia Governorate was advised that the most optimistic analysis indicated only marginal financial and economic benefit from a free zone. Instead, a land parcel oriented to domestic industrial programs combined with a small area reserved for possible free zone activity offered less risk for Ismailia resources.

While the free zone analysis indicated a financial return of approximately 5 percent over the 20-year analysis period, it must be remembered that the free zone concept has no operational background in Ismailia and, thus, the case for its development is subject to argument. Industrial activity can be traced and projected in Ismailia, so that the concept and growth patterns for this development activity are more reliable and substantive.

By combining the proposed free zone site with the current Ring Road Industrial Estate, Ismailia has the opportunity to direct industrial growth to one sector of its urban area, to manage that growth in an efficient manner, to conserve financial resources for infrastructural development, to plan for and to control support service requirements, and to minimize pollution problems.

The steps recommended for Ismailia are as follows:

1. The creation of a management organization for the Ring Road industrial area. This would include a Director and a skeleton staff to perform the key functions such as promotion, engineering, and tenant services.

2. Development of a definitive master plan. A development plan should be designed to encourage moderate sized industry based on Ismailia's strengths (canned fruits, juices, small components, etc.). The master plan should combine the existing and proposed industrial sites for reasonable, cost-effective phasing. Consulting services can accomplish this, and would be most effectively performed utilizing an international consultant providing technical assistance to a local consultant, thereby ensuring continuity, cost-control, timely performance, and assisting the institutionalization process for Egypt's small consultant base.

3. Develop a utility service program. To encompass both areas, the program should utilize the master plan results.

4. Promote and support the existing industrial area. Test future promotion and service programs with this site and utilize it to train staff for the future expansion area.

## ADABIYA FEASIBILITY ANALYSIS

### Analysis

The Phase II report analyzes the Adabiya site 13 km from the City of Suez for its potential as a free zone. An analysis of competition, location, industry, employment, construction, and operating requirements provide essential inputs to this program. This analysis concludes that a well planned and promoted free zone can create substantial economic benefits to Egypt, and especially augment foreign exchange earnings.

The overall projections for the Suez City area development were prepared assuming a real national growth of 6.5 percent in gross domestic product. Based upon the 1975-1977 trends established by the Egyptian economy, this growth rate appears attainable over the near-term period. A committed policy to growth may allow the growth trend to continue through the year 2000.

Egypt's industrial growth may take the trend of resource development--intermediate manufacturing--final goods creation--emphasizing light manufacturing. The development of intermediate/final good manufacturing is in the best interest of the Suez economy. Investment in natural resource development is capital intensive; the processing and manufacturing functions are more labor oriented, and the area will have an abundant need of employment centers. Suez, like the rest of Egypt, will offer low wages, educated and skilled workers, and a relatively

rebuilt industrial base. The development of Suez as an industrial center will have positive benefits to the Egyptian economy.

Of Egypt's total manufacturing activity, exports have accounted for only a small percentage of total output. The location of Suez relative to the Red Sea Arab countries, to Africa, and as a port for Indian and Far Eastern imports and exports makes it extremely attractive for projections of future growth. Suez is by far the most developed of Egypt's Red Sea oriented ports. Competition for exports from the area will come from Jordan, with a small free zone, and from Saudi Arabia. Neither of these countries can compete with Egypt in terms of the basic educational level of its employees and the abundance of labor at extremely competitive prices.

The potential of the Suez area for major industrial growth is fully recognized in the 1976 Suez Master Plan. Moreover, a rapid development of manufacturing industry represents an essential element of the Plan. Industrial growth since 1974 warrants its optimism. In addition to the reconstructed oil refineries and fertilizer plant, a cement works and a textile spinning complex are nearing completion. The area offers considerable potential for large-scale power generation and petrochemical production. The proposed Adabiya Industrial Free Zone, if established, would provide a suitable base for export-oriented industries. Additional industry prospects are summarized in Table I-13. The report concludes that the proposed Adabiya Free Zone:

1) Is well located;

2) Can provide complementary services to industry;

3) Can provide a base for secondary and light manufacturing for domestic/export potential;

4) Has easy accessibility by major planned road development;

5) Serves as a divergent area for free zone activity allowing Port Tawfik to serve as a transit shipping point;

6) Is conveniently located to rail service;

7) Has electric infrastructure;

8) Affords sea frontage for possible cargo activity.

After developing the growth scenario predicted for the City of Suez, local Suez resources and industry which would provide a framework for local linkage to complement a free zone effort are analyzed. An assessment of Egypt imports, Egypt exports, and competitive country products is carefully developed. The purpose of this analysis is to eliminate further consideration of any industry or product with little area demand or with little Egyptian demand.



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As a first step, a detailed assessment of the imports to the various nations which could most likely be served by Adabiya are analyzed. These countries encompass the majority of the Central and Eastern Mediterranean Region, the Middle East, North and Northeastern Africa, and parts of Southwestern Asia. While other parts of the world could undoutedly be served by the Adabiya Free Zone, it is felt that these nations, especially those south of the Suez Canal would constitute its principal markets.

There are a large number of free zones already existing in the Mediterranean area, most of which have port facilities as well as pre-built structures for warehousing. A few of these also have pre-built factories and special cargo handling facilities. But the majority of Mediterranean free zones are now simply warehousing and distribution centers, whereas many of these were initially conceived to be industrial free zones. Although some have been successful in attracting industry, there are very few free zones south of the Suez Canal which would offer much competition to Adabiya. From an analysis of the free zones which would potentially compete with Adabiya, it has been ascertained that Adabiya's primary competition will likely come from Greece, Tunisia (to a lesser degree), and from other Egyptian free zones, primarily Alexandria. A detailed analysis is made of the principal exports from Greece, Tunisia, and Egypt in order to assess the magnitude of this competition.

Only relatively few free zones in the world have been successful in attracting a significant amount of industry. Fewer still have attracted any heavy industries. In targeting industries for Adabiya, therefore, it is very important that Egypt's economy and technology, as well as that of the nearby markets, be considered, for in the design and planning of a free zone, it is important to develop an understanding of the types of industries which will likely locate in the free zone, as different industries may require substantially different infrastructure to meet their needs. While it is impossible to determine exactly which industries will likely locate at Adabiya, an attempt has been made to target those industries which appear most appropriate for that free zone.

The methodology used is a proven technique for targeting industries for communities and industrial parks, and has direct application to free zones Industries are analyzed as to their suitability according to, in this case, ten different criteria. They are given values in each of these criteria as to their appropriateness for locating in the Adabiya Free Zone. All criteria are then weighted, as they are not of equal importance. These weights are then applied to the criteria values to determine a total score for that industry. Two separate weighting schemes are used as a sensitivity test, one emphasizing demand and the other emphasizing supply. The criteria utilized are:



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| | | | |
|---|---|---|---|
| 1. | Industry growth potential | 6. | Raw material availability |
| 2. | Wages | 7. | Market proximity |
| 3. | Job potential | 8. | Environmental effect |
| 4. | Production linkage | 9. | Infrastructural needs |
| 5. | Labor availability | 10. | Technology transfer |

Of 233 initial industrial types analyzed for inclusion in the free zone, 40 have been targeted by this methodology. These industries are only targets; that is, they are those which the free zone would have the best chance of attracting and upon which they should concentrate their marketing efforts. Also they would presumably have the most economic success in locating at the free zone. Not all of these industries will indeed be attracted, while some others that have not been targeted may come to the free zone and succeed. This compilation is only a list of those industries which seem to have the best chance of success and which are the most appropriate for the purposes of the free zone.

As an example of the usage of the criteria, sources for information on criteria No. 4, production linkages, included the Port Said Master Plan, the Suez Master Plan, the Suez Canal Regional Industrial Plan, and various lists of industries alrady existing or planned within Egypt, including those in other free zones. Those industries for which potential linkages could be identified within the portion of Egypt immediately surrounding Adabiya are given the highest rating for that category, while those which showed no linkages in the Adabiya region but some within Egypt are ranked relatively lower. Those for which virtually no linkages exist within Egypt are given a rating of 1 on a scale of 1 to 10.

To determine the approximate feddans which each of the industries would require in the free zone, an analysis was made of the size of existing plant sites in those 40 industries in the United States. The average plant sizes in the United States were lowered because of the need for less parking space and individual plant site landscaping in the Egyptian Free Zones than is usually the case in the United States. The resulting site sizes are then used as a guide to derive a preliminary design for the infrastructure of the free zone. As the most significant concentration of this effort concerns the first phase development, the listing of potential free zone industries is reduced to a 21 industry total which represents the highest rated industries.

It was assumed that the first phase should be designed to accommodate approximately half of the targeted industries. The 21 highest rated industries are likely to be the easiest to attract among those targeted, while the remainder will be easier to attract once complementary industries are operational and have demonstrated success. Also, these 21 industries are representative of the others in terms of their infrastructural needs, so if the first phase is designed to accommodate them, the free zone will actually be in a position to attract virtually any of the 40 which are targeted. The planning benefits from this analysis approach include:

- Better net-to-gross land utilization which maximizes infrastructural investment.

- A direction for the free zone and its ability to benefit the local economy.

- A maximization of local resources which can be used to generate foreign exchanges.

- Targeted export markets.

- Realistic assumptions for pro forma financial development.

The land area for the Adabiya Free Zone is currently owned by the Suez Governorate. The land area encompasses some 700 feddans, split by the proposed Suez-El Zafarane Road. An area of 431 feddans is located to the east of the proposed road while the remaining 269 feddans are located west of the proposed road. It is a recommendation of this report that the General Authority for Investment and Free Zones utilize only the 431 feddan parcel for this project. The reason for this recommendation lies in the anticipated net-to-gross land usage which can be otbtained when compared to reasonable absorption for the land. The remaining portion of the land may be considered for the future development of an industrial estate, although further analysis would be required to substantiate its usage in that manner.

The Adabiya Free Zone will support approximately 8,100 investor employees plus incubator unit personnel as discussed later. Although this employment total is less than the approximate 12,500 previously estimated for Adabiya by the Suez Master Plan, it appears reasonable and justifiable for all planning objectives.

Location of the Adabiya Free Zone site was determined during the Suez Master Plan Study prepared by Sir William Halcrow & Partners. The property is designated as "Heavy Manufacturing Free Zone." The selection justification in the Master Plan includes relationship to transportation, proximity to open water for the possible future development of shipping capability and available developed utilities. Secondary considerations include prevailing wind direction for the northwest, proximity to adjacent established industries, and the relatively close labor market.

From the engineering and construction viewpoints the proposed selection of the Adabiya site is appropriate for development. The technical survey concludes that sufficient building materials and equipment are available at relatively low transportation costs from Suez and from Cairo and availabilities of construction tradesmen and laborers in the City of Suez are sufficient to meet the needs of the Adabiya construction; however, the transport of construction workers to and from the City of Suez is a consideration in the estimated cost figures. It is proposed that the contractors provide personnel transportation to and from the site and, of necessity, such costs accrue and are included in the construction costs.

The Preliminary Site Plan developed as a result of the study (see the Appendices) includes a long-range planning procedure, in three (3)

phases. The Phase I development area is determined on the basis of its accessibility to existing overland transportation and utilities, giving due consideration to the contours and existing soil conditions in the location selected. Further consideration is given to the fact that the Phase I site should be accessible to the proposed future relocation of the Suez-El Zafarane Road.

Considering further the fact that there are existing railroad facilities near the Gulf, and that the construction of the new Suez-El Zafarane Road is not eminent, it was determined that the Phase II and Phase III development areas should center around existing road and railroad rights-of-way, nearby to the Gulf itself. This consideration is also appropriate for the long-term extended utilities requirements which would be necessary in a development of those phases. The general phasing of the development areas from north to south was determined by the study to be the most appropriate for the short-term and long-term cost considerations in utilities extensions.

It is rumored that the Adabiya site, like much of the land area bordering the Gulf of Suez, may contain buried land mines left from the 1956 hostilities. It is considered prudent and appropriate to investigate this possibility, and secure removal through the GOE Ministry of Defense if necessary, prior to performance of any construction or development activity.

The estimated gross area of Phase I is 156 feddans. Flexibility of planning provides that site development as small as 118 feddans is feasible without major redesign to the underground utility systems. In other words, the suggested layout of underground utilities is flexible to the point that incremental growth may be achieved with Phase I. The preliminary cost and size of each phase is shown below:

Adabiya Free Zone
Development Profile

| Phase | Feddans | Cost (LE 000) Local | Foreign | Total |
|---|---|---|---|---|
| 1 | 156 | 5,321 | 4,426 | 9,747 |
| 2 | 98 | 4,920 | 3,930 | 8,850 |
| 3 | 177 | 10,680 | 8,120 | 18,800 |
| Total | 431 | 20,921 | 16,476 | 37,397 |

The financial and economic analysis for the Adabiya Free Zone represents a multilevel approach toward determining benefits to the country. These levels are:

- The free zone as a real estate venture;
- The investor industries occupying the free zone; and

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- The off-site cost provisions serving to regionally support the free zone and its investors.

The first analysis level, that of the projected free zone feasibility, represents the focal point for the initial desirability of the project. The development of the free zone incurs substantial GOE investment in the form of infrastructure and generates very few direct job opportunities. By itself, an internal rate of return approximating 8 percent is generated. Thus, if a private firm were to completely develop and lease the free zone according to the projections made, it would not be a profitable venture. However, as the Government is not concerned with commercial profits, it can implement this program by itself, or it can engage a private firm to administer portions of the free zone operations without requiring additional financial resources.

It is the provision of this infrastructure and associated services, when combined with legal and financial incentives, which serves to attract the investor and private investment components. The investors' generation of employment levels, local purchases of materials, and foreign exchange generation represents the primary direct benefit which will accrue to Egypt. All economic analyses, based upon investor contribution, generate internal rates of return in the over 30 percent ranges or generate a cost/benefit ratio of approximately 2.5:1.0.

Because of the uncertainty involved with a program such as a free zone industrial estate, the economic benefits are analyzed to judge the effects of changes in key factors. It is found that:

- If the free zone only developed to 90 percent of its potential, the economic rate of return would not be reduced significantly only by 3 percent, or from a 38 percent return to a 35 percent return.

- If investors used 10 percent less labor than projected, only a 1 percent point reduction in the economic return would occur;

- If the potential investors actually bought 15 percent fewer goods from the local economy than projected, the economic return would be reduced by 2 percentage points.

- If internal prices were floated to market levels (subsidies eliminated), it is estimated that the economic return would be reduced by 5 percentage points.

Thus, there would need to be substantial reduction in all free zone activity before a reduction in Egypt's benefits would occur.

The third analysis level, that of off-site, indirect regional costs, is a speculative analysis and is less subject to rigorous definition than the first two direct cost layers. For example, it is not certain how much additional housing would have to be provided for migrating workers in Suez versus the employment of similarly unskilled laborers living in



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the area. Too, by focusing on a regional analysis, benefits accruing elsewhere due to the migration process are overlooked. If skilled labor moves from Cairo to Suez, it requires housing in Suez but vacates needed housing in Cairo; it consumes water and electric power in Suez but offsets the need for similar investment in Cairo; a school seat vacates in Cairo but is required in Suez. Based upon the magnitude of problems Cairo faces one could assume that the cost of providing services in Cairo would exceed those costs in Suez. However, this analysis assumes that there will be substantial incremental service cost to the Suez region which is not subject to regional credits elsewhere. Nonetheless these costs do not significantly effect the Ababiya Free Zone project as they result in lowering the economic return by only 1 percentage point.

The results of this analysis effort show a significant economic benefit to Egypt (Table ES-2). Indeed, the question of marginality effects only the Free Zone Sector's financial cash flow on the projects. This condition is to be expected as the free zone, by itself, is only a developed piece of real estate and offers little in the way of direct economic benefit. By developing the proprerty in a location convenient for shipping, utilizing an impressive labor stock and benefiting from substantial financial incentives, investors not now likely to locate in Egypt can be attracted.

## CONCLUSIONS

It is a conclusion of this report that a significant contribution can be made to the Suez regional economy through the successful development of the Adabiya Free Zone. It is also a conclusion of the report that a viable free zone program can be of major importance to Egypt in its attempts to rapidly expand industrial activity, achieve greater employment, improve foreign exchange, and encourage the development of support industry.

Table ES-1 shows the anticipated trend in free zone industry expenditures for the 1980 to 1984 period as well as prior reported expenditures. The free zones have averaged approximately 20 percent of the private investment totals for Egypt, but this percentage is anticipated to decline as other private sector development occurs. While private investment in industry is difficult to forecast, the fact remains that the free zones can, and will, serve as a magnet for foreign investment that might otherwise not be attracted.

## RECOMMENDATIONS

Based upon the analysis conducted in the Phase I and Phase II reports, the recommendations for a beneficial free zone program are as follows:

### 1980

1. Proceed with the completion of the Alexandria Phase I, Port Said, and Nasr City Free Zones as rapidly as possible. As

TABLE ES-2

ADABIYA FREE ZONE

PROJECT SUMMARY TABLE

(LE MILLIONS)

| Item | Graph Code | Cost Benefit Ratio | Present Value 0% | Present Value 10% | Present Value 20% | Internal Rate of Return (%) |
|---|---|---|---|---|---|---|
| **Financial Analysis** | | | | | | |
| Physical Results - Free Zone | A | 1.5:1.0 | 81.3 | -5.1 | -12.6 | 8 |
| Results to Free Zone with Concessionary Finance | B | | 70.2 | -2.0 | - 8.2 | 9 |
| Payback Period: 17.1 years | | | | | | |
| **Economic Analysis** | | | | | | |
| Free Zone Benefit Contribution | C | | 206.5 | 20.5 | - 2.5 | 19 |
| Benefit to Egypt - Free Zone and Investor | D | 2.5:1.0 | 1,607.2 | 251.6 | 57.9 | 38 |
| Sensitivity of Benefits: | | | | | | |
| - 10% Land Usage | | 2.3:1.0 | 1,343.4 | 209.4 | 47.7 | 35 |
| - 10% Labor Needs | | 2.3:1.0 | 1,441.0 | 224.4 | 51.3 | 37 |
| - 15% Local Material Purchases | E | 2.4:1.0 | 1,379.9 | 217.2 | 50.3 | 36 |
| - Shadow Price Impact | F | 1.5:1.0 | 912.1 | 137.0 | 27.7 | 33 |
| - Indirect Social Costs | | 2.4:1.0 | 1,574.3 | 245.6 | 56.1 | 37 |
| Payback Period: 6 years | | | | | | |

Source: Reynolds, Smith and Hills, 1980.

determined in other reports, an expenditure approximating US $20 million is estimated as required for completion of the relevant phases.

2. Reevaluate the Alexandria Free Zone to target its industry opportunity, its future infrastructural costs and its optimum size; also analyze its capacity and ability to serve inland industry with its existing and proposed infrastructural resources, thereby maximizing Egypt's return on its expenditures and resources.

3. Implement engineering and operational training for free zone employees; develop standard practices and procedures for all the free zones.

4. Assist in establishing local customs, security, and free zone dialogue to overcome existing rivalry and interpretation of existing regulations--a problem which is increasing.

<u>1980-1981</u>:

5. Proceed with the concept of Adabiya Free Zone development. This can be accomplished by:

   a) Obtaining assurances by the Ministry of Defense that land mines do not pose a threat to site development.

   b) Initiate soil boring detailed engineering for the Adabiya Phase 1 area of 156 feddans, complete the engineering effort.

   c) Determine a likely Director for the Adabiya-Port Tawfik Free Zone area. Assign a specific Free Zone Engineer to coordinate design requirements and on-site activity.

   d) Prepare promotional strategy for industry "targets." The most likely industry candidates are anticipated to be:

      Textiles, yarn, floor coverings, fabrics;
      Apparel articles;
      Tiles, refractory materials;
      Jewelry assembly;
      Footwear;
      Candles, toilet articles, artificial decorations;
      Travel goods;
      Rubber manufacture;
      Container repair;
      Vegetable, fruit preparation and blending;
      Oils and fats;
      Glassware;
      Electric power machinery repair and assembly.

e) Begin construction process when timely and appropriate based upon completion of other program aspects.

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6. Consider the establishment of a potential foreign investor employee training center which can upgrade selected employees as the investor's build/lease their facilities.

7. Create a temporary "full-service" organization which would allow the investor the option to delay its capital expenditures until it can judge the probable success of its venture. This organization would: a) utilize incubators, b) hire labor, c) coordinate with local government officials, and d) handle day-to-day problems. The investor would supply key supervisory people and prototype equipment over the time period, but could walk away if its programs show little capability of succeeding.

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# CHAPTER I
# SUEZ AREA RESOURCES

## GENERAL CHARACTERISTICS

This section of the Adabiya Feasibility Study is designed to acquaint the reader with the characteristics of the Suez area, its resources, its population and its growth prospects.

Located approximately 135 km east of Cairo and 163 km south of Port Said, Suez occupies a coastal site along the northern extremity of the Bay of Suez. Although severely damaged during the hostilities with Israel beginning in 1967, its key location at the southern terminus of the Suez Canal and the mineral wealth of its surrounding region has ensured the city's rapid recovery since 1974, and promises significant future growth.

## PHYSICAL CHARACTERISTICS

The physical characteristics surrounding Suez are diverse, comprising a mountainous range culminating in Gebel Ataka (871 m. above sea level), a narrow coastal plain, limited fertile areas, and broad expanses of desert. Most of the Suez urban area itself is located on flat land with an elevation less than 10 m. above sea level. The Ismailia Sweetwater Canal, Suez Creek and the Suez Canal delineate the city's eastern boundary. To the east of the Suez Canal lies the Sinai Desert, with its coastal plain rising slowly towards the plateau of Gebel Raha and the Mitla Pass, some 25 km distant.

To the north of the city extends relatively flat land, a small portion of which is cultivated--primarily along the Ismailia Sweetwater Canal and the western bank of the Suez Canal. It is in this sector that most of the recent urban residential development has occurred, and ample space is available for further anticipated growth.

To the southeast of Suez and connected by a road/rail causeway are the renovated marine facilities of Port Tawfik and its recently established free zone. Landfill operations are currently underway to expand this area.

The western border of Suez is strikingly bounded by the steep slopes of Gebel Ataka, adjacent to which a narrow coastal strip of flat land extends southwards. It is in this area that most of the major industrial development has occurred, with oil refining, fertilizer and future spinning activities located at the northern end of the coastal strip, just to the west of Suez, and limestone quarrying to the south. Further wide-scale industrial development is envisioned, including the Adabiya industrial free zone, expansion of Adabiya port facilities, and continued growth at the Ain Sukhna oil terminal facilities.

## NATURAL RESOURCES

### Mineral Exploitation

For most of this century, mineral exploitation and processing has been an important factor in the economic growth of the Suez area. A small oil refinery was established in 1911, and thereafter Suez developed as the oil refining center of Egypt. In 1948, the manufacturing of calcium nitrate fertilizer, based upon waste refinery gas and limestone, was begun, followed by the manufacture of ammonium sulphate in 1963. Although further expansion of mineral based activities was prevented by the outbreak of hostilities in 1967, the potential for future exploitation and processing remains substantial.

As shown in Figure I-1 and Table I-1, the Suez area offers a rich diversity of mineral deposits, among which are limestone, dolomite, white sand, gypsum, marble, kaolin, phosphate, feldspar and barytes. In addition, some ores are present, including manganese and zinc, as well as the nearby oil and gas fields of the Gulf of Suez and Red Sea.

The Gebel Ataka possesses thick and relatively pure strata of limestone and dolomite suitable for both building and industrial uses. Clay is also present in the Ataka region, and is of adequate quality for both cement and brick production. Sand and gravel deposits are common, although many are heavily charged with chlorides and sulphates, and may therefore be unsuitable for building construction aggregates. Table I-2 lists building material sources within the general region.

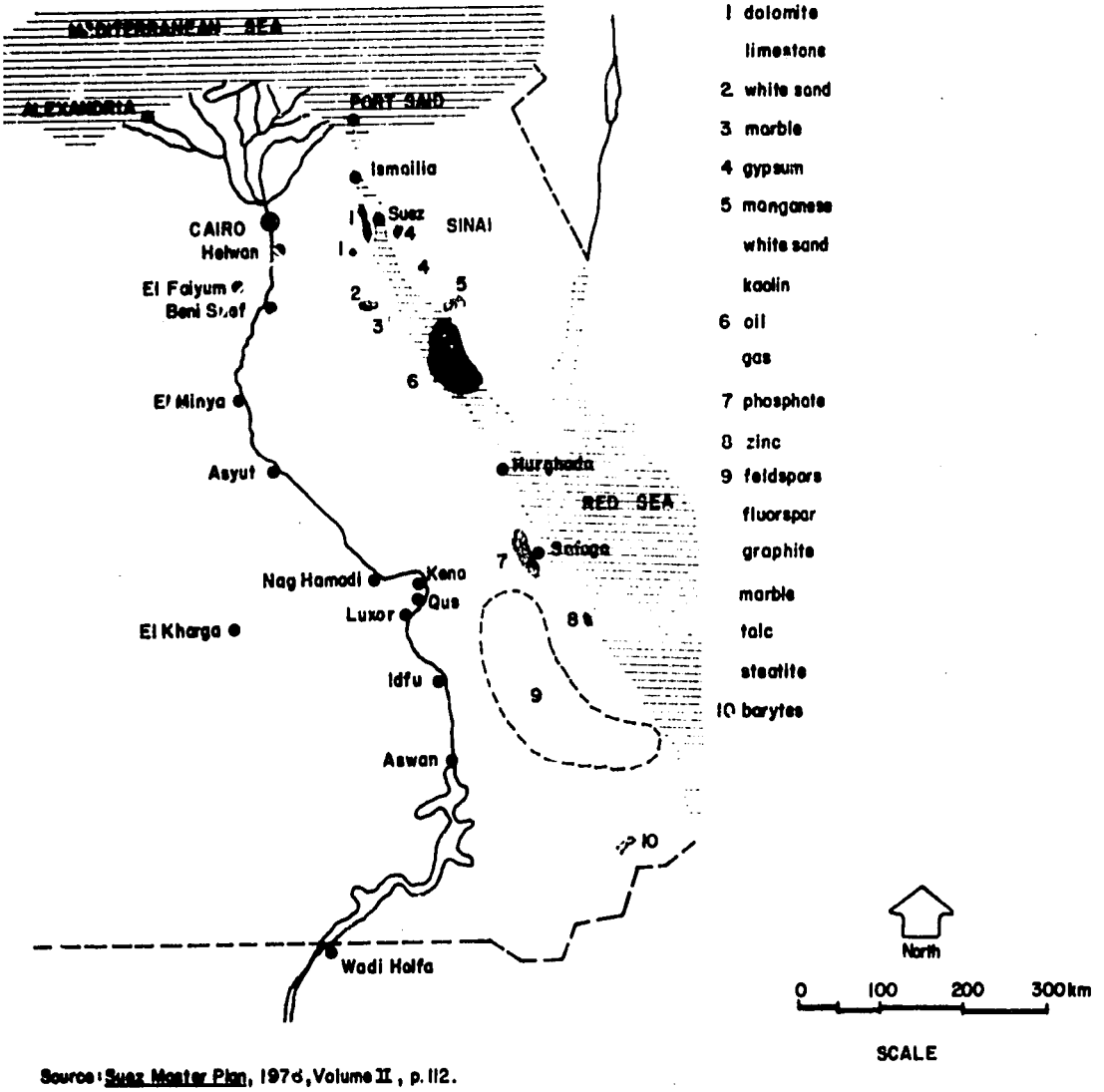
Phosphate development projects are contemplated along the Red Sea coast. Most of Egypt's phosphate production originates from more than 15 mines in the Safaga and Quseir areas to the south of Suez. Although these mines will probably be depleted within a very short time, other developments at Hamrawein and Abu Tartour could eventually produce almost eight million tons of pure phosphate each year.

Before 1967, the Abu Zenima manganese mines, located approximately 160 km south of Suez on the Sinai west coast, produced approximately 180,000 tons of manganese ore each year, most of which was exported. The Sinai Manganese Company was preparing to open a ferromanganese processing plant near the mines when the outbreak of war occurred, and the plant was subsequently destroyed. The Egyptian Government has recently announced plans to rebuild the plant, which would be able to process the large ore inventory currently existing. Until that time, manganese ore operations are limited to the small mining areas on the western shore of the Red Sea, which in all produced only 4,300 tons in 1976.

The Suez Master Plan of 1976 suggests the possibility of magnesia production at Suez from the local components of seawater and dolomite with low iron content. Although the marketing prospects for this seawater product are uncertain, the world demand for magnesia (used in high temperature refactories) has increased steadily.

Figure I-1

## MINERAL DEPOSITS, SUEZ AND RED SEA REGION




Source: Suez Master Plan, 1976, Volume II, p. 112.



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TABLE I-1

SINAI AND EASTERN DESERT MINERALS

| Location | Approximate Latitude | Mineral | Use |
|---|---|---|---|
| **GULF OF SUEZ** | | | |
| Morgan | 28° 10') | Oil, Gas | Petroleum products and chemicals |
| July | 28° 15') | | |
| Belayim | 28° 40') | | |
| Abu Rudeis | 28° 50') | | |
| Abu Zenima | 29° | Manganese | Extracted directly for manganese for steel making |
| | | White sand | Even graded, iron less than 0.04%, good for glass |
| | | White clay kaolin | For wide range of ceramic manufacture |
| Res Malab | 29° 10' | Gypsum | General industrial use |
| El Shatt | 29° 55' | Gypsum | Pharmaceutical grade |
| Ataka | 29° 55' | Dolomite | Refractories |
| Ataka/Sadat | 29° 50' | Limestone | Cement and fertilizers |
| Okeida | 29° 40' | Limestone, clay | Cement |
| Agrud | 30° 05' | Limestone, clay | Cement |
| Abuel Darag | 29° 10' | White sand | Usable for inferior glass, iron content 0.4% |
| **RED SEA COAST** | | | |
| Rod Eshab ) | 24° | | |
| Abu Ankour ) | to | Feldspar | For ceramics manufacture |
| Heglig ) | 26° | | |
| Hamata | | (Talc ) | For ceramics and cosmetics |
| Darhib | 24° | (Steatite ) | |
| Hamrawein | 20° 15' ) | | |
| Cosseir | 26° 05' ) | Phosphate rock | For fertilizers |
| Safaga | 26° 45' ) | | |

TABLE I-1 (Continued)

SINAI AND EASTERN DESERT MINERALS

| Location | Approximate Latitude | Mineral | Use |
|---|---|---|---|
| Elba | 22° | Manganese | For steel making and other manufactures |
| Um Gharig | 25° 40' | Calamine, zinc ores | Refine to zinc, lead, and cadmium byproducts |
| El Hobal | 23° | Barytes | Component of drilling mud |
| Am El Dalalil) Homret Wagid ) El Bakreia ) | 24° to 26° | Fluorspar | Flux in steel making |
| Om Fahm ) | 25° | Graphite | For lubricants and foundry work |
| El Homry ) Wadi El Maya ) Zafaranah | 29° 10') | Marble | For decorative building |

Source: Suez Master Plan, 1976, Volume II, p. 109.



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TABLE I-2

BUILDING MATERIAL SOURCES

IN SUEZ REGION

| Location | Map Reference | Mineral | Use |
|---|---|---|---|
| Agrud | 1 | Limestone | Suitable for sawn or hand dressed blocks |
| El Kubri | 2 | Sand | Soft, calcareous origin, for bituminous fillers |
| Geneifa | 3 | Gravel, sand | Weathered sandstones and best for road sub-bases |
| Kabrit | 4 | Sand | Fine grading, needs washing |
| Oweibid | 5 | Gravel | Naturally strewn on surface usable in make-up |
| Ataka | 6 | Dolomite | Tough durable rock |
| Kou El Kerd | 7 | Gravel | Concrete after washing |
| Gebel Okeida | 8 | Limestone clay | Burnt lime and brick making potential |

Source: Suez Master Plan, Section 11, p. 110, 1976.



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Located on the western coast of Sinai, the gypsum mines of Ras Matarma and Ras Mal'ab are Egypt's most important source for this material. Known reserves are estimated at 15 million tons and 2 million tons, respectively. Regained after the 1973 war, production was resumed three years later, with output going to the local cement industry and for export. In addition, many of the clays and soft shales in the Suez area are known to be gypsiferous, although the potential for economic exploitation is presently uncertain.

According to the publication, "Marketing in Egypt" (Overseas Business Reports, OBR-78, U.S. Department of Commerce), a plan is being studied for the exploitation of a one million ton quartz deposit in the Eastern Desert to supply a future ferro-silicon factory. Although the precise location of this factory is unknown to the consultant, this possible development indicates the potential for quartz extraction, deposits of which are found within the general vicinity of the Suez area.

The Suez area has continued to be favored by the near proximity of Egypt's major oil reserves, located in the Gulf of Suez and adjoining areas of the Red Sea. The center of current exploitation and production activity is in the Gulf, with more than 20 fields being exploited. The most important is El Morgan, with reserves of over one billion barrels. Together with the neighboring July and Ramadan fields, El Morgan accounts for 70 percent of Egypt's crude oil production.

Since Egypt's recent recovery of western Sinai, an expansion of oil production is considered imminent. Ongoing exploration is expected not only to reveal large additional oil deposits in the Sinai, but also along the Red Sea coast and in the Eastern Desert.

With the continued growth of oil production in the Gulf of Suez region, an extensive pipeline network is being developed. The Suez-Mediterranean Pipeline (SUMED), which was completed in late 1976, links Ain Sukhna on the Gulf of Suez and Sidi Kreir on the Mediterranean coast, with the former possessing associated storage and terminal facilities. Under construction is a network to link Ain Sukhna, Suez and Cairo, and another to connect Ras Shukheir, Suez and Mostrod.

With the completion of these networks, Suez will be directly connected to the existing major oil fields. Its two oil refineries are now almost completely rehabilitated after being severely damaged in the 1973 war, and future expansion of capacity is envisaged by the refineries' management.

Lastly, initial exploration suggests that significant underground water reserves could exist south of Ain Sukhna. The Suez area is currently dependent on the River Nile water which is brought via the Ismailia Sweetwater Canal. The quality of the Canal water is inferior to that before the hostilities because of wartime damage, and its quantity is limited according to the Canal's throughput. If proven to be substantial, the underground water reserves would provide an important impetus to the Suez area development.

## Agriculture

Because of a lack of rainfall and generally poor soils, agriculture in the area is limited to some 4,500 feddans north of Suez, comprising irrigated strips along the Sweetwater Canal. A wide range of crops is grown, including citrus, mangoes, watermelon, tomatoes, wheat and maize, almost all for local consumption.

According to the Suez Master Plan, an additional 4,500 feddans are proposed to be developed northwards from Suez Creek to the southern edge of Bitter Lake. Because of the poor soils, however, the priority for major agricultural expansion is placed in Ismailia Governorate and adjacent Sinai areas, rather than in Suez Governorate.

## HUMAN RESOURCES

### Population

The overall success of the proposed Adabiya Free Zone is ultimately dependent upon the growth of the Suez City area and complementary industrialization. Growth implies commerce and development--expanded port activity, communications, and labor development. In an environment of increased population and facilities, the free zone will provide employment to assist the Suez growth process and will, as indicated above, look to the area's growth for its overall volume potential.

The prospects for Egyptian development are dependent upon its capacity to house and productively employ an anticipated population approximating 60 million persons in the year 2000--a growth from 1979 of approximately 20 million persons. In addition, Egypt must increase its domestic product even more to allow its population to enjoy normal expectations for prosperity and better times. Major commitments are being implemented by the government in order to achieve a better standard of living for the populace. One of these commitments is for housing through the creation of new cities and infrastructural development in existing cities. Pressed by anticipated population growth, it is estimated that the Suez area will contain approximately one million persons by the year 2000; five times greater than a population estimated at 200,000 in 1978, but only three times greater than the 1966 population in the area. Under the aegis of strong central government and planned regional development, population distribution may well approach the figures listed in Table I-3.

The Suez percentage of total urban population increase against other urban areas reflects the relatively small population base in the Suez area itself. For a country dominated by desert, the sea and mountain vistas offer an attractive, livable alternative environment. Its industrial base destroyed in 1967 is reaching pre-war levels. The increased canal usage, coupled with suspension of hostilities with Israel, offers a restoration of confidence for life and property.

TABLE I-3

SUEZ CITY

NATIONAL AND REGIONAL POPULATION

1975 - 2000

(In Millions)

| Category | 1975 | 1978 | 1980 | 1990 | 2000 |
|---|---|---|---|---|---|
| Rural | 23 | 21 | 21 | 21 | 22 |
| Urban | | | | | |
| Cairo/Alexandria | 9 | 11 | 11 | 14 | 16 |
| Nile Valley | 4 | 5 | 6 | 9 | 12 |
| Suez | 0.15 | 0.20 | 0.30 | 0.65 | 1.0 |
| Other | 0.85 | 1.80 | 2.70 | 4.35 | 9.0 |
| Subtotal Urban | 14 | 18 | 20 | 28 | 38 |
| Total | 37 | 39 | 41 | 49 | 60 |
| Suez % of Urban Population | 1.1 | 1.1 | 1.5 | 2.3 | 2.6 |
| Average Annual Population Growth % | | | | | |
| Urban 1975-1980 | | | 7.4 | | |
| Urban 1980-1990 | | | | 3.4 | |
| Urban 1990-2000 | | | | | 3.1 |

Source: Reynolds, Smith and Hills, 1979.



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In 1966, prior to the prolonged period of hostilities, the combined population of Suez and Port Tawfik was estimated to be 264,000. After the outbreak of war, almost all of the population of the Suez Governorate was evacuated, and it was not until mid-1974 that resettlement was permitted. At that time, an initial rapid and large inflow of ex-Suez area residents occurred, with the population increasing from 8,000 to 65,000 between June and September, 1974. The number of residents in late 1975 was estimated to be in the vicinity of 170,000.

Since that time, the Suez area population has experienced more stable--and slightly less than predicted--growth. Although figures vary, a current estimate suggested by the consulting firm of Robert Matthew, Johnson-Marshall and Partners is that the 1979 population is between 225,000 and 250,000. While Suez is thus at or approaching its maximum size before the 1967 war, it has apparently not kept pace with projections made in the Suez Master Plan of 1976, which predicted a population of 300,000 by 1980.

According to the Suez Master Plan, the population of Suez and surrounding adjacent settlements is projected to reach one million persons by the year 2000. Between 1978 and that time, its share of the national urban population will have increased from 1.1 percent to 2.6 percent, assuming a national urban population of 38 million by 2000 AD.

Even this rapid growth is considered by some experts as "a conservative, minimum target" (Institut Ecoplan, Suez City Air Quality Study: Final Report; 1979). The Suez Canal Regional Plan of 1976 estimated that by 2000 AD the Suez Canal Zone as a whole could harbor a population of between 3 million and 7 million persons, of which potentially 1.5 million to 2.6 million could be absorbed by Suez and its surrounding region. If this remarkable growth were achieved, Suez could well become the nation's third largest city. In order to support such growth, however, and if that growth was considered favorable, immense commitments to infrastructural and industrial development would need to be made.

The translation of population growth into households forms a secondary basis for estimation of labor force and housing requirements in the Suez area. According to the Suez Master Plan Study, household statistics were projected as shown in Table I-4.

It appears, on the surface, optimistic to assume that the rural and urban households would decline by 1.53 persons and 1.71 persons, respectively, over the 1975-2000 period. A decline of 1.0 and 1.25, respectively, would be more realistic when coupled with an increase in real income. It would appear that the decline in persons per household would not make an impact in urban population planning until the late 1980s, while the rural area "persons per household" would be dependent upon education and birth control programs. Suez should be significantly different from the plan's urban statistics as its household formation age grouping is projected to remain relatively constant in the 1980-2000 period. Thus, we would assume the household levels in Suez shown in Table I-5.

TABLE I-4

PROJECTED HOUSEHOLDS IN EGYPT

| Category | 1975 | 2000 |
|---|---|---|
| Rural Population (Million) | 23 | 19 |
| Households (Million) | 4 | 4.5 |
| Persons Per Household | 5.75 | 4.22 |
| Urban Population (Million) | 14 | 37 |
| Households (Million) | 2.5 | 9.5 |
| Persons Per Household | 5.60 | 3.89 |
| Suez Population (Million) | 0.150 | 1.0 |
| Households (Million) | 0.029 | 0.256 |
| Persons Per Household | 5.17 | 3.91 |

Source: Suez Master Plan Study.
Reynolds, Smith and Hills, 1979.



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TABLE I-5

SUEZ CITY

HOUSEHOLD FORMATION

1975 - 2000

| Category | 1975 | 1978 | 1980 | 1990 | 2000 |
|---|---|---|---|---|---|
| Population (Thousands) | 150 | 200 | 300 | 650 | 1,000 |
| Persons per Household | 5.17 | 5.71 | 5.10 | 4.50 | 4.10 |
| Households (Thousands) | 29 | 39 | 59 | 144 | 244 |
| Household Average Annual Growth %: 1975-1980 | | | 15.3 | | |
| 1980-1990 | | | | 9.3 | |
| 1990-2000 | | | | | 5.4 |

Source: Reynolds, Smith and Hills, 1979.



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## Employment

The total 1979 resident labor force in the Suez area is estimated to be in excess of 80,000 persons, or approximately one-third of the area's population. As shown in Table I-6, about 9,800 persons are employed in the formal manufacturing sector (comprising activities employing more than ten persons). Major employers include the oil refineries, fertilizer company and shipbuilding activities.

Outside of the formal manufacturing sector, primary employment sources include canal transportation support services, fishing, import/export activities, government, commerce, and personal services. By far the largest employer, however, is constituted by construction and rebuilding which in 1975 accounted for some 27,000 workers. Most of these are transitory; according to the Suez Master Plan, of the 27,000, only 7,000 were believed to be local residents with families in Suez.

Although a large influx of labor has occurred since normalization in the Suez area, certain shortages--notably higher management and highly specialized skilled labor--is evident. This is partially a result of the temporary transferral of key activities away from Suez during the hostilities. Many of the former management moved to Cairo, and because of family ties still reside there and commute to Suez. This commuting pattern is declining, however.

Competition occurs between industries for highly skilled labor. This shortage has been exacerbated by continuing out-migration of such workers to surrounding Middle Eastern countries where they can command higher wages.

The shortage of highly skilled labor is likely to continue in the near future unless wage and other incentives are offered. At present, the Suez area is attracting unskilled labor, rather than the more highly specialized workers and professional management who are generally concentrated in the Cairo area. A 1977 survey of 322 heads of households residing in the Qalzam Rehabilitation Area of Suez, for example, showed that only 4 percent had been born in Cairo. The Suez Canal Regional Plan of 1978 indicated that in-migrants to the Suez Canal cities traditionally came from Sohag and Qena--"two of the poorest and most overcrowded governorates in South Upper Egypt" (Volume 2, p. 19) in search of unskilled manual jobs.

One approach to ensure the presence of skilled labor for a particular activity has been taken by the Misr-Iran Textile Company (MIRATEX), which will shortly be operating a spinning complex in the near vicinity of Suez. Their staff is being trained in the existing Masr Shibeen el Kom plant in the Eastern Delta, and will be transferred to Suez once the facility is operational.

Providing sufficient incentives, such as good wages and housing, are offered, the Suez area should be adequately supplied with a labor force of suitable skills for any foreseeable development. Egypt as a whole



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TABLE I-6

FORMAL SECTOR MANUFACTURING

EMPLOYMENT IN SUEZ AREA

1979 - 1985

| Activity | Number of Jobs | | | |
|---|---|---|---|---|
| | Existing | Underway | Proposed | Total |
| Misc. Food Products | 50 | | | 50 |
| Flour Mill | 400 | | | 400 |
| Ice Factories | 50 | | | 50 |
| Canned & Frozen Foods | | 100 | | 100 |
| Bakery Products | | 20 | | 20 |
| Beverages | | 100 | | 100 |
| Textile Spinning Plant | | 2,500 | | 2,500 |
| Denim Plant | | | 670 | 670 |
| Oil Refining | 4,600 | | | 4,600 |
| Oil Rig Construction | | 2,700 | | 2,700 |
| Fertilizer Plant | 3,200 | 150 | | 3,350 |
| Prefabricated Housing | | 300 | | 300 |
| Clay Bricks | | 200 | | 200 |
| Cement Plant | | 500 | | 500 |
| Ceramic Wall Tiles | | | 75 | 75 |
| Merchant Steel Mill | | | 145 | 145 |
| General Eng. Foundry | | | 200 | 200 |
| Ship Scrapping | 195 | | | 195 |
| Fabricated Struc. Products | | 100 | | 100 |
| Machine Shop & Assembly Plant | | | 45 | 45 |
| Shipbuilding | 1,300 | 900 | 300 | 2,500 |
| Underwater Cleaning & Inspection | | 100 | | 100 |
| Tilting Dry Dock | | 800 | | 800 |
| Contract Steel Work | | 600 | | 600 |
| Fiberglass Boat Building | | | 700 | 700 |
| Total | 9,795 | 9,070 | 2,135 | 21,000 |

Source: Suez Canal Regional Industrial Plan, 1978.
Suez City Air Quality Study, 1979.
Reynolds, Smith and Hills, 1979.



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offers an abundant supply of cheap labor as well as a diverse level of skills. Because of its well established university system, engineers and other technical professionals are relatively abundant. Also, while not immediately adaptable to large-scale industrial activities, a significant number of skilled craftsmen are employed in small private workshops--a source which could be readily retrained for use in modern facilities. Although the value added per worker in manufacturing is generally considered to be low, this may reflect low capital:labor ratios rather than any intrinsic low productivity of Egyptian workers.

For Egypt as a whole, the 1976 Suez Master Plan estimated that labor costs in manufacturing were approximately one-eighth of those in Western Europe, and only one-twentieth of those in the United States. Interviews with three large concerns in the Suez area in August, 1979 (an oil storage facility, oil refinery and the fertilizer plant, employing a combined total of 3,500 persons) indicated that wage levels--while generally low--varied considerably. Unskilled workers commanded wages ranging from LE 16 to LE 70 per month. Skilled labor (such as chemists, technicians, junior engineers and mechanics) received monthly salaries ranging from LE 30 to LE 140. Middle management positions (senior engineers, managers, legal staff) and high technical labor received salaries ranging from LE 50 to LE 170, whereas top-level management received LE 250 or higher.

The 1976 Suez Master Plan estimates that, given a total population of one million persons in 2000 AD, the total work force at that time will approximate 400,000 (Tables I-7 and I-8). Tables I-9 and I-10 portray the projected occupational distribution and employment by sector.

Further refinement is anticipated to be necessary for the total employment figures. An employment of 400,000 persons in the year 2000 represents 74 percent of the total population aged 20 to 50. Females make up approximately one-half of the 20 to 50 age group. The declining rate of growth in the service sector of the Suez economy might well serve to reduce female employment opportunity. It is our expectation that employment in the year 2000 will approximate the following range:

| | Employment (000) | |
|---|---|---|
| Year | Low | High |
| 1980 | 81 | 90 |
| 1990 | 199 | 215 |
| 2000 | 337 | 350 |

Estimates by Reynolds Smith and Hills indicate that total employment may in fact prove to be lower, ranging from 337,000 to 350,000.

As shown in Table I-10, the Suez Master Plan projects that total manufacturing jobs should approximate 37,500 by 1985, thereafter increasing to almost 150,000 by the year 2000. While the 1985 projection appears reasonable (21,000 jobs are anticipated in the formal manufacturing sector alone, as depicted previously in Table I-6), the total

TABLE I-7

SUEZ CITY

PROJECTED SUEZ EMPLOYMENT (TOTAL)

1980 - 2000

| Category | 1980 | 1990 | 2000 |
|---|---|---|---|
| Population (Thousands) | 300 | 700 | 1,000 |
| Households (Thousands) | 65 | 167 | 256 |
| Employment - Total (Thousands) | 90 | 235 | 400 |
| Basic | ( 36) | ( 110) | ( 210) |
| Service | ( 54) | ( 125) | ( 190) |
| Employment/Population % | 30 | 33.5 | 40 |
| Household Participation to Employment | 1.38 | 1.41 | 1.56 |
| Basic Employment - Average Annual Growth % | | | 9.2 |
| Service Employment - Average Annual Growth % | | | 6.5 |
| Average Annual Employment Growth % | | | 7.7 |

Source: Suez Master Plan Study 1976.
Reynolds, Smith and Hills, 1979.

TABLE I-8

SUEZ CITY

EMPLOYMENT PROFILE

1975 - 2000

| Category | 1975 | 1978 | 1980 | 1990 | 2000 |
|---|---|---|---|---|---|
| Population (000) | 150 | 200 | 300 | 650 | 1,000 |
| Households (000) | 29 | 39 | 59 | 144 | 244 |
| Employment/Population % | 28 | 29 | 30 | 35 | 40 |
| Employment (000) | 42 | 58 | 90 | 228 | 400 |
| Household Participation to Employment | 1.33 | 1.36 | 1.38 | 1.45 | 1.56 |
| Employment Based on Household Participation (000) | 39 | 53 | 81 | 209 | 381 |
| Employment Range (000) | 39-42 | 53-58 | 81-90 | 209-228 | 381-400 |

Source: Suez Master Plan Study, 1976.
Reynolds, Smith and Hills, 1979.



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TABLE I-9

SUEZ CITY

PROJECTED OCCUPATIONAL DISTRIBUTION OF HEADS OF HOUSEHOLDS

1980 - 2000

| Category | 1980 | 1985 | 1990 | 2000 |
|---|---|---|---|---|
| Executive and Managerial | 2,900 | 5,000 | 7,800 | 13,100 |
| Professional and Technical | 3,900 | 6,800 | 10,700 | 18,500 |
| Clerical | 10,400 | 17,400 | 27,200 | 43,800 |
| Sales | 7,900 | 12,800 | 17,900 | 23,800 |
| Manual | 31,700 | 54,500 | 85,700 | 133,100 |
| Services | 8,500 | 12,500 | 17,700 | 24,100 |
| Total Households | 65,300 | 109,000 | 167,000 | 256,400 |
| Total Employment* | 90,000 | 150,000 | 235,000 | 400,000 |

*Excludes migrant construction workers.

Source: Suez Master Plan, 1976.



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TABLE I-10

EMPLOYMENT BY SECTOR

SUEZ AREA

1985 - 2000

| Sector | 1985 | 1990 | 2000 |
|---|---|---|---|
| Basic: | | | |
| Manufacturing | 37,500 | 71,500 | 147,000 |
| Non-Manufacturing | 27,500 | 38,500 | 63,000 |
| Non-Basic | 85,000 | 125,000 | 190,000 |
| Total | 150,000 | 235,000 | 400,000 |

Source: Suez Master Plan, 1976.



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for the year 2000 AD may be somewhat high. The Suez Canal Regional Industrial Plan of 1978, for example, identifies 50,000 possible jobs in basic manufacturing in the Suez area by that period. Of the remaining 100,000 jobs, approximately 20,000 may be represented by existing and proposed free zone activities, as indicated in Table I-11, which projects major industrial activities. An additional 80,000 manufacturing jobs, therefore, are undefined.

Even if the 1985 projections prove correct, however, the Suez area could have as many manufacturing jobs as those in Port Said and Ismailia combined, as originally projected by the 1976 Suez Canal Regional Plan.

Existing and Proposed Industries

The overall projections for the Suez City area development were prepared assuming a real national growth of 6.5 percent in gross domestic product. Based upon the 1975-1977 trends established by the Egyptian economy, this growth rate appears attainable over the near-term period. A committed policy to growth may allow the growth trend to continue through the year 2000.

In order to accomplish the rate of gross domestic product growth upon which the Egyptian economy is based, there has to be maintained a substantial investment in the industrial sector. Capital formation has been restricted by the military considerations reflective of Egyptian priorities. The problems foreseen with subsidiation of food products and the lack of rapid investment in the manufacturing and industrialization sectors have led the Government of Egypt to solicit a new approach toward providing funds to build up its productive capacity. As the Egyptian economy is currently between 75 and 80 percent in the hands of the public sector, this increased emphasis on private investment represents a large social change. However, it is anticipated that the solicitation of these investments from developed nations into Egypt's economy will substantially contribute to raising the amount of exports which Egypt could produce.

Egypt's industrial growth may take the trend of resource development--intermediate manufacturing--final good creation--light manufacturing. Of particular interest is the current prospect for economic integration with Sudan. Sudan is rich in minerals and complements Egypt's mineral base. Suez, via the Red Sea, represents a prime port-of-entry/exit for the Sudan-Egypt trade. Competitive to Suez is Aswan and the movement of goods via Egypt's railroad system.

The development of intermediate/final good manufacturing is in the best interests for the Egypt and Suez economies. Investment in natural resource development is capital intensive; the processing and manufacturing functions are more labor oriented, and the area will have an abundant need of employment centers. Suez, like the rest of Egypt, will offer low wages, educated and skilled workers, and a relatively rebuilt industrial base. The development of Suez as an industrial center will have positive benefits for the Egyptian economy. Of Egypt's total manufacturing activity, exports have accounted for only a small percentage

TABLE I-11

SUEZ EMPLOYMENT*

INDUSTRIAL ACTIVITIES

1980 - 2000

| Category | 1980/85 | 1985/90 | 1990/95 | 1995/2000 |
|---|---|---|---|---|
| Oil Refineries | 4,000 | 5,000 | 5,000 | 5,000 |
| Principal Ind. Areas | 9,725 | 13,350 | 14,475 | 17,100 |
| Free Zones: | | | | |
| Offshore Oil | 4,000 | 5,000 | 6,000 | 7,500 |
| Other Heavy Manuf. | 1,000 | 2,000 | 2,500 | 2,500 |
| Light Manufacturing | 4,000 | 8,000 | 10,000 | 10,000 |
| Light Industrial Areas | 10,000 | 25,200 | 46,000 | 90,500 |
| Total | 32,725 | 58,550 | 83,975 | 132,600 |

*Includes all employment in industrial activities.

Source: Suez Master Plan, 1976.



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of total output. The Egyptian exports of manufactured goods and of textiles have remained relatively stable. The implications for a country subsidizing its foodstuff production with fixed prices are a diversion of valuable foreign exchange assets to subsidize part of its economy. To alleviate this problem, exports must increase and/or there must be increased substitution of locally produced goods for imported goods. The development of free zone activities for the latter processes may well provide positive benefits to the Egyptian economy.

The location of Suez relative to the Red Sea Arab countries, to Africa, and as a port for Indian and Far Eastern imports and exports, makes it extremely attractive for future growth. Suez is by far the most developed of Egypt's Red Sea oriented ports. Competition for exports from the area will come from Jordan, with a small free zone, and from Saudi Arabia. None of these countries can compete with Egypt in terms of the basic educational level of its employees and the abundance of labor at extremely competitive prices.

The proximity of Egypt to the rapidly expanding Gulf markets has prompted recent suggestions for the establishment of a pan-Arab regional market manufacturing center, which could lend itself readily to public free zone participation. Possible activities could include the manufacture of power generators, steel pipe, manufacturing and construction equipment and other key industrial products. Although the intended Arab League boycott of Egypt action might restrict the number of joint ventures and regional investments over the short term, the concept of this type of center merits serious attention.

The potential of the Suez area for major industrial growth is fully recognized in the 1975 Suez Master Plan. Moreover, a rapid development of manufacturing industry represents an essential element of the Plan. Industrial growth since 1974 warrants its optimism. In addition to the reconstructed oil refineries and fertilizer plant, a cement works and a spinning complex are nearing completion. The area offers considerable potential for large-scale power generation and petrochemical production. The proposed Adabiya Industrial Free Zone, if established, would provide a suitable base for export-oriented industries. In addition, construction of the first tunnel to the Sinai, scheduled to be completed in early 1980 and located only 16 km to the north, will provide Suez with a ready access to resources on the eastern side of the Gulf.

The sections below discuss each of the existing major industries and their potential for expansion, as well as previously identified new activities. Certain limitations on the growth of these industries should be noted, however. First, environmental factors will impose limits on the size of any heavy industrial development unless suitable anti-pollution measures are undertaken. Secondly, the attractions of Alexandria and Cairo for industry will likely remain strong.

Thirdly, the current National Economic and Social Development Plan (1978 to 1982) has placed importance on the role of private and joint-venture, rather than government investment in industrial development

of the Suez Canal region. The Plan allocates only two specific projects (a spinning factory and a power plant) to Suez, representing only LE 28 million, or 1.5 percent of the national budget allocation. In addition, national planning priorities have allocated several activities with a potential for development in the Suez area--such as petroleum products, various fertilizer products, and an iron and steel plant--elsewhere in the country.

a. Petroleum Refining and Associated Industries

In the mid-1960s petroleum refining output was over 7 million tons per annum, and the industry employed nearly half of the local manufacturing labor force. The industry, however, has never fully recovered from the hostilities beginning in 1967. Although output has been restored to 5 million tons per annum, with the future probability of increased expansion as the region prospers, the range of associated finished products processed in the area has diminished.

Prior to 1967, for example, the Suez Oil Processing Company possessed its own research laboratories, and produced a number of by-products, including insecticides and mud products. While the latter are still sold in the local market for brick-making furnaces, other by-products are generally processed by companies outside of the area.

A list of petroleum products produced at Suez is given in Table I-12. Egyptian crude oil constitutes a relatively heavy variety (27-32 API) with a high sulfur content. While this is suitable for certain products, higher grade oil from neighboring countries (in particular, Saudi Arabia and Kuwait) is imported to fulfill the feedstock needs of domestic refineries for a number of other refined products, such as kerosene.

Most of the oil itself is refined for the domestic market, with only a small portion currently for export. Gas wastes are utilized by the fertilizer plant near Suez. A coking plant was built in 1966 but was destroyed shortly thereafter. The plant is being reconstructed, and should be ready for operation in late 1980. In addition, a lube oil plant is currently being constructed.

As noted previously, although a major expansion of the petrochemical industry is feasible in the Suez area, the Government has decided to locate this activity elsewhere--principally near the major urban centers of Cairo (Mostorod) and Alexandria (El Ameria).

The ongoing exploration for oil in the Gulf of Suez and the Red Sea, however, is encouraging the growth of other industries. The firm, Oceanic Contractors, has acquired 250 feddans and been granted its own free zone at Ain Sukhna to construct offshore oil rigs as well as to provide oil and gas field services. The value of the firm's output is expected to eventually increase to LE 60 million per annum, with employment to rise from 700 to 2,700 by 1982. In addition, a company affiliated to the Suez Canal Authority (Timsah Shipbuilding Company, provides oil and gas subcontracting services.



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TABLE I-12

PETROLEUM PRODUCTS PRODUCED AT SUEZ

1979

| Product | Use |
|---|---|
| **A. Main Petroleum Products** | |
| 1. Hydrogen | Fertilizer manufacturing |
| 2. Propagas | Ceramics fuel |
| 3. Butagas | Home fuel |
| 4. Benzene | Car fuel |
| 5. Kerosene | Heaters and lighting fuel |
| 6. High Diesel | High-speed diesel engine fuel |
| 7. Low Diesel | Low-speed diesel engine fuel |
| 8. Mazot | Power plant, boiler & furnace fuel |
| **B. Oil and Lubricants** | |
| 1. Motor Oil | Automotive fuel |
| 2. Parfine Oil | Paper, matches, leather, spinning and weaving, canning |
| **C. Secondary Products** | |
| 1. Tolene | Plastics and explosives |
| 2. Benzole | Rubber, dyes and paints |
| 3. Suez Sol (A) | Insecticides |
| 4. Dodecyl Benzene | Detergents |
| 5. Coke coal | Fuel for power plants, furnaces, iron and steel plants |
| 6. Sulfur | Sulfuric acid, other sulfur carbides, artificial silk, rubber manufacturing |
| **D. Special Petroleum Products** | |
| 1. Turpentine | Detergent, paint manufacturing |
| 2. Malariol | Insecticide |
| 3. Asphalt | Road paving |

Source: Suez Oil Processing Company, 1979.



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b. Fertilizer Production

Prior to the 1967 war, the fertilizer plant located just to the west of Suez produced some 250,000 tons of ammonium sulphate and calcium nitrate. In addition, construction of a urea plant was then underway. Severe damage was incurred, but it is anticipated that an annual capacity of 225,000 tons of calcium nitrate will be restored by 1980. Feedstock is drawn from refinery waste gases and pure limestone from nearby quarries at El Sadat. All of the current production is for the domestic market.

Diversification of fertilizer production in the Suez area has been frequently proposed. According to the Suez City Air Quality Study of 1979, production of ammonium sulphate would once again begin in 1980, with ammonium nitrate production to be considered after 1985. The 1978 Suez Canal Regional Industrial Plan considered a phosphate acid and triple phosphate fertilizer plant proposed for Ain Sukhna to be a "preferred" industry for the Suez area. This plant would produce a total of 500,000 tons a year, and be based upon the El Hamrawein phosphate deposits.

The prospect for some of this diversification appears uncertain, however, since major fertilizer plants are planned by the Government in other areas of the country. Calcium nitrate, urea fertilizer and ammonium sulphate production is proposed for Takla, an urea plant is planned for Abu Keir, and tentative proposals have been made for a triple phosphate plant in the Delta region.

Thus, while the Suez region possesses adequate resources to be able to expand its fertilizer production into several products, Government emphasis on other regions may delay enlargement of at least the public sector in this field.

c. Cement

The manufacture of this product represents a new major industry for the Suez area. With USAID finance, construction of a cement plant capable of producing one million tons per annum is currently underway at Okeida, near El Sadat. Production is expected to begin in early 1980.

Local deposits of ferritic clay will improve the sulphate-resisting properties of the cement and hence its value. A pipeline from the Sweetwater Canal in Suez is planned to provide water for the site, but should on-going exploration south of Ain Sukhna prove even more successful than initial findings suggest, water could well be supplied from this latter area.

Because of continued domestic demand, it is unlikely that much of the cement will be exported. The manufacture of cement products (such as blocks, bricks and pipes) would also be primarily for the domestic market, should such manufacture occur in the future.

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d. Spinning and Weaving

A major new spinning plan is nearing completion just to the west of Suez City and is expected to begin operation in early 1980. A joint Egyptian-Iranian venture, Miratex is located on 125 feddans, represents an investment of over LE 30 million, and will potentially employ 2,500 people. According to the Suez Canal Regional Industrial Plan, the complex will comprise three units: a mill of 46,000 spindles producing 4,500 tons of carded yarn, a mill of 58,000 yarn, and a mill of 2,000 open-end rotors for 4,500 tons of yarn.

The raw materials used each year will include 5,600 tons of medium staple cotton imported fro Iran, 3,800 tons of Egyptian long staple cotton, 3,000 tons of cotton waste, and other waste generated by the carded and combed yard mills. Plans for a second phase development include a weaving mill to transform a portio of yarn reserved for the domestic market.

e. Iron and Steel

A merchant steel mill was favorably considered for the area by the Suez Canal Regional Industrial Plan, to comprise a billet yard, billet reheating furnace, mill and finishing facilities. The steel industry could be appropriately developed along the coastal plain between El Sadat and Ain Sukhna, and would benefit from proximity to the sea, available energy resources and ample land to expand. Its output would have ready access to a local market, including offshore oil rig construction, shipbuilding, and other manufacturing or assembly activites.

As noted in the 1979 Suez City Air Quality Study, national planning priorities are for sponge and steel projects at Dakhaha (to the west of Alexandria), with plants for reinforcing iron, welding tubes and iron casting. These projects are already attracting production units that could have been located in the Suez area.

f. Other Potential Industries

Several potential industries have been suggested by previous studies, as indicated in Table I-13. These include building components and materials (a prefabricated housing project is in progress), ceramics and glass, a denim plant, a general engineering foundry, aluminum shipbuilding, and seafood processing and packing.

Ore benefication has been proposed, but local deposits are limited in quantity. Similarly, althogh solar salt production is feasible, production space adjacent to suitable transportation is limited. Other industries, such as copper electrolytic refining, are high pollution activities, and would necessitate pollution control measures. The diversity of natural wealth, good transportation modes and expansion capability of the Suez area, however, should ensure continued interest in several types of industrial activity.

TABLE I-13

PROSPECTIVE FORMAL SECTOR MANUFACTURING BY 1985

SUEZ CANAL REGIONAL PLAN

| Preferred Industries | Possible Industries |
|---|---|
| Veneer & Plywood Factory | Meat and Poultry Complex |
| Fertilizer Plant (Ammonia) | Miscellaneous Food Products |
| Phosphate Fertilizer & Chemical Complex** | Miratex - Weaving* |
| New Refinery | Knitting Mill - Underwear, Sweaters |
| Bulk Handling & Storage Facilities* | Saw Mill |
| Drilling Units, Etc., Manufacture | Household Furniture |
| Asbestos Cement Pipe | Paper-Conversion Projects |
| Cooper Electrolytic Refinery** | Pesticides & Disinfectants |
| New Shipyard | Marine Paints Factory |
| | Refactory Bricks |
| | Cement Pipes & Other Products |
| | Lightweight Aggregates |
| | Manganese Oxide Electrolytic Refinery |
| | Cast Iron Pipe Foundry |
| | Copper Wire Rod Rolling Mill |
| | Non-Ferrous Foundry (propellers) |
| | Metal Cans, Barrels & Drums |
| | Doors & Windows |
| | Plumbing Fixtures |
| | Materials Handling & Equipment |
| | Farm Equipment Shops |
| | Pollution Control |

* Already under construction.
**High pollution industries.

Source: Suez Canal Regional Plan, 1976.



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Because of the resettlement conditions existing in Suez and the alternative urban areas for residency, a flat predictability for the Suez Free Zone development cannot be made. Within the framework of overall population growth, supported by housing activity, the economy for Suez can be developed in a coordinated manner. As previously mentioned, free zone employment, based on a percentage of overall economic participation, is a contributor and a beneficiary of Suez's overall development.

The location of the Suez Free Zone is at the southern tip of the major, planned industrial corridor for Suez City. Thus, the free zone:

1) Is well located for bulk cargo facilities;

2) Can provide complementary services to industry;

3) Can provide a base for secondary and light manufacturing for domestic/export potential;

4) Has easy, major accessibility by planned road development;

5) Serves as a divergent area for free zone activity, allowing Port Tawfik to serve as a transit shipping point;

6) Is conveniently located to rail service;

7) Has electric infrastructure;

8) Affords sea frontage for oil platform activity.

It is anticipated that the identification and study of target industries for the Adabiya Free Zone will assist in the development of industries at Suez. Most of the industries outlined in the preceding paragraphs are of national significance, and the ability of the individual area or free zone to capture a portion of the investment potential will to a large extent depend on the identification of specific local opportunities and effective promotional campaigns directed to these target industries. The implementation of new investment programs will raise the quality of production in the Egyptian economy which has had serious problems competing with newer manufacturing processes throughout the world.

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## CHAPTER II
## ASSESSMENT OF IMPORTS TO MEDITERRANEAN/MIDDLE EAST REGION

As a first step in analyzing the types of industries which would be appropriate for the Adabiya Free Zone, a detailed assesment of the imports to various nations which could most likely be served by Adabiya were analyzed. These countries encompass the majority of the Central and Eastern Mediterranean Region, the Middle East, North and Northeastern Africa, and parts of Southwestern Asia. While other parts of the world could undoubtedly be served by the Adabiya Free Zone, it is felt that these nations, especially those south of the Suez Canal, would constitute its principal markets.

The source of information for this analysis is the Yearbook of International Trade Statistics, 1977, which is published by the United Nations. It is the most recent source of reliable international trade data that is available. Substantial effort was made in the preparation of this document, to ensure as much continuity and reliability as is possible when working with international trade data. The Yearbook provides detailed information on trade, using standard commodity classifications. The classifications are basically those found in the Standard International Trade Classification Revision 2, published by the United Nations in 1975. Using this classification system, each commodity is given a one-digit section code, and a two-digit division code. Most products can be further specified by giving them a third, fourth, or even fifth digit. For this analysis, it was not felt that it was necessary to go to that level of detail as many hundreds of items are included at the third, fourth, and fifth digit level. Instead, the two-digit level of classification is used for commodities to assess the market potential for Adabiya.

Table II-1 lists the two-digit classification scheme of the Standard International Trade Classification (SITC). This table should be used in conjunction with Table II-2 to assess imports to the region. Table II-2 is summarized with the total imports of those countries south of the Suez Canal and those countries tributary to the region.

Unfortunately, 1977 data is not available for each of the countries in the study area. In all cases, the latest year for which data is available for each particular country was used in the analysis. The year represented by the trade data for each particular country can be noted with the name of that country on Table II-2. The United Arab Emirates and Mauritania were considered to be in the study area but were omitted because of a lack of detailed trade data.

As mentioned, the total imports for each commodity in the study area are provided in Table II-2 as are the totals for the imports of each commodity going to countries south of the Suez in the study area. While the lack of complete data availability made it necessary to add import data for some countries in 1977 to that for other countries in 1976 or some other year, it is felt that the sum still provides a good indication

TABLE II-1

STANDARD INTERNATIONAL TRADE CLASSIFICATIONS

| Section Code | Division Code | Section and Division Headings (n.e.s. = not elsewhere specified) |
|---|---|---|
| 0 | | FOOD AND LIVE ANIMALS CHIEFLY FOR FOOD |
| | 00 | Live animals chiefly for food |
| | 01 | Meat and meat preparations |
| | 02 | Dairy products and birds' eggs |
| | 03 | Fish, crustaceans and mollusks, and preparations thereof |
| | 04 | Cereals and cereal preparations |
| | 05 | Vegetables and fruit |
| | 06 | Sugar, sugar preparations and honey |
| | 07 | Coffee, tea, cocoa, spices, and manufactures thereof |
| | 08 | Feeding stuff for animals (not including unmilled cereals) |
| | 09 | Miscellaneous edible products and preparations |
| 1 | | BEVERAGES AND TOBACCO |
| | 11 | Beverages |
| | 12 | Tobacco and tobacco manufactures |
| 2 | | CRUDE MATERIALS, INEDIBLE, EXCEPT FUELS |
| | 21 | Hides, skins and furskins, raw |
| | 22 | Oil seeds and oleaginous fruit |
| | 23 | Crude rubber (including synthetic and reclaimed) |
| | 24 | Cork and wood |
| | 25 | Pulp and waste paper |
| | 26 | Textile fibres (other than wool tops) and their wastes (not manufactured into yarn or fabric) |
| | 27 | Crude fertilizers and crude minerals (excluding coal, petroleum and precious stones) |
| | 28 | Metalliferous ores and metal scrap |
| | 29 | Crude animal and vegetable materials, n.e.s. |
| 3 | | MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS |
| | 32 | Coal, coke and briquettes |
| | 33 | Petroleum, petroleum products and related materials |

TABLE II-1 (Continued)

STANDARD INTERNATIONAL TRADE CLASSIFICATIONS

| Section Code | Division Code | Section and Division Headings (n.e.s. = not elsewhere specified) |
|---|---|---|
| | 34 | Gas, natural and manufactured |
| | 35 | Electric current |
| 4 | | ANIMAL AND VEGETABLE OILS, FATS AND WAXES |
| | 41 | Animal oils and fats |
| | 42 | Fixed vegetable oils and fats |
| | 43 | Animal and vegetable oils and fats, processed, and waxes of animal or vegetable origin |
| 5 | | CHEMICALS AND RELATED PRODUCTS |
| | 51 | Organic chemicals |
| | 52 | Inorganic chemicals |
| | 53 | Dyeing, tanning and coloring materials |
| | 54 | Medicinal and pharmaceutical products |
| | 55 | Essential oils and perfume materials; toilet, polishing and cleansing preparations |
| | 56 | Fertilizers, manufactured |
| | 57 | Explosives and pyrotechnic products |
| | 58 | Arificial resins and plastic materials, and cellulose esters and ethers |
| | 59 | Chemical materials and products, n.e.s. |
| 6 | | MANUFACTURED GOODS CLASSIFIED CHIEFLY BY MATERIAL |
| | 61 | Leather, leather manufactures, n.e.s. and dressed furskins |
| | 62 | Rubber manufactures, n.e.s. |
| | 63 | Cork and wood manufactures (excluding furniture) |
| | 64 | Paper, paperboard, and articles of paper pulp, of paper or of paperboard |
| | 65 | Textile yarn, fabrics, made-up articles, n.e.s., and related products |
| | 66 | Non-metallic mineral manufactures, n.e.s. |
| | 67 | Iron and steel |
| | 68 | Non-ferrous metals |
| | 69 | Manufactures of metal, n.e.s. |

TABLE II-1 (Continued)

STANDARD INTERNATIONAL TRADE CLASSIFICATIONS

| Section Code | Division Code | Section and Division Headings (n.e.s. = not elsewhere specified) |
|---|---|---|
| 7 | | MACHINERY AND TRANSPORT EQUIPMENT |
| | 71 | Power generating machinery and equipment |
| | 72 | Machinery specialized for particular industries |
| | 73 | Metalworking machinery |
| | 74 | General industrial machinery and equipment, n.e.s., and machine parts, n.e.s. |
| | 75 | Office machines and automatic data processing equipment |
| | 76 | Telecommunications and sound recording and reproducing apparatus and equipment |
| | 77 | Electrical machinery, apparatus and appliances, n.e.s. and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household type equipment) |
| | 78 | Road vehicles (including air cushion vehicles) |
| | 79 | Other transport equipment |
| 8 | | MISCELLANEOUS MANUFACTURED ARTICLES |
| | 81 | Sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s. |
| | 82 | Furniture and parts thereof |
| | 83 | Travel goods, handbags and similar containers |
| | 84 | Articles of apparel and clothing accessories |
| | 85 | Footwear |
| | 87 | Professional, scientific and controlling instruments and apparatus, n.e.s. |
| | 88 | Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks |
| | 89 | Miscellaneous manufactured articles, n.e.s. |
| 9 | | COMMODITIES AND TRANSACTIONS NOT CLASSIFIED ELSEWHERE IN THE SITC |

Source: Standard International Trade Classification, Revision 2, United Nations, Statistical Papers, Series M, No. 34/Rev. 2, New York, 1975.

TABLE II-2
TOTAL ANNUAL IMPORTS TO SELECTED NATIONS
POTENTIALLY SERVED FROM ADABIYA
VALUE IN U.S. DOLLARS (MILLIONS)

| Division Code | Sudan (1975) | Ethiopia (1976) | Somalia (1975) | Kenya (1977) | Libya (1976) | Algeria (1976) | Tunisia (1976) | Morocco (1976) | Syria (1976) | Lebanon (1973) |
|---|---|---|---|---|---|---|---|---|---|---|
| 00 | - | - | - | - | 51.8 | - | 12.5 | 10.2 | 2.1 | 8.7 |
| 01 | - | - | - | - | 22.2 | - | - | - | - | 14.5 |
| 02 | 2.9 | 3.3 | 1.2 | - | 47.5 | 100.6 | 21.8 | 31.8 | 46.5 | 24.8 |
| 03 | - | - | - | - | 3.9 | - | - | - | 2.6 | 5.4 |
| 04 | 24.5 | 5.3 | 25.6 | 6.9 | 103.9 | 399.2 | 55.2 | 166.2 | 56.6 | 65.5 |
| 05 | 4.1 | 1.7 | 3.0 | - | 54.0 | 44.4 | 8.7 | 16.5 | 52.9 | 24.0 |
| 06 | 111.2 | - | 0.7 | 10.1 | 47.5 | 156.2 | 60.5 | 146.9 | 82.2 | 14.8 |
| 07 | 20.1 | 2.4 | 1.9 | 5.7 | 17.7 | 95.2 | 21.7 | 47.0 | 17.4 | 16.9 |
| 08 | - | - | - | - | 72.8 | - | 4.8 | - | 7.0 | 7.6 |
| 09 | 3.6 | 1.3 | - | - | - | - | - | - | - | 3.1 |
| 11 | - | 2.7 | 0.1 | 5.1 | - | - | - | 5.2 | - | 4.1 |
| 12 | 9.9 | 2.6 | 2.9 | 4.3 | 8.9 | 11.4 | 6.5 | 18.2 | 52.5 | 11.2 |
| 21 | - | - | - | - | - | - | 1.3 | - | 3.7 | 18.5 |
| 22 | - | - | - | - | - | 20.6 | - | 9.8 | 2.8 | 13.0 |
| 23 | - | - | - | - | - | - | - | 7.3 | - | - |
| 24 | 7.4 | - | 1.3 | - | 45.9 | 46.2 | 35.2 | 55.9 | 25.1 | 28.9 |
| 25 | - | 2.8 | - | - | - | - | - | 10.6 | - | - |
| 26 | - | 3.9 | 0.5 | 23.7 | - | 28.5 | 24.3 | 66.2 | 12.5 | 20.0 |
| 27 | - | 2.5 | 1.6 | 4.8 | 14.3 | 29.4 | 27.0 | 18.3 | - | 16.7 |
| 28 | - | - | - | - | - | - | 5.4 | - | - | - |
| 29 | - | 0.1 | 2.6 | 3.7 | - | 13.6 | - | 6.1 | - | 9.1 |
| 32 | - | - | - | - | - | 21.7 | 10.5 | - | - | - |
| 33 | 35.1 | 53.2 | 9.4 | 282.6 | 85.6 | 55.5 | 164.0 | 276.3 | 192.3 | 53.7 |
| 34 | - | - | - | - | - | - | 3.6 | 15.2 | - | 4.0 |
| 35 | - | - | - | - | - | - | - | - | - | - |
| 41 | - | - | - | - | - | - | - | 3.9 | - | 3.1 |
| 42 | - | 0.5 | 4.7 | 26.2 | 38.6 | 59.7 | 2.4 | 51.4 | 4.9 | 3.0 |
| 43 | - | - | - | 2.6 | - | - | 2.9 | - | 5.1 | 3.4 |
| 51 | 14.2 | 7.4 | 1.9 | 27.9 | 27.2 | 57.1 | 21.6 | 42.3 | - | 19.5 |
| 52 | - | - | - | - | - | - | - | - | - | - |
| 53 | 4.1 | 6.1 | 0.6 | 10.3 | 13.1 | 12.2 | 8.5 | 16.7 | 11.9 | 9.1 |
| 54 | 27.8 | 9.2 | 4.0 | - | 31.1 | 97.8 | 27.7 | 21.6 | 45.6 | 32.0 |

TABLE II-2 (Continued)
TOTAL ANNUAL IMPORTS TO SELECTED NATIONS
POTENTIALLY SERVED FROM ADABIYA
VALUE IN U.S. DOLLARS (MILLIONS)

| Division Code | Saudi Arabia (1976) | Yemen (1976) | Yemen (Demi) (1969) | Oman (1976) | Bahrain (1976) | Jordan (1977) | Iraq (1976) | Iran (1975) | Pakistan (1977) | Israel (1976) | Kuwait (1975) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 00 | 67.4 | 2.9 | 3.3 | - | 2.7 | 7.8 | - | 66.1 | - | - | 19.8 |
| 01 | 101.9 | 2.4 | - | 12.6 | 11.1 | 13.9 | 7.5 | 110.2 | - | 40.7 | 40.3 |
| 02 | 93.3 | 8.9 | 7.5 | 17.5 | 10.5 | 22.6 | 48.0 | 90.3 | 32.7 | 6.6 | 46.0 |
| 03 | - | 1.6 | 16.5 | 1.2 | - | 5.5 | - | - | - | - | - |
| 04 | 294.4 | 46.3 | - | 22.2 | 24.4 | 77.7 | 225.1 | 560.2 | 40.5 | 238.4 | 83.9 |
| 05 | 166.3 | 21.0 | 5.4 | 15.6 | 20.5 | 47.7 | 34.3 | 130.5 | 26.9 | 29.3 | 81.0 |
| 06 | 51.4 | 43.3 | 4.6 | 5.6 | 9.5 | 20.2 | 103.8 | 536.8 | - | 60.5 | 44.5 |
| 07 | 63.0 | 8.0 | 6.3 | 6.6 | 12.5 | 16.1 | 33.8 | 36.2 | 128.0 | 35.4 | 29.0 |
| 08 | 14.5 | - | - | - | - | 14.9 | - | 16.3 | - | - | 3.5 |
| 09 | 27.3 | 20.0 | - | 4.9 | 6.1 | 4.3 | - | - | - | - | 14.5 |
| 11 | - | - | - | 6.8 | - | 10.1 | - | - | - | - | 2.7 |
| 12 | 61.0 | 10.0 | 2.9 | 7.2 | 11.6 | 6.0 | 14.2 | - | - | 16.2 | 28.5 |
| 21 | - | - | 2.6 | - | - | - | - | - | - | - | - |
| 22 | 3.9 | - | 1.6 | - | - | 3.1 | - | - | - | 115.2 | - |
| 23 | - | - | - | - | - | - | - | 39.6 | 15.1 | 18.3 | - |
| 24 | 163.2 | - | 1.3 | 15.4 | 16.7 | 17.5 | 71.8 | 60.2 | 14.5 | 48.4 | 13.4 |
| 25 | - | - | - | - | - | - | - | - | - | 25.0 | - |
| 26 | - | - | - | - | - | 5.0 | 2.3 | 197.2 | 64.4 | 26.9 | - |
| 27 | 25.5 | - | - | - | - | 4.7 | 12.3 | 34.7 | 10.1 | 28.0 | 8.0 |
| 28 | - | - | - | - | - | - | - | - | 28.9 | 19.8 | - |
| 29 | 7.6 | - | 4.2 | - | - | - | - | - | 7.7 | - | - |
| 32 | - | - | - | - | - | - | - | - | 5.6 | - | - |
| 33 | 62.2 | 13.9 | 81.1 | 48.1 | 707.6 | 130.6 | 5.2 | 16.7 | 380.8 | 681.0 | 14.1 |
| 34 | - | - | - | - | - | - | - | - | - | - | - |
| 35 | - | - | - | - | - | - | - | - | - | - | - |
| 41 | - | - | - | - | - | - | - | - | 24.1 | - | - |
| 42 | 28.5 | 2.2 | 1.5 | 2.3 | - | 8.5 | 19.8 | 241.8 | 149.3 | 8.7 | 8.1 |
| 43 | - | - | - | - | - | - | - | 40.0 | 2.0 | - | - |
| 51 | 26.4 | - | 0.9 | 0.6 | 32.1 | 12.7 | 26.5 | 141.2 | 63.9 | 135.5 | 22.4 |
| 52 | - | - | - | - | - | - | - | - | - | - | - |
| 53 | 30.3 | 1.4 | - | 5.6 | 4.9 | 6.1 | 15.9 | 69.3 | 33.2 | 16.7 | 5.2 |
| 54 | 88.9 | 7.7 | - | - | 4.3 | 22.8 | - | 209.6 | 46.1 | 28.0 | 23.3 |

TABLE II-2 (Continued)
TOTAL ANNUAL IMPORTS TO SELECTED NATIONS
POTENTIALLY SERVED FROM ADABIYA
VALUE IN U.S. DOLLARS (MILLIONS)

| Division Code | Cyprus (1979) | Malta (1977) | Turkey (1976) | Greece (1979) | Yugoslavia (1976) | Italy (1977) | Egypt (1977) | Total | Total South of Suez |
|---|---|---|---|---|---|---|---|---|---|
| 00 | 0.6 | 2.0 | - | - | - | 901.1 | - | 1,159.0 | 170.0 |
| 01 | 7.7 | 13.7 | - | 187.8 | 14.4 | 1,404.5 | 65.3 | 2,070.7 | 299.3 |
| 02 | 6.9 | 9.3 | - | 68.6 | - | 1,017.3 | 66.8 | 1,833.2 | 384.7 |
| 03 | 2.7 | 3.2 | - | 30.8 | - | 390.8 | 24.8 | 489.0 | 24.8 |
| 04 | 28.4 | 26.2 | 4.1 | 71.5 | 141.7 | 1,265.5 | 535.6 | 4,595.0 | 1,437.0 |
| 05 | 5.7 | 11.5 | - | - | 109.6 | 424.6 | 46.1 | 1,385.3 | 558.0 |
| 06 | 5.1 | 6.2 | 0.2 | 1.7 | 114.9 | 224.5 | 43.2 | 1,906.1 | 941.7 |
| 07 | 8.1 | 4.6 | 21.7 | 97.0 | 118.4 | 939.9 | 87.7 | 1,898.3 | 369.6 |
| 08 | 11.4 | 9.5 | - | 36.3 | 83.2 | 442.4 | 24.0 | 748.2 | 49.2 |
| 09 | 3.6 | 3.8 | 17.7 | - | - | - | - | 110.2 | 82.0 |
| 11 | 5.5 | 8.3 | - | - | 135.7 | - | - | 186.3 | 27.5 |
| 12 | 16.0 | 10.6 | - | - | - | 240.6 | 105.4 | 658.6 | 161.1 |
| 21 | - | 1.7 | - | 27.9 | 45.9 | 614.8 | - | 716.4 | 2.6 |
| 22 | - | - | - | 28.2 | - | 408.8 | 15.6 | 622.6 | 8.6 |
| 23 | - | 1.8 | 21.1 | 18.4 | 57.8 | 246.8 | 8.2 | 434.4 | 54.7 |
| 24 | 8.7 | 4.4 | - | 98.6 | 52.4 | 1,070.8 | 249.0 | 2,152.2 | 382.7 |
| 25 | - | - | 18.4 | 27.3 | 50.4 | 490.6 | 17.2 | 642.3 | 2.8 |
| 26 | - | 2.7 | 48.9 | 204.4 | 247.9 | 1,127.5 | 110.4 | 2,217.2 | 297.0 |
| 27 | 1.9 | 2.4 | 54.5 | 39.7 | 93.0 | 375.6 | 27.9 | 832.9 | 104.2 |
| 28 | - | - | 43.6 | 33.6 | 108.0 | 1,123.8 | - | 1,363.1 | 28.9 |
| 29 | - | - | - | - | 26.4 | 218.5 | - | 299.6 | 25.9 |
| 32 | - | - | 18.2 | 28.4 | 156.6 | 713.7 | 70.6 | 1,025.3 | 5.6 |
| 33 | 83.9 | 41.3 | 1,076.9 | 1,009.1 | 874.5 | 10,888.1 | 28.2 | 17,321.0 | 1,840.6 |
| 34 | 2.2 | - | 32.0 | - | - | 430.0 | - | 487.0 | 0.0 |
| 35 | - | - | - | - | 43.7 | - | - | 43.7 | 0.0 |
| 41 | - | - | - | - | - | - | 67.0 | 98.1 | 24.1 |
| 42 | 5.4 | 2.4 | 76.6 | - | 52.5 | 328.0 | 11.8 | 1,138.8 | 493.4 |
| 43 | - | - | - | - | - | - | - | 56.0 | 44.6 |
| 51 | 4.8 | 4.8 | 348.2 | 135.8 | 317.4 | 1,393.9 | 147.2 | 3,033.6 | 378.3 |
| 52 | - | - | - | - | - | - | - | 0.0 | 0.0 |
| 53 | 2.7 | 6.0 | 66.1 | 50.2 | 82.2 | 286.7 | 54.0 | 829.1 | 193.0 |
| 54 | 7.8 | 5.6 | 43.3 | 110.5 | 64.7 | 378.0 | 57.8 | 1,395.2 | 443.7 |

TABLE II-2 (Continued)
TOTAL ANNUAL IMPORTS TO SELECTED NATIONS
POTENTIALLY SERVED FROM ADABIYA
VALUE IN U.S. DOLLARS (MILLIONS)

| Division Code | Sudan (1975) | Ethiopia (1976) | Somalia (1975) | Kenya (1977) | Libya (1976) | Algeria (1976) | Tunisia (1976) | Morocco (1976) | Syria (1976) | Lebanon (1973) |
|---|---|---|---|---|---|---|---|---|---|---|
| 55 | 2.5 | 9.3 | 0.2 | 5.0 | 18.7 | 15.3 | - | - | 8.4 | 9.6 |
| 56 | 21.1 | 12.1 | 0.9 | - | 6.4 | 31.0 | 7.3 | 26.3 | 2.7 | 6.2 |
| 57 | - | - | 0.9 | - | - | - | - | - | - | - |
| 58 | 8.5 | 0.6 | 0.8 | 22.7 | 10.7 | 30.4 | 21.1 | 45.3 | 33.4 | 24.0 |
| 59 | 41.2 | 8.2 | 1.2 | - | 16.2 | 35.1 | 11.3 | 26.9 | 12.9 | 12.5 |
| 61 | 2.4 | 1.7 | - | - | - | - | 5.6 | - | - | - |
| 62 | 17.3 | 6.8 | 2.5 | 8.8 | 28.8 | 46.8 | 15.1 | 20.1 | 29.8 | 11.9 |
| 63 | - | - | 0.8 | - | 15.5 | 41.5 | 3.4 | - | 4.2 | 4.6 |
| 64 | 19.9 | 5.2 | 7.2 | 21.8 | 26.5 | 51.0 | 17.6 | 33.7 | 11.2 | 38.0 |
| 65 | 142.4 | 31.6 | 4.7 | 40.4 | 167.7 | 137.1 | 101.1 | 84.1 | 95.9 | 112.2 |
| 66 | 14.4 | 3.6 | 8.4 | 12.1 | 157.9 | 155.6 | 51.9 | 44.0 | 60.5 | 25.9 |
| 67 | 49.4 | 9.0 | 3.6 | 78.9 | 228.8 | 465.2 | 75.0 | 178.5 | 216.9 | 76.7 |
| 68 | 4.3 | 0.9 | 0.4 | 15.5 | 14.0 | 36.2 | 9.1 | 28.6 | 24.8 | 20.6 |
| 69 | 27.4 | 7.1 | 4.8 | 42.4 | 238.5 | 314.5 | 39.0 | 55.9 | 76.8 | 31.7 |
| 71 | 135.8 | 32.0 | 24.2 | 214.7 | 438.6 | 1,284.3 | 264.7 | 442.7 | 297.5 | 124.0 |
| 72 | 22.3 | 16.8 | 5.8 | 60.8 | 305.4 | 467.8 | 119.7 | 127.5 | 127.9 | 68.3 |
| 73 | 148.4 | 71.0 | 19.1 | 160.2 | 390.9 | 719.7 | 141.5 | 339.2 | 238.8 | 118.8 |
| 74 | - | - | - | - | - | - | - | - | - | - |
| 75 | - | - | - | - | - | - | - | - | - | - |
| 76 | - | - | - | - | - | - | - | - | - | - |
| 77 | - | - | - | - | - | - | - | - | - | - |
| 78 | - | - | - | - | - | - | - | - | - | - |
| 79 | - | - | - | - | - | - | - | - | - | - |
| 81 | - | 0.6 | 0.4 | - | 20.3 | 17.9 | 3.5 | 11.3 | 8.3 | 7.4 |
| 82 | - | 0.3 | 0.4 | - | 50.1 | 10.7 | - | - | - | - |
| 83 | - | - | - | - | - | - | - | - | - | - |
| 84 | 4.7 | 8.6 | 0.9 | 19.3 | 170.2 | - | 38.8 | - | 7.1 | 28.5 |
| 85 | - | - | 0.4 | - | 30.8 | - | - | - | - | - |
| 86 | 7.4 | 5.7 | 1.8 | 15.2 | 48.5 | 59.2 | 23.1 | 22.3 | 25.8 | 18.2 |
| 87 | - | - | - | - | - | - | - | - | - | - |
| 88 | - | - | - | - | - | - | - | - | - | - |
| 89 | 8.7 | 9.5 | 2.4 | 25.1 | 116.8 | 47.2 | 21.5 | 32.0 | 22.5 | 35.9 |

TABLE II-2 (Continued)
TOTAL ANNUAL IMPORTS TO SELECTED NATIONS
POTENTIALLY SERVED FROM ADABIYA
VALUE IN U.S. DOLLARS (MILLIONS)

| Division Code | Saudi Arabia (1976) | Yemen (1976) | Yemen (Demi) (1969) | Oman (1976) | Bahrain (1976) | Jordan (1977) | Iraq (1976) | Iran (1975) | Pakistan (1977) | Israel (1976) | Kuwait (1975) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 55 | 46.6 | 6.6 | 2.3 | 6.5 | 9.5 | 8.5 | 13.6 | - | - | - | 26.5 |
| 56 | - | 0.7 | - | - | - | 0.6 | - | 152.7 | 66.1 | - | - |
| 57 | - | 0.3 | - | - | - | - | - | - | - | - | - |
| 58 | 41.3 | 1.8 | - | - | - | 11.1 | - | 175.4 | 25.9 | 54.9 | 5.9 |
| 59 | 36.5 | 2.5 | - | - | 3.0 | 7.3 | - | 81.3 | 62.1 | 38.6 | 8.0 |
| 61 | - | - | - | - | - | - | - | - | - | 19.1 | - |
| 62 | 85.8 | 3.0 | 1.9 | 6.8 | - | 16.4 | 926.1 | 139.9 | 23.9 | 14.0 | 28.8 |
| 63 | 262.1 | 13.7 | - | 13.8 | 16.8 | 10.7 | 44.4 | 49.4 | - | 26.7 | 10.4 |
| 64 | 62.3 | 2.9 | 1.0 | 2.3 | 8.5 | 22.4 | 34.0 | 142.7 | 34.0 | 64.8 | 26.1 |
| 65 | 472.7 | 24.0 | 28.3 | 33.4 | 60.8 | 53.5 | 146.7 | 308.8 | 105.7 | 88.9 | 138.9 |
| 66 | 304.7 | 11.3 | 1.9 | 37.4 | 44.0 | 48.7 | 37.9 | 244.4 | 19.6 | 741.0 | 60.8 |
| 67 | 493.9 | 6.5 | 1.0 | 24.1 | 40.7 | 77.9 | 408.9 | 1,839.3 | 182.7 | 189.8 | 98.0 |
| 68 | 35.7 | 1.8 | - | 0.6 | 9.7 | 9.9 | 28.7 | 127.1 | 38.3 | 81.4 | 9.1 |
| 69 | 462.9 | 7.6 | - | 19.8 | 58.3 | 71.2 | 179.4 | 334.7 | 44.9 | 97.9 | 53.6 |
| 71 | 1,378.5 | 38.5 | 5.2 | 90.6 | 182.5 | 127.5 | 850.4 | 2,539.8 | 383.8 | 441.0 | 216.4 |
| 72 | 824.6 | 12.6 | 3.4 | 69.1 | 101.5 | 88.2 | 328.1 | 805.1 | 148.2 | 221.0 | 263.5 |
| 73 | 1,509.2 | 54.7 | 4.6 | 135.8 | 109.3 | 260.9 | 457.8 | 1,645.4 | 153.6 | 225.4 | 609.6 |
| 74 | - | - | - | - | - | - | - | - | - | - | - |
| 75 | - | - | - | - | - | - | - | - | - | - | - |
| 76 | - | - | - | - | - | - | - | - | - | - | - |
| 77 | - | - | - | - | - | - | - | - | - | - | - |
| 78 | - | - | - | - | - | - | - | - | - | - | - |
| 79 | - | - | - | - | - | - | - | - | - | - | - |
| 81 | 40.1 | 1.9 | - | - | 5.8 | 12.4 | - | 30.8 | - | - | 12.1 |
| 82 | 102.9 | - | - | - | 16.9 | 15.2 | - | - | - | 20.1 | 17.0 |
| 83 | - | - | - | - | 7.5 | - | - | - | - | - | 8.6 |
| 84 | 159.9 | 10.9 | 7.9 | 7.0 | - | 24.9 | - | - | - | - | 105.2 |
| 85 | 25.6 | 6.6 | - | - | 15.2 | 3.3 | - | - | - | - | 17.8 |
| 86 | 240.9 | 2.4 | 1.3 | 13.0 | 15.4 | 18.5 | 52.5 | 169.1 | 24.2 | 68.6 | 52.8 |
| 87 | - | - | - | - | - | - | - | - | - | - | - |
| 88 | - | - | - | - | - | - | - | - | - | - | - |
| 89 | 299.6 | 5.2 | 3.6 | 15.3 | 23.8 | 26.2 | 22.2 | 72.8 | 26.6 | 64.9 | 103.4 |



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TABLE II-2 (Continued)
TOTAL ANNUAL IMPORTS TO SELECTED NATIONS
POTENTIALLY SERVED FROM ADABIYA
VALUE IN U.S. DOLLARS (MILLIONS)

| Division Code | Cyprus (1979) | Malta (1977) | Turkey (1976) | Greece (1979) | Yugoslavia (1976) | Italy (1977) | Egypt (1977) | Total | Total South of Suez |
|---|---|---|---|---|---|---|---|---|---|
| 55 | 5.3 | 6.2 | - | - | - | 167.3 | 20.4 | 388.3 | 137.1 |
| 56 | 6.7 | - | 96.8 | - | 38.8 | - | 39.1 | 515.5 | 254.2 |
| 57 | - | - | 1.0 | - | - | - | - | 2.2 | 1.2 |
| 58 | 12.7 | 8.5 | 97.4 | 141.5 | 172.2 | 903.6 | 81.8 | 1,931.5 | 348.9 |
| 59 | 6.5 | 4.3 | 70.6 | 80.8 | 90.1 | 468.1 | 92.9 | 1,218.1 | 251.3 |
| 61 | 5.9 | 11.0 | - | 54.6 | 24.8 | 329.4 | - | 454.5 | 4.1 |
| 62 | 7.0 | 2.4 | 53.3 | 40.2 | 65.6 | 235.4 | 42.0 | 1,880.4 | 1,268.0 |
| 63 | 5.5 | 4.0 | - | - | 25.9 | - | 37.3 | 580.7 | 422.1 |
| 64 | 22.2 | 13.9 | 28.8 | 121.1 | 70.2 | 297.6 | 114.2 | 1,301.1 | 390.3 |
| 65 | 58.5 | 84.6 | 58.4 | 156.7 | 206.6 | 1,333.3 | 76.5 | 4,353.5 | 1,591.9 |
| 66 | 14.8 | 15.3 | 26.9 | 66.1 | 96.9 | 484.4 | 123.0 | 2,913.4 | 849.2 |
| 67 | 33.7 | 14.5 | 472.6 | 253.8 | 538.3 | 1,953.6 | 175.7 | 8,187.0 | 3,313.9 |
| 68 | 8.1 | 6.7 | 84.3 | 90.3 | 161.9 | 1,373.1 | 27.4 | 2,248.5 | 282.0 |
| 69 | 22.2 | 16.2 | 75.0 | 89.5 | 173.9 | 546.3 | 220.1 | 3,311.6 | 1,314.1 |
| 71 | 63.8 | 46.9 | 1,238.0 | 744.3 | 1,494.4 | 3,561.8 | 749.1 | 17,411.0 | 6,219.9 |
| 72 | 32.2 | 25.9 | 307.8 | 269.6 | 440.3 | 2,266.4 | 306.2 | 7,836.0 | 2,750.0 |
| 73 | 43.9 | 20.2 | 349.6 | 2,113.0 | 548.5 | 2,870.2 | 617.1 | 14,076.5 | 5,339.6 |
| 74 | - | - | - | - | - | - | - | 0.0 | 0.0 |
| 75 | - | - | - | - | - | - | - | 0.0 | 0.0 |
| 76 | - | - | - | - | - | - | - | 0.0 | 0.0 |
| 77 | - | - | - | - | - | - | - | 0.0 | 0.0 |
| 78 | - | - | - | - | - | - | - | 0.0 | 0.0 |
| 79 | - | - | - | - | - | - | - | 0.0 | 0.0 |
| 81 | 3.2 | - | - | - | - | - | - | 176.0 | 104.1 |
| 82 | 1.3 | - | - | - | - | - | - | 234.9 | 152.7 |
| 83 | - | - | - | - | - | - | - | 16.1 | 16.1 |
| 84 | 6.1 | 10.8 | - | 15.2 | 16.1 | 336.9 | 15.3 | 994.3 | 349.3 |
| 85 | - | 2.4 | - | - | - | - | - | 102.1 | 68.9 |
| 86 | 10.3 | 6.8 | 62.3 | 88.1 | 111.5 | 781.4 | 56.0 | 2,002.3 | 620.2 |
| 87 | - | - | - | - | - | - | - | 0.0 | 0.0 |
| 88 | - | - | - | - | - | - | - | 0.0 | 0.0 |
| 89 | 22.0 | 21.4 | 27.3 | 73.2 | 96.5 | 617.8 | 70.7 | 1,914.1 | 644.4 |

Source: Yearbook of International Trade Statistics, Volume 1, Trade by Country, United Nations, New York, 1978.

of the total imports for each commodity in the study region. The table does, therefore, provide at least a general idea of the demand for various products that could perhaps be manufactured at the Adabiya Free Zone. It should be noted that Eygpt's imports are also indicated on this list as Egypt certainly provides a market for a portion of the free zone goods.

In a few cases, there appear to be no imports in the study area of particular commodities, This is not truly the case as, because of the reporting system used by the various countries and the United Nations, these imports have been accounted for under other commodity classifications.

COMPETITION FOR THE ADABIYA FREE ZONE

Adabiya will have to compete with many free zones, both north and south of the Suez Canal in attracting industry. There are a large number of free zones already existing in the Mediterranean area, most of which have port facilities as well as pre-built structures for warehousing. A few of these also have pre-built factories and special cargo handling facilities. The majority of Mediterranean free zones are now simply warehousing and distribution centers, whereas many of these were initially conceived to be industrial free zones. However, although some have been successful in attracting industry, there are very few free zones south of the Suez Canal which would offer much competition to Adabiya. From an analysis of the free zones which would potentially compete with Adabiya, it has been ascertained that Adabiya's primary competition will likely come from Greece, Tunisia (to a lesser degree), and from other Egyptian free zones, primarily Alexandria.

A somewhat detailed analysis was made of the principal exports from Greece, Tunisia, and Egypt in order to assess the magnitude of this competition. This assessment was completed by using three-digit level SITC commodity data. It is found that Egypt is a major exporter of 14 commodity groups, Greece of 44 major commodity groups, and Tunisia of 7. A description of these SITC commodities can be found in Table II-3. These descriptions are to be used in conjunction with Tables II-4, II-5, and II-6, which list Egypt's, Tunisia's, and Greece's principal export receivers respectively, as well as Table II-7, which lists Egypt's major importers. The data used in these tables is the estimated value of 1977 exports received in millions of U.S. dollars.

Unfortunately, many centrally planned economies, such as those in eastern Europe and the Soviet Union, do not report trade data by nation of destination, and therefore cannot be included on these tables. It should also be noted that these tables represent total exports and not just those from free zones. However, they do give a good indication of the types of goods coming from the principal areas competing with Adabiya and also provide some indication of the major trading partners and the influence of trade agreements between these countries.

TABLE II-3

STANDARD INTERNATIONAL TRADE CLASSIFICATION

DESCRIPTION OF COMMODITIES FOUND IN TABLES II-4, II-5, II-6, II-7

| SITC | Description |
|---|---|
| 011 | Meat, prepared |
| 013 | Meat, canned |
| 023 | Butter |
| 024 | Cheese and curd |
| 025 | Eggs, preserved |
| 032 | Fish, canned |
| 041 | Wheat |
| 042 | Rice |
| 044 | Maize, unmilled |
| 046 | Meal and flour of wheat and flour of meslin |
| 047 | Other cereal meals and flours |
| 051 | Fresh fruit and nuts |
| 052 | Dried fruit |
| 053 | Fruit, preserved and prepared |
| 054 | Vegetables, fresh, chilled, or frozen |
| 055 | Vegetables, prepared |
| 074 | Tea |
| 075 | Spices |
| 112 | Alcoholic beverages |
| 121 | Tobacco, unmanufactured |
| 122 | Tobacco, manufactured |
| 211 | Hides and skins, raw |
| 243 | Wood, shaped |
| 244 | Cork, natural |
| 261 | Silk |
| 262 | Wool and animal hair |
| 263 | Cotton |
| 264 | Jute |
| 265 | Vegetable textile fibers (other than cotton and jute) |
| 267 | Other man-made fibers suitable for spinning |
| 271 | Fertilizers, crude |
| 274 | Sulfur and unroasted iron pyrites |
| 275 | Natural abrasives |
| 276 | Other crude minerals |
| 282 | Iron and steel scrap |
| 321 | Coal, coke, and briquettes |
| 411 | Animal oils and fats |
| 421 | Fixed vegetable oils, soft |
| 513 | Inorganic chemicals |
| 551 | Essential oils, perfume, and flavor materials |
| 553 | Perfumery, cosmetics, and toilet preparations |
| 561 | Fertilizers, manufactured |
| 581 | Plastic materials |
| 599 | Chemicals, n.e.s. |
| 611 | Leather manufacturers |
| 612 | Furskins, tanned and dressed |



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TABLE II-3 (Continued)

STANDARD INTERNATIONAL TRADE CLASSIFICATION

DESCRIPTION OF COMMODITIES FOUND IN TABLES II-4, II-5, II-6, II-7

| SITC | Description |
|---|---|
| 631 | Veneers, plywoods, etc. |
| 651 | Textile yarn |
| 652 | Cotton fabrics, woven |
| 654 | Lace, ribbons, tulle, etc. |
| 657 | Floor coverings, tapestry, etc. |
| 661 | Cement building products |
| 662 | Clay, refractory building products |
| 671 | Pig iron |
| 674 | Iron and steel plate, sheet |
| 676 | Railway rails, etc., iron and steel |
| 678 | Iron and steel tubes, pipes, etc. |
| 684 | Aluminum |
| 685 | Lead |
| 691 | Structures and parts, metal |
| 692 | Metal tanks, boxes |
| 693 | Wire products, non-electrical |
| 696 | Cutlery |
| 697 | Household equipment of base metal |
| 717 | Texile, leather machinery |
| 723 | Electrical distributing machinery |
| 731 | Railway vehicles |
| 732 | Road motor vehicles |
| 735 | Ships and boats |
| 812 | Plumbing, heating, and lighting equipment |
| 841 | Clothing, not of fur |
| 842 | Fur clothing |
| 851 | Footwear |
| 891 | Sound recorders, producers |
| 893 | Articles of plastic |

Note: n.e.s. = not elsewhere specified.

Source: Yearbook of International Trade Statistics, 1972, Vol. 2, Trade by Commodity, United Nations, New York, 1978.

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TABLE II-4

EGYPT'S PRINCIPAL EXPORT RECEIVERS - 1977*

(DOLLARS - U.S. MILLIONS)

| SITC Code | Total** | United Kingdom | West Germany | France | Netherlands | Belgium/ Luxemburg | Italy | Ireland | Sweden | Finland | Norway | Denmark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 042 | 59.7 | 2.6 | 3.2 | 0.4 | - | - | 5.9 | - | - | - | - | - |
| 051 | 63.1 | 0.4 | 0.1 | 0.3 | 0.9 | - | 1.1 | - | 0.1 | 0.8 | 0.5 | 0.3 |
| 054 | 80.4 | 29.3 | 3.7 | 4.7 | 3.5 | 0.2 | 1.5 | - | 0.2 | - | - | 0.2 |
| 055 | 11.5 | 6.4 | 2.7 | 0.3 | 2.5 | 0.2 | - | - | - | - | - | 0.2 |
| 075 | 10.8 | 0.3 | 0.6 | 0.6 | 0.3 | 0.1 | 0.1 | - | 0.1 | - | - | - |
| 112 | 27.1 | - | - | - | - | - | - | - | - | - | - | - |
| 263 | 479.3 | 3.4 | 12.1 | 20.2 | 0.6 | 2.4 | 19.1 | - | - | - | - | - |
| 265 | 10.0 | - | 0.3 | 2.4 | - | 5.0 | 2.0 | - | - | - | - | - |
| 267 | 0.7 | - | 0.1 | 0.1 | - | - | 0.2 | - | - | - | - | - |
| 271 | 2.6 | - | - | 0.1 | - | - | - | - | - | - | - | - |
| 551 | 23.5 | 0.1 | 0.8 | 3.6 | 0.4 | - | - | - | - | - | - | - |
| 553 | 25.2 | - | - | - | - | - | - | - | - | - | - | - |
| 651 | 176.9 | 0.5 | 10.9 | 3.3 | 0.3 | 5.2 | 0.3 | 0.1 | 1.6 | - | - | 1.6 |
| 652 | 62.9 | 2.6 | 0.2 | 1.9 | 1.7 | 0.1 | 5.3 | - | - | - | - | 0.4 |



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TABLE II-4 (Continued)

EGYPT'S PRINCIPAL EXPORT RECEIVERS - 1977*

(DOLLARS - U.S. MILLIONS)

| SITC Code | Spain | Portugal | Switzerland | Austria | Greece | Yugoslavia | Iraq | Iran | Syria | Saudi Arabia | Kuwait | Nigeria | Bangladesh |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 042 | - | - | - | - | - | - | - | - | 9.7 | 1.3 | - | - | - |
| 051 | - | - | - | 0.2 | - | - | - | 6.8 | - | - | - | - | - |
| 054 | - | - | 0.6 | 0.4 | - | - | - | - | - | - | - | - | - |
| 055 | - | - | 0.2 | 0.4 | - | - | - | - | - | 0.2 | 0.2 | - | - |
| 075 | - | - | 0.1 | 0.1 | - | - | - | - | - | 0.1 | 0.1 | - | - |
| 112 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 263 | 12.1 | 2.6 | 7.5 | - | 10.6 | 8.3 | - | - | - | - | - | - | 0.3 |
| 265 | 0.5 | - | - | - | - | 0.1 | - | - | - | - | - | - | - |
| 267 | 0.2 | - | - | - | - | - | - | - | - | - | - | - | - |
| 271 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 551 | - | - | 0.3 | - | - | - | - | - | - | - | - | - | - |
| 553 | - | - | - | - | - | - | - | - | - | 0.5 | 0.3 | - | - |
| 651 | - | - | 0.1 | 0.4 | - | - | - | 0.2 | - | - | - | 0.1 | - |
| 652 | - | - | 1.6 | - | - | - | 9.2 | - | - | - | - | - | - |



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TABLE II-4 (Continued)

EGYPT'S PRINCIPAL EXPORT RECEIVERS - 1977*

(DOLLARS - U.S. MILLIONS)

| SITC Code | Singapore | Malaysia | Hong Kong | Japan | Korea RP | Australia | United States | Canada | Cuba | Brazil |
|---|---|---|---|---|---|---|---|---|---|---|
| 042 | - | - | - | - | - | - | - | - | - | - |
| 051 | 1.0 | - | 0.1 | - | - | - | - | - | - | - |
| 054 | - | - | - | - | - | - | - | - | 0.7 | 0.6 |
| 055 | - | - | - | - | - | - | - | - | - | - |
| 075 | 1.9 | 0.6 | - | - | - | - | 0.8 | - | - | - |
| 112 | - | - | - | - | - | - | - | - | - | - |
| 263 | - | - | - | 64.3 | 4.2 | - | - | - | - | - |
| 265 | - | - | - | 0.1 | - | - | - | - | - | - |
| 267 | - | - | - | - | - | - | - | - | - | - |
| 271 | - | - | - | - | - | - | - | - | - | - |
| 551 | - | - | - | 0.1 | - | - | 1.5 | - | - | - |
| 553 | - | - | - | - | - | - | - | - | - | - |
| 651 | - | - | - | - | - | - | - | 1.2 | - | - |
| 652 | - | - | - | - | - | 0.1 | 2.6 | - | - | - |

* Derived from tables listing the 22 major exporting countries and the 20 major importing countries for each commodity. The U.S.S.R. and most east European nations, which accounted for a significant amount of Egypt's trade in 1977, are not included on the U.N.'s commodity matrix tables.

** "Total" is that reported by Egypt. Figures under individual countries are the value of the goods which they report having received from Egypt.

Source: United Nations, Yearbook of International Trade Statistics - 1977, Vol. II, Trade by Commodity, 1978. Reynolds, Smith and Hills, 1979.

TABLE II-5

TUNISIA'S MAJOR EXPORT RECEIVERS - 1977*

(DOLLARS - U.S. MILLIONS)

| SITC Code | United Kingdom | West Germany | France | Nether-lands | Belgium/ Luxemburg | Italy | Ireland | Sweden | Portugal | Switzer-land | Austria | Egypt | United States | Brazil |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 112 | - | 3.3 | 3.8 | - | 1.5 | - | - | 0.4 | - | 0.1 | - | - | - | - |
| 244 | - | - | 0.1 | - | - | 0.2 | - | - | 0.3 | 0.1 | - | - | 0.3 | - |
| 271 | 3.9 | 1.0 | 19.9 | - | - | 0.9 | - | - | - | - | 1.1 | - | - | 7.1 |
| 421 | - | - | 13.7 | - | - | 62.1 | - | - | - | - | - | - | 1.3 | - |
| 513 | - | 2.0 | 8.7 | - | - | 14.8 | - | - | - | - | - | - | - | - |
| 561 | 1.1 | 7.3 | 17.9 | 2.5 | 6.1 | 5.5 | 1.4 | 0.1 | - | - | - | - | - | - |
| 685 | - | - | 0.3 | 3.1 | - | 3.0 | - | - | - | - | - | 0.3 | - | - |

Source: United Nations, Yearbook of International Trade Statistics - 1977, Volume II, Trade by Commodity, New York, 1978.
Reynolds, Smith and Hills, 1979.

TABLE II-6
GREECE'S MAJOR EXPORT RECEIVERS - 1977*
(DOLLARS - U.S. MILLIONS)

| SITC Code | United Kingdom | West Germany | France | Nether-lands | Belgium/ Luxemburg | Italy | Ireland | Sweden | Finland | Norway | Denmark | Spain | Switzer-land | Austria |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 024 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.1 |
| 025 | 0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 041 | 0.4 | - | - | - | - | 2.4 | - | - | - | - | - | - | - | - |
| 042 | 0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 046 | - | 0.5 | - | - | - | - | - | - | - | - | - | - | - | - |
| 047 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 051 | 2.7 | 86.4 | 11.9 | 5.3 | 2.3 | 4.0 | - | 1.4 | 0.5 | 0.4 | 0.7 | - | 1.8 | 13.3 |
| 052 | 64.5 | 11.7 | 7.1 | 6.4 | 0.2 | 3.8 | 0.9 | 0.2 | 0.2 | 0.2 | 0.3 | - | 1.9 | 3.9 |
| 053 | 5.8 | 33.6 | 18.8 | 3.9 | 1.1 | 2.5 | - | - | - | - | 0.2 | 0.4 | 0.4 | 0.2 |
| 054 | 3.6 | 27.5 | 5.8 | 0.7 | 1.2 | 0.7 | - | 0.7 | - | - | 0.3 | - | 0.4 | 3.1 |
| 055 | 12.7 | 9.0 | 7.2 | 10.7 | 1.9 | 18.3 | - | 0.2 | - | - | 0.7 | - | 0.1 | 0.4 |
| 112 | 0.6 | 14.8 | 1.4 | 6.6 | 8.8 | - | - | 0.6 | - | 0.1 | - | - | 0.6 | 0.3 |
| 121 | 0.5 | 32.9 | 2.6 | 3.9 | 3.4 | 4.3 | - | 0.3 | - | - | 0.2 | 0.4 | 3.5 | 1.1 |
| 211 | - | 0.2 | 0.2 | - | - | 4.6 | - | 0.1 | - | - | - | 5.3 | - | - |
| 261 | - | - | - | - | - | 0.1 | - | - | - | - | - | - | - | - |
| 274 | - | - | - | - | - | 0.1 | - | - | - | - | - | - | - | - |
| 275 | 0.8 | 0.4 | 0.1 | 0.1 | - | 0.1 | - | - | - | - | - | 0.1 | - | - |
| 276 | 5.7 | 22.9 | 5.4 | 5.7 | 3.0 | 6.6 | - | 0.4 | - | 0.9 | 0.2 | 5.2 | - | 1.2 |
| 421 | 0.2 | 0.1 | - | - | - | 4.1 | - | 0.1 | - | - | - | - | - | - |
| 513 | 1.5 | 0.8 | 0.3 | 30.4 | 0.7 | 0.6 | - | 0.3 | - | - | 1.0 | - | - | - |
| 581 | 0.1 | 1.9 | 2.4 | 0.6 | 0.3 | 1.9 | - | 0.6 | 0.1 | 0.1 | 0.6 | - | 0.1 | 0.2 |
| 599 | 0.2 | 3.1 | 0.3 | 3.9 | 2.2 | 10.5 | - | 1.3 | - | - | 0.3 | - | 1.1 | 0.1 |
| 613 | 2.2 | 31.2 | 14.5 | 3.6 | 2.1 | 1.4 | - | 4.2 | 0.9 | 3.8 | 0.9 | 1.3 | - | 0.2 |
| 651 | 11.9 | 77.8 | 18.1 | 12.2 | 10.7 | 23.6 | 0.7 | 0.2 | - | - | 5.4 | - | 0.5 | 0.1 |
| 654 | - | 0.2 | - | 0.3 | 0.3 | - | - | - | - | - | - | - | 0.1 | - |
| 657 | 0.3 | 15.2 | 4.6 | 0.6 | 0.4 | 2.2 | - | 1.3 | - | 0.3 | 1.2 | - | 0.7 | 0.3 |
| 661 | - | 1.6 | - | 0.1 | - | - | - | - | - | - | - | - | - | - |
| 662 | - | 0.4 | 1.9 | - | 1.0 | 0.5 | - | 0.2 | - | - | - | - | - | - |
| 671 | 6.4 | 13.3 | 7.8 | - | 0.1 | 0.4 | - | 6.7 | - | - | - | - | - | 0.7 |
| 674 | 0.3 | 0.2 | - | - | - | 1.5 | - | - | - | - | - | - | - | - |
| 678 | - | 0.8 | - | - | - | - | - | - | - | - | - | - | - | - |
| 684 | 0.2 | 8.9 | 35.9 | 0.1 | 0.6 | 39.5 | - | - | - | - | - | - | - | - |
| 692 | - | 0.1 | - | - | - | - | - | - | - | - | - | - | - | - |
| 693 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 696 | 0.5 | - | 2.2 | - | - | 1.7 | - | - | - | - | - | - | - | - |
| 697 | - | 0.4 | - | 0.3 | - | 0.1 | - | 0.1 | - | - | - | - | - | - |
| 723 | - | 0.3 | 0.2 | - | - | - | - | - | - | - | - | - | - | - |
| 735 | - | 7.0 | 0.1 | - | - | 3.3 | - | - | - | - | - | - | - | - |
| 812 | - | 0.7 | 0.4 | 0.2 | 0.3 | 2.0 | - | - | - | - | - | - | - | - |
| 841 | 6.1 | 228.6 | 28.3 | 29.1 | 8.8 | 9.7 | 0.4 | 2.1 | - | 0.4 | 0.5 | - | 3.7 | 2.2 |
| 842 | 2.2 | 104.2 | 10.3 | 5.0 | 1.7 | 0.8 | - | 3.6 | - | 1.5 | 1.1 | 6.6 | 6.7 | - |
| 851 | 2.5 | 18.9 | 0.9 | 5.3 | 0.1 | - | - | 0.2 | - | - | 0.1 | - | 0.9 | 0.5 |
| 891 | 0.3 | 0.1 | 0.2 | 0.1 | 0.2 | - | - | - | - | - | - | - | - | - |
| 893 | 0.7 | 1.9 | 0.7 | 0.1 | 1.9 | 0.5 | - | - | - | - | - | - | - | - |

TABLE II-6 (Continued)
GREECE'S MAJOR EXPORT RECEIVERS - 1977*
(DOLLARS - U.S. MILLIONS)

| SITC Code | Yugoslavia | Iraq | Iran | Syria | Saudi Arabia | Kuwait | Jordan | Egypt | Morocco | Algeria | Libya | U.Ar.Emr. | Turkey | Nigeria |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 024 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 025 | - | - | - | - | 0.1 | 0.6 | 0.4 | - | - | - | - | - | - | - |
| 041 | - | - | - | - | - | - | - | 4.1 | 2.4 | - | - | - | - | - |
| 042 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 046 | - | - | - | - | 1.3 | - | 0.3 | 1.5 | - | 2.4 | - | - | - | - |
| 047 | - | - | - | - | - | - | - | - | - | 2.1 | - | - | - | - |
| 051 | 7.1 | - | 0.5 | - | - | - | - | - | - | - | - | - | - | - |
| 052 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 053 | - | - | - | - | 2.4 | - | - | - | - | - | - | - | - | - |
| 054 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 055 | - | - | - | - | 10.0 | 1.2 | - | - | - | - | - | - | - | 0.8 |
| 112 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 121 | - | - | - | - | - | - | - | 18.0 | - | - | - | - | - | - |
| 211 | 3.0 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 261 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 274 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 275 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 276 | 0.9 | - | - | - | - | - | - | - | - | - | - | - | - | 0.8 |
| 421 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 513 | - | - | - | - | - | - | - | - | - | - | - | - | 2.3 | - |
| 581 | - | - | 0.9 | - | - | - | - | - | - | - | - | - | - | - |
| 599 | 0.1 | - | 1.3 | - | - | - | - | - | - | - | - | - | - | - |
| 613 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 651 | - | - | 1.2 | - | - | - | - | - | - | 0.1 | - | - | - | - |
| 654 | 0.6 | - | - | - | 0.1 | - | - | - | - | - | - | - | - | - |
| 657 | - | - | - | - | 0.3 | - | - | - | - | - | - | - | - | - |
| 661 | - | - | 0.7 | 1.1 | 46.9 | 1.3 | - | 3.3 | - | 7.7 | 26.8 | 4.0 | - | 24.7 |
| 662 | - | - | 0.1 | - | - | 1.2 | - | - | - | - | - | - | - | - |
| 671 | 29.1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 674 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 678 | - | 0.8 | - | - | 1.6 | - | - | - | - | - | - | 0.5 | - | 1.0 |
| 684 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 692 | - | 0.5 | 5.9 | - | 2.0 | - | - | - | - | - | - | - | - | - |
| 693 | 0.2 | 0.2 | - | - | 0.7 | - | - | - | - | - | 1.4 | - | - | - |
| 696 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 697 | - | - | 0.5 | - | 0.6 | - | - | - | - | - | 0.1 | - | - | - |
| 723 | - | 0.1 | 1.0 | - | 4.4 | 1.5 | - | 6.4 | - | - | 3.0 | 1.4 | - | 0.1 |
| 735 | - | - | - | - | 2.6 | - | - | - | - | - | - | - | - | - |
| 812 | - | - | - | - | 1.1 | - | - | - | - | - | - | 0.3 | - | 0.1 |
| 841 | - | - | - | - | 0.4 | 0.6 | - | - | - | - | 2.6 | - | - | - |
| 842 | - | - | - | - | - | 2.2 | - | - | - | - | - | - | - | - |
| 851 | - | - | - | - | 0.2 | - | - | - | - | - | 0.2 | - | - | - |
| 891 | - | - | - | - | 0.3 | - | - | - | - | - | - | - | - | - |
| 893 | - | - | 0.3 | - | 1.5 | - | - | - | - | - | - | - | - | - |



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TABLE II-9 (CONTINUED)

GREECE'S MAJOR EXPORT RECEIVERS - 1977*

(DOLLARS - U.S. MILLIONS)

| SITC Code | South Africa | Singapore | Hong Kong | Japan | Korea RP | Thailand | Australia | New Zealand | United States | Canada | Brazil | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 024 | - | - | - | - | - | - | 1.4 | - | 2.2 | 0.3 | - | 4.7 |
| 025 | - | - | - | - | - | - | - | - | - | - | - | 1.7 |
| 041 | - | - | - | - | - | - | - | - | - | - | - | 4.5 |
| 042 | - | - | - | - | - | - | - | - | - | - | - | 7.9 |
| 046 | - | - | - | - | - | - | - | - | - | - | - | 16.1 |
| 047 | - | - | - | - | - | - | - | - | - | - | - | 2.1 |
| 051 | - | - | - | - | - | - | - | - | - | - | - | 201.0 |
| 052 | - | - | - | 3.4 | - | - | - | 0.4 | 8.5 | 1.5 | - | 135.7 |
| 053 | - | - | - | - | - | - | 0.2 | - | 0.4 | 0.1 | - | 95.0 |
| 054 | - | - | - | - | - | - | - | - | 2.4 | 0.9 | - | 52.2 |
| 055 | - | 0.1 | - | 0.2 | - | - | 1.3 | - | 4.4 | 1.3 | - | 107.6 |
| 112 | - | - | - | 0.2 | - | - | 0.3 | - | 3.2 | 1.1 | - | 36.6 |
| 121 | - | - | - | 19.9 | 4.5 | 0.5 | 1.6 | - | 39.1 | - | - | 153.2 |
| 211 | - | - | - | 0.4 | - | - | - | - | - | - | - | 41.7 |
| 261 | - | - | - | 0.8 | - | - | - | - | - | - | - | 0.2 |
| 274 | - | - | - | - | - | - | - | - | - | - | - | 3.5 |
| 275 | - | - | - | - | - | - | - | - | 1.1 | 0.1 | - | 1.9 |
| 276 | - | - | - | - | - | - | - | - | 3.9 | 0.6 | - | 66.4 |
| 421 | - | - | - | - | - | - | 0.3 | - | 0.4 | - | - | 8.7 |
| 513 | | - | - | - | - | - | - | - | - | - | 0.2 | 39.9 |
| 581 | - | - | - | - | - | - | 0.2 | - | - | - | - | 26.4 |
| 599 | 0.1 | - | - | - | - | - | - | - | - | 2.1 | - | 43.9 |
| 613 | - | - | 0.1 | 0.9 | - | - | - | - | 1.8 | 1.3 | - | 66.3 |
| 651 | - | - | - | - | - | - | - | - | 0.2 | 0.2 | - | 201.1 |
| 654 | - | - | - | - | - | - | - | - | 0.1 | 0.6 | - | 7.6 |
| 657 | - | - | - | 0.1 | - | - | 0.5 | - | 0.7 | 0.4 | - | 28.1 |
| 661 | - | - | - | - | - | - | - | - | 0.1 | - | - | 134.4 |
| 662 | - | - | - | - | - | - | - | - | - | - | - | 12.3 |
| 671 | - | - | - | - | - | - | - | - | 2.0 | 10.8 | - | 47.4 |
| 674 | - | - | - | - | - | - | - | - | - | - | - | 38.7 |
| 678 | - | - | - | - | - | - | - | - | 7.3 | - | - | 26.3 |
| 684 | - | - | - | 4.0 | - | - | - | - | - | - | - | 123.0 |
| 692 | - | - | - | - | - | - | - | - | - | - | - | 23.1 |
| 693 | - | - | - | - | - | - | - | - | - | - | - | 8.0 |
| 696 | - | - | - | - | - | - | 0.3 | - | 2.1 | 0.3 | - | 7.4 |
| 697 | - | - | - | - | - | - | - | - | 0.1 | 0.1 | - | 9.9 |
| 723 | - | - | - | - | - | - | - | - | - | - | - | 32.5 |
| 735 | - | - | - | - | 1.3 | - | - | - | 0.3 | - | - | 43.7 |
| 812 | - | - | - | - | - | - | - | - | 0.3 | - | - | 7.4 |
| 841 | - | - | - | - | - | - | 0.1 | - | 2.2 | 0.3 | - | 200.4 |
| 842 | - | - | - | 0.5 | - | - | - | - | 1.4 | 0.7 | - | 16.6 |
| 851 | - | - | - | - | - | - | 0.3 | - | 23.0 | 3.5 | - | 54.0 |
| 891 | - | - | - | - | - | - | 0.2 | - | 0.5 | - | - | 7.1 |
| 893 | - | - | - | - | - | - | - | - | 0.4 | 0.7 | - | 14.5 |

* Figures for centrally-planned economies not all included.

Source: United Nations, Yearbook of International Trade Statistics - 1977, Volume II, Trade by Commodity, New York,



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TABLE II-7
EGYPT'S PRINCIPAL IMPORTS - 1977*
(DOLLARS - U.S. MILLIONS)

| SITC Code | United Kingdom | West Germany | France | Nether-lands | Belgium/ Luxemburg | Italy | Ireland | Sweden | Finland | Norway | Denmark | Spain | Switzer-land | Austria |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 011 | 0.1 | - | - | 0.1 | - | - | - | - | - | - | - | - | - | - |
| 013 | - | 0.2 | 0.7 | 0.1 | - | - | - | - | - | - | 0.2 | - | - | - |
| 023 | - | - | 5.2 | 3.3 | 13.5 | - | 2.8 | - | 0.5 | - | 0.6 | - | - | 0.1 |
| 024 | - | 2.1 | 5.4 | 3.7 | - | 0.1 | - | - | - | - | 1.7 | - | 0.6 | 0.3 |
| 032 | - | 0.2 | - | 0.1 | - | - | - | - | - | - | - | 0.2 | - | - |
| 041 | - | - | 12.2 | 1.4 | - | - | - | - | - | - | - | - | - | - |
| 044 | - | - | 0.1 | - | - | - | - | - | - | - | - | - | - | - |
| 046 | 1.5 | - | 58.0 | 2.6 | 1.8 | 9.6 | - | 1.3 | - | - | - | - | - | - |
| 074 | - | 0.1 | - | - | - | - | - | - | - | - | - | - | - | - |
| 121 | - | - | - | - | - | 6.2 | - | - | - | - | - | - | - | - |
| 122 | 9.6 | 1.6 | 0.1 | 2.1 | 0.1 | - | 0.1 | - | - | - | - | - | 0.1 | - |
| 243 | - | 2.6 | 1.0 | 0.1 | - | - | - | 27.5 | 52.6 | - | - | - | - | 21.9 |
| 261 | 0.4 | - | 0.1 | - | 0.2 | 0.1 | - | - | - | - | - | - | - | - |
| 262 | - | - | - | 0.1 | - | - | - | - | - | - | - | - | - | - |
| 263 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 264 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 274 | - | 0.1 | - | - | - | 0.8 | - | - | - | - | - | - | - | - |
| 282 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 321 | 1.6 | 1.4 | 0.3 | - | - | 2.5 | - | - | - | - | - | - | - | - |
| 411 | 0.1 | 7.3 | 2.9 | 3.7 | 1.4 | - | - | - | - | - | - | - | - | - |
| 612 | 0.1 | 0.1 | 0.2 | - | - | 4.4 | - | - | - | - | - | - | - | - |
| 631 | 0.1 | 0.3 | - | - | 1.3 | 2.2 | - | 1.4 | 0.2 | - | - | 0.4 | - | - |
| 661 | 0.1 | 0.5 | 2.2 | 0.5 | - | 2.4 | - | - | - | - | - | 11.8 | - | - |
| 676 | 0.1 | 0.9 | - | - | 1.4 | 2.5 | - | - | - | - | - | 0.3 | - | - |
| 685 | 5.8 | 0.2 | 0.6 | - | 0.2 | - | - | - | - | - | 0.4 | - | - | - |
| 691 | 3.5 | 35.9 | 6.2 | 2.4 | 0.6 | 21.2 | - | 0.5 | - | - | 4.9 | 0.8 | 0.8 | - |
| 717 | 12.8 | 28.2 | 7.5 | 1.5 | 11.6 | 5.8 | - | 0.2 | - | - | - | 2.2 | 8.5 | - |
| 723 | 2.6 | 3.6 | 1.7 | - | - | 1.8 | - | 1.6 | 0.1 | - | - | 3.0 | 0.3 | - |
| 731 | 0.5 | 8.8 | 3.9 | - | 0.1 | 1.0 | - | - | - | - | - | - | - | - |
| 732 | 24.5 | 79.3 | 41.6 | 4.9 | 2.6 | 103.6 | - | 5.4 | - | - | 0.8 | 6.8 | 1.0 | 1.4 |

TABLE II-7 (Continued)
EGYPT'S PRINCIPAL IMPORTS - 1977*
(DOLLARS - U.S. MILLIONS)

| SITC Code | Greece | Yugoslavia | Cyprus | Turkey | Kuwait | Syrn A.R. | Saudi Arabia | Singapore | Morocco | Lebanon | Tunisia | Kenya |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 011 | - | - | - | - | - | - | - | - | - | - | - | - |
| 013 | - | 1.2 | - | - | - | - | - | - | - | - | - | - |
| 023 | - | - | - | - | - | - | - | - | - | - | - | - |
| 024 | - | - | - | - | - | - | - | - | - | - | - | - |
| 032 | - | - | - | - | - | - | - | - | 0.6 | - | - | - |
| 041 | 4.1 | - | - | 3.4 | - | - | - | - | - | - | - | - |
| 044 | - | - | - | - | - | - | - | - | - | - | - | - |
| 046 | 1.5 | - | - | - | - | - | - | - | - | - | - | - |
| 074 | - | - | - | - | - | - | - | - | - | - | - | 15.0 |
| 121 | 18.0 | 3.6 | - | 8.4 | - | 0.2 | - | - | - | - | - | - |
| 122 | - | - | 0.2 | - | - | - | - | - | - | - | - | - |
| 243 | - | 40.6 | - | - | - | - | - | - | - | - | - | - |
| 261 | - | - | - | - | - | - | - | - | - | - | - | - |
| 262 | - | - | - | - | - | 0.7 | - | - | - | - | - | - |
| 263 | - | - | - | - | - | - | - | - | - | - | - | - |
| 264 | - | - | - | - | - | - | - | - | - | - | - | - |
| 274 | - | - | 0.8 | - | - | - | - | - | - | 0.6 | - | - |
| 282 | - | - | - | - | - | - | - | - | - | 1.0 | - | - |
| 321 | - | - | - | - | - | - | - | - | - | - | - | - |
| 411 | - | - | - | - | - | - | - | - | - | - | - | - |
| 612 | - | - | - | - | - | - | - | - | - | - | - | - |
| 631 | - | 4.2 | | - | - | - | - | 0.8 | - | - | - | - |
| 661 | 3.3 | 0.6 | 9.4 | 0.4 | - | - | - | - | - | - | - | - |
| 676 | - | - | - | - | - | - | - | - | - | - | - | - |
| 685 | - | - | - | - | - | - | - | - | - | - | 0.3 | - |
| 691 | - | 2.0 | - | - | - | - | - | 0.9 | - | - | - | - |
| 717 | - | 0.9 | - | - | - | - | - | - | - | - | - | - |
| 723 | 6.4 | 0.9 | - | - | - | - | - | - | - | 0.3 | - | - |
| 731 | - | - | - | - | - | - | - | - | - | - | - | - |
| 732 | - | 17.8 | - | - | 8.1 | - | - | - | - | - | - | - |

TABLE II-7 (Continued)
EGYPT'S PRINCIPAL IMPORTS - 1977*
(DOLLARS - U.S. MILLIONS)

| SITC Code | U.Rp.Tnz. | Ivory Ct. | Ghana | Malawi | Zambia | Algeria | Indonesia | Hong Kong | Korea | Japan | Philippines | Thailand |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 011 | - | - | - | - | - | - | - | - | - | - | - | - |
| 013 | - | - | - | - | - | - | - | - | - | - | - | - |
| 023 | - | - | - | - | - | - | - | - | - | - | - | - |
| 024 | - | - | - | - | - | - | - | - | - | - | - | - |
| 032 | - | - | - | - | - | - | - | - | 0.1 | 10.5 | - | - |
| 041 | - | - | - | - | - | - | - | - | - | - | - | - |
| 044 | - | - | - | - | - | - | - | - | - | - | - | - |
| 046 | - | - | - | - | - | - | - | - | - | - | - | - |
| 074 | 0.3 | - | - | - | - | - | 6.9 | - | - | - | - | - |
| 121 | - | - | - | 3.3 | 4.7 | - | - | - | - | - | 0.8 | - |
| 122 | - | - | - | - | - | - | - | - | - | - | - | - |
| 243 | - | 0.3 | 0.3 | - | - | - | - | - | - | - | - | - |
| 261 | - | - | - | - | - | - | - | - | 0.1 | - | - | - |
| 262 | - | - | - | - | - | - | - | - | - | - | - | - |
| 263 | - | - | - | - | - | - | - | - | - | - | - | - |
| 264 | - | - | - | - | - | - | - | - | - | - | - | 4.8 |
| 274 | - | - | - | - | - | - | - | - | - | - | - | - |
| 282 | - | - | - | - | - | 1.1 | - | - | - | - | - | - |
| 321 | - | - | - | - | - | - | - | - | - | - | - | - |
| 411 | - | - | - | - | - | - | - | - | - | - | - | - |
| 612 | - | - | - | - | - | - | - | - | - | - | - | - |
| 631 | - | - | - | - | - | - | - | - | 2.2 | - | - | - |
| 661 | - | - | - | - | - | - | - | - | - | - | - | - |
| 676 | - | - | - | - | - | - | - | - | - | 1.1 | - | - |
| 685 | - | - | - | - | - | - | - | - | - | - | - | - |
| 691 | - | - | - | - | - | - | - | - | 0.2 | 3.8 | - | - |
| 717 | - | - | - | - | - | - | - | 0.2 | 0.1 | 19.7 | - | - |
| 723 | - | - | - | - | - | - | - | - | 0.1 | 0.9 | - | - |
| 731 | - | - | - | - | - | - | - | - | - | 11.8 | - | - |
| 732 | - | - | - | - | - | - | - | - | - | 45.2 | - | - |

TABLE II-7 (Continued)
EGYPT'S PRINCIPAL IMPORTS - 1977*
(DOLLARS - U.S. MILLIONS)

| SITC Code | Bangladesh | India | Australia | Sr. Lanka | New Zealand | United States | Canada | Brazil | Argentina | Uruguay | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 011 | - | - | 31.4 | - | 0.9 | 7.5 | - | - | 5.6 | 8.5 | 57.9 |
| 013 | - | - | - | - | - | 0.5 | - | 3.4 | - | - | 6.7 |
| 023 | - | - | - | - | 0.3 | 0.2 | - | - | - | - | 26.7 |
| 024 | - | - | - | - | 1.2 | - | - | - | - | - | 15.4 |
| 032 | - | - | - | - | - | 0.2 | 60.2 | - | - | - | 14.4 |
| 041 | - | - | 79.3 | - | - | 168.5 | - | - | 6.4 | - | 328.7 |
| 044 | - | - | - | - | - | 76.7 | - | - | - | - | 76.7 |
| 046 | - | - | - | - | - | 52.7 | 3.3 | - | - | - | 126.2 |
| 074 | - | 17.1 | - | 22.4 | - | - | - | - | - | - | 67.1 |
| 121 | - | 0.7 | - | - | - | 26.7 | - | 0.6 | 0.4 | - | 86.3 |
| 122 | - | - | - | - | - | 4.4 | - | - | - | - | 19.2 |
| 243 | - | - | - | - | - | 9.9 | 1.6 | - | - | - | 228.1 |
| 261 | - | - | - | - | - | - | - | - | - | - | 0.2 |
| 262 | - | - | 27.5 | - | 6.5 | - | - | - | - | 0.2 | 41.0 |
| 263 | - | - | - | - | - | 49.1 | - | - | - | - | 49.1 |
| 264 | 5.0 | - | - | - | - | - | - | - | - | - | 9.8 |
| 274 | - | - | - | - | - | - | - | - | - | - | 10.2 |
| 282 | - | - | - | - | - | 6.4 | 1.3 | - | - | - | 10.0 |
| 321 | - | - | - | - | - | 21.9 | - | - | - | - | 70.6 |
| 411 | - | - | - | - | - | 52.1 | - | - | - | - | 67.0 |
| 612 | - | - | - | - | - | 0.1 | - | - | - | - | 5.1 |
| 631 | - | - | - | - | - | 0.4 | - | - | - | - | 34.6 |
| 661 | - | - | - | - | - | 0.1 | - | - | - | - | 67.8 |
| 676 | - | 4.6 | - | - | - | - | - | - | - | - | 11.2 |
| 685 | - | - | - | - | - | - | - | - | - | - | 8.5 |
| 691 | - | - | - | - | - | 3.2 | - | - | - | - | 134.6 |
| 717 | - | 0.3 | - | - | - | 2.1 | - | - | - | - | 123.6 |
| 723 | - | - | - | - | - | 8.2 | - | - | - | - | 55.0 |
| 731 | - | 0.1 | - | - | - | 17.1 | 0.1 | 0.1 | - | - | 53.0 |
| 732 | - | - | - | - | - | 54.3 | - | - | - | - | 506.9 |

* Figures for centrally planned economies not all included.

Source: United Nations, Yearbook of International Trade Statistics, 1977, Vol. II, Trade by Commodity, New York, 1978.
Reynolds, Smith and Hills. 1979.

From Table II-4, it can be seen that Egypt is a major exporter of cotton, as well as textile yarn and woven cotton fabrics. Other principal exports include rice, fresh fruit and nuts, and dried fruit. These commodities are being shipped primarily to the European Economic Community (EEC). Non-EEC Mediterranean nations, in addition to Switzerland and Austria, consume much of the balance of Egypt's trade. Japan and Korea both import substantial amounts of Egypt's cotton. Egypt exports only a relatively small amount to the other Middle Eastern nations such as Iraq, Iran, Syria, Saudi Arabia, and Kuwait. These countries made up only a very small portion of Egypt's trade in 1977, and recent political events have undoubtedly cut back that amount even further.

Table II-5 shows that, as of 1977, Tunisia was a major exporter of only a relatively small number of items. The principal items included crude fertilizers, manufactured fertilizers, fixed vegetable oils, and inorganic chemicals. Again, the principal trading partners are found in the EEC, principally West Germany, France, and Italy. Tunisia apparently did little export business with the Middle Eastern nations in 1977. That country has, however, established a large number of free zones over the past few years and is expected to become a major competitor with those of Egypt.

Table II-6 includes the somewhat extensive list of major commodities exported by Greece in 1977. In terms of total dollar value, the principal commodities (over $100 million in value) include fresh fruit and nuts, dried fruit, prepared vegetables, unmanufactured tobacco, textile yarn, cement building products, aluminum, and clothing. The principal receivers of these products included primarily the United States and the EEC. Exports to Middle Eastern countries are notably small. However, it is known that with the recent political problems in Lebanon and Iran, a number of major companies have moved their Middle East distribution facilities from those countries to Greek free zones. With its relatively stable government and excellent shipping facilities, Greece is expected to become a major free zone competitor with Egypt.

## EGYPT'S PRINCIPAL IMPORTS

A list of Egypt's major imports in 1977, as well as the countries from which these goods were imported, can be found on Table II-7. While Egypt was one of the world's major exporters of 14 separate SITC commodities, it was a major importer of 30 SITC commodities. Its more notable imports include wheat, meal and flour of wheat, shaped wood, metal structures and parts, textile machinery for leather products, and road motor vehicles. Egypt's imports of these commodities totaled over $100 million in 1977.

It can be seen from the table that the United States and the European Economic Community (EEC) constitute Egypt's major trading partners. It should again be kept in mind that the Eastern European nations and the Soviet Union are not included in the United Nations statistics of trading partners. However, it is felt that imports from most of those nations have been dwindling over the past several years.



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Australia, Yugoslavia, and Japan constitute major trading partners in a few select commodities. It is important to note that, as with the case of Egypt's exports, Egypt imports extremely little from other Arab nations. While Egypt's overall trade may not be severely impacted by the Arab boycott, the Arab markets, especially in terms of exports from Egypt, may be critically important to the success of the Adabiya Free Zone.

## EGYPT'S PRINCIPAL TRADING PARTNERS

Egypt enjoys most favored nation status in trading with the United States and has signed a number of trade agreements with the European Economic Community as well as with individual and groups of Arab countries. Table II-8 lists the principal nations from which Egypt is importing and the value of goods coming from those countries. More goods are imported from the United States than any other country. However, some of the EEC nations have been rapidly gaining ground on the United States. These countries particularly include Germany, France, Italy, United Kingdom, and the Netherlands. Each of those EEC nations exported a substantially higher value of goods to Egypt in 1977 than they had in 1973. It is expected that the United States and the EEC will continue to be the major countries from which Egypt imports. Japan and Australia represent two other substantial exporters to Egypt, and are expected to continue in that role. The Soviet Union and several East European nations are also rather high on the list of countries exporting to Egypt, but those nations have been decreasing and are expected to continue to decrease in the relative importance of their exports to Egypt. Perhaps the most notable factor on the table is the extreme year-to-year fluctuation of Egypt's imports from other Middle Eastern nations. Indeed, 1979 data, when available, will undoubtedly show this trend as continuing. It is obvious from the tables that Egypt's most stable sources of imports are, and probably will continue to be, the United States and the European Economic Community.

Table II-9 presents a list of the principal nations to which Egypt is exporting. While the Soviet Union and several East European nations appear near the top of this list, the relative importance of these nations has certainly declined since 1977, and can be expected to continue to decline in the future. In their place, Japan, the EEC, and other European nations, along with perhaps the United States, will presumably take over the positions of importing the most goods from Egypt.

It should be noted that while the growth of Egypt's exports to other Middle Eastern nations have been much more steady than have its imports from those nations during the 1970s, the total dollar value of those exports is quite low compared to that going to Europe. The recent political problems have undoubtedly fostered a marked decline in Egypt's exports to the Middle Eastern nations. It is presumed that the political problems which have caused a break in relations between Egypt and most of the other Arab nations will be solved sometime within the next few years, and the Arab nations will resume their role as modest importers of Egyptian goods. It is doubtful, however, that they will ever represent

TABLE II-8

EGYPT'S PRINCIPAL TRADING PARTNERS:

NATIONS FROM WHICH EGYPT IS IMPORTING

(THOUSANDS OF U. S. DOLLARS)

| Country | 1973 | 1975 | 1977 |
|---|---|---|---|
| U.S. - Puerto Rico | 114,579 | 756,932 | 788,105 |
| Germany | 71,739 | 329,483 | 515,673 |
| France | 77,616 | 421,686 | 303,894 |
| Italy | 42,946 | 232,454 | 429,877 |
| USSR | 64,702 | 232,880 | 270,813 |
| United Kingdom | 34,469 | 178,899 | 280,611 |
| Australia | 46,506 | 171,665 | 139,666 |
| Japan | 13,954 | 129,964 | 138,773 |
| Netherlands | 27,637 | 107,445 | 128,481 |
| Romania | 41,463 | 143,845 | 80,566 |
| German Dm. Rp. | 45,611 | 100,891 | 82,553 |
| Switzerland | 15,483 | 81,177 | 90,673 |
| India | 25,255 | 65,491 | 82,018 |
| Czechoslovakia | 30,122 | 58,824 | 75,601 |
| Yugoslavia | 5,663 | 54,028 | 118,044 |
| Saudi Arabia | 565 | 133,227 | 30,638 |
| Belgium-Lux | 10,216 | 49,630 | 66,604 |
| Lebanon | 19,777 | 83,969 | 23,216 |
| China | 25,911 | 37,103 | 52,065 |
| Greece | 10,533 | 24,011 | 57,460 |
| Sweden | 11,443 | 36,847 | 69,248 |
| Spain | 8,789 | 32,116 | 56,952 |
| Poland | 23,455 | 35,841 | 35,434 |
| Bulgaria | 18,997 | 30,552 | 38,948 |
| Austria | 3,738 | 21,723 | 67,053 |
| Finland | 6,243 | 14,458 | 74,089 |
| Canada | 525 | 3,943 | 75,747 |
| Syrian Arab Rp. | 7,487 | 14,421 | 20,162 |
| Iran | 26 | 61,412 | 9,780 |
| Denmark | 5,966 | 9,729 | 31,460 |
| Sudan | 17,284 | 2,054 | 19,540 |
| Brazil | 704 | 10,666 | 32,358 |
| Turkey | 16,796 | 14,519 | 16,159 |
| Hungary | 14,423 | 13,651 | 9,491 |
| Iraq | 11,276 | 17,981 | 14,544 |
| Sri Lanka | 2,927 | 8,637 | 23,074 |
| Kuwait | 1,204 | 8,538 | 16,638 |
| Singapore | 1,488 | 12,938 | 10,208 |
| Argentina | 85 | 225 | 12,332 |
| Bangladesh | 2,741 | 5,642 | 5,866 |

Source: Yearbook of International Trade Statistics, Vol. 1, Trade by Country, United Nations, New York, 1978.

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TABLE II-9

EGYPT'S PRINCIPAL TRADING PARTNERS:

NATIONS TO WHICH EGYPT IS EXPORTING

(THOUSANDS OF U. S. DOLLARS)

| Country | 1973 | 1975 | 1977 |
|---|---|---|---|
| USSR | 367,759 | 606,104 | 395,508 |
| Italy | 49,230 | 62,808 | 180,514 |
| Czechoslovakia | 65,982 | 103,319 | 113,804 |
| German Dm. Rp. | 43,751 | 82,318 | 85,394 |
| Japan | 57,550 | 10,727 | 61,557 |
| United Kingdom | 37,488 | 20,834 | 71,013 |
| France | 27,077 | 21,271 | 60,626 |
| China | 19,149 | 52,505 | 34,123 |
| Greece | 11,770 | 6,721 | 105,163 |
| Poland | 38,063 | 45,512 | 29,371 |
| Germany | 35,269 | 19,969 | 45,862 |
| Romania | 28,590 | 64,617 | 20,254 |
| Netherlands | 12,743 | 30,872 | 49,413 |
| Bulgaria | 20,464 | 34,135 | 14,567 |
| US - Puerto Rico | 16,955 | 2,013 | 32,410 |
| Libyan Arab Jm. | 21,916 | 29,136 | 21,007 |
| Yugoslavia | 11,513 | 23,295 | 37,673 |
| Switzerland | 16,954 | 5,844 | 53,450 |
| Hungary | 17,765 | 15,629 | 16,191 |
| Saudi Arabia | 7,947 | 20,223 | 35,526 |
| Spain | 33,589 | 8,436 | 13,892 |
| India | 33,444 | 9 | 5,652 |
| Belgium-Lux | 11,465 | 6,838 | 13,003 |
| Algeria | 6,477 | 22,295 | 17,899 |
| Brazil | 16,711 | 10,880 | 2,811 |
| Iraq | 5,653 | 14,117 | 20,213 |
| Syrian Arab Rp. | 9,558 | 6,447 | 27,845 |
| Lebanon | 8,774 | 9,387 | 11,429 |
| Sudan | 7,613 | 9,193 | 16,151 |
| Jordan | 3,356 | 4,350 | 8,314 |
| Kuwait | 2,793 | 2,533 | 10,063 |
| Korea Dem. Rp. | 3,506 | 8,117 | 5,307 |
| Iran | 45 | 3,976 | 8,586 |
| Finland | 6,973 | 1,246 | 5,068 |
| Austria | 5,924 | 634 | 3,073 |
| Denmark | 4,918 | 3,516 | 2,446 |
| Sri Lanka | 9,424 | 293 | 113 |
| Bangladesh | 2,720 | 1,497 | 263 |
| Turkey | 598 | 6,111 | 1,602 |
| Sweden | 2,533 | 4,444 | 3,249 |

Source: Yearbook of International Trade Statistics, Vol. 1, Trade by Country, United Nations, New York, 1978.

a market similar in size to that of the European Common Market and the United States. It is against this import/export background that the proposed industrial free zone at Adabiya is analyzed.

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# CHAPTER III
# INDUSTRY TARGETING FOR ADABIYA

## INTRODUCTION

In the design and planning of the Adabiya Free Zone, it is important that there be an understanding of the types of industries which will likely locate in the free zone, as different industries require substantially different infrastructure to meet their needs. While it is impossible to determine exactly which industries will likely locate at Adabiya, an attempt has been made to target those industries which appear most appropriate for that free zone. In performing this targeting, many different criteria were analyzed, as various industries may seem suitable from a particular standpoint, such as market, but when other criteria are analyzed, these same industries may no longer appear appropriate.

Only relatively few free zones in the world have been successful in attracting a significant amount of industry. Fewer still have attracted any heavy industries. In targeting industries for Adabiya, therefore, it was very important that Egypt's economy and technology, as well as that of the nearby markets, be considered. Adabiya's location will certainly give it an edge over the various other free zones which are competing for industries which would supply markets south of the Suez. However, that does not assure that Adabiya will be successful in attracting large amounts of industry if the free zone experience in many other parts of the world can be used as a judge. It is, therefore, important to target the most appropriate industries for the free zone so infrastructure can be designed to be very attractive to these industries.

The methodology used herein is a proven technique for targeting industries for communities and industrial parks, and has direct application to free zones. Industries are analyzed as to their suitability according to, in this case, ten different criteria. They are given values in each of these criteria as to their appropriateness for locating in the Adabiya Free Zone. The criteria are then weighted, as they are not of equal importance. These weights are then applied to the criteria values to determine a total score for that industry. Two separate weighting schemes are used as a sensitivity test, one emphasizing demand and the other emphasizing supply. The methodology will be explained in more detail later in this section.

Of 233 initial industrial types analyzed for inclusion in the free zone, 40 have been targeted for this methodology. Some of these industries are small scale and require little infrastructure. These may, therefore, not be considered as important in planning the infrastructure, but they may well play an important role in the future of the free zone. Many of the others that have been targeted require more substantial infrastructure and are very important in planning the free zone.

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These industries are only targets; that is, they are those which the free zone would have the best chance of attracting and upon which they should concentrate their marketing efforts. Also they would presumably have the most economic success in locating at the free zone. Not all of these industries will indeed be attracted, while some others that have not been targeted may come to the free zone and succeed. This compilation is only a list of those industries which seem to have the best chance of success and which are the most appropriate for the purposes of planning the free zone.

## INDUSTRIES USED IN THE ANALYSIS

The industrial categories used in the targeting analysis were all taken from the Standard Industrial Trade Classification System used by the United Nations. This system was employed because of its universal acceptance and because international trade data is provided according to the Standard International Trade Classification (SITC) codes. Therefore, the industries in this analysis are targeted based on the commodities which they represent.

Initially, 233 industries were assessed for inclusion in the analysis based on 3-digit level SITC codes. It was felt that in some cases a 2-digit level analysis would, for certain types of industries, not have been adequate. However, upon reviewing the 3-digit level industries, it was noted that many of these commodities are actually produced by the same 2-digit level industry. In those cases, the 3-digit level industries were condensed to the 2-digit level, which lessened the total number of industries considered. In addition, it was found that reliable data is only available at the 2-digit level for certain industries so that all 3-digit industries within the same 2-digit category would have virtually the same score in the targeting analysis. Therefore, these 3-digit industries were also condensed to their 2-digit categories. Likewise a number of industries were deleted simply because of their inappropriateness in an Egyptian free zone. These included industries manufacturing highly specialized items and precision scientific instruments which are only produced in a few factories in the developed world, such as nuclear reactors, precision optics, surveying instruments, etc. Following these deletions and groupings, a net of 102 industry categories were used in the targeting analysis for Adabiya, as shown in Table III-1.

These industries were all additionally coded according to the Standard Industrial Classification (SIC) codes which best fit them. These SIC codes were used to gather data for criteria in which data is not available for SITC categories.

## RATING CRITERIA

Various criteria were assessed as to their appropriateness for inclusion in the industry targeting analysis. Attempts were made to consider all the important factors not only from the Egyptian government's viewpoint but also from the investor's standpoint. Attempts

TABLE III-1

STANDARD INTERNATIONAL TRADE CLASSIFICATION

DESCRIPTIONS FOR COMMODITIES USED IN THE ADABIYA ANALYSIS

| SITC | Description (n.e.s. = Not Elsewhere Specified) |
|---|---|
| 01 | Meat and meat preparations |
| 02 | Dairy products |
| 03 | Fish, crustaceans and mollusks, and preparations thereof |
| 042 | Rice (milled) |
| 05 | Vegetables and fruit (prepared) |
| 06 | Sugar, sugar preparations and honey |
| 074 | Tea |
| 075 | Spices |
| 111 | Non-alcoholic beverages |
| 112 | Alcoholic beverages |
| 122 | Tobacco, manufactured |
| 233 | Synthetic rubber latex; synthetic rubber and reclaimed rubber; waste and scrap of unhardened rubber |
| 24 | Cork and wood (including pulpwood and cut) |
| 25 | Pulp and waste paper |
| 263 | Cotton (preliminary processing) |
| 264 | Jute and other textile bast fibers |
| 266 | Synthetic fibers suitable for spinning |
| 267 | Other man-made fibers suitable for spinning and waste of man-made fibers |
| 273 | Stone, sand, and gravel |
| 278 | Other crude minerals |
| 281 | Iron ore and concentrates |
| 282 | Waste and scrap metal of iron or steel |
| 29 | Crude animal and vegetable materials, n.e.s. |
| 323 | Briquettes; coke and semi-coke of coal, lignite, or peat; retort carbon |
| 33 | Petroleum, petroleum products and related materials |
| 34 | Gas, natural and manufactured |
| 42 | Fixed vegetable oils and fats |
| 43 | Animal and vegetable oils and fats, processed, and waxes of animal or vegetable origin |
| 51 | Organic chemicals |
| 52 | Inorganic chemicals |
| 53 | Dyeing, tanning, and coloring materials |
| 54 | Medicinal and pharmaceutical products |
| 55 | Essential oils and perfume materials, toilet, polishing and cleaning preparations |
| 56 | Fertilizers, manufactured |
| 57 | Explosives and pyrotechnic products |



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TABLE III-1 (Continued)

STANDARD INTERNATIONAL TRADE CLASSIFICATION

DESCRIPTIONS FOR COMMODITIES USED IN THE ADABIYA ANALYSIS

| SITC | Description (n.e.s. = Not Elsewhere Specified) |
|---|---|
| 58 | Artificial resins and plastic materials, and cellulose esters and ethers |
| 59 | Chemical materials and products, n.e.s. |
| 611 | Leather |
| 612 | Manufactures of leather or of composition leather, n.e.s. saddlery and harness; parts of footwear, n.e.s. |
| 62 | Rubber manufactures, n.e.s |
| 63 | Cork and wood manufactures - excluding furniture |
| 64 | Paper, paperboard, and articles of paper pulp, of paper or of paperboard |
| 651 | Textile yarn |
| 652 | Cotton fabrics, woven - not including narrow or special fabrics |
| 653 | Fabrics, woven, of man-made fibers - not including narrow or special fabrics |
| 656 | Tulle, lace, embroidery, ribbons, trimmings and other small wares |
| 657 | Special textile fabrics and related products |
| 658 | Made-up articles, wholly or chiefly of textile materials, n.e.s. |
| 659 | Floor coverings, etc. |
| 661 | Non-metallic mineral manufactures, n.e.s. (including construction materials) |
| 662 | Clay construction materials and refractory construction materials |
| 663 | Mineral manufactures, n.e.s. (including articles of stone and ceramics) |
| 664 | Glass |
| 665 | Glassware |
| 666 | Pottery |
| 667 | Pearls, precious and semi-precious stones, varnished or worked |
| 67 | Iron and steel |
| 68 | Non-ferrous metals |
| 69 | Manufactures of metal, n.e.s. |
| 71 | Power generating machinery and equipment |
| 721 | Agricultural machinery - excluding tractors - and parts thereof, n.e.s. |
| 722 | Tractors, whether or not fitted with power take-offs, winches or pulleys |



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TABLE III-1 (Continued)

STANDARD INTERNATIONAL TRADE CLASSIFICATION

DESCRIPTIONS FOR COMMODITIES USED IN THE ADABIYA ANALYSIS

| SITC | Description (n.e.s. = Not Elsewhere Specified) |
|---|---|
| 723 | Civil engineering and contractors' plant and equipment and parts thereof, n.e.s. |
| 724 | Textile and leather machinery, and parts thereof, n.e.s. |
| 726 | Printing and bookbinding machinery, and parts thereof, n.e.s. |
| 727 | Food-processing machines - excluding domestic - and parts thereof, n.e.s. |
| 728 | Other machinery and equipment specialized for particular industries and parts thereof, n.e.s. |
| 73 | Metalworking machinery |
| 74 | General industrial machinery and equipment, n.e.s., and machine parts, n.e.s. |
| 751 | Office machines |
| 752 | Automatic data processing machines and units thereof, magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, n.e.s. |
| 76 | Telecommunications and sound recording and reproducing apparatus and equipment |
| 771 | Electric power machinery, and parts thereof |
| 772 | Various electrical apparatus, including circuits, plugs, resistors, etc. |
| 773 | Equipment for distributing electricity |
| 774 | Electric apparatus for medical purposes and radiological apparatus |
| 775 | Household type electrical and non-electrical equipment, n.e.s. |
| 778 | Electrical machinery and apparatus, n.e.s |
| 781 | Passenger motor cars, including vehicles designed for the transport of both passengers and goods |
| 782 | Motor vehicles for the transport of goods or materials and special purpose motor vehicles |
| 783 | Road motor vehicles, n.e.s. |
| 785 | Motorcycles, motor scooters and other cycles, motorized and non-motorized; invalid carriages |
| 786 | Trailers and other vehicles, not motorized, n.e.s., and specially designed and equipped transport containers |
| 791 | Railway vehicles and associated equipment |
| 792 | Aircraft and associated equipment, and parts thereof, n.e.s. |
| 793 | Ships, boats and floating structures |

TABLE III-1 (Continued)

STANDARD INTERNATIONAL TRADE CLASSIFICATION

DESCRIPTIONS FOR COMMODITIES USED IN THE ADABIYA ANALYSIS

| SITC | Description (n.e.s. = Not Elsewhere Specified) |
|---|---|
| 81 | Sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s. |
| 82 | Furniture and parts thereof |
| 83 | Travel goods, handbags and similar containers |
| 84 | Articles of apparel and clothing accessories |
| 85 | Footwear |
| 87 | Professional, scientific and controlling instruments and apparatus, n.e.s |
| 881 | Photographic apparatus and equipment, n.e.s. |
| 882 | Photographic and cinematographic supplies |
| 883 | Cinematography film, exposed and developed |
| 885 | Watches and clocks |
| 892 | Printed matter |
| 893 | Articles of plastic |
| 894 | Baby carriages, toys, games and sporting goods |
| 895 | Office and stationary supplies, n.e.s. |
| 897 | Jewelry, goldsmiths' and silversmiths' wares, and other articles of precious or semi-precious materials, n.e.s. |
| 899 | Other miscellaneous manufactured articles, n.e.s. |

Source: Standard International Trade Classification, Revision 2, United Nations, Statistical Papers, Series M, No. 34/Revision 2, New York, 1975.

were also made to select criteria which could be definitely quantified on some relative scale and which would receive similar ratings whether calculated from the government's or the investor's standpoint. The criteria were also chosen to represent as wide a range of considerations as possible. The ten criteria which were ultimately selected for industrial targeting analysis can be seen on Table III-2.

Each industry was rated according to each of these ten criteria and given a value of from one to five. In each case, a "five" indicates that at least according to that one criteria this particular industry is most suited for inclusion in the Adabiya Free Zone. On the other hand, a "one" means that at least according to this criteria, the industry may not at all be appropriate for the free zone. The other numbers imply relative rankings with respect to those already described for one and five. No attempt was made to see that there was a normal distribution of these numbers or that the same number of industries were given ones as were given twos, etc. They were rated, rather, on their relative appropriateness for inclusion in the free zone.

The first criteria, relative growth potential for industry, was based on the relative growth in international trade in each of those products during the period 1973 to 1977. An assessment of the industries locating in industrial parks and free zones throughout the world are primarily those which are showing substantial growth rates. The fast growing industries are most likely to have spin-offs from the home factory. Given the fact that most industries locating in the Egyptian free zones must be export oriented, it was felt that the measurement of the growth rate of those industries should most logically be based on the growth rate of the international trade in their commodities. The average growth rate for these commodities during the 1973 to 1977 period was approximately 79 percent in terms of the value of that trade. Petroleum products were excluded from the calculations as they would heavily skew the average upward, making the growth rate in most other industries pale by comparison. Industries averaging about a 55 to 90 percent growth rate during that period were given a rating of 3. On the extreme end of the scale, industries which had a growth rate of over 120 percent were given a rating of 5, while those which showed a negative growth rate were given a 1.

The second criteria is a measure of the general wage level of the various industries. It is felt that most industries which locate in an Egyptian free zone would do so for various reasons, with the relatively low wages they would have to pay for Egyptian labor being among the most important. Therefore, those industries which have paid low wages in the past, and which have in United States surveys shown an interest in locating in low wage areas, are given a high score, whereas those paying high wages and/or have expressed no interest in locating in low wage areas in the past are given a relatively low score. Information on wage levels of various industries were found in the 1972 Census of Manufactures in the United States, as well as in two Economic Development Administration publications. These publications, Manufacturing Plant Characteristics, 1970, and Industrial Location Determinants, 1971-1975,

TABLE III-2

RATING CRITERIA FOR TARGETING

EGYPTIAN FREE ZONE INDUSTRIES

1. Relative Growth Potential for Industry

5 - Very high
4 - Above average
3 - Moderate
2 - Below average
1 - Very low

2. Wages

5 - Very low
4 - Below average
3 - Average
2 - Above average
1 - Very high

3. Job Potentials (related to land area)

5 - Very high
4 - Above average
3 - Average
2 - Below average
1 - Very low

4. Production Linkages

5 - Mostly in region
4 - Partially in region, mostly in Egypt
3 - Paritally in region and Egypt
2 - Very little in Egypt
1 - Virtually all external

5. Availability of Labor

5 - Primarily unskilled and/or skilled available locally
4 - Largely unskilled and/or skilled available in Egypt
3 - Largely unskilled and semi-skilled, but skilled not available in Egypt
2 - Some unskilled, but skilled not available in Egypt
1 - Heavily skilled, not available in Egypt

6. Availability of Raw Materials

5 - Generally in the region
4 - Partially in the region, generally in Egypt
3 - Little or none in the region, partially in Egypt
2 - Little in Egypt
1 - Virtually none in Egypt

TABLE III-2 (Continued)

RATING CRITERIA FOR TARGETING

EGYPTIAN FREE ZONE INDUSTRIES

7. Proximity of Market

5 - Large stable market in Egypt and nearby countries
4 - Substantial stable market in nearby countries, but to a lesser degree in Egypt
3 - Small market in Egypt and nearby countries, but large stable market in nearby and distant markets
2 - Small nearby and distant markets
1 - Questionable market

8. Effect on the Environment

5 - Initial construction effect only
4 - Little permanent effect
3 - Moderate adverse effect
2 - Substantial adverse effect
1 - Major environmental degradation

9. Infrastructure Needs

5 - Requires little infrastructure
4 - Requires moderate infrastructure, but only small back-up needed
3 - Requires significant infrastructure, and can only supply partial back-up
2 - Requires extensive local infrastructure
1 - Requires extensive reliable infrastructure, and ties in to extensive regional infrastructure

10. Technology Transfer

5 - Very high
4 - Above average
3 - Moderate
2 - Below average
1 - Very low

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TABLE III-2 (Continued)

RATING CRITERIA FOR TARGETING

EGYPTIAN FREE ZONE INDUSTRIES

WEIGHTING FACTORS USED FOR CRITERIA SUMMATION

| Criteria | Method A | Method B |
|---|---|---|
| 1 | 4 | 6 |
| 2 | 2 | 4 |
| 3 | 10 | 2 |
| 4 | 2 | 8 |
| 5 | 6 | 9 |
| 6 | 5 | 5 |
| 7 | 9 | 5 |
| 8 | 4 | 2 |
| 9 | 7 | 6 |
| 10 | 5 | 5 |

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were used to determine both the relative wage scales of the industries as well as the desires of the industries in considering future location sites. Basically, an average wage in the time period considered in these documents was from $3.50 to $3.90 per hour, while anything over $4.30 an hour would be considered very high, and anything under about $3.10 would be considered very low.

Criteria number three, job potentials, was assessed to determine the approximate benefit in terms of employed persons per feddan in each industrial type. It is an expressed goal of the Egyptian free zones to employ large amounts of Egyptian labor. Therefore, those industries which require a large amount of labor per feddan are given a higher rating than those which do not. Information sources used to make calculations on job potential were the same as those used to calculate the second criteria.

The fourth criteria, production linkages, is a relative measure of the amount of other industries and facilities which exist within the Adabiya region and within Egypt that would serve to provide products to these industries and/or utilize the output from these industries. This is obviously an important consideration, both from the Egyptian government's standpoint, as well as from that of the investor. Egypt would certainly like to attract industries to the free zones which could use products manufactured within Egypt, providing them with an additional market, and potential investors are also concerned with having local linkage as a means of cost savings in their production and distribution.

Sources for information on potential linkages with the various SITC categories included the Port Said Master Plan, the Suez Master Plan, the Suez Canal Regional Industrial Plan, and various lists of industries already existing or planned within Egypt, including those in other free zones. Those industries for which potential linkages could be identified within the portion of Egypt immediately surrounding Adabiya were given the highest rating, while those which showed no linkages in the Adabiya region but some within Egypt are ranked relatively lower. Those for which virtually no linkages exist within Egypt were given a rating of 1.

Availability of labor, the fifth criteria, is designed to measure the amount of labor which would be available in the region and in Egypt to work in each industry. Those industries which require large amounts of unskilled labor, or which require skilled labor that would be most likely available locally, are given the highest rating. Those industries requiring labor that is available in Egypt but not all of which would be available locally are given a relatively lower rating. It is not a duplication of criteria 2, which is measuring wages, as in this case the relative wage level is unimportant; this criteria only assesses whether or not the different types of labor are available in the area. The sources of information for this criteria include the EDA publications as well as the Suez and Port Said Master Plans, the Area Handbook for Egypt and various lists of existing industries in Egypt.

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Criteria six, availability of raw materials, is used to assess the relative attractiveness of the Adabiya region for various industries with respect to the raw materials required for their industrial output. The ratings were based on the relative nearness to Adabiya of the various raw materials required by the individual industries. Sources for this information included the Port Said and Suez Master Plans.

The proximity of the market from Adabiya for the various industrial commodities is criteria number seven. Information for this criteria was gathered from the Yearbook of International Trade Statistics, 1977, published by the United Nations. A discussion of this market analysis, including various tables, can be found in Chapter II. Those commodities which were given a rating of 5 in this criteria are those for which there is a large demand in Egypt and nearby countries. While it is true that the free zones are to be geared for export, given the rapid fluctuations in the political situation in the Middle East it is important that there be a large market in Egypt for some of the free zone products. In that way, should the market for those products temporarily evaporate, the industries could continue to stay in business by providing at least some of their output to Egypt. When the political situation once again became more favorable, they would still be operating in the free zone and could continue their exporting operations.

The markets which are located closest to Adabiya, that is those primarily located south of the Suez, are considered most important as the are the ones for which Adabiya holds a distinct locational advantage. Many products have rather large and stable markets in Europe, but not necessarily in the Middle East, owing to various economic and political fluctuations. These products are given an average rating of 3, as they may still be appropriate for location in Adabiya. Egypt may indeed attract some of these industries with its low wages, raw materials, etc. They should not, therefore, be disqualified simply because of a lack of a local market.

Criteria number eight, the effect on the environment, was included to assess the relative environmental impact of various industrial types. This criteria is of importance not only to assess the potential dangers to the health of the many thousands of workers that will be employed in the free zone, but also as a relative measure of the impacts which particular industries would have on other industries located in the same relatively confined space of the zone. Sources for information on this criteria included the EDA publications, as well as various studies on industrial pollution. Those industries which would impact the environment only in the initial construction phase of the project were given ratings of 5. At the other end of the scale, those which would produce major environmental degradation, were given ratings of 1. Most industries fall somewhere between these two extremes.

Infrastructural needs of the various industries were considered in criteria nine. It would certainly not be advantageous for the free zone to set up for exceptionally heavy power loads or extremely large water pipes for just one or two non-typical industries. From the government

standpoint, it would be unwise to provide infrastructure that would be used only by one or two industries and to have, therefore, excessively overprovided for the needs of the balance of the industries. Also, from an investor's standpoint, given the reported unreliability of public power sources and the somewhat questionable future availability of large amounts of fresh water to this region, it is felt that those industries requiring a small or moderate amount of infrastructure would stand the most chance of being attracted to Adabiya. Those industries requiring little infrastructure were, therefore, given a high rating, while those which require extensive infrastructure were given a low rating.

Criteria ten, technology transfer, is designed to assess the relative amount of technology which could be expected to be transferred to Egypt by each particular industry. One of the principal purposes of the Egyptian free zones is to attract industries which would, through the training of Egyptian employees, transfer to Egypt technology which is held by other nations. This can be accomplished through training workers in assembly procedures, machine operation and maintenance, management and administration techniques, etc. Quantifying the amount of technology which one industry could be expected to transfer to Egypt compared to other industries is somewhat difficult. In order to minimize the amount of subjectivity in this criteria, it was assumed that the average annual capital expenditures on machinery and equipment per worker in each particular industry would be a usable measure of the relative amount of technology that would be transferred. It is felt that those industries which enable workers to utilize high-capital equipment and varied machinery would transfer more technology than would more labor-intensive industries. Data for this criteria was derived from the 1972 Census of Manufacturers in the United States. Those industries which display an average capital expenditure on equipment and machinery per worker was given a rating of three, while high-capital industries were given a higher rating, and those with small-capital expenditures were given a low rating. These ratings were derived for each industry with consideration given to the type of operation they would have in an Egyptian free zone. For example, the electronics industry may be a high technology industry, but it is doubtful that a free zone facility would have much of a research function. Rather, it would likely be an assembly operation that would not transfer as much technology as might be at first imagined. This was an important consideration for this criteria.

The ten criteria were then weighted as to their relative importance to each other according to two methods. The first method emphasized the demand or needs of the various industries. In that method, such factors as proximity of the market and infrastructural needs were emphasized. As a check on the sensitivity of this weighting system and on the analysis itself, the second method weighted the supply functions, or natural attractive forces more heavily. In that method, such factors as production linkages and availability of labor were weighted more heavily.

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## INDUSTRIAL RATINGS RESULTS

The ratings given each of the 102 industries in each of the ten criteria used in the analysis can be seen in Appendix Table 8-1. As previously explained, each of the SITC codes was given a rating of from 1 to 5 in each of the ten criteria. The individual ratings were then multiplied by the weight of the respective criteria and then totaled. This was done for both the demand or "A" method and for the supply or "B" method. In the "A" method, there are a total of 270 points available for an industry and in the "B" method there are a total of 260 points available. The difference in total points available is not important as industries are measured relative to one another within each method, and a point total in one method should not be compared to a point total in another method except in terms of the relative rankings of industries in the two separate methods.

The relative rankings of each of the SITC codes are displayed on Appendix Table 8-2. The SITC codes are ranked according to their total scores using method "A." For each of those same codes the relative ranking according to method "B" is also shown. For each method, the total points for the particular industries are shown in parentheses along with the relative ranking.

It can be seen that the industries which scored the highest in method A are also the same ones that scored the highest in method B. It can be noted that virtually all of the industries which ranked highly using both methods were light industries, primarily textiles and food processing. This can be seen by using the SITC descriptions on Table III-3 in conjunction with the results of Appendix Table 8-2. These types of industries generally require very little infrastructure in order for them to be operational. They are, therefore, not truly critical in the planning of the free zone. It is felt that the Adabiya Free Zone will be successful in attracting at least some medium scale industry and that the infrastructure will need to be designed around those operations.

In order to obtain a somewhat comprehensive list of the types of industries which Adabiya could be expected to attract, those SITC categories which ranked reasonably well using both methodologies were initially targeted. Those industries which did not rank reasonably well, using one or both methods, were felt to have definite handicaps for their location in the free zone. That is not to say that none of them could be successful at Adabiya, only that they are less likely to be successful and to be attracted in the first place than those industries which ranked higher in the targeting methodology.

The industries which were initially targeted were then assessed for some "fatal flaw." That is, their rating on each of the criteria were assessed to make certain that there was no one criteria that rated so low as to actually eliminate them from consideration, even though their ratings in the other criteria showed them to be acceptable. It is certainly conceivable that an industry could rank very highly in most criteria, but that there is actually very little market, for instance, for the goods. There were, in fact, five industries that were eliminated

by this fatal flaw analysis. SITC 042, milled rice, was eliminated because the job potentials are low and because it is not generally a free zone industry. SITC 112, alcoholic beverages, was deleted because of the lack of a local market which would logically be served from a free zone in Adabiya. SITC 323, briquettes, coke and semi-coke of coal, etc., was eliminated for a lack of certain resources, and because it is not normally a free zone industry due to the necessary linkages. SITC 58, artificial resins and plastic materials, and cellulose esters and ethers war dropped because it is a high-skill industry not normally seeking free zone locations. And lastly, SITC 64, paper, paperboard, and articles of paper pulp, of paper or of paperboard, was eliminated because of its dependence on imports and on the fact that a similar industry has recently been constructed in the Suez area.

Likewise, those industries which were eliminated in the initial targeting methodology were all reassessed to be sure that none were eliminated simply because they scored one or two points lower than some other industry that was accepted. It is important to be certain that those industries that were eliminated had substantially less of a chance of being successful in the Adabiya Free Zone than those which were not eliminated. Using this logic, six industries which had narrowly missed the cut-off point for acceptance in the preliminary analysis were added to the list of targeted industries for Adabiya. These included SITC 724, textile and leather machinery, and parts thereof; SITC 76, telecommunications and sound recording and reproducing apparatus and equipment; SITC 771, electric power machinery, and parts thereof; SITC 772, electrical apparatus, including circuits, plugs, resistors, etc.; SITC 786, trailers and other vehicles, not motorized, and especially designed and equipped transport containers; and SITC 81, sanitary, plumbing, heating, and lighting fixtures and fittings.

In total, 40 industries have been targeted for inclusion in the Adabiya Free Zone. These industries can be found on Table III-3. This list of industries was then used as a guide to the design of infrastructure for the Adabiya Free Zone. One of these industries, SITC 786, was subdivided to isolate what could be called "Handling and Container Manufacture Industries."

The Adabiya Free Zone was analyzed as to its potential as a container port, and the Free Zone Sector has indicated that interest has been expressed in using the area to repair container boxes and related equipment (cranes, lift forks, etc.).

Applying the previously described rating system to this particular industry as a case example, we obtain the following: (List) relative growth potential for industry = 5; wages = 3; job potentials = 2; production linkages = 4; availability of labor = 3; availability of raw materials = 3; proximity of market = 5; effect on the environment = 4; infrastructure needs = 4; and technology transfer = 2. Applying the weighting factors used in the two methods, the two total scores become: Method A = 186; Method B = 187. Using either method, the score for

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TABLE III-3

LIST OF INDUSTRIES MOST SUITABLE

FOR LOCATION IN THE ADABIYA FREE ZONE

| SITC | Industry Description |
|---|---|
| 05 | Vegetables and fruit (prepared and/or preserved) |
| 06 | Sugar<br>(a) refined<br>(b) confectionery |
| 074 | Tea (processing and packaging) |
| 111 | Non-alcoholic beverages (production and bottling) |
| 122 | Tobacco, manufactured (primarily cigarettes) |
| 29 | Crude animal and vegetable materials<br>(a) worked bones, coral and horns<br>(b) vegetable materials processed for use in industry |
| 42 | Fixed vegetable oils and fats (including especially cotton seed and palm oil) |
| 43 | Animal and vegetable oils and fats, processed, and waxes of animal or vegetable origin |
| 55 | Essential oils and perfume materials, toilet, polishing and cleaning preparations |
| 611 | Leather and leather manufactures |
| 62 | Rubber Manufactures<br>(a) materials of rubber (e.g., pastes, plates, sheets, rods, thread and tubes)<br>(b) tires, inner tubes, and treads |
| 651 | Textile yarn (primarily cotton and polyester blends) |
| 652 | Cotton fabrics, woven |
| 653 | Fabrics, woven, of man-made fibers (including blends with cotton) |
| 656 | Tulle, lace, embroidery, ribbons, trimmings, and other small wares |



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TABLE III-3 (Continued)

LIST OF INDUSTRIES MOST SUITABLE

FOR LOCATION IN THE ADABIYA FREE ZONE

| SITC | Industry Description |
|---|---|
| 658 | Made-up articles, wholly or chiefly of textile materials<br>(a) sacks and bags for packing of goods<br>(b) tarpaulins, sails, awnings, sunblinds, and tents<br>(c) bed and table linen |
| 659 | Floor coverings (carpets, mats, rugs, and linoleum) |
| 661 | Lime, cement, and fabricated construction materials (except glass and clay materials)<br>(a) bricks, blocks, tiles, pipes<br>(b) refractory cements, mortars, etc. |
| 662 | Clay construction materials and refractory construction materials |
| 664 | Glass<br>(a) manufacture of glass in various standard shapes<br>(b) pressed and moulded glass<br>(c) safety glass<br>(d) glass parts (watch faces, tubes, etc.) |
| 665 | Glassware (primarily containers - bottles, jars, pots, and glasses) |
| 666 | Pottery |
| 69 | Manufactures of metal (small objects and parts) |
| 724 | Textile and leather machinery, and parts thereof (including manufacturing, assembly, and parts-making operations) |
| 76 | Telecommunications and sound recording and reproducing apparatus and equipment (including manufacturing, assembly, and parts-making operations)<br>(a) television receivers<br>(b) radio broadcast receivers<br>(c) sound recorders and players<br>(d) other transmitting and receiving equipment |
| 771 | Electric power machinery, and parts thereof<br>(a) transformer assembly<br>(b) convertors and rectifiers |

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TABLE III-3 (Continued)

LIST OF INDUSTRIES MOST SUITABLE

FOR LOCATION IN THE ADABIYA FREE ZONE

| SITC | Industry description |
|---|---|
| 772 | Electrical apparatus (including manufacturing, assembly, and parts-making operations)<br>(a) switches, fuses, relays, surge suppressors, plugs, resistors, etc.<br>(b) insulators (glass, ceramic, etc.), and fittings |
| 773 | Equipment for distributing electricity<br>(a) electrical insulators of glass or ceramic materials<br>(b) insulating fittings for electrical machines |
| 775 | Household type, electrical and non-electrical equipment (primary assembly)<br>(a) clothes washers and dryers<br>(b) refrigerators and freezers<br>(c) vacuum cleaners and floor polishers<br>(d) vented hoods and room fans |
| 778 | Electrical machinery and apparatus (including manufacturing, assembly, and parts-making operations)<br>(a) batteries<br>(b) electric filament lamps<br>(c) electric equipment for combustion engines<br>(d) traffic control devices |
| 786 | Trailers and other non-motorized vehicles, and specially designed and equipped transport containers |
| 81 | Sanitary, plumbing, heating, and lighting fixtures and fittings (including manufacturing, assembly, and parts-making operations)<br>(a) heaters and air conditioners<br>(b) sinks, wash basins, and other water closet fixtures<br>(c) lighting fixtures and fittings, lamps and lanterns, and parts thereof |
| 83 | Travel goods, handbags, and similar containers<br>(a) trunks, suitcases<br>(b) handbags, wallets, purses<br>(c) brief-cases<br>(d) containers for jewelry, musical instruments, footwear, etc. |



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TABLE III-3 (Continued)

LIST OF INDUSTRIES MOST SUITABLE

FOR LOCATION IN THE ADABIYA FREE ZONE

| SITC | Industry Description |
|---|---|
| 84 | Articles of apparel and clothing accessories<br>(a) traditional outer clothing<br>(b) western outer clothing<br>(c) under garments<br>(d) accessories (e.g., handkerchiefs, veils, shawls)<br>(e) headgear |
| 85 | Footwear (primarily of leather) |
| 885 | Watches and clocks (primarily assembly) |
| 893 | Articles of plastic |
| 894 | Toys, games, and sporting goods |
| 897 | Jewelry (except watches, primarily of gold and precious and semi-precious materials) |
| 899 | Miscellaneous manufactured articles<br>(a) candles and combustible items<br>(b) basketwork, brooms, and brushes<br>(c) toilet articles<br>(d) artificial flowers |



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handling and container manufacture industries falls within the limits set previously for most acceptable industries.

## ADABIYA FREE ZONE INDUSTRY AND EMPLOYMENT PROJECTIONS

To determine the approximate feddans which each of the industries would require in the free zone, an analysis was made of the size of existing plant sites in those SITC categories in the United States. The Economic Development Administration publications Manufacturing Plant Characteristics, 1970 and Industrial Location Determinants, 1971 to 1975, were used in this analysis. Also, the 1963 and 1972 U.S. Census of Manufacturers was employed to help determine the average number of employees at the various factory types. The average plant sizes for the individual industries in the United States were used for this analysis but they were lowered substantially because of the need for much less parking space and individual plant site landscaping in the Egyptian Free Zones than is usually the case in the United States. The resulting site sizes were then used as a guide to derive a preliminary design for the infrastructure of the free zone.

As the most significant concentration of this effort concerned the first phase development, the listing of potential free zone industries was reduced to 21 industries which represented the highest rated industries. Obviously, not all 40 targeted industries would likely be attracted to the free zone during this first phase. However, given the proximity of the first phase area of the free zone to transportation facilities, it is likely that this phase should have a higher concentration of industries than some of the later phases (given a stable business climate at the time of development). Therefore, it was assumed that the first phase should be designed to accommodate approximately half of the targeted industries.

The 21 highest rated industries are likely to be the easiest to attract among those targeted, while the remainder will be easier to attract once complimentary industries are operational and have demonstrated success. Also, these 21 industries are representative of the others in terms of their infrastructural needs, so if the first phase is designed to accommodate them, the free zone will actually be in a position to attract virtually any of the 40 which were targeted.

Next, an assessment of employment and land area for typical plant sizes was determined using the 1963 Census of Manufacturers. The 1963 Census of Manufacturers was chosen because it was felt that the employment levels would be similar to Egypt's intended employment at smaller sized plants; that is, Egypt would have higher employment today due to the tradition of more personal services and under-employed, lower-paid workers. Too, the 1963 statistics would more closely reflect plant sizes which would occur in Egypt than the larger, more capital intensive plants of current years. The results are shown in Table III-4. It may be seen from Table III-4 that if these industries are attracted to the Adabiya Free Zone, the average land absorbed by each tenant could approximate 2.6 feddans with an average of 71 employees.

TABLE III-4

ADABIYA FREE ZONE

SUMMARY OF AVERAGE PLANT EMPLOYMENT AND SIZE

| SITC Code | Description | Average Employment | Average Size (Feddans) |
|---|---|---|---|
| 658 | Textile Articles | 24 | 2 |
| 84 | Apparel & Clothing | 57 | 3 |
| 659 | Floor Coverings | 89 | 2 |
| 897 | Jewelry | 27 | 1 |
| 85 | Footwear | 182 | 4 |
| 652 | Woven Cotton Fabrics | 110 | 3 |
| 899 | Other Misc. Manufacturing | 26 | 1 |
| 775 | Household Electric | 130 | 4 |
| 74 | Tea | 48 | 1 |
| 62 | Rubber Manufacturing | 79 | 4 |
| 651 | Textile Yarns | 85 | 2 |
| 656 | Tulle, Lace, Embroidery | 35 | 1 |
| 773 | Elec. Distrib. Equip. | 90 | 4 |
| 665 | Glassware | 135 | 4 |
| 111 | Non-Alcoholic Beverages | 31 | 2 |
| 83 | Travel Goods | 38 | 1 |
| 885 | Watches and Clocks | 52 | 2 |
| 122 | Manufacturing Tobacco | 116 | 6 |
| 893 | Plastic Articles | 41 | 1 |
| 29 | Crude Animal/Veg. Materials | 35 | 1 |
| 5 | Veg. & Fruit Processing | 70 | 3 |
| | Average | 71 | 2.6 |

Source: Reynolds, Smith and Hills, 1979.



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This distribution, weighing the area export demand for the various products, was used to approximate the relative composition of industry for the Adabiya Free Zone. Because of the need to combine many of the categories, a summary of 12 industries results. Weighted averages shown in Table III-5 figures suggest that the Adabiya Free Zone will average 31 employees per feddan of occupied space. This employment figure is at the lower end of ranges suggested by UNIDO.

Integration of Adabiya Free Zone With Existing Egypt Free Zones

Although the Adabiya Free Zone would be most successful structuring itself for export towards the Arab countries, East Africa, and eastern trade routes, trade may involve transhipment of goods to the Port of Alexandria for delivery to European ports. However, for initial planning purposes, Adabiya should be considered a stand-alone facility.

Criteria used to select the most likely industries for Adabiya recognize this factor. While good rail transportation exists between Port Said and Suez, industries appear most likely to utilize their respective ports. A good highway network and a possible rail network may indicate the possibility of goods transshipped between these ports--especially if roll-on/roll-off containers are utilized. It is speculative, however, to incorporate these freight movements in projections of export market directions.

By using criteria related to regional resources in selecting industries for Adabiya, the industries most specific to the Suez area are considered. The industries which settle in Adabiya are anticipated to result in the use of local and regional resouces for part of their production process. If the cost of materials from Alexandria, Cairo, Port Said, or elsewhere can be obtained at less cost for similar quality than these pruducts imported, a material integration process may occur.

Because of the difference in the timing of each free zone's development, a further integrated picture suffers distortion. It appears doubtful that the Suez-Adabiya area free zone will be operative prior to 1983. Today's investor will locate where facilities are immediately available unless specifically oriented to an export market or imported supplies from one geographic region. This internal business decision will be made by each potential investor on the merits of each specific case. It does not seem practical for the Free Zone Sector to discourage today's investors because a perfect location is not currently available.

There are, however, some thoughts that container transfer between Suez and Port Said, using the free zones as distribution and repair centers, may be successful industries for free zone attraction. The rationale behind these thoughts lies in the cost and capacity of using the Suez Canal after the mid-1980 period. Phase 2 of the Adabiya Free Zone includes land which might be utilized for this purpose.

The first phase development should also include the construction of a mini-warehouse assembly complex not to exceed 10 feddans. This complex

TABLE III-5

ADABIYA FREE ZONE

INDUSTRY AND EMPLOYMENT ANALYSIS

| SITC Codes | Category | Area Market M$ | Area Market Percent | Suez Market M$ | Suez Market Percent | Averages Employment | Averages Fed. | Employment/Feddan Suez Market | Employment/Feddan Area Market |
|---|---|---|---|---|---|---|---|---|---|
| 658,659 | Textiles | 4353.5 | 19.3 | 1591.9 | 19.2 | 69 | 2 | 6.6 | 6.6 |
| 651,652 | | | | | | | | | |
| 656 | | | | | | | | | |
| 84 | Apparel | 994.3 | 4.4 | 349.3 | 4.2 | 57 | 3 | 0.8 | 0.8 |
| 897,899 | Manuf. (Other) | 1914.1 | 8.5 | 644.4 | 7.8 | 37 | 1 | 2.9 | 3.1 |
| 885,893 | | | | | | | | | |
| 85 | Leather | 102.1 | 0.5 | 68.9 | 0.8 | 182 | 4 | 3.6 | 2.3 |
| 773 | Small Appliances | 7836.0 | 34.9 | 2750.0 | 33.1 | 110 | 4 | 9.1 | 9.6 |
| 775 | | | | | | | | | |
| 62 | Rubber | 1880.4 | 8.3 | 1268.0 | 15.3 | 79 | 4 | 3.0 | 1.6 |
| 665 | Glass | 2913.4 | 12.9 | 849.2 | 10.2 | 135 | 4 | 3.4 | 4.4 |
| 074,111 | Beverages | 186.3 | 0.8 | 27.5 | 0.3 | 40 | 1 | 0.1 | 0.3 |
| 83 | Travel Goods | 16.1 | 0.1 | 16.1 | 0.2 | 39 | 1 | 0.1 | - |
| 122 | Manuf. Tobacco | 658.6 | 2.9 | 161.1 | 1.9 | 116 | 6 | 0.4 | 0.6 |
| 29 | Crude Oils-Animal | 299.6 | 1.3 | 25.9 | 0.3 | 35 | 1 | 0.1 | 0.5 |
| 05 | Veg. Processing | 1385.3 | 6.1 | 558.0 | 6.7 | 70 | 3 | 1.6 | 1.4 |
| | Total/Average | 22,539.7 | 100.0 | 8,310.3 | 100.0 | 81 | 2.6 | 31.7 | 31.2 |

Source: Reynolds, Smith and Hills, 1979.

is necessary to "seed" the area and to develop immediate revenue for the zone. An "incubator" for small-scale industrial trials should also be established an approximately 1 feddan. A block immediately behind the location of the proposed administrative building can accommodate these needs. By 1987, Phase 1 should be completely absorbed, averaging 15 feddans for the first two years (1983 to 1984) and approximately 20 feddans per year thereafter (Table III-6).

Phase 2 absorption should also average 20 feddans per year and Phase 3, beginning leasing in 1989, should easily achieve absorption by 1994. In summary, absorption of industry at the free zone should be targeted as follows.

Excluding incubator employment, the number of direct investor jobs created over this time period should approximate 8,100. The phasing profile is consistent with expected growth in Suez and the job profile is reasonable when compared with population, employment, and anticipated industrial activity. The engineering activity associated with this development program is examined in the following section.

TABLE III-6

ADABIYA FREE ZONE

ABSORPTION PROFILE

(FEDDANS)

| Year | Phase 1 | Phase 2 | Phase 3 | Total |
|---|---|---|---|---|
| 1983 | 15 | - | - | 15 |
| 1984 | 15 | - | - | 15 |
| 1985 | 20 | - | - | 20 |
| 1986 | 22 | - | - | 22 |
| 1987 | 23 | - | - | 23 |
| 1988 | - | 25 | - | 25 |
| 1989 | - | 24 | 1 | 25 |
| 1990 | - | - | 26 | 26 |
| 1991 | - | - | 30 | 30 |
| 1992 | - | - | 30 | 30 |
| 1993 | - | - | 30 | 30 |
| Total | 95 | 49 | 117 | 261 |

Source: Reynolds, Smith and Hills, 1979.

## CHAPTER IV
## ENGINEERING ASPECTS

### JUSTIFICATION OF FREE ZONE LAYOUT AND LOCATION SELECTION

Location of the Adabiya Free Zone site was determined during the Suez Master Plan Study prepared by Sir William Halcrow & Partners. The property is designated as "Heavy Manufacturing Free Zone." The selection justification in the Master Plan includes relationship to transportation, proximity to open water for the possible future development of shipping capability and available developed utilities. Secondary considerations include prevailing wind direction for the northwest, proximity to adjacent established industries, and the relatively close labor market.

The proposed Adabiya site is located approximately 10 kilometers from the existing Suez port, Port Ibrahim, at the western bay area of the northern most portion of the Gulf of Suez. The site location is appropriate due to its accessibility to the existing shipping lanes in the gulf, which include a substantial portion of the ship traffic passing through the Suez Canal. Also, being located on the western most side of the northern portion of the Gulf of Suez, there would be no ship traffic problems in docking in the Adabiya site area once the dredging is completed. The relatively close proximity to Port Ibrahim could represent a choice in shipper determination of the most appropriate docking location, and due to the fact that the Port Ibrahim facilities are and would be much more appropriate from a utilitarian viewpoint than that of proposed Adabiya site docking facilities, the possibility exists that a substantial portion of the free zone docking could occur at Port Ibrahim with the small additional requirement of overland transport from the Ibrahim port to the Adabiya site.

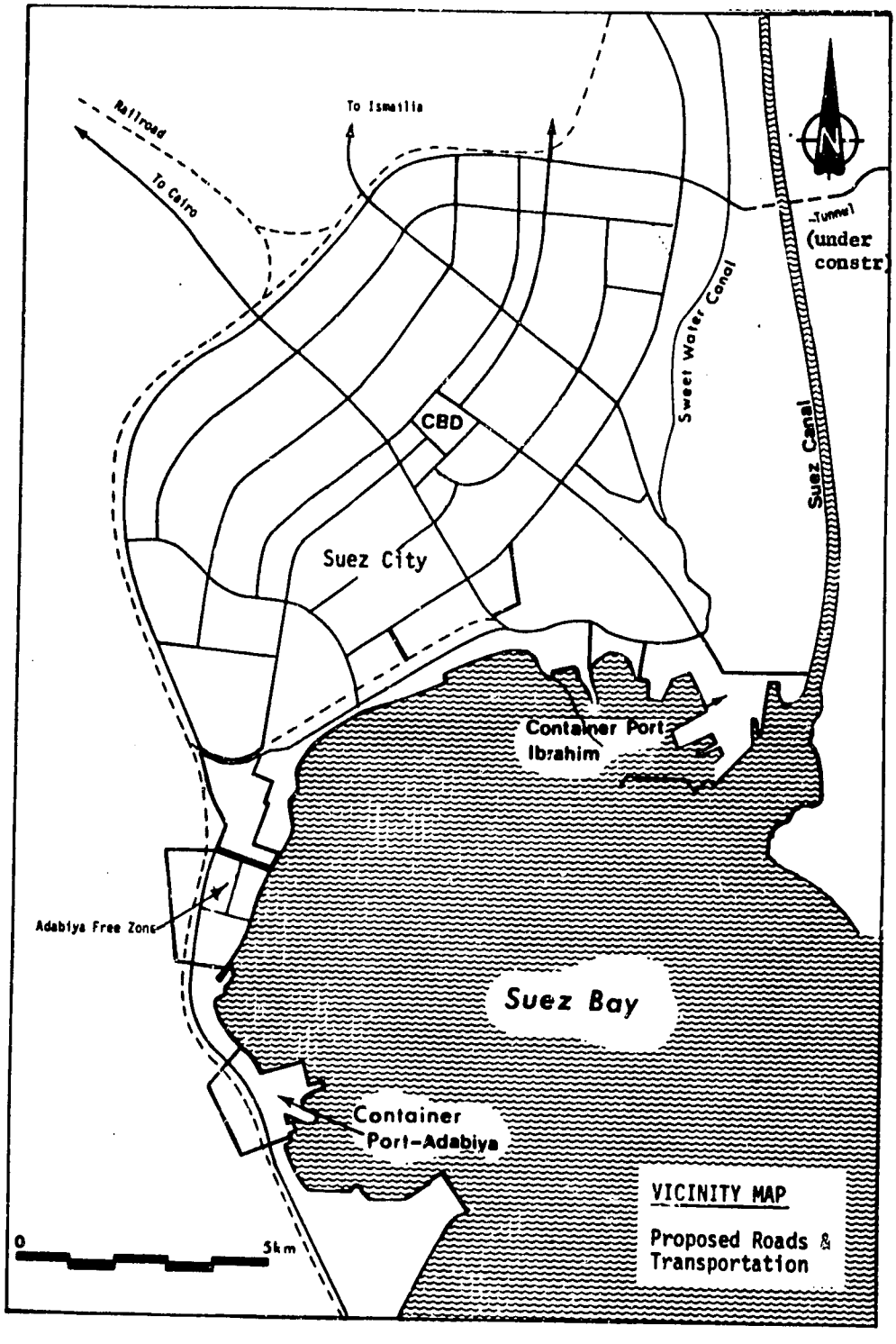
Exhibit IV-1 developed from the Suez Master Plan Study delineates the proposed Adabiya Free Zone location. The eastern area has rail access. Development of the selected side is divided into phases with the first phase location near the north boundary from the existing Suez to El Zafarana Road on the east to the New Road right-of-way on the west.

### LAND AVAILABILITY

The land area for the Adabiya Free Zone is currently owned by the Suez Governorate. The land area encompasses 700 feddans, split by the Suez-El Zafarane Road. An area of 431 feddans is located to the east of the proposed new Suez-El Zafarane road while the remaining 269 feddans are located west of the proposed new road.

It is a recommendation of this report that the General Authority for Investment and Free Zones utilize only the 431 feddan east parcel for this project. The reason for this recommendation lies in the anticipated net-to-gross land usage which can be obtained when compared to reasonable absorption for the land.

EXHIBIT IV-1




Source: Reynolds, Smith and Hills, 1979.



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The free zones in Alexandria, Nasr City, and Port Said have achieved a net-to-gross land leaseable area of under 50 percent. This existing ratio is due to inordinately large roads, set-backs, and generally inefficient space planning. Initial development at Adabiya can achieve nearly a 70 percent net-to-gross figure for a first phase, and at least a 65 percent ratio for the remainder of the eastern portion of the site.

The 431 feddan area loses approximately 14 feddans to a generous railroad right-of-way and another 15 feddans to administrative needs (first phase). An estimated 15 feddans may be lost to the existing ship repair facility on the site during Phase 2. Net leaseable area is, therefore, estimated at 261 feddans (Table IV-1).

The 261 feddans will support approximately 8,100 investor employees (261 feddans X 31.2 employees per feddan) plus incubator personnel as discussed later. Although this employment total is less than the approximate 12,500 previously estimated for Adabiya by the Suez Master Plan, it appears reasonable and justifiable for all planning objectives.

The 95 feddan first phase is assumed to commence construction in 1981 and be completed by the end of 1982. Phase 2 of 49 feddans can be implemented in a one-year timeframe, most probably 1986. The third and last phase of 117 feddans would be constructed conceivably in 1988 to 1980.

The report presents the development of Phase I in detail. However, Phases 2 and 3, although following the same general guidelines as Phase 1, are not detailed to the extent developed in Phase 1. The purpose of this exclusion is due to the degree of uncertainty which may ultimately affect the final design of the free zone.

The key to the development of the free zone is to provide for flexibility in its design regarding industrial plots and collector streets. Too, in an exercise of prudence, the less detail provided at this point for Phases 2 and 3 encourages rethinking of those phases in the future and may well limit thoughts toward excessive, initial infrastructure expenditures.

No cost estimates are shown or needed for the land west of the three phases for the Adabiya Free Zone. This land amounts to 270 feddans. The free zone does not appear to need the land, and it is reputed to contain land mines, remnants of the Egypt-Israel hostilities. The land may ultimately serve as an inland investment industrial area.

## Technical Aspects

From the engineering and construction viewpoints, the proposed selection of the Adabiya site is appropriate and does not represent an unusual cost problem. The technical survey concluded:



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TABLE IV-1

ADABIYA FREE ZONE

NET LEASEABLE LAND BY PHASE

(FEDDANS)

| Phase | Area | Roads, Other Infrastructure | Administration | Railroad | Other | Net |
|---|---|---|---|---|---|---|
| 1 | 156 | ( 46) | (15) | - | - | 95 |
| 2 | 98 | ( 28) | - | ( 6) | (15) | 49 |
| 3 | 177 | ( 52) | - | ( 8) | - | 117 |
| Total | 431 | (126) | (15) | (14) | (15) | 261 |

Source: Reynolds, Smith and Hills, 1979.

A. That sufficient building materials and equipment were available at relatively low transportation costs from Suez and from Cairo.

B. Availabilities of construction tradesmen and laborers in the City of Suez are sufficient to meet the needs of the Adabiya construction; however, the transport of construction workers to and from the City of Suez was a consideration in the estimated cost figures. It is proposed that the contractors provide personnel transportation to and from the site and, of necessity, such costs would accrue and be included in the construction costs.

On the "plus" side, once a suitable crew was assembled, there should be crew stability with minimum attrition, due to the fact that the site is sufficiently distant from the existing population centers where other projects in construction would not represent a worker attraction thus causing fluctuations in the workmen crew requirements.

C. To a degree, it was determined in the study that unit costs for construction, both in labor and materials, at the Adabiya site would be approximately 3 percent higher than those corresponding costs would be in nearby Suez, and approximately 5 percent higher than those costs would be in the City of Cairo. This factor is the result of the transportation requirements, primarily, with some impact coming from a slight limitation on the competitive pricing considerations which are more evident in major population areas.

D. The Preliminay Site Plan developed as a result of the study (see the Appendices) was developed to include a long-range planning procedure, in three (3) phases (see Appendix Drawing #1). The Phase I development area was determined on the basis of its accessibility to existing overland transportation and utilities, giving due consideration to the contours and existing soil conditions in the location selected. Further consideration was given to the fact that the Phase I site should be both accessible to any later proposed wharf facility for container transfer and repair and to the proposed future relocation of the Suez-El Zafarane Road. Considering further the fact that there are existing railroad facilities near the Gulf, and that the construction of the new Suez-El Zafarane Road is not eminent, it was determined that the Phase II and Phase III development areas should center around existing road and railroad rights-of-way, nearby to the Gulf itself. This consideration was also appropriate to the long-term extended utilities requirements which would be necessary in a development of those phases. The general phasing of the development areas from north to south was determined by the study to be the most appropriate for the short-term and long-term cost considerations in utilities extensions.



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The estimated gross area of Phase I is 156 feddans. Flexibility of planning provides that site development as small as 118 feddans is feasible without major redesign to the underground utility systems. In other words, the suggested layout of underground utilities is flexible to the point that incremental growth may be achieved with Phase I.

The location of the administration area was selected to provide accessibility from the existing Suez-El Zafarane Road until the New Road is built and then from the west side of the Phase I site. Another reason for the location shown is to isolate the administration building as much as possible from industrial activities and existing thru-highway traffic.

Each of the blocks of suggested investor properties was sized to accommodate the "targeted industries" using land allocation sizes appropriate to the activity. Flexibility within each block is available to adjust to investor needs.

Consideration of the existing railroad, highway, and underground utilities has been made. If the railroad right-of-way is moved in the future, improvements in security can be undertaken. Because of the interim thru-passage of non-stop, bulk trains, and the possible development of spur sidings, the railroad right-of-way has not been indicated to be repositioned. (Further study to determine full railroad utilization should be undertaken.)

When site surveys of the free zone site are made, underground utilities (water) and semi-buried oil transmission lines with expansion loops will be shown. Consideration for their access and appropriate coverage must be made. The proposed lay-out allows for accessibility, repairs, and alterations.

## CRITERIA FOR TECHNICAL ASPECTS

Due to the physical location of the proposed Adabiya Free Zone site, it was determined that the interrelationships between the economic and technical aspects of the feasibility study were exceptional. The industry attraction possibilities were predetermined as a guideline in establishing the infrastructure construction requirements. Because of the Adabiya site's location away from a major populated center, transportation costs for men, equipment, and materials were developed and added to construction costs.

A principal of utility infrastructure planning of municipal nature is to provide for utilities in large enough increments to allow for unexpected increases in demand for services to be absorbed without costly, small phase development, while at the same time any slowdown in demand would not unduly hinder the financial position of the utility. This concept is appropriate for the free zone infrastructure as the free zone is, in essence, a consolidated public utility.

For the proposed site itself, available utility and overland transportation arteries are factors affecting both feasibility and ultimate costs. Examples of these factors are summarized as follows:

A. The existing electrical distribution lines that transverse the site at the present time are each capable of an approximate load capacity of 11KV. However, services available for development of additional industry or expansion are insufficient to satisfy even the Phase I needs of the proposed Adabiya site. It is apparent, therefore, that the Free Zone Sector would be required to contribute to the cost of the construction of a new distribution line from a presently available source approximately seven (7) kilometers to the north.

   At the power generating station, power leaves the plant at 220 KV to the substations which drop it to 66 KV. Then it is dropped to 11 KV for transmittal to the user or distribution network. A new, larger 11 KV line is being run through the site parallel to the existing line. It is expected to be energized by year-end.

   A new power generating station is to be built near the Adabiya site. The foundation contract has just been awarded. The station will be 600 megawatt size. It is designed by Electrowatt Co., Switzerland and is expected to feed the existing Suez, Cairo, and Ismailia grid by 1983. Site plans identify the locations of these facilities--power plant(s), and substations.

   Because the master plan identified the free zone site location, it appears power needs can be met.

B. There is a 400 millimeter (16 inch) cement asbestos water main located in the existing right-of-way transversing the Adabiya site from north to south. This main terminates at Ataka. Pressure is 30 meters head to the plant in Suez with a 10 meter drop at the site, leaving a net head of 20 meters. For the Phase I development of the Adabiya site, the quantity and pressure available is marginal. Therefore, the Free Zone Sector will be responsible for paying additional costs relating to additional new piping installations, assuming that additional sources of supply are available.

   Water for domestic and processing uses will be supplied by the Suez Canal Authority Water Distribution Department from the existing Sweetwater Canal source and new pumping station under construction approximately 13 km north of the site.

   All water service lines installed in the free zone are paid for by the free zone and remain their property. The maintenance of the lines, including new service connections, is the work of



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the Canal Authority Water Department, payment for which is billed to the free zone on an annual basis.

All connected water users become metered customers of the Canal Water Department. Water costs are billed at a flat rate of 10 piasters per cubic meter. There is no provision for high quantity users.

On-site distribution has been developed in a conventional single line loop system which will satisfy demand and pressure requirements for the least cost. Also, a high level of flexibility is offered. Fire hydrants are spaced 70 to 100 meters apart in the distribution system. Pressure in the system is projected to be between 20 and 30 meters.

At the present time, the estimated cost for additional 100 millimeter (6 inch) asbestos piping services is 4 LE per meter.

During the preparation of this report, it was found that the Suez Cement Company (SCC) proposes to construct a separate 800 millimeter water main for their use. There exists a good possibility that this main has the capability of providing the Free Zone Sector with 4,000 cubic meters a day, as an average consumption of potable water. The pipeline will be available by 1982. The cost of construction of that pipeline will be furnished by the SCC at an approximate construction cost of 160 LE per meter length of pipe with tie-ins buying a proportionate share.

C. At present there is no existing sanitary (or storm) sewer system available. Therefore, the development of the Adabiya site would require an initial investment in waste collection facilities during the Phase I construction if none were built. However, an off-site waste treatment plant is included in the area master plan and there are plans for its construction approximately 3 km north of the free zone site. A 350 millimeter force main from an on-site pumping station will convey sewerage to the new plant. Investors are required to install necessary equipment to pretreat strong industrial wastes.

D. At present, rail transportation through the proposed Adabiya site is available on the Suez-Adabiya Railroad; however, if the railroad system presently available is to be utilized by investors occupying the Adabiya Free Zone, additional sidings, loading, and unloading facilities would be required. The possibility of a need for rail transportation was not considered as a Free Zone Sector cost factor in the construction of the Phase I development on the assumption that the proposed investors, as determined by the economic study, would not require such facilities. The development of future phases, especially Phases II and III, may require rail transportation

construction cost expenditures to be borne by the investor or Free Zone Sector.

E. Limited highway transportation is presently available on the Suez-El Zafarane Road, and although maintenance is required, this road is considered adequate for both the Phase I construction requirements in transportation and investor requirements in the initial development of the Phase I project. The study determined that a proposed relocation of the existing Suez-El Zafarane Road and associated rights-of-way have been accomplished. At this time, the planning for and the construction of this road cannot be determined, although it is anticipated to be a "super" highway, which would significantly enhance industry attraction to the Adabiya site. It is doubtful that the Free Zone Sector would be required to participate in the cost of the construction of the new highway; however, access roads on and off this highway could result in an expenditure at a later date.

## INFRASTRUCTURE REQUIREMENTS

The study conclusions outlined in the "Criteria" section are primarily oriented toward overall attention to on-site and off-site utilities and transportation development requirements. The on-site infrastructure requirements are normal. Unusual cost expenditures are not anticipated.

The plans, maps, and descriptions of the proposed phased development of the Adabiya Free Zone Area are included in the Appendices. These drawings provide site development area layouts, infrastructure construction requirements, and general planning which the study concluded would be most appropriate from both utilitarian and cost viewpoints. The plans also delineate the three (3) phases proposed for the whole development, facility layouts, building and infrastructure facilities, and provisions for future expansion, with descriptions of the off-site requirements in the development of the Phase I area, specifically, with roadway delineations for the other phases.

The on-site construction requirements for the Phase I development include:

A. A water distribution system as depicted on drawing No. 2 in the Appendices. This system was developed to satisfy the needs of proposed investors as determined in the economic study.

B. A sanitary sewage distribution system as depicted on drawing No. 3 contained in the Appendices. Again, this system was designed to accommodate the types of investors which the economic study determined would be interested in the Adabiya site. If it developed that an investor having unusual chemical process disposal requirements became interested in the Adabiya site, a requirement of his agreement would include pretreatment



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to an acceptable level. However, the likelihood of such investor interests is not considered to be a possibility at this time.

C. The electrical distribution system, as depicted on drawing No. 4 of the Appendices, is minimal but adequate to the requirements of the proposed investors anticipated. It is emphasized, however, that the proposed system is adequate only for the needs of the Phase I development requirements.

D. The on-site roadway/street network, depicted on drawing No. 1 of the Appendices, is both minimal but adequate to the requirements of the proposed investors. It is anticipated that there would be no unusual changes in those requirements, or additional cost expenditures required. Should the overland transportation requirements of individual investors prove to be extraordinary, there could be some nuisance traffic problems, especially in the utilization of the existing Suez-El Zafarane Road.

E. One cost factor which is present only in the development of a new site is the requirement for the construction of an administration building, control buildings, and support facilities. The costs related thereto are included in the cost estimate summaries contained in this report.

These figures are based upon minimal initial building construction to satisfy the operational and administrative aspects of the Phase I requirements. Provisions for expansion of the initial facilities are to be considered in the development of the other phases, at a later date.

The costs for Phases 2 and 3 are estimated for the year in which they might occur if the absorption pattern for Adabiya follows its schedule. Extension of the concepts for Phase 1 form the basis of the Phase 2 and 3 costs. It is considered prudent in this endeavor, however, to provide flexibility for the future phases of the free zone and, as mentioned earlier, to discourage over-investment in infrastructure for the project's initial development.

## ENGINEERING ASPECTS

Due to the presence of existing "land mines" on the proposed Adabiya site, survey data and geological and soil testing information to determine infrastructure and building foundations requirements were not available. However, professionals employed by Reynolds, Smith and Hills made determinations through visual observations of existing on and off-site conditions. These observations conclude:

A. The site itself is relatively level and the soil conditions evident are conducive to minimal investments in earth moving operations. Also, there does not appear to be any sub-surface



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water table problems during the development of Phase I. It is concluded that the Adabiya site, from the site development aspect, is exceptionally appropriate for the construction of the types of facilities required.

B. The construction of on-site utilities, roadways, building foundations, and buildings were concluded to represent little technical or economic problem, and that the costs for such construction would be minimal and most attractive both to the Free Zone Sector and to perspective investors. Concerning foundations, the problems that would affect the foundations are:

1) Ground and groundwater aggressivity (salt weathering or massive chemical attack).

2) Ground settlement (caused by leaching of salts in the foundation soils).

3) Ground heave (caused by salt crystalization or hydration or lattice expansion of clay minerals).

4) The topographic relief in respect of demonstration areas.

Lightly Loaded Foundations

Problems of ground or groundwater aggressivity may be minimized by placing the foundations at a high level with respect to the water table and capillary fringe limit. The most expedient method of maintaining the foundations at high level is to place them on compacted fill.

It will be seen that three groundwater hazard zones have been established, corresponding to water table below 5M depth Zone I, water table below 2.5 depth Zone II, and water table between ground level and 2.5M depth Zone III (Exhibit IV-2). Locations of zones will be determined from on-site core borings.

Zone I (water table below 5M depth). This zone is referred to as "No Hazard." The capillary fringe limit will be below foundations placed at shallow depth. External and internal walls are supported by a concrete strip foundation and the floors are formed from cement screed not less than 100 millimeters. Both the cement screed floor and the concrete strip foundations are underlain by bitumen/polythene/building paper layer which should be wrapped around the sides of the concrete strip foundations.

The purpose of the layer is:

1) To ensure that wet concrete does not become contaminated during the pour.

2) To inhibit attack by hygroscopic salts.

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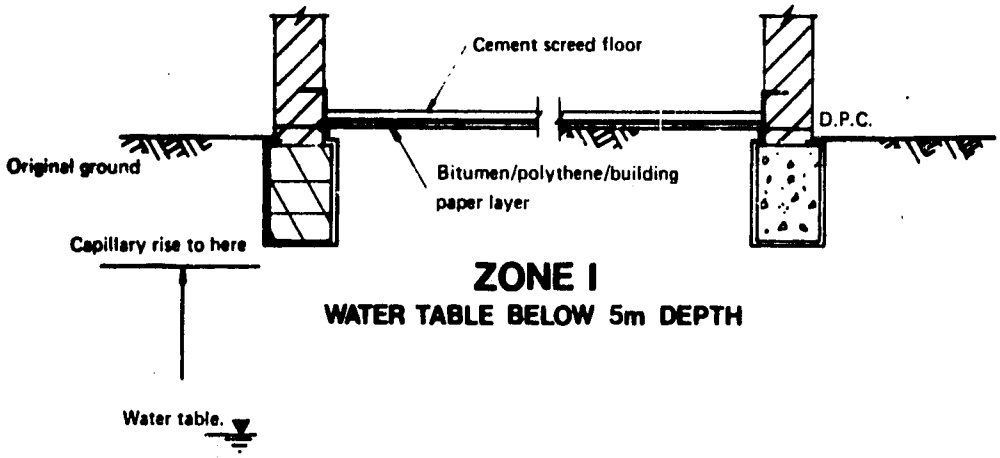
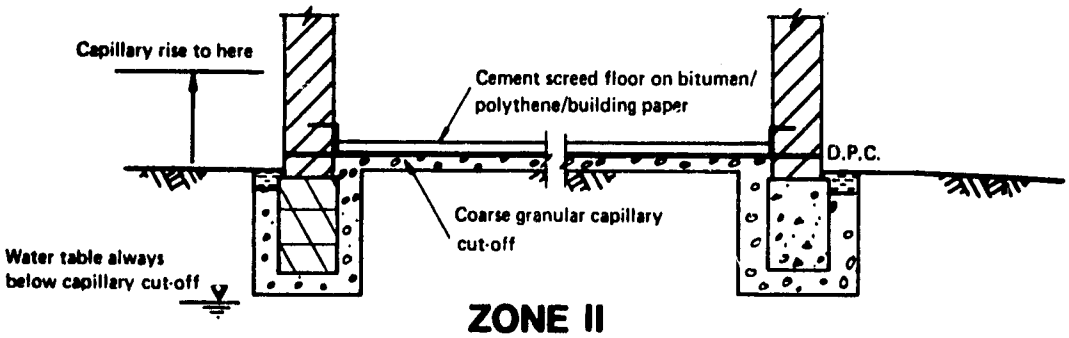
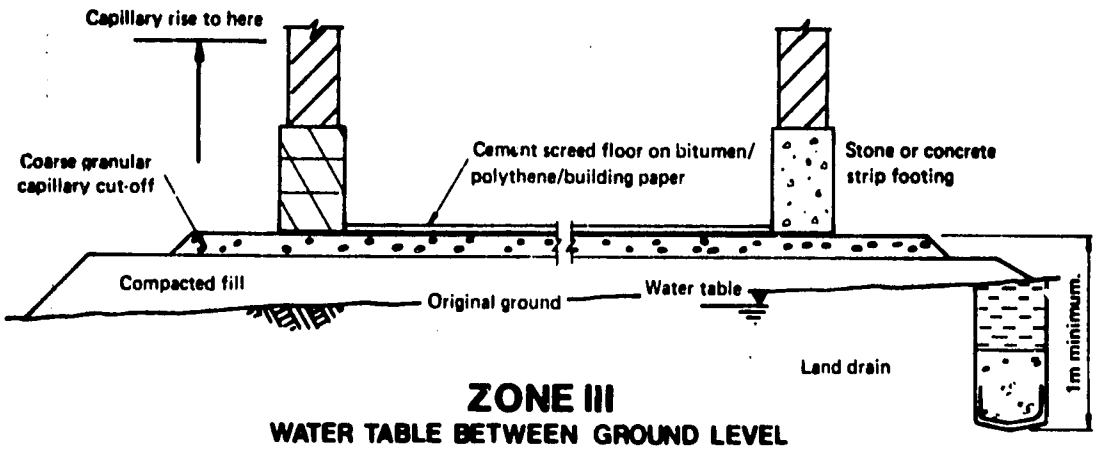
EXHIBIT IV-2
FOUNDATION DATA




**ZONE I**
**WATER TABLE BELOW 5m DEPTH**




**ZONE II**
**WATER TABLE BELOW 2·5m DEPTH**




**ZONE III**
**WATER TABLE BETWEEN GROUND LEVEL AND 2·5m DEPTH**



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Zone II (water below 2.5 meter depth). This zone is referred to as "Hazard." The capillary fringe limit will extend up to shallow foundations. As with Zone I foundation, external and internal walls are supported by a concrete strip foundation placed in coarse gravel filled trenches (refer to figure). The coarse gravel, both in trenches and under the floor, functions as a capillary cut-off provided that it does not become water-logged.

Zone III (Severe Hazard). The capillary fringe limit will extend above the ground level to foundation placed on fill (refer to the Figure). A concrete strip supports the external and internal wall and are formed from cement screed. Both underlain by a rolled course gravel capillary cut-off not less than 150 MM thick which rests on a compacted fill blanket. In high water table areas drainage may be essential.

Heavily Loaded Foundation

It is anticipated that heavily loaded columns for industrial structures and residential and commercial structures may be built within the area. Suggested foundations for more heavily loaded buildings are discussed below.

A grillage raft foundation is recommended for the more heavily loaded foundation. Where the water table is within 2.5M depth, the reinforced concrete cross beams and floor slabs should be placed upon a coarse gravel capillary cut-off, screeded over, and finished with a thin layer of sand. Careful attention will have to be paid to drainage as discussed below. Where the depth of water table and capillary fringe is large, the coarse gravel cut-off should be replaced by a bitumen/polythene/building paper layer.

A special circumstances will exist where heavily loaded buildings are to be sited in areas liable to flooding. This will mean that occasionally the reinforced concrete ground beams will come into contact with the water table, for such conditions tanking the foundations must be considered. The layout of some structures will be unsuitable for the grillage raft foundation; industrial structures having widely spaced and heavily loaded columns, for this type of structure the most economic alternative is pad foundations placed at shallow depth, piles are not recommended because of the certainty of concrete attack by aggressive ground and groundwaters.

COST ESTIMATES

The cost estimates summarized on the following pages were developed on an "order of magnitude" basis from the preliminary plans developed during the study and included in the Appendices. It is important to note that the study itself progressed on the basis of three (3) basic cost considerations:



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A. Economic development - investor interests and infrastructure costs to satisfy those interests.

B. Locational factors - existing adjacencies and transportation requirements, both for construction and occupancy.

C. Technical requirements - site, materials, and labor considerations.

Table IV-2 presents the Phase I construction cost for the Adabiya Free Zone which would have to be provided by the Government of Egypt. Table IV-3 presents those costs anticipated for future developments. Foreign currency requests as well as local costs are developed in Table IV-2. Table IV-4 lists rolling stock which the free zone would be required to purchase. All rolling stock is assumed to be of foreign origin. Table IV-5 lists unit costs utilized in the analysis and applied to the quantities developed from the drawings in the Appendices.

PROJECT EXECUTION

The development of a totally new free zone industrial area in a relatively sparce population area required special study considerations to determine the project execution requirements. Upon completion of the study, it was determined that project execution would require control devices in the following described aspects:

A. Free Zone Sector organizational extensions.

B. Special engineering considerations.

C. Construction accomplishment considerations.

Conclusions derived from the study relative to project execution are summarized as follows:

A. Organizational. From an organizational viewpoint, the study does not recommend the development of a full in-house engineering staff for the development of the Phase I area. The existing Free Zone Sector engineering organization should be sufficiently enlarged (one person initially) to proceed with the procedural input. Thereafter, the engineering work required should proceed on a controlled basis, subject to periodic approvals on the part of the FZS Engineer. The design engineer should be required to provide budget cost estimates, up-dated periodically, and as are appropriate to the overall budget requirements of the Free Zone Sector.

B. Engineering. The design engineering should progress on a controlled basis in context with initial investor requirements, utilizing the preliminary plans and specifications guidelines developed during this study. There should be no substantial departure from those guidelines without fully documented

TABLE IV-2

ADABIYA FREE ZONE

ON-SITE CONSTRUCTION COST ESTIMATE (1980)

PHASE I - 156 FEDDANS

| Category | Source Percent Local | Source Percent Foreign | Local Cost-LE | Foreign Cost-LE | Total Cost-LE |
|---|---|---|---|---|---|
| Site Development | 100 | - | 195,313 | - | 195,313 |
| Roads and Drainage | 100 | - | 1,335,469 | - | 1,335,469 |
| Fencing, Guard Stations | 80 | 20 | 379,360 | 94,840 | 474,200 |
| Administration and Control Buildings | 90 | 10 | 414,000 | 46,000 | 460,000 |
| Water System | 80 | 20 | 296,376 | 74,094 | 370,470 |
| Sewage System | 80 | 20 | 265,620 | 66,405 | 332,025 |
| Electrical System | 25 | 75 | 748,073 | 2,244,222 | 2,992,295 |
| Solid Waste Disposal | 50 | 50 | 234,375 | 234,375 | 468,750 |
| Communications, Fire | 10 | 90 | 27,475 | 247,275 | 274,750 |
| Irrigation System | 40 | 60 | 60,000 | 90,000 | 150,000 |
| Subtotal | 56 | 44 | 3,956,061 | 3,097,211 | 7,053,272 |
| General, Administration | 56 | 44 | 789,108 | 621,317 | 1,410,425 |
| Contractor Overhead, Profit | 56 | 44 | 473,419 | 372,753 | 846,172 |
| Design, Construction Management | 23 | 77 | 102,110 | 334,717 | 436,827 |
| Total Cost | 55 | 45 | 5,320,698 | 4,425,998* | 9,746,696 |

* Equivalent to U.S. $6,341,000.

Source: Reynolds, Smith and Hills, 1979.



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TABLE IV-3

ADABIYA FREE ZONE

ON-SITE CONSTRUCTION COST ESTIMATE

PHASES 2 AND 3

(000 LE)

| Category | Phase 2 (1986) Local LE | Phase 2 (1986) Foreign LE | Phase 2 (1986) Total LE | Phase 3 (1988-1989) Local LE | Phase 3 (1988-1989) Foreign LE | Phase 3 (1988-1989) Total LE |
|---|---|---|---|---|---|---|
| Site Development | 174 | - | 174 | 364 | - | 364 |
| Roads, Drainage | 1,190 | - | 1,190 | 2,488 | - | 2,488 |
| Fencing, Guard Stations | 381 | 42 | 423 | 778 | 86 | 864 |
| Control, Administration | 166 | 18 | 184 | 545 | 60 | 605 |
| Water System | 264 | 66 | 330 | 550 | 140 | 690 |
| Sewage System | 266 | 30 | 296 | 558 | 60 | 618 |
| Electrical System | 626 | 1,880 | 2,506 | 1,338 | 3,900 | 5,238 |
| Solid Waste Disposal | 218 | 200 | 418 | 473 | 400 | 873 |
| Irrigation System | 69 | 65 | 134 | 160 | 120 | 280 |
| Communications, Fire | 40 | 370 | 410 | 120 | 737 | 857 |
| Incubator Industry | 245 | - | 245 | 511 | - | 511 |
| Subtotal | 3,639 | 2,671 | 6,310 | 7,885 | 5,503 | 13,388 |
| Design, Construction MGT | 280 | 218 | 498 | 620 | 435 | 1,055 |
| Contingency, Other | 1,001 | 1,041 | 2,042 | 2,175 | 2,182 | 4,357 |
| Total | 4,920 | 3,930* | 8,850 | 10,680 | 8,120* | 18,800 |

* Equivalent to U.S. $5,630,000 and $11,633,000.

Source: Reynolds, Smith and Hills, 1979.

TABLE IV-4

ADABIYA FREE ZONE

VEHICLE REQUIREMENTS

(U.S. DOLLARS)

| Category | Amount | Total($) | Phase I |
|---|---|---|---|
| **Vehicles** | | | |
| (10) Mini-bus | 12,500 ea. | 125,000 | 37,500 |
| **Maintenance Trucks** | | | |
| (2) Street Cleaners | 34,000 ea. | 68,000 | 34,000 |
| (5) Trucks-Solid Waste | 80,000 ea. | 400,000 | 160,000 |
| (1) Truck-Weighing Facility | 25,000 ea. | 25,000 | 25,000 |
| (2) Guard Vehicles (Jeep) | 12,000 ea. | 24,000 | 24,000 |
| (1) Emergency-Ambulance | 45,000 ea. | 45,000 | 45,000 |
| **Fire Apparatus** | | | |
| (1) Large Fire Truck | 100,000 ea. | 100,000 | - |
| (3) Small Fire Trucks | 30,000 ea. | 90,000 | 30,000 |
| Total U.S. Dollars | | 877,000 | 355,500 |
| Egyptian Pounds | | 613,000 | 248,500 |

Source: Reynolds, Smith and Hills, 1979.



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TABLE IV-5

ADABIYA FREE ZONE

CONSTRUCTION FACILITIES COSTS

| Construction Work Item | Measuring Unit | In-Place Unit Prices (Egyptian Pounds) |
|---|---|---|
| **Site Work** | | |
| Clearing & grubbing | Square Meter | .600 |
| Remove trees | Each | 4.450 |
| Limestone sub-base | Square Meter | 4.110 |
| Limerock base course | Square Meter | 2.820 |
| Bituminous paving (3 layers) | Square Meter | 9.100 |
| Borings | Meter | 8.650 |
| **Fences (Security Walls)** | | |
| Excavation in earth to depth of 3 meters | Cubic Meter | 2.369 |
| Excavation in rock to depth of 3 meters | Cubic Meter | 11.530 |
| Reinforced concrete in foundations | Cubic Meter | 82.812 |
| Plain concrete in foundations | Cubic Meter | 22.660 |
| Reinforced concrete formed in beams and columns | Cubic Meter | 87.550 |
| Rubbing of exposed concrete | Square Meter | 5.700 |
| Rock facing and infill | Cubic Meter | 40.000 |
| Clean sand fill | Cubic Meter | 1.900 |
| Hard fire clay brick | Cubic meter | 45.200 |
| **Guard Stations** | | |
| Earth excavation | Cubic Meter | 2.369 |
| Rock excavation | Cubic Meter | 11.530 |
| Plain concrete foundation | Cubic Meter | 22.660 |
| Reinforced concrete in forms | Cubic Meter | 113.300 |
| Rubbing exposed concrete | Square Meter | 5.645 |
| **Buildings** | | |
| Excavation in earth to 3 meters depth | Cubic Meter | 2.369 |
| Excavation in rock to 3 meters depth | Cubic Meter | 11.530 |
| Plain concrete foundations | Cubic Meter | 22.660 |
| Reinforced concrete foundations | Cubic Meter | 90.000 |
| Reinforced concrete for slabs and beams in block forms | Cubic Meter | 20.600 |
| Block forms erected | Square Meter | 5.150 |

TABLE IV-5 (Continued)

ADABIYA FREE ZONE

CONSTRUCTION FACILITIES COSTS

| Construction Work Item | Measuring Unit | In-Place Unit Prices (Egyptian Pounds) |
|---|---|---|
| Hard fire clay brick | Cubic Meter | 45.200 |
| Erection of brick (hard) | Square Meter | 5.665 |
| Erection of brick (soft) | Square Meter | 5.645 |
| Roofing Bitumin | Square Meter | 3.296 |
| Concrete fill to slope roof | Square Meter | 3.000 |
| Concrete troweling (inside) | Square Meter | 1.803 |
| Reinforced concrete stairs | Cubic Meter | 87.550 |
| Soft red clay brick | Cubic Meter | 22.660 |
| Reinforced concrete for shell or vaulted roof | Cubic Meter | 123.600 |
| Outside troweling (including painting) | Square Meter | 2.833 |
| Plain concrete flooring (base) | Square Meter | 17.510 |
| Plain concrete flooring (topping) | Square Meter | 6.180 |
| Tile concrete flooring | Square Meter | 3.000 |
| Vertical bitumin waterproofing | Square Meter | .750 |
| Interior painting | Square Meter | 3.200 |
| Ceramic tile | Square Meter | 15.450 |
| Industrial steel windows | Square Meter | 78.280 |
| Wood doors (office) | Square Meter | 44.290 |
| Wood windows | Square Meter | 51.500 |
| 3" roof drains | Meter | 7.210 |
| 4" iron pipes | Meter | 8.755 |
| Leader head | Each | 6.180 |
| Galley trap | Each | 20.600 |
| 60 cm x 60 cm manhole | Each | 92.700 |
| Stored Material Items* | | |
| Gravel | Cubic Meter | 4.635 |
| Sand | Cubic Meter | 3.090 |
| Cement | Ton | 45.000 |
| Rock | Cubic Meter | 6.180 |
| Reinforcing bars | Ton | 300.000 |
| 150 mm cement asbestos pipe | Meter | 5.974 |
| 300 mm cement asbestos pipe | Meter | 11.000 |
| 400 mm cement asbestos pipe | Meter | 12.000 |
| 300 mm clay pipe | Meter | 5.000 |
| 200 mm clay pipe | Meter | 3.000 |
| 150 mm clay pipe | Meter | 2.000 |

* Not installed.

Source: Reynolds, Smith and Hills, Inc., November 1979.

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descriptions of the reasons for such departures. Throughout the design development phase, the FZS Engineer should reserve an exercise of right to guidance control and management of the design activities. The design should be accomplished on the basis of existing site conditions, existing materials, and labor availabilities.

The engineering design should also be accomplished on a phased basis within each phase development area, in order to control both the design and construction costs, and in order to provide an organized and controlled construction undertaking. In other words, neither the design nor the construction should progress beyond investor interest and commitments at any point in time. This procedure will provide for a managed cash flow appropriate to the ultimate revenues which will be derived after construction completions and occupancies occur.

C. Construction. For cost savings, the advanced procurement of key equipment items should be accomplished directly by the Free Zone Sector Engineering group. In the procurement process, it is important that the equipment is procured under specifications appropriately developed by the Design Engineer, in order that that equipment will accomplish the utilitarian value required. The contracting itself should be phased in separate bid packages as the design work progresses and is packaged. This procedure will allow for cost controls and prevent long-term cost commitments not subject to changing conditions, resulting in unnecessary cost expenditures. Contractors should be selected on a competitive bidding process and lump sum figures should be required, with lump sum contracts resulting therefrom The study participants recognize the fact that this type of bidding procedure is not common in Egypt; however, in context with local contractors, the professional personnel involved in the study concluded that such a procedure is feasible for the development of the Adabiya site.

Although the contractor will provide supervision for their individual construction contract requirements, it is also appropriate that the FZS employ independent consultants for both on-site supervision and inspection. This procedure will accomplish the quality controls required and further implement a control over ultimate costs and scheduling.

In the phasing of the design and construction, it is important that the utility requirements be given first consideration. Areas such as power and sewage should be first considered due to the fact that a resolution of those utility sources will undoubtedly impact the other design and construction considerations. Interface with government authorities is a time-consuming process and if the utility problems cannot be economically resolved during the design process and it became necessary to delay the project because of these problems, there would be no extensive cost commitment on the part of the Authority. We include

this statement in the study due to the fact that there may be unknown or unforeseen cost factors relating to power and sewage, which factors will only evidence themselves in the design process.

## ESTIMATED MANPOWER REQUIREMENTS

The estimated manpower requirements for the accomplishments of the Phase I design and construction work are summarized as follows:

| | Man-days |
|---|---|
| Site Development | 6,893 |
| Roads and Drainage | 9,711 |
| Fences and Guard Station | 10,537 |
| Adm. and Control Bldgs. | 8,364 |
| Water System | 7,409 |
| Sewage System | 6,640 |
| Electrical System | 5,667 |
| Solid Waste | 2,686 |
| Communication System | 1,248 |
| Irrigation System | 1,667 |
| Total | 60,822 |

This summary is based upon a normal phased design and contruction procedure which includes allowances for supervisory and crew stabilization. It is important that the crew stabilization be implemented for the Adabiya project from a cost and schedule veiwpoint due to the relatively "remote location" of the project to the proposed labor pool area in Suez.

### Staff Integration

The Adabiya Free Zone will serve as the industrial free zone in Suez, leaving Port Tawfik as a center for warehousing, and small commercial activity. The existence of Port Tawfik gives the management of the zone an experience factor upon which to rapidly solidify its operations through the utilization of one overall General Director for Suez located at the Adabiya Free Zone with a Deputy Director located at Port Tawfik reporting directly to the Adabiya General Director. Functions of similar capacity should be engaged at both areas with the exception of management functions. These should be concentrated at Adabiya (i.e., legal, public relations, operations, accounting) with working staff at Port Tawfik reporting to Adabiya. The organization and management of Adabiya and Port Tawfik might assume the following format:

| Department | Adabiya | Port Tawfik |
|---|---|---|
| Director General | X | - |
| Deputy Director | - | X |
| Legal | 0 | - |
| Investor Relations | X | 0 |

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| | | |
|---|---|---|
| Administration | X | 0 |
| Finance/Accounting | X | 0 |
| Operations/Security | X | X |

X = Full Staff  0 = Staff Support

The prefeasibility report (Phase 1) under the USAID grant number 263-0042 presented a description of personnel administration and manning levels.

The Adabiya facility requires a basic staff of 10 persons once tenants begin to be secured for the area. This staff need is anticipated to grow to 40 persons by the time the facility is fully absorbed. Daily wages for the staff are estimated as follows:

| Function | Initial | Final | Daily Wage |
|---|---|---|---|
| Management | 1 | 2 | 15 LE/Day |
| Engineering/Research | 2 | 6 | 12 LE/Day |
| Accounting/Finance | 2 | 6 | 10 LE/Day |
| Inspection/Service | 2 | 13 | 8 LE/Day |
| Maintenance | 3 | 13 | 8 LE/Day |
| Total | 10 | 40 | |

Additionally, security services and customs inspectors should be a cost to the free zone beginning with 8 security guards.

## AVAILABILITY OF CONSTRUCTION SERVICES

As noted elsewhere in this report, the construction contracting and servicing available for the proposed Adabiya project are centered in the City of Suez, with appropriate supportive and specialty contracting agencies located in the City of Cairo. Construction services and contracting availabilities are summarized as follows:

A. City of Suez. For the basic infrastructure requirements, within the City of Suez and confines, contractors and contracting services are available primarily for earth moving, concrete work, piping, and road work. Although the equipment available in the City of Suez is considered to be somewhat marginal in its utilitarian value, and although such equipment is in relatively short supply, depending upon the project timing requirements, the study concluded that such availabilities were appropriate through the infrastructure requirements of the proposed Adabiya site, primarily due to the fact that there are no special site problems in earth moving or underground installations apparent. The labor force in the City of Suez is primarily unskilled but knowledgeable in the basic requirements of earth moving, concrete work, and roadway construction. Work of this nature, especially on the Adabiya site, does not require special training or expertise.

B. City of Cairo. The City of Cairo, with its ongoing construction requirements, and its vast resources in materials, equipment and labor, and being approximately 140 kilometers in distance from the proposed Adabiya site, should be considered as a secondary source of materials and labor, and such consideration should be for only those work items which are technically oriented, such as power, electrical work, mechanical work and sewage treatment. Also, Cairo sources should only be considered as a "last resort" to existing sources in the City of Suez. The professionals involved in the study were concerned not only with costs and time, but also with the quality of the construction product. This concern was amplified in the study of existing materials, equipment, and labor forces in the City of Suez. Generally, it was determined that the workmanship quality obtained from the Cairo sources was superior to the quality obtained in the utilization of Suez tradesmen. Due to the fact that the quality differential is not appreciable, the quality features of the construction work required for the Adabiya site can be controlled through a well defined program of quality control implemented on site by the FZS Engineer and his independent supervisory and inspection consultants.

## SPECIAL PROBLEMS

As stated elsewhere in this report, the special problems in the execution of the project relate primarily to the possible inflation of cost factors accruing to off-site power, water, and sewage development. Therefore, a resolution of those costs should be accomplished as a first priority before either short or long-term commitments are made. In the next increment of engineer design, these elements would be intensively dealt with. If the funding for the project were undertaken on a conservative basis, that is, without allowances for unusual cost considerations, problems of cash flow could result in a project delay or cancellation and funding losses. On the other hand, if substantial allowances are included in the funding program, such inclusions may preclude the feasibility of the project as being a revenue producing undertaking.

## SUMMARY OF TECHNICAL FEASIBILITY

The study concludes that the proposed site itself is technically feasible from both the engineering and construction viewpoints. However, it is concluded that if unknown factors relating to power, water, and sewage are uncovered, they may override the technical considerations. Too, until the Ministry of Defense inspects the site and ensures that no land mines remain, no construction activity should occur.

## CHAPTER V
## FINANCIAL AND ECONOMIC ANALYSIS OF ADABIYA FREE ZONE

The financial and economic analysis for the Adabiya Free Zone represents a multilevel approach toward determining benefits to the country. These levels are:

- The free zone as a real estate venture;
- The investor industries occupying the free zone; and
- The off-site cost provisions serving to regionally support the free zone and its investors.

The first analysis level, that of the projected free zone feasibility, represents the focal point for the initial desirability of the project. The development of the free zone incurs substantial GOE investment in the form of infrastructure and generates very few direct job opportunities. It is the provision of this infrastructure and associated services, when combined with legal and financial incentives, which serves to attract the investor and private investment components. The investors' generation of employment levels, local purchases of materials, and foreign exchange generation represents the primary direct benefit which will accrue to Egypt.

The third analysis level, that of off-site, indirect regional costs, is less subject to rigorous definition than the first two direct cost layers. For example, it is not certain how much additional housing would have to be provided for migrating workers in Suez versus the employment of similarly unskilled laborers living in the area. Too, by focusing on a regional analysis, benefits accruing elsewhere due to the migration process are overlooked. If skilled labor moves from Cairo to Suez, it requires housing in Suez but vacates needed housing in Cairo; it consumes water and electric power in Suez but offsets the need for similar investment in Cairo; a school seat vacates in Cairo but is required in Suez. Based upon the magnitude of problems Cairo faces one could assume that the cost of providing services in Cairo would exceed those costs in Suez. However, this analysis assumes that there will be a substantial incremental service cost to the Suez region which is not subject to regional credits elsewhere.

### COST/BENEFIT SUMMARY

A detailed financial and economic analysis for the Adabiya Free Zone follows. The assumptions building the levels of revenues and expenses utilized in the analysis are defined in the Assumptions section of this chapter. The schedules presented hereunder include:

- Basic Free Zone Cash Flow - Schedule 1
- Free Zone Financial Cash Flow - Schedule 2

- Free Zone Income Statement - Schedule 3
- Free Zone Balance Sheet - Schedule 4
- Investor Analysis - Schedule 5
- Economic Cash Flow - Schedule 6
- Foreign Exchange Profile - Schedule 7

The results of these efforts are summarized on Table V-1, which also presents additional sensitivity analyses applied against the basic data. These sensitivities consist of:

(1) Absorption of 235 feddans of developed land rather than 261 feddans.

(2) A 15 percent decrease in local purchases by free zone investors.

(3) Utilization of 10 percent fewer laborers by free zone investors.

The financial analysis demonstrates an internal rate of return (IRR) approximating 8 percent accompanied by a payback period of 17 years for this infrastructure project. On an economic basis, the project demonstrates an IRR of 38 percent and a payback period of 6 years. Looking at the project in another way, for each LE 1.00 of cost to Egypt, LE 2.50 in benefits are anticipated.

Schedule Summary

Schedule 1 - Basic Free Zone Sector Cash Flow. This cash flow analysis represents the direct costs and revenues associated with the development of Adabiya if financed entirely by the Government of Egypt. In essence, it is a pure equity cash flow concerned only with the timing of revenues and expenses. Construction of the free zone is based upon the parameters established in Chapters III and IV of this document which define market absorption, and construction costs. The assumptions portion of this chapter explains the basis for revenue and operating cost calculations.

The summation of revenues and expenditures for the project represents a revenue surplus of LE 81 million through the year 2009. Applying present value factors, the following positions result:

SCHEDULE 1

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CASH FLOW | | | | | | | | | | | |
| | REVENUE | | | | | | | | | | | |
| 102 | FEDDANS ABSORBED | 241 | | | | 15 | 15 | 29 | 22 | 23 | 25 | 25 |
| 103 | SALES REVENUE | 717 | | | | 135 | 139 | 143 | 148 | 152 | | |
| 104 | LEASE INCOME | 93,588 | | | | 54 | 308 | 633 | 992 | 1,348 | 1,731 | 2,126 |
| 105 | FEES AND CHARGES | 36,466 | | | | | | 20 | 40 | 120 | 232 | 371 |
| 106 | RESIDUAL VALUE | 8,909 | | | | | | | | | | |
| | TOTAL REVENUE | 139,481 | | | | 190 | 447 | 785 | 1,200 | 1,629 | 1,963 | 2,497 |
| | DEVELOPMENT EXPENDITURES | | | | | | | | | | | |
| 111 | WORKING CAPITAL | -4 | | 9 | 5 | 9 | 1 | 3 | 9 | 1 | 10 | 10 |
| 112 | SITE DEVELOPMENT | 751 | | 104 | 110 | | | | 174 | | 177 | 187 |
| 113 | ELECTRIC UTIL | 11,587 | | 1,586 | 1,681 | | | | 2,646 | | 2,756 | 2,869 |
| 114 | WATER SYSTEM | 1,425 | | 196 | 208 | | | | 330 | | 335 | 354 |
| 115 | SEWAGE SYSTEM | 1,277 | | 176 | 186 | | | | 296 | | 300 | 318 |
| 116 | SOLID WASTE DIS | 1,803 | | 248 | 253 | | | | 418 | | 424 | 449 |
| 117 | FENCES | 1,824 | | 251 | 256 | | | | 423 | | 429 | 455 |
| 118 | IRRIGATION SYS. | 577 | | 80 | 84 | | | | 134 | | 136 | 144 |
| 119 | STREETS | 5,136 | | 708 | 750 | | | | 1,190 | | 1,208 | 1,280 |
| 120 | LAND | 1,293 | 1,293 | | | | | | | | | |
| 122 | INCUBATOR | 382 | | | 382 | | | | | | | |
| 123 | COMMUNICATIONS | 1,056 | | 146 | 154 | | | | 245 | | 248 | 263 |
| 124 | SUPPORT BUILDINGS | 1,769 | | 244 | 258 | | | | 410 | | 416 | 441 |
| 125 | VEHICLES | 1,060 | | | 280 | | | | 184 | | | 605 |
| 126 | DESIGN AND CONSTR. MG | 1,935 | | 243 | 408 | | | | 421 | | 415 | 479 |
| 127 | WAREHOUSE CONSTRUCTI | 1,652 | | | 1,652 | | | | | | | |
| 128 | CONTINGENCY - OTHER | 7,060 | | 1,121 | 1,883 | | | | 1,941 | | 1,913 | 2,219 |
| | TOTAL INVESTMENT | 42,549 | 1,293 | 5,112 | 8,572 | 9 | 1 | 3 | 8,840 | 1 | 8,715 | 10,884 |
| | OPERATING COSTS | | | | | | | | | | | |
| 131 | LABOR | 4,867 | | 36 | 37 | 53 | 55 | 74 | 77 | 89 | 100 | 103 |
| 132 | PRODUCTION | 826 | | | | 40 | 40 | 40 | 40 | 20 | 20 | 20 |
| 133 | GENERAL AND ADMIN | 3,244 | | | | 1 | 8 | 16 | 24 | 37 | 49 | 62 |
| 134 | SECURITY | 2,645 | | 13 | 13 | 28 | 29 | 30 | 46 | 48 | 65 | 84 |
| 135 | INTEREST | | | | | | | | | | | |
| 136 | MAINTENANCE | 5,612 | | 20 | 68 | 68 | 68 | 68 | 113 | 113 | 156 | 206 |
| 137 | DEPRECIATION | 33,500 | | 175 | 455 | 455 | 454 | 453 | 747 | 746 | 1,036 | 1,371 |
| | TOTAL OPERATING COST | 48,889 | | 244 | 573 | 646 | 654 | 682 | 1,048 | 1,052 | 1,427 | 1,847 |
| 139 | NET CASH FLOW | 81,263 | -1,293 | -5,186 | -8,690 | -11 | 246 | 563 | -7,942 | 1,322 | -7,143 | -8,245 |



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SCHEDULE 1 (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADAMIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CASH FLOW | | | | | | | | | | |
| | REVENUE | | | | | | | | | | |
| 102 | FEDDANS ABSORBED | 26 | 30 | 30 | 30 | | | | | | |
| 103 | SALES REVENUE | | | | | | | | | | |
| 104 | LEASE INCOME | 2,548 | 3,042 | 3,591 | 4,075 | 4,124 | 4,174 | 4,226 | 4,288 | 4,335 | 4,392 |
| 105 | FEES AND CHARGES | 530 | 709 | 903 | 1,116 | 1,347 | 1,594 | 1,804 | 1,971 | 2,086 | 2,145 |
| 106 | RESIDUAL VALUE | | | | | | | | | | |
| | TOTAL REVENUE | 3,078 | 3,751 | 4,494 | 5,191 | 5,471 | 5,769 | 6,030 | 6,251 | 6,421 | 6,537 |
| | DEVELOPMENT EXPENDITURES | | | | | | | | | | |
| 111 | WORKING CAPITAL | 5 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| 112 | SITE DEVELOPMENT | | | | | | | | | | |
| 113 | ELECTRIC UTIL | | | | | | | | | | |
| 114 | WATER SYSTEM | | | | | | | | | | |
| 115 | SEWAGE SYSTEM | | | | | | | | | | |
| 116 | SOLID WASTE DIS | | | | | | | | | | |
| 117 | FENCES | | | | | | | | | | |
| 118 | IRRIGATION SYS. | | | | | | | | | | |
| 119 | STREETS | | | | | | | | | | |
| 120 | LAND | | | | | | | | | | |
| 122 | INCUBATOR | | | | | | | | | | |
| 123 | COMMUNICATIONS | | | | | | | | | | |
| 124 | SUPPORT BUILDINGS | | | | | | | | | | |
| 125 | VEHICLES | | | | | | | | | | |
| 126 | DESIGN AND CONST. MG | | | | | | | | | | |
| 127 | WAREHOUSE CONSTRUCTI | | | | | | | | | | |
| 128 | CONTINGENCY - OTHER | | | | | | | | | | |
| | TOTAL INVESTMENT | 5 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| | OPERATING COSTS | | | | | | | | | | |
| 131 | LABOR | 133 | 134 | 138 | 142 | 146 | 151 | 155 | 160 | 165 | 170 |
| 132 | PROMOTION | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 133 | GENERAL AND ADMIN | 77 | 94 | 111 | 130 | 137 | 144 | 151 | 156 | 161 | 163 |
| 134 | SECURITY | 87 | 89 | 92 | 95 | 97 | 100 | 103 | 106 | 110 | 113 |
| 135 | INTEREST | | | | | | | | | | |
| 136 | MAINTENANCE | 236 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 |
| 137 | DEPRECIATION | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| | TOTAL OPERATING COST | 1,891 | 1,914 | 1,938 | 1,963 | 1,978 | 1,992 | 2,006 | 2,020 | 2,032 | 2,043 |
| 139 | NET CASH FLOW | 2,552 | 3,205 | 3,483 | 4,595 | 4,863 | 5,145 | 5,399 | 5,601 | 5,759 | 5,864 |

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SCHEDULE I (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CASH FLOW | | | | | | | | | | |
| | REVENUE | | | | | | | | | | |
| 102 | FEDMANS ABSORBED | | | | | | | | | | |
| 103 | SALES REVENUE | | | | | | | | | | |
| 104 | LEASE INCOME | 4,451 | 4,509 | 4,570 | 4,632 | 4,696 | 4,762 | 4,830 | 4,900 | 4,972 | 5,046 |
| 105 | FEES AND CHARGES | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 |
| 106 | RESIDUAL VALUE | | | | | | | | | | 8,909 |
| | TOTAL REVENUE | 6,596 | 6,654 | 6,715 | 6,777 | 6,841 | 6,907 | 6,975 | 7,045 | 7,117 | 16,101 |
| | DEVELOPMENT EXPENDITURES | | | | | | | | | | |
| 111 | WORKING CAPITAL | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -99 |
| 112 | SITE DEVELOPMENT | | | | | | | | | | |
| 113 | ELECTRIC UTIL | | | | | | | | | | |
| 114 | WATER SYSTEM | | | | | | | | | | |
| 115 | SEWAGE SYSTEM | | | | | | | | | | |
| 116 | SOLID WASTE DIS | | | | | | | | | | |
| 117 | FENCES | | | | | | | | | | |
| 118 | IRRIGATION SYS. | | | | | | | | | | |
| 119 | STREETS | | | | | | | | | | |
| 120 | LAND | | | | | | | | | | |
| 122 | INCUBATOR | | | | | | | | | | |
| 123 | COMMUNICATIONS | | | | | | | | | | |
| 124 | SUPPORT BUILDINGS | | | | | | | | | | |
| 125 | VEHICLES | | | | | | | | | | |
| 126 | DESIGN AND CONST. MG | | | | | | | | | | |
| 127 | WAREHOUSE CONSTRUCTI | | | | | | | | | | |
| 128 | CONTINGENCY - OTHER | | | | | | | | | | |
| | TOTAL INVESTMENT | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -99 |
| | OPERATING COSTS | | | | | | | | | | |
| 131 | LABOR | 175 | 175 | 180 | 186 | 191 | 197 | 203 | 209 | 215 | 222 |
| 132 | PROMOTION | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 133 | GENERAL AND ADMIN | 165 | 166 | 168 | 169 | 171 | 173 | 174 | 176 | 178 | 180 |
| 134 | SECURITY | 116 | 116 | 120 | 123 | 127 | 131 | 135 | 139 | 143 | 147 |
| 135 | INTEREST | | | | | | | | | | |
| 136 | MAINTENANCE | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 |
| 137 | DEPRECIATION | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| | TOTAL OPERATING COST | 2,053 | 2,054 | 2,065 | 2,075 | 2,086 | 2,097 | 2,109 | 2,121 | 2,133 | 2,146 |

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| Discount Rate | | Present Value (LE) |
|---|---|---|
| 0% | | 81.3 million |
| 10% | | - 5.4 million |
| 20% | | -12.6 million |
| | Rate of Return | 8% |
| | Payback Period | 17.1 years |

The decrease in present value means that the direct return generated by the project is less than 10 percent. On a commercial basis, a private firm would not develop the free zone as a real estate venture because its return on funds would be too low. However, the return does indicate that if the GOE developed the free zone and paid a private firm to promote, manage, and operate the free zone, the private firm could do so, and the cost to the GOE would not significantly affect its return on investment.

Schedule 2 - Free Zone Sector Financial Cash Flow. The use of concessionary loans for the possible foreign purchase components of the free zone infrastructural development is demonstrated in Schedule 2. It has been assumed that foreign assistance at 5.5 percent over 20 years is available to provide loans for the foreign material costs of the Adabiya Free Zone. For Phase 1, 55 percent of the development costs represents foreign input; Phases 2 and 3 assume 40 percent of the development costs represent foreign components.

Because of interest payments, the free zone's direct revenue surplus declines from LE 81 million to LE 70 million over the life of the project. This decline is offset by the usage of external funds which reduces the initial cash outlay requirements by the GOE and results in a marginally higher rate of return on the project.

As in the case presented by Schedule 1, there would not appear to be any financial incentive for a private firm to develop the free zone even with concessionary financing. However, the GOE returns would not be significantly affected if it hired a private firm to promote, manage, and operate the Adabiya Free Zone.

Schedule 3 - A Free Zone Income Statement. Annual income statements for the free zones are presented so that an analyst can note changes for key years.

Schedule 4 - Balance Sheet. An annual balance sheet is included.

Schedule 5 - Investor Analysis. This brief schedule presents a quantified summary of annual investor expenditures, labor costs, sales and purchases. The schedule is later used as a reference for foreign exchange and the cost/benefit schedules.

SCHEDULE 2

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | FINANCIAL CASH FLOW | | | | | | | | | | | |
| 301 | TOTAL REVENUE | 139,401 | | | | 190 | 447 | 795 | 1,203 | 1,629 | 1,963 | 2,467 |
| 302 | OPERATING COSTS | 15,589 | | 74 | 118 | 191 | 200 | 229 | 351 | 306 | 391 | 474 |
| 303 | OPR. CASH FLOW | 123,812 | | -74 | -118 | -2 | 247 | 567 | 898 | 1,323 | 1,572 | 2,021 |
| 305 | EQUITY FOR CAPTIAL NEEDS | 24,773 | 1,293 | 2,568 | 4,289 | 9 | 1 | 3 | 5,387 | 1 | 5,233 | 6,849 |
| 306 | FOREIGN DEBT SERVICE | | | | | | | | | | | |
| 307 | PRINCIPAL REPAYMENTS | 17,540 | | 36 | 131 | 202 | 214 | 226 | 286 | 359 | 493 | 549 |
| 308 | INTEREST | 11,419 | | 70 | 248 | 362 | 350 | 338 | 419 | 581 | 576 | 747 |
| 310 | PAID IN EQUITY | 29,756 | 1,293 | 3,248 | 5,370 | 667 | 418 | 93 | 6,217 | | 5,639 | 6,619 |
| 313 | RETAINED EARNINGS | 98,124 | | | | | | | | 313 | | |
| 315 | FINANCIAL CASH FLOW | 70,174 | -1,293 | -2,739 | -4,786 | -575 | -318 | -1 | -5,119 | 467 | -4,661 | -5,317 |

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SCHEDULE 2 (Continued)
GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | FINANCIAL CASH FLOW | | | | | | | | | | |
| 301 | TOTAL REVENUE | 3,078 | 3,751 | 4,454 | 5,191 | 5,471 | 5,769 | 6,038 | 6,251 | 6,421 | 6,537 |
| 302 | OPERATING COSTS | 523 | 543 | 567 | 593 | 607 | 622 | 636 | 649 | 661 | 672 |
| 303 | OPR. CASH FLOW | 2,559 | 3,207 | 3,888 | 4,598 | 4,864 | 5,147 | 5,394 | 5,602 | 5,760 | 5,865 |
| 305 | EQUITY FOR CAPTIAL NEEDS | 9 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| 306 | FOREIGN DEBT SERVICE | | | | | | | | | | |
| 307 | PRINCIPAL REPAYMENTS | 632 | 668 | 705 | 745 | 787 | 832 | 879 | 928 | 980 | 1,036 |
| 308 | INTEREST | 814 | 780 | 742 | 703 | 661 | 616 | 569 | 520 | 467 | 412 |
| 310 | PAID IN EQUITY | | | | | | | | | | |
| 313 | RETAINED EARNINGS | 822 | 1,474 | 2,153 | 2,864 | 3,132 | 3,415 | 3,667 | 3,870 | 4,028 | 4,133 |
| 315 | FINANCIAL CASH FLOW | 1,185 | 1,757 | 2,435 | 3,147 | 3,415 | 3,698 | 3,945 | 4,153 | 4,311 | 4,416 |



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SCHEDULE 2 (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADAMIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | FINANCIAL CASH FLOW | | | | | | | | | | |
| 301 | TOTAL REVENUE | 6,596 | 6,654 | 6,715 | 6,777 | 6,841 | 6,907 | 6,974 | 7,045 | 7,117 | 16,101 |
| 302 | OPERATING COSTS | 682 | 684 | 694 | 705 | 715 | 727 | 738 | 750 | 762 | 775 |
| 303 | OPR. CASH FLOW | 5,914 | 5,971 | 6,021 | 6,072 | 6,126 | 6,180 | 6,237 | 6,295 | 6,355 | 15,326 |
| 305 | EQUITY FOR CAPTIAL NEEDS | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| 306 | FOREIGN DEBT SERVICE | | | | | | | | | | |
| 307 | PRINCIPAL REPAYMENTS | 1,094 | 1,050 | 829 | 683 | 722 | 762 | 663 | 544 | 430 | 151 |
| 308 | INTEREST | 354 | 293 | 240 | 200 | 162 | 121 | 80 | 48 | 19 | 2 |
| 310 | PAID IN EQUITY | | | | | | | | | | |
| 313 | RETAINED EARNINGS | 4,182 | 4,365 | 4,726 | 4,997 | 5,040 | 5,095 | 5,310 | 5,554 | 5,784 | 15,224 |
| 315 | FINANCIAL CASH FLOW | 4,465 | 4,628 | 4,950 | 5,187 | 5,241 | 5,295 | 5,493 | 5,701 | 5,904 | 15,268 |

SCHEDULE 3

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FINANCIAL INCOME STATEMENT | | | | | | | | | | | |
| | REVENUE | | | | | | | | | | | |
| 142 | SALES REVENUE | 717 | | | | 135 | 139 | 143 | 148 | 152 | | |
| 143 | LEASE INCOME | 93,388 | | | | 54 | 308 | 633 | 992 | 1,348 | 1,731 | 2,126 |
| 144 | FEES AND CHARGES | 36,466 | | | | | | 28 | 48 | 129 | 232 | 371 |
| | TOTAL REVENUE | 130,491 | | | | 190 | 447 | 795 | 1,208 | 1,629 | 1,963 | 2,497 |
| 146 | COST OF SALES | 420 | | | | 84 | 84 | 84 | 84 | 84 | | |
| | GROSS PROFIT | 130,071 | | | | 106 | 363 | 711 | 1,116 | 1,545 | 1,963 | 2,497 |
| | OPERATING COSTS | | | | | | | | | | | |
| 149 | LABOR | 4,067 | | 36 | 37 | 53 | 55 | 74 | 77 | 89 | 100 | 103 |
| 150 | PROMOTION | 620 | | | | 40 | 40 | 40 | 40 | 20 | 20 | 20 |
| 151 | GEN AND ADMIN | 3,244 | | | | 1 | 8 | 16 | 26 | 37 | 49 | 62 |
| 152 | SECURITY | 2,640 | | 13 | 13 | 28 | 29 | 30 | 46 | 48 | 65 | 84 |
| 153 | MAINTENANCE | 5,012 | | 26 | 68 | 68 | 68 | 68 | 113 | 113 | 156 | 206 |
| 154 | DEPRECIATION | 33,300 | | 170 | 455 | 455 | 454 | 453 | 747 | 746 | 1,036 | 1,372 |
| | TOTAL OPERATING COSTS | 48,889 | | 244 | 573 | 646 | 654 | 682 | 1,048 | 1,052 | 1,427 | 1,847 |
| | OPERATING PROFIT | 81,182 | | -244 | -573 | -540 | -291 | 29 | 68 | 493 | 536 | 650 |
| | INTEREST PAYMENT | 11,419 | | 70 | 248 | 362 | 350 | 338 | 419 | 501 | 576 | 747 |
| | NET PROFIT | 69,763 | | -314 | -822 | -902 | -641 | -309 | -352 | -8 | -40 | -97 |



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SCHEDULE 3 (Continued)
GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | FINANCIAL INCOME STATEMENT | | | | | | | | | | |
| | REVENUE | | | | | | | | | | |
| 142 | SALES REVENUE | | | | | | | | | | |
| 143 | LEASE INCOME | 2,548 | 3,042 | 3,591 | 4,075 | 4,124 | 4,174 | 4,224 | 4,288 | 4,339 | 4,392 |
| 144 | FEES AND CHARGES | 533 | 709 | 903 | 1,116 | 1,347 | 1,594 | 1,804 | 1,971 | 2,086 | 2,145 |
| | TOTAL REVENUE | 3,078 | 3,751 | 4,494 | 5,191 | 5,471 | 5,769 | 6,038 | 6,251 | 6,421 | 6,537 |
| 148 | COST OF SALES | | | | | | | | | | |
| | GROSS PROFIT | 3,078 | 3,751 | 4,494 | 5,191 | 5,471 | 5,769 | 6,038 | 6,251 | 6,421 | 6,537 |
| | OPERATING COSTS | | | | | | | | | | |
| 149 | LABOR | 130 | 134 | 138 | 142 | 146 | 151 | 155 | 160 | 165 | 170 |
| 150 | PROMOTION | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 151 | GEN AND ADMIN | 77 | 94 | 111 | 130 | 137 | 144 | 151 | 158 | 161 | 163 |
| 152 | SECURITY | 87 | 89 | 92 | 95 | 97 | 100 | 103 | 106 | 110 | 113 |
| 153 | MAINTENANCE | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 |
| 154 | DEPRECIATION | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| | TOTAL OPERATING COSTS | 1,891 | 1,914 | 1,938 | 1,963 | 1,978 | 1,992 | 2,006 | 2,020 | 2,032 | 2,043 |
| | OPERATING PROFIT | 1,187 | 1,837 | 2,515 | 3,227 | 3,494 | 3,776 | 4,024 | 4,231 | 4,389 | 4,494 |
| | INTEREST PAYMENT | 816 | 780 | 742 | 703 | 661 | 616 | 569 | 520 | 467 | 412 |
| | NET PROFIT | 371 | 1,057 | 1,773 | 2,525 | 2,833 | 3,160 | 3,454 | 3,712 | 3,922 | 4,082 |



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SCHEDULE 3 (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | FINANCIAL INCOME STATEMENT | | | | | | | | | | |
| | REVENUE | | | | | | | | | | |
| 142 | SALES REVENUE | | | | | | | | | | |
| 143 | LEASE INCOME | 4,451 | 4,509 | 4,570 | 4,632 | 4,696 | 4,762 | 4,830 | 4,900 | 4,972 | 5,046 |
| 144 | FEES AND CHARGES | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 |
| | TOTAL REVENUE | 6,596 | 6,654 | 6,715 | 6,777 | 6,841 | 6,907 | 6,975 | 7,045 | 7,117 | 7,191 |
| 146 | COST OF SALES | | | | | | | | | | |
| | GROSS PROFIT | 6,596 | 6,654 | 6,715 | 6,777 | 6,841 | 6,907 | 6,975 | 7,045 | 7,117 | 7,191 |
| | OPERATING COSTS | | | | | | | | | | |
| 149 | LABOR | 175 | 175 | 180 | 186 | 191 | 197 | 203 | 209 | 215 | 222 |
| 150 | PROMOTION | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 151 | GEN AND ADMIN | 165 | 166 | 168 | 169 | 171 | 173 | 174 | 176 | 178 | 180 |
| 152 | SECURITY | 116 | 116 | 120 | 123 | 127 | 131 | 135 | 139 | 143 | 147 |
| 153 | MAINTENANCE | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 |
| 154 | DEPRECIATION | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| | TOTAL OPERATING COSTS | 2,053 | 2,054 | 2,065 | 2,075 | 2,086 | 2,097 | 2,109 | 2,121 | 2,133 | 2,146 |
| | OPERATING PROFIT | 4,543 | 4,600 | 4,650 | 4,702 | 4,755 | 4,810 | 4,866 | 4,924 | 4,984 | 5,046 |
| | INTEREST PAYMENT | 354 | 293 | 240 | 200 | 162 | 121 | 80 | 48 | 19 | 2 |
| | NET PROFIT | 4,189 | 4,307 | 4,410 | 4,501 | 4,593 | 4,688 | 4,786 | 4,876 | 4,965 | 5,043 |



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SCHEDULE 4

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FINANCIAL BALANCE SHEET | | | | | | | | | | | |
| | ASSETS | | | | | | | | | | | |
| | CURRENT ASSETS | | | | | | | | | | | |
| 162 | CASH | 444 | | 2 | 4 | 6 | 6 | 7 | 9 | 9 | 12 | 14 |
| 163 | RECEIVABLES | 444 | | 2 | 4 | 6 | 6 | 7 | 9 | 9 | 12 | 14 |
| 164 | INVENTORIES | 889 | | 4 | 7 | 11 | 12 | 14 | 18 | 18 | 23 | 29 |
| | TOTAL CURRENT ASSETS | 1,778 | | 9 | 14 | 23 | 24 | 27 | 36 | 37 | 47 | 57 |
| | FIXED ASSETS | | | | | | | | | | | |
| 167 | LAND RIGHTS | 38,790 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 |
| 168 | OPERATING PLANT | 998,677 | | 5,183 | 13,250 | 13,250 | 13,250 | 13,250 | 22,081 | 22,081 | 38,786 | 40,640 |
| 169 | INVEST. PLANT | 1,680 | | | 420 | 420 | 336 | 252 | 168 | 84 | | |
| 170 | ACCUMULATED DEPRECIATI | 427,581 | | 170 | 625 | 1,085 | 1,534 | 1,987 | 2,734 | 3,486 | 4,515 | 5,586 |
| | NET FIXED ASSETS | 633,566 | 1,293 | 6,226 | 14,337 | 13,883 | 13,345 | 12,80[illegible] | 20,808 | 19,970 | 27,564 | 36,246 |
| | TOTAL ASSETS | 665,343 | 1,293 | 6,235 | 14,352 | 13,906 | 13,369 | 12,835 | 20,844 | 20,015 | 27,610 | 36,304 |
| | LIABILITIES | | | | | | | | | | | |
| | CURRENT LIABILITIES | | | | | | | | | | | |
| 178 | ACCTS PAYABLE | 1,299 | | 8 | 18 | 16 | 17 | 19 | 25 | 25 | 33 | 48 |
| 179 | DEBT | 18,839 | | 42 | 141 | 218 | 231 | 245 | 312 | 388 | 496 | 588 |
| | LONG TERM | | | | | | | | | | | |
| 181 | DEBT | 207,085 | | 2,516 | 6,668 | 6,466 | 6,252 | 6,026 | 9,272 | 8,912 | 11,976 | 15,119 |
| | TOTAL LIABILITIES | 225,924 | | 2,555 | 6,809 | 6,684 | 6,482 | 6,271 | 9,584 | 9,297 | 12,432 | 15,787 |
| | NET WORTH | | | | | | | | | | | |



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SCHEDULE 4 (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | PAID EQUITY | -100,626 | | 3,985 | 8,668 | 9,242 | 9,548 | 9,532 | 14,574 | 14,848 | 18,932 | 24,041 |
| 106 | RETAINED EARNINGS | 538,425 | | -314 | -1,135 | -2,037 | -2,678 | -2,987 | -3,339 | -3,[illegible]47 | -3,387 | -3,484 |
| | LIABILITIES NET WORTH | 485,343 | 1,293 | 6,235 | 14,352 | 13,906 | 13,369 | 12,835 | 28,844 | 28,815 | 27,616 | 38,334 |



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SCHEDULE 4 (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | FINANCIAL BALANCE SHEET | | | | | | | | | | |
| | ASSETS | | | | | | | | | | |
| | CURRENT ASSETS | | | | | | | | | | |
| 162 | CASH | 16 | 16 | 17 | 18 | 18 | 19 | 19 | 19 | 20 | 20 |
| 163 | RECEIVABLES | 16 | 16 | 17 | 18 | 18 | 19 | 19 | 19 | 20 | 20 |
| 164 | INVENTORIES | 31 | 33 | 34 | 36 | 36 | 37 | 38 | 39 | 40 | 40 |
| | TOTAL CURRENT ASSETS | 62 | 65 | 66 | 71 | 73 | 75 | 76 | 78 | 79 | 81 |
| | FIXED ASSETS | | | | | | | | | | |
| 167 | LAND RIGHTS | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 |
| 168 | OPERATING PLANT | 40,840 | 40,840 | 40,840 | 40,840 | 40,840 | 40,840 | 40,840 | 40,840 | 40,840 | 40,840 |
| 169 | INVEST. PLANT | | | | | | | | | | |
| 170 | ACCUMULATED DEPRECIATI | 7,257 | 8,628 | 9,998 | 11,369 | 12,740 | 14,110 | 15,481 | 16,852 | 18,223 | 19,593 |
| | NET FIXED ASSETS | 34,876 | 33,505 | 32,134 | 30,764 | 29,393 | 28,022 | 26,651 | 25,281 | 23,910 | 22,539 |
| | TOTAL ASSETS | 34,938 | 33,570 | 32,202 | 30,835 | 29,466 | 28,097 | 26,728 | 25,359 | 23,989 | 22,620 |
| | LIABILITIES | | | | | | | | | | |
| | CURRENT LIABILITIES | | | | | | | | | | |
| 178 | ACCTS PAYABLE | 43 | 45 | 47 | 49 | 51 | 52 | 53 | 54 | 55 | 56 |
| 179 | DEBT | 675 | 713 | 753 | 794 | 838 | 883 | 931 | 982 | 1,035 | 1,092 |
| | LONG TERM | | | | | | | | | | |
| 181 | DEBT | 14,487 | 13,820 | 13,114 | 12,369 | 11,582 | 10,751 | 9,872 | 8,944 | 7,964 | 6,928 |
| | TOTAL LIABILITIES | 15,163 | 14,533 | 13,867 | 13,144 | 12,420 | 11,634 | 10,804 | 9,926 | 8,999 | 8,020 |
| | NET WORTH | | | | | | | | | | |



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SCHEDULE 4 (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 185 | PAID EQUITY | 22,848 | 21,848 | 19,571 | 15,430 | 11,972 | 8,229 | 4,236 | 32 | -4,332 | -8,834 |
| 186 | RETAINED EARNINGS | -3,113 | -2,056 | -283 | 2,241 | 5,074 | 8,234 | 11,688 | 15,488 | 19,322 | 23,454 |
| | LIABILITIES NET WORTH | 34,938 | 33,578 | 32,282 | 30,635 | 29,466 | 28,697 | 26,729 | 25,359 | 23,989 | 22,620 |



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SCHEDULE 4 (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | FINANCIAL BALANCE SHEET | | | | | | | | | | |
| | ASSETS | | | | | | | | | | |
| | CURRENT ASSETS | | | | | | | | | | |
| 162 | CASH | 20 | 21 | 21 | 21 | 21 | 22 | 22 | 23 | 23 | |
| 163 | RECEIVABLES | 20 | 21 | 21 | 21 | 21 | 22 | 22 | 23 | 23 | |
| 164 | INVENTORIES | 41 | 41 | 42 | 42 | 43 | 44 | 44 | 45 | 46 | |
| | TOTAL CURRENT ASSETS | 82 | 82 | 83 | 85 | 86 | 87 | 89 | 90 | 91 | |
| | FIXED ASSETS | | | | | | | | | | |
| 167 | LAND RIGHTS | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 | 1,293 |
| 168 | OPERATING PLANT | 40,840 | 40,840 | 40,840 | 40,840 | 40,840 | 40,840 | 40,840 | 40,840 | 40,840 | 40,840 |
| 169 | INVEST. PLANT | | | | | | | | | | |
| 170 | ACCUMULATED DEPRECIATI | 20,964 | 22,335 | 23,705 | 25,076 | 26,447 | 27,817 | 29,188 | 30,559 | 31,930 | 33,300 |
| | NET FIXED ASSETS | 21,169 | 19,798 | 18,427 | 17,057 | 15,686 | 14,315 | 12,944 | 11,574 | 10,203 | 8,832 |
| | TOTAL ASSETS | 21,250 | 19,880 | 18,510 | 17,141 | 15,772 | 14,402 | 13,033 | 11,664 | 10,294 | 8,832 |
| | LIABILITIES | | | | | | | | | | |
| | CURRENT LIABILITIES | | | | | | | | | | |
| 178 | ACCTS PAYABLE | 57 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 |
| 179 | DEBT | 1,151 | 1,187 | 887 | 742 | 781 | 823 | 724 | 606 | 493 | 215 |
| | LONG TERM | | | | | | | | | | |
| 181 | DEBT | 5,834 | 4,784 | 3,955 | 3,272 | 2,550 | 1,788 | 1,125 | 581 | 151 | |
| | TOTAL LIABILITIES | 6,985 | 5,891 | 4,842 | 4,014 | 3,332 | 2,611 | 1,849 | 1,187 | 645 | 216 |
| | NET EQUITY | | | | | | | | | | |



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SCHEDULE 4 (Continued)
GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 185 | PAID EQUITY | -13,328 | -17,911 | -22,641 | -27,684 | -32,964 | -38,301 | -43,695 | -49,278 | -55,069 | -61,146 |
| 186 | RETAINED EARNINGS | 27,593 | 31,988 | 34,310 | 40,811 | 45,484 | 50,092 | 54,870 | 59,755 | 64,719 | 69,762 |
| | LIABILITIES NET WORTH | 21,250 | 19,888 | 18,518 | 17,141 | 15,772 | 14,402 | 13,033 | 11,664 | 10,294 | 8,932 |



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SCHEDULE 5

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADAMIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | INVESTOR INCOME STATEM | | | | | | | | | | | |
| 320 | SALES REVENUE | 4,631,760 | | | | | | 1,950 | 6,097 | 13,105 | 23,728 | 38,342 |
| 321 | COST OF SALES | | | | | | | | | | | |
| 322 | FOREIGN | 883,801 | | | | | | 372 | 1,150 | 2,501 | 4,528 | 7,316 |
| 323 | LOCAL | 1,382,355 | | | | | | 582 | 1,799 | 3,911 | 7,082 | 11,443 |
| 324 | TOTAL | 2,266,157 | | | | | | 954 | 2,949 | 6,412 | 11,609 | 18,759 |
| 325 | VALUE ADDED | 2,365,603 | | | | | | 996 | 3,078 | 6,693 | 12,119 | 19,583 |
| 326 | OPERATING EXPENSES | | | | | | | | | | | |
| 327 | FOR. LABOR | 198,723 | | | | | 1,044 | 1,798 | 2,638 | 3,536 | 4,558 | 5,638 |
| 328 | LOCAL LABOR | 478,960 | | | | | 1,666 | 2,868 | 4,208 | 5,639 | 7,278 | 8,992 |
| 329 | TOTAL | 677,682 | | | | | 2,710 | 4,666 | 6,846 | 9,175 | 11,828 | 14,631 |
| 330 | UTILITIES | 185,273 | | | | | | 78 | 241 | 524 | 949 | 1,534 |
| 331 | OTHER | 144,798 | | | | 302 | 679 | 1,093 | 1,582 | 2,072 | 2,459 | 3,050 |
| 332 | TOTAL | 1,007,750 | | | | 302 | 3,389 | 5,837 | 8,669 | 11,772 | 15,235 | 19,223 |
| 333 | OPERATING PROFIT/LOS | | | | | | | | | | | |
| 334 | LOCAL | 108,468 | | | | -24 | -271 | -387 | -447 | -406 | -249 | 29 |
| 335 | FOREIGN | 1,247,383 | | | | -278 | -3,118 | -4,454 | -5,144 | -4,672 | -2,867 | 330 |
| 336 | TOTAL | 1,355,851 | | | | -302 | -3,389 | -4,841 | -5,591 | -5,079 | -3,117 | 359 |
| | INVESTMENT | | | | | | | | | | | |
| 338 | LOCAL CAPITAL | 48,859 | | | | 1,404 | 2,808 | 3,276 | 3,931 | 4,212 | 4,493 | 4,680 |
| 339 | FOREIGN CAPITAL | 114,005 | | | | 3,276 | 6,552 | 7,644 | 9,173 | 9,828 | 10,483 | 10,929 |
| 340 | TOTAL | 162,864 | | | | 4,680 | 9,360 | 10,920 | 13,104 | 14,040 | 14,976 | 15,608 |
| 341 | WORKING CAPITAL | 694,762 | | | | | | 293 | 994 | 1,966 | 3,559 | 5,751 |
| 342 | TOTAL INVESTMENT | 857,625 | | | | 4,680 | 9,360 | 11,213 | 14,098 | 16,006 | 18,535 | 21,351 |

Best Available Document

SCHEDULE 5 (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ACABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | INVESTOR INCOME STATEM | | | | | | | | | | |
| 320 | SALES REVENUE | 55,319 | 74,830 | 96,427 | 120,563 | 147,263 | 176,316 | 202,479 | 225,239 | 243,457 | 256,668 |
| 321 | COST OF SALES | | | | | | | | | | |
| 322 | FOREIGN | 18,556 | 14,286 | 19,399 | 23,089 | 28,100 | 33,643 | 38,636 | 42,979 | 46,459 | 48,974 |
| 323 | LOCAL | 16,510 | 22,335 | 28,779 | 35,992 | 43,951 | 52,622 | 60,438 | 67,223 | 72,660 | 76,601 |
| 324 | TOTAL | 27,065 | 36,619 | 47,178 | 58,987 | 72,051 | 86,265 | 99,066 | 110,202 | 119,119 | 125,575 |
| 325 | VALUE ADDED | 28,253 | 38,222 | 49,249 | 61,576 | 75,212 | 90,051 | 103,413 | 115,038 | 124,342 | 131,096 |
| 326 | OPERATING EXPENSES | | | | | | | | | | |
| 327 | FOR. LABOR | 6,818 | 5,483 | 6,472 | 7,515 | 7,741 | 7,973 | 8,212 | 8,459 | 8,713 | 8,974 |
| 328 | LOCAL LABOR | 10,874 | 13,888 | 16,394 | 19,037 | 19,610 | 20,197 | 20,803 | 21,427 | 22,070 | 22,732 |
| 329 | TOTAL | 17,692 | 19,371 | 22,866 | 26,552 | 27,351 | 28,171 | 29,015 | 29,886 | 30,783 | 31,707 |
| 330 | UTILITIES | 2,217 | 2,993 | 3,857 | 4,823 | 5,891 | 7,053 | 8,099 | 9,310 | 9,738 | 10,266 |
| 331 | OTHER | 3,794 | 4,475 | 5,273 | 6,084 | 6,205 | 6,346 | 6,639 | 6,876 | 7,063 | 7,191 |
| 332 | TOTAL | 23,604 | 26,840 | 31,996 | 37,459 | 39,447 | 41,569 | 43,748 | 45,772 | 47,589 | 49,164 |
| 333 | OPERATING PROFIT/LOS | | | | | | | | | | |
| 334 | LOCAL | 372 | 911 | 1,380 | 1,929 | 2,861 | 3,879 | 4,773 | 5,541 | 6,141 | 6,554 |
| 335 | FOREIGN | 4,273 | 10,471 | 15,872 | 22,187 | 32,084 | 44,603 | 54,897 | 63,725 | 70,617 | 75,368 |
| 336 | TOTAL | 4,645 | 11,382 | 17,253 | 24,117 | 35,765 | 48,482 | 59,665 | 69,266 | 76,757 | 81,922 |
| | INVESTMENT | | | | | | | | | | |
| 338 | LOCAL CAPITAL | 4,774 | 5,242 | 5,616 | 5,616 | 2,808 | | | | | |
| 339 | FOREIGN CAPITAL | 11,138 | 12,230 | 13,104 | 13,104 | 6,552 | | | | | |
| 340 | TOTAL | 15,912 | 17,472 | 18,720 | 18,720 | 9,360 | | | | | |
| 341 | WORKING CAPITAL | 8,293 | 11,225 | 14,464 | 18,084 | 22,089 | 26,447 | 30,372 | 33,786 | 36,919 | 38,499 |
| 342 | TOTAL INVESTMENT | 24,213 | 28,697 | 33,184 | 36,804 | 31,449 | 26,447 | 30,372 | 33,786 | 36,919 | 38,499 |



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SCHEDULE 5 (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADAWIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | INVESTOR INCOME STATEM | | | | | | | | | | |
| 320 | SALES REVENUE | 264,363 | 264,363 | 272,292 | 280,463 | 288,876 | 297,544 | 306,469 | 315,663 | 325,128 | 334,890 |
| 321 | COST OF SALES | | | | | | | | | | |
| 322 | FOREIGN | 50,444 | 50,444 | 51,957 | 53,516 | 55,121 | 56,775 | 58,478 | 60,233 | 62,039 | 63,902 |
| 323 | LOCAL | 78,899 | 78,899 | 81,266 | 83,705 | 86,216 | 88,803 | 91,466 | 94,210 | 97,035 | 99,949 |
| 324 | TOTAL | 129,343 | 129,343 | 133,223 | 137,221 | 141,337 | 145,578 | 149,945 | 154,443 | 159,074 | 163,850 |
| 325 | VALUE ADDED | 135,019 | 135,019 | 139,069 | 143,243 | 147,539 | 151,967 | 156,525 | 161,220 | 166,054 | 171,040 |
| 326 | OPERATING EXPENSES | | | | | | | | | | |
| 327 | FOR. LABOR | 9,243 | 9,243 | 9,521 | 9,806 | 10,101 | 10,404 | 10,716 | 11,037 | 11,368 | 11,710 |
| 328 | LOCAL LABOR | 23,414 | 23,414 | 24,117 | 24,841 | 25,586 | 26,353 | 27,144 | 27,958 | 28,796 | 29,661 |
| 329 | TOTAL | 32,657 | 32,658 | 33,638 | 34,647 | 35,686 | 36,757 | 37,860 | 38,995 | 40,165 | 41,371 |
| 330 | UTILITIES | 10,579 | 10,579 | 10,892 | 11,219 | 11,555 | 11,902 | 12,259 | 12,627 | 13,005 | 13,396 |
| 331 | OTHER | 7,255 | 7,320 | 7,386 | 7,455 | 7,525 | 7,598 | 7,672 | 7,749 | 7,829 | 7,910 |
| 332 | TOTAL | 50,481 | 50,552 | 51,916 | 53,320 | 54,766 | 56,257 | 57,791 | 59,371 | 60,998 | 62,677 |
| 333 | OPERATING PROFIT/LOS | | | | | | | | | | |
| 334 | LOCAL | 6,763 | 6,797 | 6,972 | 7,194 | 7,422 | 7,657 | 7,899 | 8,148 | 8,404 | 8,669 |
| 335 | FOREIGN | 77,769 | 77,785 | 80,181 | 82,729 | 85,351 | 88,053 | 90,835 | 93,701 | 96,651 | 99,695 |
| 336 | TOTAL | 84,531 | 84,467 | 87,154 | 89,922 | 92,773 | 95,710 | 98,734 | 101,849 | 105,056 | 108,364 |
| | INVESTMENT | | | | | | | | | | |
| 338 | LOCAL CAPITAL | | | | | | | | | | |
| 339 | FOREIGN CAPITAL | | | | | | | | | | |
| 343 | TOTAL | | | | | | | | | | |
| 341 | WORKING CAPITAL | 39,654 | 39,654 | 40,844 | 42,069 | 43,331 | 44,632 | 45,970 | 47,349 | 48,769 | 50,234 |
| 342 | TOTAL INVESTMENT | 39,654 | 39,654 | 40,844 | 42,069 | 43,331 | 44,632 | 45,970 | 47,349 | 48,769 | 50,234 |

Key assumptions in the development of the schedule include the following:

- Land leased from the free zone requires two years of investor construction prior to the commencement of operations.

- Each investor, once operations commence, does not reach full productive capacity for a period of five years.

- The investor's working capital requirements are equal to three month sales values.

By adding the investor's profits and investments to the Adabiya Free Zone financial results, an overall return on total investment approximating 20 percent is realized. Based upon the assumption utilized in this analysis, the overall development of the free zone is shown to be financially adequate.

Schedule 6 - Free Zone Economic Analysis. This cash flow adds the portions of the foreign investor's operations which contribute benefits or cost to Egypt to the financial cash flow. In essence, the economic cash flow is the complete Adabiya picture. Allowing the economic benfits to accrue results in a rate of return for Adabiya of approximately 38 percent. This rate of return is equivalent to a cost/benefit ratio of 2.3:1.0.

Because of the considerable uncertainties with forward projections involving many investors and industries, it was considered prudent to test the impact on the economic analysis which would occur if many of the basic assumptions did not materialize. A series of sensitivity analyses were performed to test these impacts on the project. Sensitivity analysis of: (1) absorption of 235 feddans rather than 261 feddans; (2) a 15 percent decrease in local purchases; and (3) utilization of 10 percent less labor formed the basic criteria modification.

The results of these efforts are detailed on Table V-1 and Figure V-1. If 10 percent fewer investors are attracted to the free zone, or 10 percent less land is developable, the economic rate of return is reduced from 38 to 35 percent. Thus, even a reduction in investor performance of 25 percent less than anticipated would not have significant impact on the program.

- If the investors do not use as many laborers or workers as predicted, the project's social benefits are not materially returned.

- A reduction in local material purchases of 15 percent has little impact on the results. Material purchases could be reduced by over one-third and not significantly alter the program.

SCHEDULE 6

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS  IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECONOMIC COST BENEFIT | | | | | | | | | | | |
| 351 | F Z BENEFIT | | | | | | | | | | | |
| 352 | REVENUE | 139,481 | | | | 190 | 447 | 795 | 1,200 | 1,629 | 1,963 | 2,497 |
| 353 | LABOR | 6,712 | | 48 | 58 | 82 | 84 | 104 | 123 | 136 | 166 | 187 |
| 354 | OPERATIONS | 8,877 | | 26 | 68 | 110 | 116 | 125 | 179 | 169 | 225 | 289 |
| 355 | RETAINED EARNINGS | 98,124 | | | | | | | | 313 | | |
| 356 | F Z COSTS (NET) | | | | | | | | | | | |
| 357 | OPERATIONS | 8,877 | | 26 | 68 | 110 | 116 | 125 | 179 | 169 | 225 | 289 |
| 358 | PAID IN EQUITY | 29,756 | 1,293 | 3,248 | 5,370 | 667 | 410 | 93 | 6,217 | | 5,830 | 6,619 |
| 359 | NET BENEFIT | 206,481 | -1,293 | -3,280 | -5,320 | -396 | 122 | 807 | -4,895 | 2,078 | -3,718 | -3,934 |
| 361 | INVESTOR CONTRIBUTION | | | | | | | | | | | |
| 361 | LOCAL PURCHASES | 1,382,355 | | | | | | 582 | 1,799 | 3,911 | 7,882 | 11,445 |
| 362 | LABOR | 578,321 | | | | | 2,188 | 3,767 | 5,527 | 7,407 | 9,949 | 11,812 |
| 363 | OPERATIONS | 332,667 | | | | 382 | 679 | 1,171 | 1,823 | 2,597 | 3,488 | 4,599 |
| 364 | PROFIT | 108,468 | | | | -24 | -271 | -387 | -447 | -406 | -249 | 29 |
| 365 | CAPITAL | 48,859 | | | | 1,404 | 2,838 | 3,276 | 3,931 | 4,212 | 4,493 | 4,68[illegible] |
| 366 | INVESTOR BENEFIT TOTAL | 2,450,672 | | | | 1,682 | 5,404 | 8,409 | 12,633 | 17,721 | 24,282 | 32,556 |
| 367 | INVESTOR COSTS | | | | | | | | | | | |
| 368 | OPERATIONS | 319,018 | | | | 283 | 635 | 1,092 | 1,703 | 2,434 | 3,211 | 4,343 |
| 369 | PURCHASES | 691,177 | | | | | | 281 | 899 | 1,956 | 3,541 | 5,722 |
| 370 | CAPITAL | 39,087 | | | | 1,123 | 2,246 | 2,621 | 3,145 | 3,370 | 3,594 | 3,744 |
| 371 | INVESTOR COST TOTAL | 1,049,283 | | | | 1,406 | 2,881 | 4,004 | 5,747 | 7,759 | 10,347 | 13,809 |
| 373 | NET BENEFIT | 1,400,787 | | | | 276 | 2,523 | 4,405 | 6,886 | 9,962 | 13,935 | 18,748 |
| 375 | PROJECT BENEFIT | 1,607,269 | -1,293 | -3,280 | -5,320 | -120 | 2,645 | 5,212 | 1,991 | 12,040 | 10,229 | 14,813 |



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SCHEDULE 4 (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECONOMIC COST BENEFIT | | | | | | | | | | |
| 351 | F Z BENEFIT | | | | | | | | | | |
| 352 | REVENUE | 3,978 | 3,751 | 4,454 | 5,191 | 5,471 | 5,769 | 6,034 | 6,251 | 6,421 | 6,537 |
| 353 | LABOR | 217 | 223 | 230 | 237 | 244 | 251 | 259 | 266 | 274 | 283 |
| 354 | OPERATIONS | 303 | 320 | 335 | 356 | 363 | 371 | 377 | 383 | 387 | 390 |
| 355 | RETAINED EARNINGS | 822 | 1,474 | 2,153 | 2,864 | 3,132 | 3,415 | 3,662 | 3,870 | 4,028 | 4,133 |
| 356 | F Z COSTS (NET) | | | | | | | | | | |
| 357 | OPERATIONS | 303 | 320 | 338 | 356 | 363 | 371 | 377 | 383 | 387 | 390 |
| 358 | PAID IN EQUITY | | | | | | | | | | |
| 359 | NET BENEFIT | 4,114 | 5,448 | 6,836 | 8,291 | 8,847 | 9,439 | 9,951 | 10,388 | 10,724 | 10,953 |
| 360 | INVESTOR CONTRIBUTION | | | | | | | | | | |
| 361 | LOCAL PURCHASES | 16,519 | 22,335 | 29,779 | 35,982 | 43,951 | 52,622 | 60,436 | 67,223 | 72,460 | 76,601 |
| 362 | LABOR | 14,283 | 16,630 | 19,630 | 22,795 | 23,480 | 24,184 | 24,909 | 25,657 | 26,427 | 27,219 |
| 363 | OPERATIONS | 5,916 | 7,469 | 9,130 | 10,987 | 12,996 | 13,398 | 14,732 | 15,886 | 16,802 | 17,457 |
| 364 | PROFIT | 372 | 911 | 1,380 | 1,929 | 2,861 | 3,879 | 4,773 | 5,541 | 6,141 | 6,554 |
| 365 | CAPITAL | 4,774 | 5,242 | 5,616 | 5,616 | 2,908 | | | | | |
| 366 | INVESTOR BENEFIT TOTAL | 41,854 | 52,586 | 64,535 | 77,229 | 85,196 | 94,083 | 104,849 | 114,307 | 122,829 | 127,031 |
| 367 | INVESTOR COSTS | | | | | | | | | | |
| 368 | OPERATIONS | 5,609 | 7,094 | 8,685 | 10,388 | 11,549 | 12,821 | 14,129 | 15,261 | 16,168 | 16,834 |
| 369 | PURCHASES | 8,255 | 11,167 | 14,389 | 17,991 | 21,975 | 26,311 | 30,215 | 33,612 | 36,930 | 38,388 |
| 370 | CAPITAL | 3,819 | 4,193 | 4,493 | 4,493 | 2,246 | | | | | |
| 371 | INVESTOR COST TOTAL | 17,682 | 22,454 | 27,567 | 32,871 | 35,771 | 39,132 | 44,344 | 48,872 | 52,498 | 55,164 |
| 373 | NET BENEFIT | 24,172 | 30,131 | 36,968 | 44,357 | 49,426 | 54,950 | 60,500 | 65,434 | 69,539 | 72,727 |
| 375 | PROJECT BENEFIT | 28,284 | 35,579 | 43,804 | 52,649 | 59,273 | 64,389 | 70,451 | 75,822 | 80,963 | 83,680 |



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SCHEDULE 6 (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES — MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECONOMIC COST BENEFIT | | | | | | | | | | |
| 351 | F Z BENEFIT | | | | | | | | | | |
| 352 | REVENUE | 6,596 | 6,654 | 6,715 | 6,777 | 6,841 | 6,907 | 6,974 | 7,045 | 7,117 | 10,191 |
| 353 | LABOR | 291 | 291 | 300 | 309 | 318 | 328 | 337 | 348 | 358 | 369 |
| 354 | OPERATIONS | 391 | 393 | 394 | 396 | 397 | 399 | 401 | 402 | 404 | 406 |
| 355 | RETAINED EARNINGS | 4,182 | 4,365 | 4,728 | 4,987 | 5,040 | 5,095 | 5,319 | 5,554 | 5,784 | 15,274 |
| 356 | F Z COSTS (NET) | | | | | | | | | | |
| 357 | OPERATIONS | 391 | 393 | 394 | 396 | 397 | 399 | 401 | 402 | 404 | 406 |
| 359 | PAID IN EQUITY | | | | | | | | | | |
| 359 | NET BENEFIT | 11,069 | 11,311 | 11,743 | 12,073 | 12,199 | 12,330 | 12,631 | 12,967 | 13,959 | 31,673 |
| 363 | INVESTOR CONTRIBUTION | | | | | | | | | | |
| 361 | LOCAL PURCHASES | 78,899 | 78,899 | 81,260 | 83,705 | 86,216 | 88,803 | 91,464 | 94,210 | 97,035 | 99,948 |
| 362 | LABOR | 28,036 | 28,036 | 28,877 | 29,744 | 30,636 | 31,555 | 32,502 | 33,477 | 34,481 | 35,516 |
| 363 | OPERATIONS | 17,839 | 17,894 | 18,278 | 18,673 | 19,080 | 19,499 | 19,931 | 20,376 | 20,834 | 21,306 |
| 364 | PROFIT | 6,769 | 6,757 | 6,972 | 7,194 | 7,422 | 7,657 | 7,899 | 8,148 | 8,404 | 8,669 |
| 365 | CAPITAL | | | | | | | | | | |
| 366 | INVESTOR BENEFIT TOTAL | 131,524 | 131,587 | 135,394 | 139,316 | 143,353 | 147,514 | 151,798 | 156,211 | 160,754 | 165,440 |
| 367 | INVESTOR COSTS | | | | | | | | | | |
| 368 | OPERATIONS | 17,173 | 17,229 | 17,607 | 17,996 | 18,396 | 18,809 | 19,234 | 19,671 | 20,122 | 20,587 |
| 369 | PURCHASES | 39,451 | 39,453 | 40,633 | 41,852 | 43,138 | 44,401 | 45,739 | 47,185 | 48,517 | 49,974 |
| 370 | CAPITAL | | | | | | | | | | |
| 371 | INVESTOR COST TOTAL | 56,621 | 56,679 | 58,240 | 59,848 | 61,534 | 63,210 | 64,967 | 66,777 | 68,640 | 70,561 |
| 373 | NET BENEFIT | 74,903 | 74,909 | 77,154 | 79,468 | 81,820 | 84,304 | 86,831 | 89,434 | 92,114 | 94,879 |
| 375 | REDUCED BENEFIT | 89,999 | 89,219 | 90,497 | 91,543 | 98,744 | 98,834 | 93,465 | [illegible] | [illegible] | [illegible] |



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TABLE V-1

ADABIYA FREE ZONE

PROJECT SUMMARY TABLE

(LE MILLIONS)

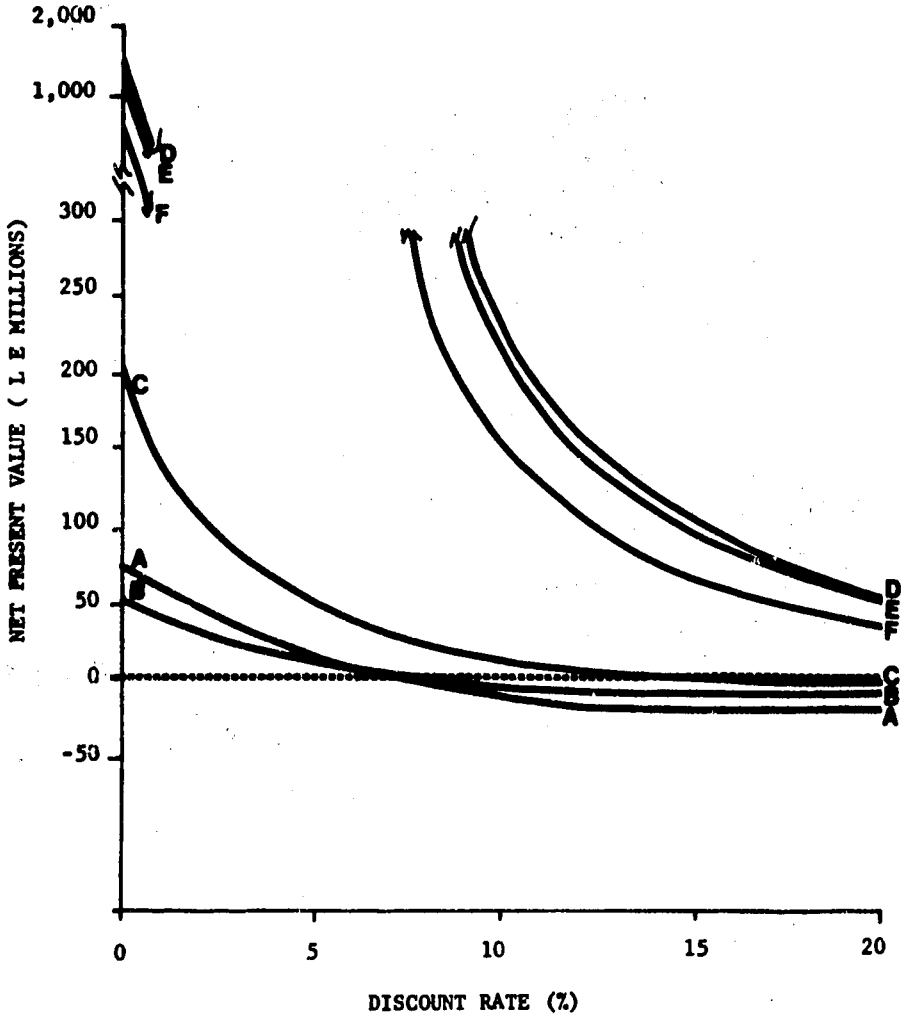
| Item | Graph Code | Cost Benefit Ratio | Present Value 0% | Present Value 10% | Present Value 20% | Internal Rate of Return (%) |
|---|---|---|---|---|---|---|
| **Financial Analysis** | | | | | | |
| Physical Results - Free Zone | A | 1.5:1.0 | 81.3 | -5.1 | -12.6 | 8 |
| Results to Free Zone with Concessionary Finance | B | | 70.2 | -2.0 | - 8.2 | 9 |
| Payback Period: 17.1 years | | | | | | |
| **Economic Analysis** | | | | | | |
| Free Zone Benefit Contribution | C | | 206.5 | 20.5 | - 2.5 | 19 |
| Benefit to Egypt - Free Zone and Investor | D | 2.5:1.0 | 1,607.2 | 251.6 | 57.9 | 38 |
| Sensitivity of Benefits: | | | | | | |
| - 10% Land Usage | | 2.3:1.0 | 1,343.4 | 209.4 | 47.7 | 35 |
| - 10% Labor Needs | | 2.3:1.0 | 1,441.0 | 224.4 | 51.3 | 37 |
| - 15% Local Material Purchases | E | 2.4:1.0 | 1,379.9 | 217.2 | 50.3 | 36 |
| - Shadow Price Impact | F | 1.5:1.0 | 912.1 | 137.0 | 27.7 | 33 |
| - Indirect Social Costs | | 2.4:1.0 | 1,574.3 | 245.6 | 56.1 | 37 |
| Payback Period: 6 years | | | | | | |

Source: Reynolds, Smith and Hills, 1980.

Figure V-1

ADABIYA FREE ZONE

PROJECT SUMMARY CHART



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Other analyses performed with Schedule 6 include shadow-price adjustments and adjustments for indirect social costs. A reduction of total benefits in excess of one-third of the totals projected would still result in an attractive program.

The last schedule prepared in the analysis includes:

Schedule 7 - Foreign Exchange Program. New foreign exchange generated by the free zone is summarized with printouts. The impact of currency revaluation can easily be seen by applying such revaluation to the totals. (A 10 and 20 percent discount is included in the Appendix.)

## ASSUMPTIONS

For the cost/benefit analysis only costs to the Government of Egypt for establishing and operating the free zones, and the benefits to the economy of Egypt are considered. Foreign costs which accrue to investors, and the benefits which other countries receive through foreign ownership considerations, are of no real concern in this analysis. It is up to the individual investor to determine the profitability of potential free zone operations, and it is up to the Free Zone Sector to analyze the investor's application to determine if Egypt will benefit significantly from the venture.

### Employment

Benefits (and costs) to Egypt because of the free zone primarily revolve around employment. Table III-3 presents the results of assumptions used to determine investor employment. A figure of 31.2 employees/feddan is obtained from that analysis. Two checks on the representativeness of that employment figure were utilized.

As of June 30, 1978, the 243 approved projects in the four public Egyptian free zones accounted for 1,047,072 square meters of land absorbed for development out of a total available area of 8,085,640 square meters. Those investors projected their production level employment to reach a total of 12,213. This implies an average of approximately 49 employees per net developed feddan (1 feddan equals 1.038 acres). In other countries, figures of 50 to 75 (or more) employees per net acre are frequently assumed for intensive development situations like a free zone (Table V-2).

Assumptions on percentages of unskilled, semi-skilled, and skilled workers which will likely be employed in the future within the public free zones are difficult to verify, as are their wages. Wages for "Approved" and "In Production" projects in the public free zones are available only in the form of projected wages. Reported wages paid to both Egyptians and non-Egyptians in the private free zones in 1978 are, however, available. We chose to use the average annual wages reported in these free zones (LE 1,634 for Egyptians and LE 6,001 for non-Egyptians) for our estimates of wages paid to Adabiya free zone workers. The use of this data is justifiable for several reasons. It is recent, and the jobs

SCHEDULE 7

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | | |
| 221 | PURCHASES | 883,801 | | | | | | 372 | 1,185 | 2,501 | 4,598 | 7,314 |
| 222 | LABOR | 338,841 | | | | | 1,355 | 2,323 | 3,473 | 4,580 | 5,914 | 7,319 |
| 223 | UTILITIES | 165,270 | | | | | | 78 | 241 | 524 | 949 | 1,534 |
| 224 | OTHER EXPENSES | 146,798 | | | | 332 | 679 | 1,083 | 1,582 | 2,172 | 2,459 | 3,259 |
| 225 | PROFIT | 138,468 | | | | -24 | -271 | -387 | -447 | -466 | -249 | 29 |
| 226 | INVESTMENT | 48,959 | | | | 1,404 | 2,838 | 3,274 | 3,931 | 4,212 | 4,493 | 4,[illegible] |
| 227 | PRINCIPAL | 17,546 | | 36 | 131 | 232 | 214 | 226 | 256 | 359 | 493 | 548 |
| 228 | INTEREST | 11,419 | | 73 | 248 | 362 | 350 | 338 | 419 | 501 | 576 | 747 |
| 229 | TOTAL EXCHANGE CREATION | 1,683,077 | | -109 | -379 | 1,118 | 4,377 | 6,261 | 9,174 | 12,435 | 17,093 | 22,437 |



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SCHEDULE 7 (Continued)
GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | |
| 221 | PURCHASES | 10,556 | 14,288 | 18,399 | 23,065 | 28,100 | 33,643 | 38,436 | 42,979 | 46,455 | 48,974 |
| 222 | LABOR | 8,846 | 9,686 | 11,433 | 13,276 | 13,676 | 14,885 | 14,509 | 14,943 | 15,792 | 15,853 |
| 223 | UTILITIES | 2,213 | 2,993 | 3,857 | 4,823 | 5,871 | 7,053 | 8,099 | 9,010 | 9,738 | 10,246 |
| 224 | OTHER EXPENSES | 3,704 | 4,475 | 5,273 | 6,084 | 6,205 | 6,346 | 6,633 | 6,876 | 7,063 | 7,191 |
| 225 | PROFIT | 372 | 911 | 1,388 | 1,929 | 2,861 | 3,879 | 4,773 | 5,541 | 6,141 | 6,554 |
| 226 | INVESTMENT | 4,774 | 5,242 | 5,610 | 5,616 | 2,808 | | | | | |
| 227 | PRINCIPAL | 632 | 668 | 705 | 745 | 787 | 832 | 878 | 928 | 980 | 1,036 |
| 228 | INTEREST | 816 | 780 | 742 | 703 | 661 | 616 | 569 | 528 | 467 | 412 |
| 229 | TOTAL EXCHANGE CREATION | 29,815 | 30,138 | 44,511 | 53,285 | 58,893 | 63,558 | 71,281 | 77,901 | 83,341 | 87,391 |



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SCHEDULE 7 (Continued)
GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADAMIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | |
| 221 | PURCHASES | 50,444 | 50,444 | 51,957 | 53,516 | 55,121 | 56,775 | 58,478 | 60,233 | 62,040 | 63,902 |
| 222 | LABOR | 16,329 | 16,329 | 16,819 | 17,323 | 17,843 | 18,379 | 18,930 | 19,498 | 20,082 | 20,685 |
| 223 | UTILITIES | 10,575 | 10,575 | 10,892 | 11,219 | 11,555 | 11,902 | 12,259 | 12,627 | 13,005 | 13,396 |
| 224 | OTHER EXPENSES | 7,255 | 7,328 | 7,386 | 7,455 | 7,525 | 7,598 | 7,672 | 7,749 | 7,829 | 7,913 |
| 225 | PROFIT | 6,763 | 6,757 | 6,972 | 7,194 | 7,422 | 7,657 | 7,899 | 8,148 | 8,404 | 8,669 |
| 226 | INVESTMENT | | | | | | | | | | |
| 227 | PRINCIPAL | 1,094 | 1,058 | 829 | 683 | 722 | 762 | 663 | 544 | 430 | 191 |
| 228 | INTEREST | 354 | 293 | 240 | 238 | 162 | 121 | 80 | 48 | 19 | 2 |
| 229 | TOTAL EXCHANGE CREATION | 89,918 | 90,882 | 92,957 | 95,823 | 98,583 | 101,427 | 104,495 | 107,662 | 110,910 | 114,459 |

TABLE V-2

ADABIYA FREE ZONE

COMPARATIVE EMPLOYMENT AND FREE ZONE SIZE

| Zone | Country | Type of Industry | Size | Approximate Employment per Acre |
|---|---|---|---|---|
| La Romana | Dominican Rep. | Light | 83 ac. (33 La) | 80 |
| San Bartolo | El Salvador | Light | 133 ac. (55 La) | Under construction |
| Santa Cruz | India | Light | 100 ac. (41 La) | N/A |
| Shannon | Ireland | Light | 200 ac. (80 Ha) | 30 |
| Masan | Korea | Light | 232 ac. (94 Ha) | 90 |
| Iri | Korea | Light | 227 ac. (92 Ha) | Under construction |
| Changwon | Korea | Medium/heavy | 1000 ac.+ | Under construction |
| Sungei Way | Malaysia | Light | 104 ac. (42 Ha) | 50 |
| Bayan Lepas | Malaysia | Light | 550 ac. (220 Ha) | 130 |
| Port Klang | Malaysia | Medium/heavy | 2100 ac. (850 Ha) | N/A |
| Prai | Malaysia | Medium/heavy | 850 ac. (350 Ha) | 30 |
| Pulau Jerejak | Malaysia | Heavy | 400 ac. (160 Ha) | 3 |
| Bataan 1 | Philippines | Light | 165 ac. (67 Ha) | N/A |
| Bataan 11 | Philippines | Medium/auto | 225 ac. (91 Ha) | N/A |
| Bataan 111 | Philippines | Medium/heavy | 510 ac. (207 Ha) | N/A |

Source: United Nations Industrial Development Organization, Handbook on Export Free Zones, 1976.
Reynolds, Smith and Hills, 1979.

represent the approximate skills which will be required in the free zone. Therefore, the skilled/unskilled ratio should be similar, as should the average wage, to that of the Adabiya Free Zone.

In addition, the private free zones had 81 percent Egyptian employees and 19 percent non-Egyptian in 1978. Proportions utilized to make projections of total wages paid to Adabiya Free Zone workers were assumed at 85 percent Egyptian and 15 percent foreign employment through 1990 and a 90/10 ratio thereafter.

It is assumed that all wages paid to Egyptian workers will accrue to Egypt's economy, as benefits, while 50 percent of those paid to non-Egyptians will accrue to Egypt. Half of foreign employee's income may legally leave Egypt, and it is assumed that it will.

The Government of Egypt will also receive benefits in the form of money paid by investors (through fringes on wages) for health and community services for employees. The actual cost of fringes paid on salaries by investors is close to 24 percent of wages. For the benefit analysis, we lowered that figure to 20 percent, since not all of the fringes will accrue to Egypt as the investors are allowed to have their own plans for employee benefits. Therefore, some profits and benefits of the fringes will be paid in foreign countries. The rest will go to Egyptian hospitals, or to Egyptian employees in their old age, etc., and should be counted as benefits to the Egyptian economy.

Free Zone Labor Assumptions

The personnel requirements to operate the free zone including security are based upon the following assumptions: personnel requirements for the free zone are dependent upon the level of development and absorption of feddans. The Adabiya Free Zone facility is assumed to employ 40 personnel at capacity. The labor costs are shown below. All labor costs from 1981 to 2009 will increase at 3 percent per year.

| Function | Number | 1979 Wage |
|---|---|---|
| Management | 4 | 15 LE/day |
| Engineering/Research | 4 | 12 LE/day |
| Accounting/Finance | 6 | 10 LE/day |
| Inspection/Services | 13 | 8 LE/day |
| Maintenance | 13 | 8 LE/day |
| Total | 40 | |

The costs of security and customs are also included in free zone labor as a separate item in the cash flow schedules. There are 50 personnel in this category phased according to the needs of the development. Each is employed at 5 LE per day (1979 values).

Construction activity at the free zone will generate temporary employment for construction workers over an 18-month period. The timing



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of the project development results in expected employment of between 200 to 300 laborers, on the average, over this time period. Additional labor will be required for the investor structures and it is assumed that each LE 30,000 of investment will generate one construction man-year.

Fees and Rental

Various benefits will accrue to the Egyptian economy through the sales of goods and services by free zone investors. According to Article 46 of Law 43, annual duties will not exceed one percent of the value of goods entering or leaving the free zones. Also, transit goods are exempt from the fee, while fees collected on services do not exceed three percent of the annual value added of a project. Given the concentration of industry, fee collection averaging one percent is reasonable.

As a basis for analysis, 1967 data on employment, wages, value added, and total sales for selected industries and industrial groupings were extracted from the U.S. Census of Manufacturing General Summary. Although more recent corresponding data were available, it was considered that industrial characteristics for 1967 would be more representative of those associated with projects that would be located in the proposed free zone. The data were adjusted to take account of the lower wage levels prevailing in Egypt, and sales volumes per employee were calculated for each of the selected industrial activities. Using the weighted ratio of 31.2 employees per feddan, typical sales volumes on a net feddan basis were then calculated, as shown in Table V-3. These amounted to LE 544,474, or LE 130 per square meter. At a one percent rate of total sales volumes, free zone service fees and charges are thus expected to approximate LE 1.30 per square meter.

Another direct benefit to Egypt will also come in the form of rent collected by the Free Zone Sector from the investors. The rent to be collected on a per square meter basis is calculated using existing rates for each present free zone, as projected rates for Adabiya. Rental is initially collected at LE 2.50 per square meter of investor space and is escalated at about 3 percent annually to cover changes in marketability of the free zone land.

Warehousing/Standard Factories

The Free Zone Sector may be encouraged to build structures for leasing and/or sale to the investors. The Adabiya analysis recommends that an initial 21,000 square meters of space be built. Of this amount, 15,000 square meters is calculated to be leased and 6,000 square meters is calculated to be sold to the investors. A summary shows:

| | Units | Size (Square Meters) | Total Square Meters |
|---|---|---|---|
| Lease | 30 | 500 | 15,000 |
| Sell | 4 | 1,500 | 6,000 |

TABLE V-3

ADABIYA FREE ZONE

SALES AND FEES ANALYSIS

| SITC Codes | Category | Value Added/ Employee (LE) | Sales Volume/ Employee (LE) | Employment/Feddan Area Market | Total Sales/ Feddan (LE) | Fees Per Square Meter*(LE) |
|---|---|---|---|---|---|---|
| 658,659 | Textiles | 7,000 | 16,870 | 6.6 | 111,342 | 0.27 |
| 651,652 | | | | | | |
| 656 | | | | | | |
| 84 | Apparel | 5,180 | 15,330 | 0.8 | 12,264 | 0.03 |
| 897,899 | Manufacturing (Other) | 9,520 | 16,520 | 3.1 | 51,212 | 0.12 |
| 885,893 | | | | | | |
| 85 | Leather | 5,390 | 8,890 | 2.3 | 20,447 | 0.05 |
| 773,775 | Small Appliances | 9,030 | 15,820 | 9.6 | 151,872 | 0.36 |
| 62 | Rubber | 13,160 | 22,610 | 1.6 | 36,176 | 0.09 |
| 665 | Glass | 9,590 | 12,670 | 4.4 | 55,748 | 0.13 |
| 74,111 | Beverages | 9,940 | 15,120 | 0.3 | 4,536 | 0.01 |
| 83 | Travel Goods | 6,090 | 10,570 | - | - | - |
| 122 | Manufacturing, Tobacco | 18,970 | 45,640 | 0.6 | 27,384 | 0.07 |
| 29 | Crude Oils-Animal | 14,630 | 79,170 | 0.5 | 39,585 | 0.09 |
| 05 | Vegetable Processing | 10,150 | 24,220 | 1.4 | 33,908 | 0.08 |
| Total/Average | | 9,888 | 23,619 | 31.2 | 544,474 | 1.30 |

Note: Conversion from U.S. dollars: LE 1.00 = $0.70.

Source: U.S. Department of Commerce, Bureau of the Census: 1972 Census of Manufacturing, General Summary, November, 1975; Table 3: General Statistics for Establishments by Industry Group and Industry, 1967.
Reynolds, Smith and Hills, 1979.



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Prefabricated, clear span aluminized steel skin, steel framed buildings adapt very well to the needs of the free zone. The buildings are flexible in design with respect to width, length, and height. A standard 14' eave height (4.3 M) covering 120' x 677' long (37 M x 240 M) with 20 ridge ventilators and 2 truck access doors erected in place will cost approximately LE 40 per square meter (total cost 8880 S.M. x LE 40 = LE 355,200). If insulation is added to the roof or walls, an allowance of LE 1.30 per square meter of contact surface should be added. Building weight is minimal thereby reducing foundation costs. Natural aluminum color roof offers appropriate reflective finish for roofs and wall colors can be selected from eight standard colors.

The lease rate for standard buildings is based upon the amount per square meter required to amortize a 20-year note at 5.5 percent interest. This lease rate is also escalated at 3 percent. Maximum occupancy is estimated at 85 percent of total available space and is not anticipated to be reached until the fifth year of the lease program.

The sales value of the standard buildings, assumed sold over a three-year period, represents a 10 percent return on investment for the Free Zone Sector as builder of the facilities.

Incubator Program

It is anticipated that approximately 1.3 feddans will be developed for "incubator unit" operations. These are designed to assist new small-scale activities with the necessary support services for their development. The services provided to each activity are temporary in nature, and enterprises are expected to move to other permanent premises as soon as they become feasible operations.

Some 30 incubator units are proposed, each with an area of 100 square meters, for lease to new activities. In addition, a central workshop complex with basic metal working and wood working equipment would be provided. Another building would house classrooms, a library, and administrative offices.

An important element of the program would be the provision of an advisory services staff, which would both administer the program as well as offer financial and technical advidce to enterpreneurs. Initially, the key personnel of the staff are anticipated to be expatriates, who would train Egyptian counterparts to take over their responsibilities after a period of, say, three years.

The costs of the program are presented in Table V-4. These are adjusted estimates based upon those given in the 1978 Suez Canal Regional Industrial Plan (Volume VI, Section II: Small Industry Estate, Ministry of Housing and Reconstruction). Total start-up costs are estimated to approximate LE 607,000, of which LE 300,000 is for construction.

Construction would be undertaken in 1982, and the program would begin operation the following year. Initially, the incubator unit

TABLE V-4

ADABIYA FREE ZONE

INITIAL START-UP COSTS FOR INCUBATOR PROGRAM

| Category | Unit Size (Square Meters) | No. Units | Total (Square Meters) | Unit Cost (L.E.) | Total Cost (L.E.) |
|---|---|---|---|---|---|
| Construction | | | | | |
| Incubator Buildings | 100 | 30 | 3,000 | 70 | 210,000 |
| Classroom/Admin. Building | 300 | 1 | 300 | 90 | 27,000 |
| Workshop | 900 | 1 | 900 | 70 | 63,000 |
| Subtotal | | | | | 300,000 |
| Equipment | | | | | |
| Workshop Equipment | | | | | 20,000 |
| Furniture and Manuals | | | | | 20,000 |
| Subtotal | | | | | 40,000 |
| Staff | | | | | |
| Expatriate Advisors (5 p.a. for 1983-85) | | | | | 190,000 |
| Local Professional Staff (10) | | | | | 59,200 |
| Administrative Support Staff (20) | | | | | 14,000 |
| Workshop Manager | | | | | 2,500 |
| Librarian | | | | | 1,200 |
| Subtotal | | | | | 266,900 |
| Total | | | | | LE 606,900 |

Source: Sores, Inc., Suez Canal Regional Industrial Plan, 1978; Project Analysis Volume VI, Section II. For UNDP and Ministry of Housing and Reconstruction. May, 1978.
Reynolds, Smith and Hills, 1979.

occupancy rate is expected to be 20 percent, thereafter increasing each year by 20 percent through 1985. From 1986 onward, occupancy is expected to stabilize at 70 percent. An average of eight workers per incubator unit would result in a total industry labor force of 240 persons at full operation. It is assumed that the units would be leased at LE 15 per square meter per annum.

Investor Contributions. The investors are anticipated to stimulate the Egyptian economy through means other than wages. The most direct examples are local purchases for production, operating and maintenance costs, and the return of profits on Egyptian capital.

Of the total purchases made by firms in the Adabiya Free Zone, only a portion will actually affect the local economy. As the free zone has targeted its industries with resource availability as one criteria, local purchases are projected to be higher than at the existing free zones. Table V-5 develops the local purchase projections for Adabiya and the total cost of sales/feddan anticipated at this free zone. These figures are based on concepts of the types of industries which will locate in the new zones.

Again, using the 1967 U.S. Census of Manufacturing as a basis, the cost of investor materials per employee was calculated for each targeted industry. The potential of materials that could be purchased locally was then estimated for each sector, and applied on a feddan basis, as shown in Table V-5. Total normal operating investor purchases are estimated to be LE 266,392 for each net feddan per annum, of which 61.4 percent (LE 163,600) could be supplied from within Egypt.

The sum of purchases on Table V-5 and value added (wages, fringes, fees, rent, profit, plus operational expenditures) approximates the sales being made by the free zone firms. Local purchases should represent a substantial contribution to the local economy.

Operational expenditures include such items as private security, building maintenance, and utility bills. An analysis of the approximate annual costs of such items were used to derive a figure which is shown on the investor income statement schedule in another section of this chapter.

Another benefit coming from free zone sales will be Egyptian investment profits. Currently approved projects in the public free zones show foreign capital investment to be 92.6 percent of the total capital investment for those projects, with local (Egyptian) investments being approximately 7.4 percent. We are assuming that profits will be distributed in the same proportion as the initial capital investment, and that the proportion of local to foreign capital will remain fairly stable over time. Since foreign profits can be repatriated, we are assuming that only 8 percent of total profits will accrue to Egypt.

Surveys of American industry profits yields averages (depending on the sector) ranging from 5 to 12 percent of total sales. Considering the



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TABLE V-5

ADABIYA FREE ZONE

NORMAL OPERATING INVESTOR PURCHASES ANALYSIS

| SITC Codes | Category | Cost of Materials/ Employee (LE) | Potential Local Purchase of Materials | Employment/Feddan Area Market | Purchases/Feddan (LE) Total | Foreign | Local |
|---|---|---|---|---|---|---|---|
| 658, 695 | Textiles | 9,870 | 80% | 6.6 | 65,142 | 13,029 | 52,113 |
| 651, 652 656 | | | | | | | |
| 84 | Apparel | 10,150 | 65 | 0.8 | 8,120 | 2,843 | 5,277 |
| 897, 899 885, 893 | Manufacturing (Other) | 7,000 | 45 | 3.1 | 21,700 | 11,935 | 9,765 |
| 85 | Leather | 3,500 | 70 | 2.3 | 8,050 | 2,415 | 5,635 |
| 773, 775 | Small Appliances | 6,790 | 35 | 9.6 | 65,184 | 42,375 | 22,809 |
| 62 | Rubber | 9,450 | 15 | 1.6 | 15,120 | 12,853 | 2,267 |
| 665 | Glass | 3,080 | 90 | 4.4 | 13,552 | 1,356 | 12,196 |
| 074, 111 | Beverages | 5,180 | 50 | 0.3 | 1,554 | 777 | 777 |
| 83 | Travel Goods | 4,480 | 70 | - | - | - | - |
| 122 | Manufacturing, Tobacco | 26,670 | 80 | 0.6 | 16,002 | 3,201 | 12,801 |
| 29 | Crude Oil - Animals | 64,540 | 75 | 0.5 | 32,270 | 8,068 | 24,202 |
| 05 | Vegetable Processing | 14,070 | 80 | 1.4 | 19,698 | 3,940 | 15,758 |
| Total/Average | | | | 31.2 | 266,392 | 102,792 | 163,600 |

Source: U.S. Department of Commerce, Bureau of the Census; 1972 Census of Manufacturing, General Summary, November, 1975; Table 3: General Statistics for Establishments by Industry Group and Industry, 1976.
Reynolds, Smith and Hills, 1979.

sectors most likely to locate in the free zones, and the fact that most foreign companies will wish to put their risk capital in a fairly high profit operation, it is assumed that average profits of companies in the free zone will be approximately 15 to 20 percent.

Investment. Benefits will also be derived from expenditures by the investors during the construction phase of their operation. These expenditures will include wages and fringes paid to construction workers, as well as local materials purchased for construction. Thirty percent of the investor total is assumed to accrue to Egypt.

Likewise, benefits to the Egyptian economy will accrue directly from expenditures for the establishment of infrastructure at Adabiya by the Free Zone Sector, both in the form of construction workers' wages, and in terms of local materials used in construction. It is assumed that initially 55 percent of the infrastructure costs will be spent for Egyptian goods and labor, while the remaining 45 percent will be primarily used to purchase foreign materials. This ratio is derived from the cost estimate for Phase 1. For the remaining phases, it is assumed that 60 percent of the construction cost will utilize local services reflecting an increase in Egyptian production capacity.

Shadow Pricing. In the past several years, a number of organizations have employed shadow pricing techniques for cost/benefit studies in Egypt. Shadow prices were derived for currency exchange, wage rates, and various goods and services, to make them more accurately reflect their value or cost to the economy. For instance, the official exchange rate for Egyptian pounds to foreign currency was substantially different from the parallel rate which formerly existed. It was felt that the parallel rate much more accurately reflected the true value of the Egyptian pound on the world market. Since calculations were necessarily made at the official rate, the currency was assigned a shadow factor, which, in effect, brought it down to a level that was close to its actual value. Similarly, owing to high unemployment and underemployment in Egypt, wages did not accurately reflect their true value to the economy while subsidies, tariffs, and duties distorted the true value (or cost to the government) of various goods and services. Therefore, labor and select goods and services were assigned shadow factors as well.

The government subsidizes many goods and services purchased in Egypt. Therefore, when free zone employees purchase certain items, it represents a differential cost to the government. The U.S. State Department once noted that the amount which the government has to pay to subsidize goods and services purchased by an average worker amounts to about 25 percent of his wages. While this percentage varies with an individual's purchases, the 25 percent figure presumably represents a reasonable average. Therefore, as a cost to the government, this analysis used 25 percent of all wages paid to staff, construction workers, and all Egyptian employees of the investors. Also the 25 percent figure was applied to the half of non-Egyptian's wages which would be spent in Egypt.

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In addition, the 25 percent figure is also applied to all local construction materials used in the free zones. Some of these materials are subsisided, though an exact figure is not accurately determinable. The figure used herein is thought to give reasonable consideration to this factor of the Egyptian economy. The cost of providing electricity and water and sewer services to the individual investors is assumed to be double the investor's cost, to cover the extremely high subsidies on these items.

In reviewing various studies which employed shadow pricing in Egypt, it was noted that the shadow factor for some items varied quite substantially from study to study, and many were of questionable validity. In attempting to resolve the differences between shadow prices and to verify others, two important observations were made. First, reliable data is not available for use in calculating shadow factors for many commodities. Judging from the variance in factors employed in other studies, it is evident that many were based on simple guesses. Second, the two most important factors which made shadow pricing necessary in Egypt in the first place have changed substantially. The official rate of currency exchange has recently been changed to more closely reflect actual market value. Also, the existing wage rates are now a much better reflection of market value, and the wage rates have gone up with competition for jobs. These considerations have led the World Bank to discontinue their use of shadow pricing in Egypt. They are now using the existing market rates to reflect the true market value of the currency, wages, goods, and services.

To consider subsidies on goods and services purchased by the investors and all employees in the free zones, relationships between expenditures and subsidies were isolated and are noted as Government costs. Additionally, the rate of exchange for LE to U.S. dollars is ranged between the official rate of LE 0.70/$1.00 and LE 0.85/$1.00. Too, subsidies on electricity are included in the government costs by utilizing a rate/kWh double that charged to the free zone investors.

The results of the shadow pricing analysis are shown in Table V-1. A resulting decrease in the project's return is noted, lowering the basic IRR from 38 to 33 percent.

Free Zone Sector Costs and Benefits. As previously noted, the Free Zone Sector, through its annual operation and maintenance of the free zones, benefits the Egyptian economy in the form of jobs for staff, security, customs, and service personnel, as well as in the form of material purchases. Wages are anticipated to make up an average of approximately 40.3 percent of the annual operation and maintenance costs at the free zone exclusive of depreciation. It is assumed that all of the personnel will be Egyptian, and that all of their wages will enter the local economy. As with investors' employees, the fringes paid on wages will also accrue to the Egyptian economy. However, in this case, no foreign health or retirement plans will be involved. Of course, all of these items (wages, fringes, and materials) are also expressed directly as costs as well as benefits in the cost/benefit analysis.

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Various direct costs to the Government of Egypt will result from the completion of the existing free zones and the construction of the Adabiya Free Zone. The most obvious includes the cost of establishing each zone's infrastructure, as well as operation and maintenance costs for the zones.

In addition, there is the cost of providing community services (health care, pensions, etc.) for all free zone workers. These are paid for primarily through fringes on wages. Therefore, social costs not already included in the above costs (infrastructure and operations and maintenance) should be added into the total cost to the government. These costs are discussed in a later section of this chapter.

## FOREIGN EXCHANGE

As Egypt is a country in need of increased foreign exchange, the Adabiya Free Zone seems to be a particularly beneficial project for foreign exchange improvements. It should be remembered that according to Law 43 of 1974 which estalished the free zones:

- Almost all investor activity in the free zone is to be carried out with foreign exchange.
- All local materials purchased are with foreign exchange.
- Exports to Egypt are in foreign exchange.
- Wages are to be paid in foreign exchange.
- Rentals and fees are paid in foreign exchange.
- Lower duties on products sold to Egypt represent foreign exchange savings (see following section).

The construction of the free zone will require the importation of foreign goods. For example, the Phase I development could require 45 percent of its construction cost in foreign exchange. Loan support from an international agency would spread out this obligation into annual increments beneficial to the capacity of the host country to acquire foreign exchange.

A summary of foreign exchange benefits is shown in Schedule 7. To present the benefits in a more conservative manner, only 50 percent of local investor wages are assumed to be paid in Egyptian pounds.

## OFF-SITE SOCIAL COSTS

Direct off-site costs which might theoretically be absorbed by the Adabiya Free Zone include the pro rata share of off-site infrastructure and social services necessary to support the free zone workers and their families. These investments include:

- Housing
- Education
- Religious buildings
- Waste disposal
- Electricity
- Roads
- Public administration
- Hospitals and clinics
- Cultural facilities
- Water supply
- Postal, communication services
- Railways



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The specific analysis of total investment on the Suez Region was not undertaken as part of the Adabiya Free Zone feasibility. Instead, information presented in the 1976 Suez Master Plan Study by Sir William Halcrow & Partners, et al, has been updated and applied to obtain Adabiya's pro rata share of these needs. Table V-6 presents the estimated 1975 construction costs, as determined in the Suez Master Plan Study for the above elements.

The representativeness of these support investment amounts is clearly open to conjecture. To minimize the imperfections in these amounts, we would prefer to call these amounts incremental costs to the region. Next, an estimate of population migrating to Suez for the Adabiya Free Zone job potential needs to be examined.

The work force component at the free zones, excluding temporary construction workers, is derived below. Using the Suez Master Plan Study household size averages, a total population attributable to the free zone is obtained.

| Period | Average Work Force | Household Size | Total Population |
|---|---|---|---|
| 1981 - 1985 | 873 | 4.4 | 3,840 |
| 1986 - 1990 | 3,660 | 4.2 | 15,370 |
| 1991 - 1995 | 6,980 | 4.0 | 27,920 |
| 1996 - 2000 | 8,385 | 3.9 | 32,700 |

It cannot be assumed that the free zone will serve as a magnet to attract the work force and population from other areas. Indeed, there is evident unemployment today in Suez and a benefit of the free zone will be to reduce unemployment. It is anticipated that the free zone will attract skilled labor from other areas on a gradual basis so that its impact on added population to the Suez area would be as follows:

| Date | Average Work Force | Work Force From Local Population* | Inmigrating Work Force | Household Size | Added Population |
|---|---|---|---|---|---|
| 1981 - 1985 | 873 | 90% | 87 | 4.4 | 384 |
| 1986 - 1990 | 3,660 | 80% | 557 | 4.2 | 2,341 |
| 1991 - 1995 | 6,980 | 70% | 996 | 4.0 | 3,984 |
| 1996 - 2000 | 8,385 | 60% | 562 | 3.9 | 2,192 |
| Total | | | 2,202 | | 8,901 |

* For each increment; i.e., 1986 - 1990 = (3,660-873) x 80%.

The off-site investment costs which the Government of Egypt would incur in Suez which can be allocated to the Adabiya Free Zone are then estimated as indicated below. A derivation into annual costs is shown in



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TABLE V-6

ADABIYA FREE ZONE ANALYSIS

SUEZ URBAN DEVELOPMENT COSTS

1980 - 2000

LE MILLIONS

| Category | 1981-1985 | 1986-1990 | 1991-1995 | 1996-2000 |
|---|---|---|---|---|
| Housing | 33 | 58 | 59 | 74 |
| Public Administration | 2 | 3 | 1 | 1 |
| Education | 7 | 10 | 9 | 9 |
| Hospitals and Clinics | 6 | 7 | 4 | 4 |
| Religious Buildings | 6 | 8 | 6 | 6 |
| Cultural Facilities | 9 | 11 | 6 | 5 |
| Waste Disposal | 13 | 18 | 6 | 8 |
| Water Supply | 8 | 10 | 11 | 8 |
| Electricity | 25 | 45 | 35 | 5 |
| Postal, Communications | 3 | 3 | 3 | 3 |
| Railways | 3 | 4 | 1 | - |
| Roads | 10 | 10 | 10 | 7 |
| Total | 125 | 187 | 151 | 130 |
| Adjustment: 1975 to 1980 Prices (70%) | 88 | 131 | 106 | 91 |
| Contingency (50%) | 106 | 159 | 129 | 111 |
| Adjusted Total (LE Millions) | 319 | 477 | 386 | 332 |
| Population Increase (000) | 180 | 220 | 150 | 150 |
| Per Capita Cost (LE) | 1,772 | 2,168 | 2,573 | 2,213 |

Source: Reynolds, Smith and Hills, 1979.

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parentheses, assuming a 25-year life and a 6 percent borrowing cost to the GOE.

| | | | | |
|---|---|---|---|---|
| 1981 - 1985: | 384 x LE 1,772 = LE | 680,448 | (LE | 53,229 annual) |
| 1986 - 1990: | 2,341 x LE 2,168 = LE | 5,075,288 | (LE | 397,023 annual) |
| 1991 - 1995: | 3,984 x LE 2,573 = LE | 10,250,832 | (LE | 801,890 annual) |
| 1996 - 2000: | 2,192 x LE 2,213 = LE | 4,850,896 | (LE | 379,470 annual) |

The Government of Egypt receives a cost recovery for these expenditures through fringes on wages paid to employees in the Adabiya Free Zone. The actual figure of fringes paid on salaries approximates 24 percent of wages. The impact of fringe benefits can be noted in the analysis which follows.

| Period | Average Wages (LE)* | 20% Fringe Benefits | Average Work Force | Annual Fringes (LE) | Average Off-site Cost (LE) |
|---|---|---|---|---|---|
| 1981 - 1985 | 2,497 | 500 | 873 | 436,500 | 53,229 |
| 1986 - 1990 | 2,333 | 467 | 3,660 | 1,708,379 | 450,252 |
| 1991 - 1995 | 2,121 | 424 | 6,980 | 2,961,624 | 1,252,142 |
| 1996 - 2000 | 2,121 | 424 | 8,385 | 3,555,240 | 1,631,612 |
| 2001 - 2005 | 2,121 | 424 | 8,385 | 3,555,240 | 1,631,612 |
| 2006 - 2010 | 2,121 | 424 | 8,385 | 3,555,240 | 1,578,383 |

* Excludes escalation.

There is no analysis for determining how much of the fringe benefit contributions would go toward the off-site services. To be conservative, the analysis assumes that none of the fringe benefits are used in this manner. Utilizing this assumption, the following social cost occurs for the project.

| Discount Factor (%) | Present Value Cost (LE 000) |
|---|---|
| 0 | ( 32,990) |
| 10 | ( 6,042) |
| 20 | ( 1,800) |

## INDIRECT BENEFITS

The Adabiya Free Zone will benefit the Egyptian economy in other areas which are subject to varying economic interpretations and, for the most part, result primarily in "merit" upward adjustments to the quantifiable data. For these reasons, this portion of the economic analysis describes the primary indirect benefits but does not attempt quantification.

### Indirect Employment

By producing goods in the free zone which use Egypt resources, the free zone encourages local industry to expand output. Expansion of

output eventually requires additional labor input. The support labor requirement in Egypt is approximated using secondary data as indicated.

A World Bank staff paper developed "Labor Multipliers" for total versus direct labor in countries with annual incomes approximating $200 per year. Appendix 9 reproduces the paper.

The weight-average Labor Multiple for Adabiya industries, using Table V-7, approximates 2.57 - 1.00 or about 1.5 off-site jobs for every on-site industry job.

As only 61 percent of Adabiya industry purchases are anticipated to be local purchases, a ratio approximating 1 off-site job for every 1 on-site industry job results. Eventually, 7,800 indirect jobs would be created in Egypt serving to produce support goods or to distribute finished goods. At LE 3 per day for 250 annual workdays, LE 5,850,000 would be added to the economy at full capacity, excluding any estimate for increase in wages over time.

It is our opinion that the indirect job creation figure may represent a maximum figure. Wage levels, timing, and net benefits are subject to numerous interpretations, but a 5-year lag in indirect job creation would be reasonably conservative.

Import Substitution

A derivative of the free zone may be import substitution benefits. Theoretically, the free zone can ship all its output to markets other than Egypt. Thus, its substitution benefit is speculative. However, the following factors should be judged as possible benefits.

- The free zone could export to Egypt. On the average, every sale to Egypt:
  - Has produced 61 percent of its materials in Egypt;
  - Has contributed all "value added" to Egypt except the foreign profit return;
  - Will save Egypt one-half of the normal duty cost in foreign exchange plus shipping costs. While these costs vary by good, a reasonably conservative estimate is 10 percent of product cost may be added for shipping and 20 percent may be added for duties.

The product purchases and value added components are shown as benefits to Egypt in the primary analysis. The saving of foreign exchange normally used for duty payments and shipping may well represent LE 15.6 million annually at full capacity computed as follows:

TABLE V-7

ADABIYA FREE ZONE

INDIRECT JOB CREATION

| Sector | Labor Multiplier | Percent of Free Zone | Employment/ Feddan |
|---|---|---|---|
| Textiles | 2.07 | 19.3 | 6.6 |
| Apparel | 2.07 | 4.4 | 0.8 |
| Other Manufacturing (Industry n.e.s.) | 6.67 | 8.5 | 3.1 |
| Leather (Services n.e.s.) | 1.17 | 0.5 | 2.3 |
| Small Appliances (Trade) | 1.78 | 34.9 | 9.6 |
| Rubber | 3.15 | 8.3 | 1.6 |
| Glass | 2.03 | 12.9 | 4.4 |
| Beverages (Food Processing) | 3.95 | 0.8 | 0.3 |
| Travel Goods (Services n.e.s.) | 1.17 | 0.1 | - |
| Manuf. Tobacco (Services n.e.s.) | 1.17 | 2.9 | 0.6 |
| Crude Oil-Animals (Food Processing) | 3.95 | 1.3 | 0.5 |
| Veg. Processing (Food Processing) | 3.95 | 6.1 | 1.4 |
| Total | 2.57 | 100.0 | 31.2 |

Notes: (1) 31.2 employees/feddan x 2.57 = 80.2 total jobs.
(2) 80.2 total jobs - 31.2 onsite jobs = 49.0 indirect jobs/feddan.
(3) 49.0 indirect x 61% local requirements = 30.0 indirect jobs/feddan.
(4) 30.0 x 260 feddans = 7,800 indirect support jobs.
(5) n.e.s. = not elsewhere specified.

Source: Reynolds, Smith and Hills, 1979.

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Import from foreign source:

1) LE 544,474 sales/feddan x 1.10 shipping = LE 598,921
LE 598,921 x 1.20 duties = LE 718,705 inputed cost

Import from free zone:

2) LE 544,474 sales/feddan x 1.10 duty = LE 598,921 free zone cost

Savings:

3) LE 119,785/feddan savings x 130 feddans/output for Egypt sales = LE 15,572,050 annual savings

An alternative scenario is also possible. This scenario assumes that the sales price of goods to Egypt would be marked up to a level comparable to landed cost goods. If this occurred, assuming 50 percent of the free zone output is sold to Egypt:

1) LE 598,921 x 1.10 duties = LE 658,813 free zone cost

2) LE 718,705 import cost - LE 658,813 free zone cost = LE 59,893 savings

3) LE 59,892 savings x 130 feddans output = LE 7,786,090 annual savings

4) Additional local profit remittance on markup of LE 54,447 x 130 x 8% = LE 556,249

5) Total annual substitution benefit = LE 8,352,339 at full capacity (LE 64,248/feddan).

Other

In addition to the above, there are numerous benefits to Egypt which will come from the construction of the Adabiya Free Zone which are also nonquantifiable. These include:

- The transfer of technology;
- Labor skill increases;
- Quality of life improvement;
- Indirect consumption benefits.

Too, while it may be assumed that equipment will return to the investor's home country when a project is terminated, it is rare to return a used asset with the associated costs of doing so, so a more likely prediction is that the assets will remain in Egypt. Similarly, the investor's building would also become the property of the Government of Egypt.

## CONCLUSION

As Egypt is a country currently in and of foreign exchange, employment and technology, the free zone program is beneficial in concept. The Adabiya Free Zone, with proper guidance, management, and dedication, can assist these goals. The free zones can represent a focal point for government and private investor cooperation.

## CHAPTER VI
## REGIONAL TRANSPORTATION

Located at the southern terminus of one of the world's busiest waterways, the Suez area is provided direct access to international markets both to the north via the Suez Canal and to the south via the Red Sea. Although seaport facilities, road, and rail networks are all generally adequate, no air passenger or freight service facilities exist. Instead, use is made of Cairo International Airport, which is within two hours' travel via road.

Although heavily damaged during the recent hostilities, Suez seaport facilities are currently at normal operation. A general cargo and passenger terminal is located at Port Ibrahim, immediately to the west of the southern entrance to the Suez Canal. Additional general cargo facilities are located at Port Adabiya, about 18 km southwest of Port Ibrahim on the western shore of the Bay of Suez. Petroleum terminals are situated to the west of Port Ibrahim, and to the south of Adabiya at El Sadat. A small fishing port at Ataka Harbor is located just to the north of Adabiya.

Although much rehabilitation has already been undertaken, a study by Parsons Brinckerhoff International (Port of Suez: Rehabilitation and Modernization; Interim Report, November, 1977) indicated that further extensive reconstruction and modernization were needed for the port facilities to cope with projected traffic. The study also recommended that Adabiya be developed to handle bulk and container traffic.

Two principal roads presently connect Suez with other major cities: a Suez-Cairo Road that has recently been four-laned, and the two-lane Suez-Ismailia Road. Both of these roads, according to the 1976 Suez Master Plan, currently have a large amount of excess capacity. Another road runs along the western shore of the Bay of Suez through the proposed industrial free zone area to the oil fields further south. It is presently in poor repair, although resurfacing and moderate realignment are planned at a future date. Inexpensive bus service is provided from Suez to Cairo and other major cities.

Within Suez City itself, there is a limited network of good roads. A new road bypassing the city connects Adabiya with the Suez-Cairo Road. Proposed for future construction is a "ring" road that will link the four major roads in the region--from Suez to Cairo, Zafarene, Ismailia, and the Sinai via the Hamdy Tunnel at El Shatt (see Figure VI-1). Located 10 km north of Suez City, the tunnel is to open for traffic in 1980, and will provide the first direct overland link to the Sinai from Egypt.

The early completion of the Hamdy Tunnel should give Suez an initial advantage over other cities in the Suez Canal region with regard to communications and trade to Sinai, in addition to Jordan and Israel. The potential drawing force of a one or two-day total transit time (one way) to these markets and the degree of consignment control offered by land transit would be significant. Any tunnel projects which would affect



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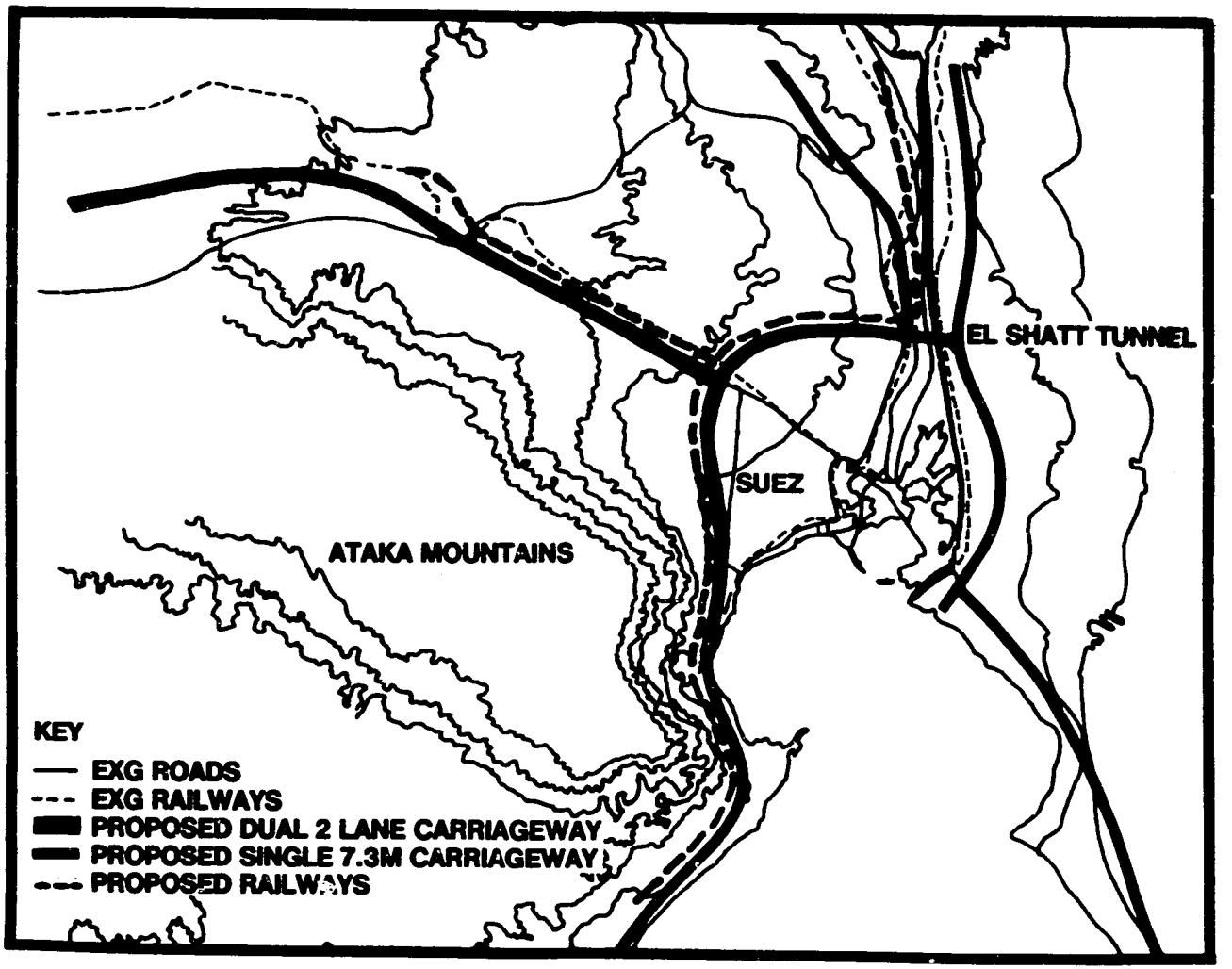
FIGURE VI-1
PROPOSED ROAD AND RAIL NETWORK, SUEZ REGION



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other Suez Canal region cities will not likely be initiated until the mid-1980s or beyond, according to officials of the Ministry of Reconstruction.

Prior to the 1967 war, railway lines used to cross the Suez Canal to Sinai at two locations--just to the north of Ismailia, and at Port Said. Both were destroyed and have not been reconstructed. (The Hamdy Tunnel will offer no provision for railway traffic.) Many of the lines in the Suez Canal region were, in fact, destroyed or damaged during the hostilities but reconstruction has restored normal operations.

Suez is presently connected by a single-line railway to Cairo and a two-line railway to Ismailia. In addition, a single track runs southwest from Suez through the proposed industrial free zone area to El Sadat. Railway sidings extend into the two major ports of Ibrahim and Adabiya.

The Cairo-Suez line poses the major problem for rail connection. The line presents too steep a gradient for heavy freight wagons with no braking systems, and is currently used mainly for military purposes and occasional passenger service.

Work is presently underway to provide a total bypass of the city, with a new railway station to be located at the northern end of the city's central main road, as advocated by the Suez Master Plan. Once completed, this development will help ease traffic congestion within the central city area.

With regard to inland waterways, the only feasible route is via the Sweetwater Canal to Ismailia, and thence via the Ismailia-Cairo canal. This canal at present is of little importance to the regions' transportation infrastructure. More than 200 bridges and 28 blocks impede traffic considerably. The canal, in fact, is primarily for irrigation purposes, and shipping is insignificant (approximately 114,000 tons per annum). The 128 km long, 30 meters wide canal is planned to be widened to 50 meters for the purpose of irrigating new reclamation areas. The Ismailia Master Plan advises, however, that any further reconstruction of the canal to make it a Class I waterway would be warranted only if Ismailia had port facilities. Even if such reconstruction did occur, it is not expected that waterways movement would be attractive enough to divert freight from either road or railways to any significant degree.

No commercial airports are presently in operation in the Suez area. Moreover, the Suez Master Plan recommended that there was no basis for the provision of an airport for either commercial international or inter-regional flights because of the area's proximity and good road access to Cairo International Airport. A military airbase exists at Shalufa, within ten miles of Suez City. In addition, a heliport is located at 7 km adjacent to the Suez-Cairo road, but is used primarily by military authorities and visiting dignitaries.

The following section analyzes transportation costs by various modes from Suez to other parts of Egypt. The results show a complex, somewhat



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conflicting picture, with many freight structures being determined on a contract-by-contract basis.

**RAILWAYS**

Until June 1979, the freight tariffs of the Egyptian Railway Authority had remained unchanged since 1957. The result was that freight traffic was becoming increasingly subsidized. According to the Transport Planning Authority, Ministry of Transport, the average revenue per ton/kilometer in 1977 was 6.5 milliemes, whereas the corresponding average operating cost was 9.8 milliemes--approximately 50 percent higher. As of June, however, basic freight rates were increased by between 70 and 100 percent, depending upon tariff class.

There are 11 tariff classes in all, with each class representing a wide range of products and raw materials, as shown in Table VI-1. Basic freight rates decrease from class 3 through 13. In addition, the rate scales are reduced by 50 percent for the portion of a haul above 250 km, and by a further 50 percent for any portion above 500 km, as shown in Table VI-2. It should be noted, however, that many commodities fall under two classes, depending upon whether car loads are full or less than full.

Using Table VI-2 as a guide, the basic rate per ton between major urban centers in the vicinity of existing and proposed free zones are presented in Table VI-3. The distances used are not those of the most direct railway tracks but those of tracks which are currently suitable for freight traffic. For example, a direct single line track between Cairo and Suez exists, but it has high curve and grade resistances, which prevent its use by heavy freight trains with unbraked rolling stock. Most of the freight movement, therefore, travels via the Ismailia-Zagazig-Benha line (Suez Master Plan, Volume II, 1976, p. 19). Port Said is presently served only by passenger service, although full freight service for the city is envisaged by the Egyptian Railway Authority in 1980.

The basic rates represent only a portion of the full freight tariff, however. An administrative charge of 2.00 milliemes per ton/kilometer is added. In addition, a surcharge of between 50 and 120 percent of the combined basic rate and administrative charge is imposed, which is determined by specific commodity rather than tariff class. A partial listing of commodity surcharges is given in Table VI-4.

As an example, the basic rate for the movement of one ton of machinery from Cairo to Suez would amount to LE 4.03 over the 237-kilometer distance. To this would be added LE 0.47 for administrative costs and LE 5.40 as surcharge. Thus the total freight charge in this instance would be LE 9.90.

With the recent substantial increase in tariff rates, the need for government subsidies should be greatly reduced. In a 1978 study, the consulting firm of Frederic R. Harris, Inc., made estimates in economic terms of the total (operating plus investment) average costs per ton/

TABLE VI-1

VARIOUS COMMODITIES ACCORDING TO RAIL TARIFF CLASS

| Tariff Class | Commodity Types |
|---|---|
| 3 | Pharmaceuticals, stationery, furniture, perfumes, tobacco |
| 4 | * |
| 5 | Floor covers, trucks, silk textiles, machinery |
| 6 | Cotton textiles |
| 7 | Wood, copper, benzine, cotton waste |
| 8 | * |
| 9 | Cotton, fresh fruit, glass |
| 10 | Meat, vegetables |
| 11 | Groceries, confectionary, lumber, iron and steel, diesel fuel, citrus, molasses for food |
| 12 | Flour, refined sugar, coke coal, cotton seeds, and cotton seed oil, cement |
| 13 | Fertilizers, phosphates, grains, unrefined sugar, molasses for industry, stone, gravel, gypsum, rice, cement, bricks, building materials |

* No information given.

Source: Egyptian Railway Authority, 1979.



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TABLE VI-2

BASIC FREIGHT RATES BY TARIFF CLASS AND DISTANCE

REVISED JUNE, 1979

(MILLIEMES PER TON/KM)

| Tariff Class | Distance km | | |
|---|---|---|---|
| | 0-250 | 251-500 | 500+ |
| 3 | 25.50 | 12.75 | 6.38 |
| 4 | 21.25 | 10.63 | 5.31 |
| 5 | 17.00 | 8.50 | 4.25 |
| 6 | 13.60 | 6.80 | 3.40 |
| 7 | 12.00 | 6.00 | 3.00 |
| 8 | 10.00 | 5.00 | 2.50 |
| 9 | 8.00 | 4.00 | 2.00 |
| 10 | 6.00 | 3.00 | 1.50 |
| 11 | 5.00 | 2.50 | 1.25 |
| 12 | 4.00 | 2.00 | 1.00 |
| 13 | 3.00 | 1.50 | 0.75 |

Source: Egyptian Railway Authority, 1979.



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TABLE VI-3

BASIC FREIGHT RATES FOR VARIOUS DESTINATIONS BY SELECTED TARIFF CLASS

(LE PER TON)

| Route | Approximate Distance (km) | Tariff Class 3 | 5 | 7 | 9 | 11 | 13 |
|---|---|---|---|---|---|---|---|
| Cairo-Alexandria | 212 | 5.41 | 3.60 | 2.54 | 1.70 | 1.06 | 0.64 |
| Cairo-Ismailia | 155 | 3.95 | 2.64 | 1.86 | 1.24 | 0.78 | 0.47 |
| Cairo-Ismailia-Port Said | 228 | 5.81 | 3.88 | 2.74 | 1.82 | 1.14 | 0.68 |
| Suez-Ismailia | 91 | 2.32 | 1.55 | 1.09 | 0.73 | 0.46 | 0.27 |
| Ismailia-Port Said | 74 | 1.89 | 1.26 | 0.89 | 0.59 | 0.57 | 0.22 |
| Port Said-Alexandria | 334 | 7.45 | 4.96 | 3.50 | 2.34 | 1.46 | 0.88 |
| Cairo-Suez | 237 | 6.04 | 4.03 | 2.84 | 1.90 | 1.19 | 0.71 |

Source: Egyptian Railway Authority, 1979.
Reynolds, Smith and Hills, 1979.

TABLE VI-4

FREIGHT SURCHARGE RATES FOR VARIOUS COMMODITIES

EYGPTIAN RAIL AUTHORITY

| Commodity Types | Surcharge (Percent) |
|---|---|
| Tobacco, machinery, cotton textiles, benzine, industrial molasses, rice for export, fertilizers, biotomin | 120 |
| Furniture, silk textiles, edible molasses, iron and steel, kerosene, diesel and other oil derivatives, sugar, four, cotton seeds, cotton seed oil, cereals, rice for domestic consumption, sand and gravels | 100 |
| Fruits, meat, vegetables, citrus, groceries, cement | 80 |
| Phosphates | 65 |

Source: Egyptian Rail Authority, 1979.



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kilometer for various lengths of haul for the year 1985. These estimates are shown in Table VI-5, and were used to approximate line haul costs per ton between major cities, as shown in Table VI-6.

The total route length of the railway system is 3,905 km, of which 951 km is double-tracked. Many of the lines in the Suez Canal area were destroyed or damaged during the hostilities. Most have now been repaired, although the line from Ismailia to Port Said still terminates 5 kilometers short of the latter city.

Rail transport is generally considered as unable to provide adequate freight services, especially for perishable goods, and freight traffic volume is still declining. The existing shortage of locomotives, the high proportion of damaged cars and obsolete track layout will pose continuing severe problems when and if freight traffic recovers.

## ROAD HAULAGE

The present tariff system portrays complexity as well as inconsistencies in its rates. This is primarily the result of competitive bidding on long-term contracts, which accounts for a large proportion of non-local haulage. Since these contracts can last for several years, not only may they fail to reflect the actual costs of haulage, but it is also possible that different customers are charged different tariffs for hauling the same cargo over the same distance.

General estimates for various commodities on a ton/kilometer basis have been provided by the Ministry of Transport, Transport Planning Department, as shown in Table VI-7.

The range of these average rates compares fairly closely with that depicted for 1976 in the Egypt National Transport Study of 1977, as shown in Table VI-8. In addition to the ton/kilometer charges, a basic rate per ton is charged, which may range from LE 1.00 to above LE 4.00, depending upon the commodity.

As previously mentioned, however, most of these rates are based upon long-term contracts which may vary considerably. The tariff charge by Ismailia Transportation Company for cement, for example, is LE 4.25 per ton between Port Said and Cairo. The haulage charge for steel bars is approximately 10 percent higher than this rate, resulting in a comparative tariff of LE 4.68. Special contracts for the haulage of oil drilling equipment to rigs south of Suez, however, may be at least five times these rates.

The Sumed Fertilizer Plant in Suez is charged, under contract, LE 1.5 per ton for the first 50 kilometers, and thereafter, 165 milliemes per ton/kilometer up to 275 kilometers and 120 milliemes per ton/kilometer on any additional distance. Thus a 20-ton truck haulage to Cairo (representing a distance of 131 kilometers) costs the company the equivalent of LE 2.88 per ton.



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TABLE VI-5

AVERAGE RAILWAY COSTS PER TON/KILOMETER

BY LENGTH OF HAUL IN 1985

(MILLIEMES)

| Haul Length (Km) | Type of Train* | |
|---|---|---|
| | Unit | General |
| 50 | 10.3 | 24.3 |
| 100 | 9.6 | 18.9 |
| 150 | 9.4 | 17.1 |
| 200 | 9.3 | 16.2 |
| 250 | 9.3 | 15.7 |
| 300 | 9.2 | 15.3 |
| 350 | 9.2 | 15.0 |
| 400 | 9.2 | 14.9 |
| 450 | 9.1 | 14.7 |
| 500 | 9.1 | 14.6 |
| 750 | 9.1 | 14.2 |
| 1,000 | 9.1 | 14.0 |

* All break-bulk cargo is assumed to be carried by general train; all dry-bulk by unit train.

Source: Frederic R. Harris, Inc., Development Policy: Ports of Egypt, January, 1978, Table B4.1

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TABLE VI-6

AVERAGE COSTS PER TON FOR BREAK-BULK

AND DRY-BULK HAULAGE BETWEEN MAJOR DESTINATIONS

1985

(LE)

| Route | Distance (km) | Cost Per Ton (LE) | |
|---|---|---|---|
| | | Dry-Bulk | Break-Bulk |
| Cairo-Alexandria | 212 | 1.97 | 3.41 |
| Cairo-Ismailia | 155 | 1.46 | 2.65 |
| Cairo-Ismailia-Port Said | 228 | 2.12 | 3.63 |
| Suez-Ismailia | 91 | 0.89 | 1.81 |
| Ismailia-Port Said | 74 | 0.74 | 1.61 |
| Port Said-Alexandria | 334 | 3.07 | 5.04 |
| Cairo-Suez | 237 | 2.20 | 3.75 |

Source: Frederic R. Harris, 1978.
Reynolds, Smith and Hills, 1979.



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TABLE VI-7

AVERAGE RATES FOR ROAD HAULAGE

1979

| Commodity | Milliemes Per Ton/Kilometer |
|---|---|
| Building Materials | 20 |
| Food Supplies | 11-17 |
| Fertilizers | 13 |
| Petroleum and Petroleum Products | 14 |
| General Commodities | 12 |

Source: Ministry of Transport, Transport Planning Department, 1979.
Reynolds, Smith and Hills, 1979.

TABLE VI-8

TRUCKING CHARGES FOR LAND TRANSPORT

GENERAL NILE COMPANY

1976

| Commodity/Customer | Distance/Route | Basic Rate* (LE per Ton) | Milliemes* per Ton/Km |
|---|---|---|---|
| Agricultural Credit Organization | 1-100 km | 1.32 | 11.25 |
| | 100-300 km | 1.69 | 14.40 |
| | Over 300 km | 1.69 | 11.20 |
| Ind. Company Kafr-El-Zayat | Local | 1.3-1.4 | 14.40 |
| | Nonlocal | 1.4-3.5 | 14.40 |
| Electric Cables | Alexandria-Mostorod | 3.50 | - |
| | Cairo-Alexandria | 1.66 | - |
| Military Factories | Alexandria-Helwan | 3.40 | - |
| Iron and Steel Assembly | Alexandria-Cairo | 3.40 | - |
| General Authority for Basic Provisions | Alex-Suez Canal Zone | 2.50 | 9.40 |
| | Alex-Western Desert | 1.65 | 9.40 |
| | Alex-Tahrir Province | 1.65 | 9.40 |
| Rice, Processed | To Alexandria | 1.20 | 10.00 |
| | To Cairo | 1.20 | 10.00 |

* Total charge comprises both basic rate and ton/km charges.

Source: Arab Republic of Egypt, Ministry of Transportation, Egypt National Transport Study, Phase I, Interim Report, Volume II, 1977, p. IV-119.
Reynolds, Smith and Hills, 1979.

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Without the existence of overall fixed rates, it is not feasible to accurately gauge the charges of road haulage between various locations in Egypt, according to various products. The 1978 report by Frederic R. Harris, however, did attempt to estimate the economic costs of road haulage for various cargo handling categories in 1985, as shown in Table VI-9.

Using these estimates as a base, the economic costs for hauling the cargo handling categories between major urban cities in 1985 are depicted in Table VI-10.

## SUEZ CANAL TRANSIT

Canal rates are charged according to vessel net tonnage and utilize Special Drawing Right (SDR) units. The various rates, as amended in July 1979, are shown in Table VI-11. At that time, an SDR unit (which comprises a mix of 13 major world currencies) approximated U.S. $1.29. In addition to these rates are tug charges (varying according to the horsepower needed) and pilotage costs (approximately LE 150.00 for the total passage).

Average transit times through the 173 kilometer-long canal differ significantly according to convoy direction. Including mooring times at Port Said, Ballah, and Great Bitter Lake, southbound convoys average 20.3 hours from Port Said to Suez, whereas northbound convoys average 11.4 hours. The canal accommodates three convoys daily: two southbound and one northbound.

The Suez Canal Authority is currently undertaking a massive, two-stage development program to widen, deepen, and straighten the canal in order to allow the passage of VLCCs (very large crude carriers). Until recently, the 38-foot deep canal was capable of carrying only vessels up to 60,000 deadweight tonnage (dwt) ladened or 150,000 dwt ballasted. With the recent completion of the first phase of development, the canal depth has been increased to 53 feet and now allows passage of vessels up to 150,000 dwt ladened and 370,000 tons dwt ballasted. Plans for the second phase include further widening and deepening the canal, increasing the draft to 67 feet and thus allowing transit for loaded VLCCs of 260,000 dwt and virtually all ships in ballast. Three new bypasses of 68 km each would effectively double the width of the canal. A final decision for implementing this second phase has not as yet been made.

In a 1978 study, the consulting firm of Frederic R. Harris attempted to estimate the incremental costs of moving one ton of various cargo categories between Port Said and Suez. These costs, shown in Table VI-12, are in economic terms, and represent the total of canal transit charges, vessel operating costs, and inventory costs projected for 1985. The same convoy system was assumed to still be operating.



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TABLE VI-9

TOTAL TRUCK COSTS*

BY CARGO HANDLING CATEGORY

1985

| Cargo Handling Category** | Milliemes Per Ton/Km*** |
|---|---|
| A | 21.2 |
| B | 11.7 |
| C | 15.5 |

* Costs are defined as "the total of operating and inventory costs from the time loading of a truck is completed to the time unloading begins" (F.R. Harris, 1978, p. B-12).

** A: Vegetables, fruits, and nuts; cotton textile and waste; fish; consumer goods.
B: Rice, sugar, raw cotton, intermediate goods.
C: Phosphate, fertilizer, corn, cement.

*** Figures used pertain to average truck speed of 40 to 50 km per hour.

Source: Frederic R. Harris, Inc., Development Policy: Ports of Egypt, January, 1978, Table B4.



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TABLE VI-10

TOTAL TRUCK COSTS BY CARGO HANDLING CATEGORY FOR MAJOR ROUTES

1985

| Route | Road Distance (km) | Cargo Handling Category* (LE per Ton) | | |
|---|---|---|---|---|
| | | A | B | C |
| Cairo - Alexandria | 224 | 4.75 | 2.62 | 3.47 |
| Cairo - Ismailia | 128 | 2.71 | 1.50 | 1.98 |
| Cairo - Port Said (via Ismailia) | 207 | 4.39 | 2.42 | 3.21 |
| Cairo - Suez | 131 | 2.78 | 1.53 | 2.03 |
| Suez - Ismailia | 85 | 1.80 | 0.99 | 1.32 |
| Ismailia - Port Said | 79 | 1.67 | 0.92 | 1.22 |
| Suez - Port Said | 164 | 3.48 | 1.92 | 2.54 |
| Port Said - Alexandria | 225 | 4.77 | 2.63 | 3.49 |

Source: See Table VI-6 for definition of categories.
Frederic R. Harris, Inc., 1978.
Reynolds, Smith and Hills, 1979.

TABLE VI-11

SUEZ CANAL RATES FOR LADEN AND UNLOADED

VESSELS, AS AMENDED JULY, 1979

| Type of Vessel | Rate Per Ton | |
|---|---|---|
| | SDR Units | U.S.$ Equivalency (July, 1979) |
| **Laden** | | |
| Tankers, Crude Oil | 1.611 | 2.078 |
| Bulk Carriers: | | |
| 1st 1,000 Tons | 2.420 | 3.122 |
| Next 4,000 Tons | 2.000 | 2.580 |
| Remainder | 1.611 | 2.078 |
| Other Vessels*: | | |
| 1st 1,000 Tons | 2.660 | 3.431 |
| Next 4,000 Tons | 2.180 | 2.812 |
| Remainder | 1.772 | 2.286 |
| **Unloaded** | | |
| Tankers | 1.289 | 1.663 |
| Bulk Carriers: | | |
| 1st 1,000 Tons | 1.936 | 2.497 |
| Next 4,000 Tons | 1.600 | 2.064 |
| Remainder | 1.289 | 1.663 |
| Other Vessels*: | | |
| 1st 1,000 Tons | 2.128 | 2.745 |
| Next 4,000 Tons | 1.744 | 2.250 |
| Remainder | 1.481 | 1.910 |

* For container vessels, a third container tier is charged an additional 5 percent of dues; each additional tier is charged at an extra 7-1/2 percent total dues. For general cargo vessels carrying containers, the bulk of containers on-deck is added to the vessel net tonnage for charge purposes.

Source: Suez Canal Authority, Suez, 1979.



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TABLE VI-12

INCREMENTAL COSTS OF SUEZ CANAL TRANSIT

PER ONE TON OF CARGO

1985

(LE)

| Cargo Category | Vessel Type: Containerships 725 tfe | Containerships 1210 tfe | Break-Bulk 10,000 dwt | Dry-bulk 16,000 dwt |
|---|---|---|---|---|
| **From Port Said To:** | | | | |
| Suez | 3.2 | 3.0 | 2.1 | 1.8 |
| **From Suez To:** | | | | |
| Port Said | 2.9 | 2.8 | 2.0 | 1.7 |

Source: Frederic R. Harris, Inc., Development Policy: Ports of Egypt, January, 1978, Table B3.1.



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## CONCLUSION

From the review of the transportation networks surrounding Suez, it would appear that an industrial free zone located in the Suez area would be well served by both domestic and international modes of transportation. Good access via road exists to Cairo and Egypt's major Mediterranean ports, although the railroad network serving the region is in need of improvement. While there is a general lack of data that allows direct comparison between different modes of transport, it appears that rail transport is both less efficient, and in many cases more costly, than road transport. The existing state of the railroad network need not necessarily hinder regional industrial development since road transport would be preferred by most industrial activities.

With regard to international transport, the Suez region provides an advantageous location for both the processing of domestic materials and goods destined for counties south of Egypt via the Red Sea, and the processing of materials shipped from these counties for export to the Mediterranean area via the Suez Canal. In addition, nearby Middle East markets could be accessed overland via the Hamdy Tunnel just to the north of Suez.

The existing international airport was Cairo and the planned airport to the west of Alexandria may well favor these areas for the production of low-bulk, high-cost items. The Cairo airport is within two hours' drive of Suez, however, and the absence of airport facilities in the region should present no major deterrent to industrial development.

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# CHAPTER VII
# ENVIRONMENTAL ASSESSMENT

## INTRODUCTION

This draft Environmental Assessment for the Adabiya Free Zone has been prepared in accordance with the relevant environmental procedures pertaining to U.S. Agency for International Development (AID) actions (AID Handbook 3 Appendix 5C, Section 216.5, June 28, 1976).

Its purpose is to provide AID and Egyptian decision makers with a comprehensive understanding of both: a) locating and operating the proposed Adabiya Industrial Free Zone, and b) reasonable alternatives to the proposed action, so that the expected benefits of development objectives can be weighed against any adverse short or long-term impacts upon the human environment, or any irreversible or irretrievable commitment of resources.

The information and findings contained in this assessment were derived from field surveys, review of existing available data and reports, and from meetings with various Government and private agencies including:

- General Authority for Investment and Free Zones
- Local USAID officials
- Ministry of Housing and Reconstruction
- Governorate Office of Suez
- Local utility departments in Suez
- Suez Canal Authority
- Robert Matthew, Johnson - Marshall and Partners
- Pirnie - Harris International

After comments are received and incorporated from participating agencies and institutions, the final document will serve as the Appendix to the main report.

## DESCRIPTION OF THE PROPOSED ACTION

The proposed action is the establishment and operation of an industrial free zone, to be located approximately 8 km southwest of the Suez City central business district and 6 km to the northwest of the port of Ras Adabiya. The site comprises a rectangular tract of land of approximately 700 feddans, which is bounded by the Ataka Mountains on the west and the western shore of the Bay of Suez on the east. The site is already severed by highway, offers proximity to railroad transportation, and is transversed by 11 kv electric transmission lines.

Of the total of 700 feddans, only 431 feddans are recommended for inclusion within the industrial free zone, of which 261 feddans would represent net leaseable land to investors. Full absorption of investor activity is envisaged to be reached by 1993. Major activities of the



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free zone are anticipated to be varied, including assembly operations for light and medium industry.

## EXISTING ENVIRONMENT AND GROWTH TRENDS

### Physical Systems

Study Area. The study area comprises Suez City, its immediate environs, the coastal strip on its western side extending southwards in an arc to Ras Adabiya, together with the Bay of Suez.

The physical characteristics surrounding Suez are diverse, consisting of a mountainous range culminating in Gebel Ataka (871 meters above sea level), a narrow coastal plain, limited fertile areas, and broad expanses of desert. Most of the Suez urban area itself is located on flat land with an elevation less than 10 meters above sea level. The Ismailia Sweetwater Canal, Suez Creek, and the Suez Canal delineate the study area's eastern boundary. To the east of the Suez Canal lies the Sinai Desert, with its coastal plain rising slowly towards the plateau of Gebel Raha and the Mitla Pass, some 25 km distant.

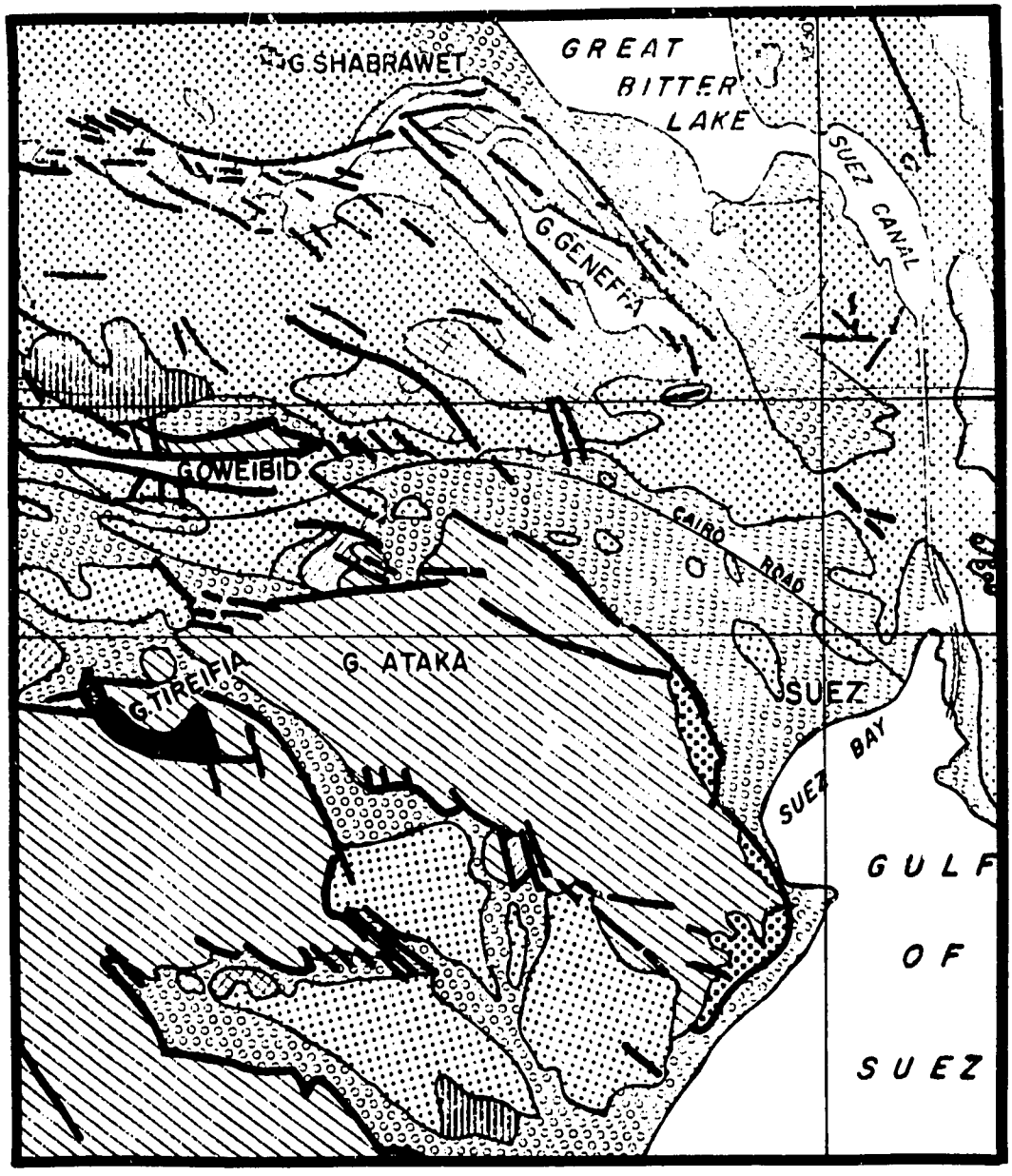
Relatively flat land extends to the north of Suez City, a small portion of which is cultivated--primarily along the Ismailia Sweetwater Canal and the western bank of the Suez Canal. It is in this sector that much recent urban residential development has occurred, and ample space is available for further anticipated growth. The renovated marine facilities of Port Tawfik and its recently established free zone are connected by a road/rail causeway to the Southeast of Suez. Landfill operations are currently underway to expand this area.

The western border of the study area is strikingly bounded by the steep slopes of Gebel Ataka, adjacent to which a narrow coastal strip of flat land extends southwards. It is in this area that most of the major industrial development has occurred, with oil refining, fertilizer, and future textile spinning activities located at the northern end of the strip just to the west of Suez, with limestone quarrying to the south of the study area. Further widescale industrial development is envisaged, including the Adabiya industrial free zone and expansion of nearby Adabiya port facilities, as well as the establishment of a cement factory and continued growth at the Ain Sukhna oil terminal facilities further south.

Geology and Soils. The study area is contained within the distinct geological of the Gulf of Suez region. Sedimentary rocks of the Pleistocene era, comprising primarily mudstone with subordinate clays, sandstones and limestone, predominate in the study area. The fringing Gebel Ataka range is composed of rocks of the Eocene era (see Figure VII-1).

Although earthquakes of surface wave magnitudes of up to 7 (Global Seismology Unit) have been reported at the mouth of the Gulf of Suez, where the Red Sea rift system divides, they are infrequent in the Suez

FIGURE VII-1
GEOLOGY OF SUEZ AREA




Cretaceous
Upper
Middle
Eocene
Basalt
Oligocene
Pleistocene & Recent
Pliocene
Miocene
Fault Lines
0 10 20 Km

Source: Rushdi Said, Geology of Egypt Elsevier, Amsterdam: 1962.

area. The largest reported earthquake within 300 km of Suez occurred in 1834, and had a surface wave magnitude of 7 (Parsons Brinckerhoff International, Port of Suez: Rehabilitation and Modernization of Existing Facilities, Appendix B; July 1978). A number of small earthquakes have occurred on a belt running northeast to southwest about 70 km north of Suez. According to Halcrow and Partners (Suez Area Subsurface Investigations, Draft Report, Volume 2, Technical Papers, 1978), however, these appear to have been minor adjustments to stress similar to those experienced in relatively stable parts of the world.

Owing to the reported suspected presence of "live" land mines on the proposed site, local geological and soil testing data were not obtained. The majority of the soils within the study area have sand or loamy sand textures, and many contain considerable amounts of gravel and coarse fragments. Boring hole samples have been undertaken previously by Parsons Brinckerhoff (1978) in the general vicinity of the proposed site, and may be used as a preliminary guide prior to actual site investigations. Samples taken at Adabiya revealed mainly medium to stiff silty clay interbedded by medium to dense silty sand and some gravel. (A comprehensive report on soil boring findings can be found in Appendix C to the 1978 Parson Brinckerhoff report.) The presence of clay soils in the vicinity of the site is noteworthy in that they may be subject to shrinkage and swelling as a result of pressure, temperature, or moisture content change.

Climate. The climatic regime of the study area is generally characteristic of that of the northern Red Sea region as a whole: arid, hot, and exhibiting a relatively rainless seasonal pattern (see Table VII-1). Short-duration monitoring undertaken between May and August, 1978, indicated the presence, however, of two climatic zones in the region: the highly populated city zone in the north, which is less influenced by the land-sea breeze and the effects of the Ataka mountain chain; and the zone to the south which represents a north-south valley, bounded by the Gulf of Suez to the east and the Ataka Mountains to the west, and where a strong channelling effect on wind patterns prevails (Institut Ecoplan: Suez Air Quality Study, Volume 5, Appendix III; April, 1979).

Average pressure volumes portray a general seasonal trend, from maximum values in January to minimum values in July. The average sea level pressure at Suez in January is 1,017 mb, while for July it is 1,006 mb.

Air movements at Suez are often funnelled by the Gebel Ataka range to the southwest and the hills of Sinai to the northeast. The area has stronger winds with a more uniform direction that sites inland, as well as shorter periods of calm. As a partial result of the funnelling effect, winds from the north and northwest are most frequent, accounting for 70 percent of the annual wind pattern. In contrast, only between 4 and 7 percent of winds blow from the southeast, southwest, west-southwest and west. The southerly winds are usually associated with an occasional moderate gale occurring between December and March. The percentage of calms registered during a short, summer monitoring period in 1978 at the

TABLE VII-1

SUEZ CLIMATOLOGICAL DATA

| Month | Mean Monthly Rainfall (mm) (1945-1970) | Mean Monthly Temperature (C) (1945-1970) | Mean Relative Humidity (%) (1400 hrs) | Average Wind Speed (km/m) (1964-1969) | Daily Evaporation (mm) (1964-1968) | Daytime) Hours (%) |
|---|---|---|---|---|---|---|
| January | 4.6 | 14.7 | 58 | 11.4 | 7.6 | 7.30 |
| February | 0.4 | 15.3 | 55 | 13.3 | 8.0 | 7.03 |
| March | 2.8 | 18.1 | 49 | 16.8 | 10.8 | 8.38 |
| April | 0.6 | 21.7 | 45 | 16.4 | 13.5 | 8.72 |
| May | 3.9 | 25.6 | 43 | 16.4 | 14.5 | 9.53 |
| June | - | 28.3 | 41 | 16.4 | 16.3 | 9.49 |
| July | - | 29.4 | 42 | 18.8 | 15.1 | 9.67 |
| August | - | 29.7 | 43 | 17.0 | 13.3 | 9.22 |
| September | - | 27.2 | 47 | 18.5 | 13.1 | 8.34 |
| October | 8.3 | 25.3 | 50 | 16.3 | 12.2 | 7.99 |
| November | 1.8 | 21.1 | 55 | 13.3 | 9.2 | 7.19 |
| December | 2.2 | 16.1 | 56 | 10.9 | 7.9 | 7.14 |

Source: Pirnie-Harris International, Suez Water and Wastewater Facilities Master Plan, Volume 3, p. E-4, February, 1979.

fertilizer plant was 11 percent (Institut Ecoplan, 1979; Volume 5, Appendix III, p. 26).

Wind speed tends to be higher than normal during the months May to September. The mean for June, the month of the highest wind speed, is 6.0 knots and 5.0 knots at 1400 and 0800 hours, respectively. Averages for the total year at those times are 5.4 and 4.3 knots, respectively. The northerly wind at Suez usually freshens late in the afternoon and continues until about midnight, with periods of calm most frequent during the early morning hours (Pirnie-Harris International, Volume 2, 1979).

Mean annual precipitation in Suez is about 27 mm, most of which occurs in one short-duration storm between the months of October and May. Rainfall during the remainder of the year is rare to nonexistent. October is usually the rainiest month, with a mean annual rainfall of 8.3 mm. The maximum rainfall on record for one day is 49.6 mm.

Suez benefits from slightly higher minimum winter temperatures than inland locations. Temperature ranges from an average of approximately 15°C in January to 30°C in August, while the mean average annual temperature is about 23°C. Absolute recorded extremes are 4.6°C in January, and 46.1°C in July. Wide divisional-nocturnal fluctuations in air temperature occur, with daily fluctuations ranging from 6 to 11°C.

Relative humidity at the national weather station at Port Tawfik (Suez Marine) for 1400 hours ranges from 41 to 58 percent, with an annual mean of 49 percent. Winter months have a slightly higher humidity. The rate of water evaporation is moderate, with the highest monthly average occurring during June (16 mm/d). Lowest values are during the winter months of November through February.

Visibility records indicate that Suez suffers very rarely from dust storms, fog, mist, or haze as compared with inland sites. The annual mean of more than 10 km visibility was 98.9 percent during 1972 (Suez Master Plan, 1976, Volume 3, p. 129).

Air Quality. Existing major sources of air pollution in the Suez area include the oil refineries (sulfur dioxide), fertilizer plant (sulfur dioxide and nitrogen oxide), the 100 MW power plant (sulfur dioxide), automotive traffic (carbon monoxide and dust particles), shipping traffic, solid waste disposal, and miscellaneous dust particles.

Continuous monitoring of pollutants and their concentration levels within the area are limited, confined to one month in 1975 (September 23 to October 23, Suez Master Plan, 1976), and intermittently over a five-month period in 1978 (May through September, Institut Ecoplan: Suez City Air Quality Study, 1979).

The Suez Master Plan findings for suspended particulate matter are shown in Table VII-2. Dust concentrations at the seven sites ranged from 0.7 mg/cubic meter at the Suez Canal Authority to 0.15 mg/cubic meter at Ataka Police Station, located to the west of central Suez. The mean for

TABLE VII-2

CONCENTRATION OF SUSPENDED PARTICULATE MATTER

SMOKE AND SULPHUR DIOXIDE AT VARIOUS SITES IN SUEZ

(23 SEPTEMBER - 23 OCTOBER 1975)

| Site | Average Concentration of Suspended Dust (6 days, 11 am-3 pm) Count mp/cu.m.* | Weight mp/cu.m.* | Daily Condentration Smoke(ug/cu.m.)*** Maximum | Minimum | Mean | Sulphur Dioxide |
|---|---|---|---|---|---|---|
| Ataka | 19.6 | 0.15 | 176.0 | 69.0 | 97.8 | Not detected |
| Emergency Police Station | 37.8 | 0.31 | | Not measured | | |
| Gas Station | 31.0 | 0.83 | | Not measured | | |
| Arbeen | 65.2 | 0.29 | 328.0 | 13.0 | 97.5 | Not detected |
| Security Office | 66.4 | 0.68 | | Not measured | | |
| Governorate | 34.3 | 0.25 | | Not measured | | |
| Suez Canal Authority | 3.4 | 0.70 | | Not measured | | |
| Mean | 36.8 | 0.46 | 252.0 | 41.0 | 97.6 | Not detected |

* mp/cubic meter = million particulates per cubic meter.
** mg/cubic meter = milligrams per cubic meter.
*** ug/cubic meter = micrograms per cubic meter.

Source: Suez Master Plan, Volume 3, 1976.

all sites was 0.46 mg/cubic meter. Samples over a 30-day period undertaken by Institut Ecoplan indicated an average of 0.28 mg/cubic meter for a central town location (Security Police Headquarters), and 0.09 mg/cubic meter for Ataka Police Station. Laboratory analysis for the latter location, which would appear to more closely resemble conditions found in the proposed industrial free zone area, is shown in Table VII-3.

In general, suspended concentrations far exceed the standards set by the World Health Organization (0.120 mg/cubic meter) as well as those set for industrial areas in the United States (0.1 to 0.2 mg/cubic meter) in the Suez City residential area, but concentrations at the Ataka site appear to be within these standards. Dust within the Suez Area is generated mostly from the desert, unpaved areas and automotive traffic, and is little prevented by the general paucity of vegetative cover within the area.

With regard to deposited particulate matter, data from the Suez Master Plan and Suez City Air Quality Study are shown in Tables VII-4 and VII-5, respectively. Again, the means of both samples exceed the U.S. standards (30 tons/square mile/month). As noted within the Suez City Air Quality Study, however, dustfall rates seem to portray no definite rhythm with respect for variations either from site to site or from month to month (Volume 5, Appendix III, p. 20).

Institut Ecoplan's monitoring of gaseous pollutants indicated that daily average concentrations of sulfur and nitrogen oxides within the Suez area were always substantially below the limit set by the Egyptian Ministry of Health (200 ug/cubic meter) for both gases. Concentrations of carbon monoxide gas were around the low standard value set by the Egyptian Ministry of Health (2.5 mg/cubic meter) but far below the standards set by WHO for 8-hour averages (10 mg/cubic meter).

The maximum concentration of ozone at the one monitoring station (Security Police Headquarters) varied between 30 and 80 ug/cubic meter, with an average of 58 ug/cubic meter, and thus remained well below the WHO standard of 120 ug/cubic meter. Over the 24-day period, however, the WHO standard of 60 ug/cubic meter for 8-hour averages was reached or exceeded five times because of natural high ozone background levels. These background levels themselves exceeded unreasonably low standards set by the Ministry of Health for 24-hour average ozone concentrations (10 ug/cubic meter, Institut Ecoplan, Volume 5, Appendix III, p. 23), and suggest the need for future careful monitoring of ozone pollution and peroxyacyl nitrates.

During the 1978 monitoring period, very low concentrations of both hydrogen sulphide and hydrocarbons were recorded.

Noise Pollution. Although no data on noise levels are available for the study region, the major sources of noise pollution appear to be port-related activities and automotive traffic. While the former source is limited in areal extent, automotive and accompanying haphazard horn

TABLE VII-3

CONCENTRATION OF SUSPENDED PARTICULATE MATTER

ATAKA POLICE STATION

(AUGUST 18-27, 1978)

| Category | Percent | | |
|---|---|---|---|
| | Minimum | Maximum | Mean |
| Water Soluble | 9.1 | 26.1 | 16.2 |
| Benzene Soluble | 1.6 | 3.0 | 2.4 |
| Ca | 3.9 | 8.0 | 5.7 |
| K | 0.2 | 1.0 | 0.6 |
| Mn | 0.02 | 0.06 | 0.03 |
| Ni | 0.01 | 0.03 | 0.02 |
| Zn | Not detectable | 0.17 | 0.08 |
| Sr | 0.01 | 0.03 | 0.02 |
| Pb | | Not detectable | |
| Cd | | Not detectable | |
| Cr | 0.01 | 0.03 | 0.02 |
| Co | | Not detectable | |
| Cu | 0.01 | 0.04 | 0.02 |

Source: Institut Ecoplan, Suez City Air Quality Study, Volume 5, App. (III), 1979.



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TABLE VII-4

DUSTFALL AT VARIOUS SITES IN SUEZ OVER ONE MONTH PERIOD

(TONS/SQUARE MILE)

(SEPTEMBER-OCTOBER 23, 1975)

| Site | Total Amount | Percentage of Various Deposits Water Soluble Matter | | | | Water Soluble Matter | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total | ca++ | cl- | +SO4-- | Water Total | Tarry Matter | Combust. Matter | Ash |
| Ataka | 30.43 | 23.17 | 3.78 | 8.60 | nil | 76.83 | nil | 14.77 | 62.06 |
| Emergency police station | 12.56 | 24.33 | 12.17 | 6.46 | nil | 75.67 | nil | 8.75 | 66.92 |
| Gas station | 40.77 | 29.35 | 6.91 | 12.09 | 3.45 | 70.65 | 0.43 | 20.44 | 49.78 |
| Arbeen | 63.12 | 32.37 | 3.63 | 3.78 | 2.57 | 67.63 | nil | 9.76 | 57.87 |
| Security office | Not Measured | | | | | | | | |
| Governorate | 50.40 | 55.92 | 2.05 | 11.42 | 6.48 | 44.08 | 0.08 | 4.27 | 39.73 |
| Suez Canal Authority | 73.26 | 25.57 | 2.35 | 7.57 | 1.41 | 74.43 | 0.94 | 16.72 | 56.77 |
| Mean | 45.09 | 31.78 | 5.15 | 8.32 | 2.32 | 68.22 | 0.24 | 12.45 | 55.52 |

Source: Suez Master Plan, Volume 3, 1976.

TABLE VII-5

DUSTFALL IN SUEZ AREA*

APRIL-SEPTEMBER, 1978

| Deposit (%) | Month | | | | | | |
|---|---|---|---|---|---|---|---|
| | April | May | June | July | August | Sept. | Mean** |
| Water Soluble | 31.1 | 24.4 | 31.3 | 23.1 | 33.6 | 19.8 | 27.2 |
| Tarry Matter | 1.0 | 0.5 | 0.6 | 0.4 | 0.6 | 1.5 | 0.8 |
| Ca | 5.7 | 10.0 | 8.7 | 5.2 | 4.3 | 4.2 | 6.4 |
| K | 0.21 | 0.11 | 0.15 | 0.20 | 0.20 | 0.15 | 0.17 |
| Mn | 0.03 | 0.04 | 0.04 | 0.03 | 0.04 | 0.03 | 0.04 |
| Ni | 0.03 | 0.06 | 0.03 | 0.02 | 0.02 | 0.006 | 0.03 |
| Zn | 0.06 | 0.10 | 0.09 | 0.08 | 0.06 | 0.06 | 0.08 |
| Sr | 0.02 | 0.04 | 0.03 | 0.03 | 0.02 | 0.02 | 0.03 |
| Pb | 0.02 | 0.03 | 0.02 | 0.02 | ND | ND | 0.02 |
| Cd | 0.006 | 0.003 | Trace | 0.003 | ND | ND | 0.02 |
| Cr | ND | 0.03 | 0.02 | 0.02 | ND | ND | 0.01 |
| Co | 0.002 | 0.004 | 0.001 | ND | ND | ND | 0.001 |
| Cu | 0.02 | 0.10 | 0.04 | 0.06 | 0.016 | 0.001 | 0.04 |
| Total Deposits (tons/square mile) | 54.3 | 42.8 | 64.5 | 49.9 | 51.0 | 41.7 | 50.7 |

ND = Not detectable

* Mean of seven sites within the Suez area.

Source: Institut Ecoplan, Suez City Air Quality Study; Vol. 5, App. III, 1979.



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noise is prevalent throughout most of the area. The site of the proposed project is presently uninhabited, and noise levels are low other than for occasional passing traffic on the Suez-Zafarene road.

Hydrography. The Bay of Suez is located at the northern extremity of a narrow gulf extending northwards from the Red Sea for a distance of 250 km. The bay totals some 120 square km, and has an average depth of only 10 m. Shoreline slope is shallow, with a maximum depth of 20 m occurring about 6 km from the shoreline.

The tidal range at Suez is 1.5 m, with an extreme range of about 2.0 m. Winds and atmospheric conditions, however, are known to affect water levels to the extent of about 0.6 m. The bay has a tidal cycle of approximately 12 hours and a counter-clockwise circulation pattern.

Total currents are northwards with a rising tide, and southwards when the tide is falling. Water movements parallel the longer axis of the gulf except near to shore where they are influenced by coastline irregularities. Parsons Brinckerhoff International (1978, p. 8-10) reported that maximum current velocity in mid-channel is 0.75 m/sec at springs and 0.25 m/sec. at neaps. The volume of flow in and out of the bay during a tidal cycle was estimated to be approximately 13.5 x 10(6) cubic meters/hr.

Wave data for the years 1964 through 1967 indicate that waves of 0.6 m and 1.8 m or more in height occurred 64 percent and 17 percent of the time, respectively (quoted in Parsons Brinckerhoff International, 1978, p. 8-10). Although seas are calm during the summer months, occasional strong swells and heavy seas occur during the winter.

Water Quality. The Suez Bay is subject to potential serious pollution because of its limited circulation and low flushing capacity. Pollution sources presently comprise untreated wastewater, industrial wastes, and oil spills, the latter either from the oil refineries or oil tankers. Another primarily short-term pollution source has been the dumping of dredging spoil from operations in the Suez Canal. Disposal of the spoil is by barge approximately one kilometer or more from the entrance of the Suez Canal.

An oceanographic study on Suez Bay conducted during January, 1979, indicated that the weak currents do not induce significant mixing of shallow and deep bay waters, resulting in near-shore discharges having a very local influence on water quality. An example is the sewer relief outfalls near Mina El Gedida, where signs posted during 1978 warning of pollution and banning swimming were generally ignored. The study found that water quality away from the shoreline, however, was good to excellent (Pirnie-Harris International: Suez Water and Wastewater Facilities Master Plan, Volume 2, 1979).

In the study undertaken by Parsons Brinckerhoff International (1978, pp. B-12 to B-13), it was reported that analysis of water samples taken from the Bay of Suez indicated average concentrations of calcium,

magnesium, sodium, and potassium cations to be 40, 188, 548, and 12 mg/l, respectively, for surface water samples. Corresponding figures for bottom water samples were, respectively, 37, 176, 639, and 12 mg/l. Although concentrations of carbonate and bicarbonate anious were low, those for chloride and sulphate anious were high, with average levels of 752 and 30 mg/l, respectively, for surface water levels, and 838 and 30 mg/l for bottom water samples. The pH values in the sampled water varied from 7.1 to 7.4. The lowest dissolved oxygen level reported for Suez Bay waters is approximately 4 mg/l.

Water Supply. Major sources of groundwater supply include deep artesian aquifers, the Sweetwater Canal system, and shallow regional aquifers. The primary source of water for treatment is the Nile River, brought via Ismailia by canal. The quality of this water is reported to be inferior to that before the hostilities because of war-time damage. Evidence of water quality degradation has been obtained by separate surveys along the southern end of the Sweetwater Canal (cited in Pirnie-Harris International, Volume 3, p. H-1). Moreover, the quantity of water available to the Suez region from this source is limited according to the canal's throughput, although plans for expansion are considered.

Highly brackish groundwater underlies the Suez coastal area, and is overlain in several places by less saline water in the vicinity of Suez City. These lenses appear to be the result of seepage from other sources, such as canal, irrigation plots, pipes, and sewers.

At Ataka well, to the west of Suez, brackish water exists at great depths. At Wadi Ghueba well, approximately 40 km southwest of Suez, brackish water (salinity ranging from 1011 to 1274 ppm) has been reported at a depth of about 30 m (Parsons Brinckerhoff International, 1978, p. B-11). Approximately 10 km further south at Ain Sukhna, highly brackish water flows to the surface at the rate of 1800 cubic meters/day. The high salinity of groundwater found along the western shoreline of Suez Bay may be caused by seawater infiltrating into the coastal deposits replacing water lost by high evaporation rates.

It is possible that large quantities of groundwater may be available from deep sandstone strata near Suez that may form part of a regional aquifer system. Treatments would probably be required, however, to meet existing potable water standards (maximum limit for total dissolved solids of 1500 mg/l). Initial exploration results also suggest that significant groundwater reserves could exist south of Ain Sukhna, which could be pumped northwards to serve the Suez City area.

Aquatic Community. The quality and quantity of the Suez Bay fishery ware relatively unknown in comparison to other shallow bays in the Gulf of Suez, but a recent study (Pirnie-Harris International, 1979, p. 3-1) suggests that a sizable concentration of pelagic forms may exist in the northern gulf along the 3-4 km wide coastal reef zone. This study cites the findings of a USSR Ministry of Fisheries expedition to the Red Sea and Gulf of Suez during 1964 and 1965. The expedition found that zooplankton abundance in the Gulf decreases from north to south,



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indicating that the spawning zones of the northern Gulf may be more rich in food than in the remainder of the Gulf.

The USSR expedition registered a total of 138 species of fish representing 63 families in the Gulf. Included were herrings (Clupeidae), hakes (Gadidae), mullets (Mugilidae), jacks (Carangidae), lizard fish (Synodontidae), tuna (Scombridae), soles (Soleidae), flounders (Scophthalmidae), and sharks (Triakidae). Some 28 species were of economic importance, and the most abundantly harvested fish were sardines (Sardinella sp.), comprising 66 percent of the total catch (Pirnie-Harris International, 1979, p. 3-2). A comprehensive list of fish fauna found in the Gulf of Suez and the northwestern area of the Red Sea is presented in Table VII-6.

Terrestrial Community. In a recent study by Pirnie-Harris International (Suez Water and Wastewater Facilities Master Plan, Draft, Volume 2, 1979), terrestrial biota that exist within the general Suez area were cited. A summary of these findings follows.

Prior botanical research in 1957 has shown that wadis (intermittent river beds) may contain over a hundred plant species that are apparently unique to the Suez coastal area. No wadis are evident on the proposed site, nor within the immediate vicinity, however, and the site is almost totally devoid of vegetation.

Terrestrial vertebrate fauna found within the general Suez area are limited both in distribution and population, primarily because of the harsh environmental conditions. Some 32 forms of amphibians and reptiles are known to exist, but none are considered rare or endangered.

Avian species, either transient or resident, are numerous, and over 170 have been recorded in the Suez area. Several have been seriously depleted in numbers over the last few decades, including the white-tailed sea eagle (Haliactus albicilla), flamingo (Phoenicopterus ruber, caspian tern (Hydroprogue caspia), red-billed tropic bird (Phaethon indicus), and grey heron (Ardea cinerea). However, none appear limited in distribution or indigenous only to the Suez area.

Some 25 species of mammals inhabit or are periodically encountered within the Suez area. The rarer species comprise Schlieffren's Cairo bat (N. Schlieffeni), which may still exist in the area; the Egyptian pest rat (N. indica), which exists only in isolated, low saline depressions near Suez, but in abundant number; and the nubian dorcas gazelle (Gazella dorcas), which is still found in vegetated wadis and hills west and south of Suez. The proposed site provides no natural habitat for any of these species.

## Socioeconomic Systems

Population. In 1966, prior to the prolonged period of hostilities, the combined population of Suez and Port Tawfik was estimated to be 264,000. After the outbreak of war, almost all of the population of the

TABLE VII-6

FISH FAUNA IN THE GULF OF SUEZ

AND NORTH-WESTERN PART OF THE RED SEA

| Family | Scientific Name |
|---|---|
| Plotosidae | Plotosus anguillaris (lacepede) |
| Synodontidae | Saurida undosquamus (Richardson) |
| | Sauridae tumbil (Block) |
| | Synodus indicus (Day) |
| | Trachinocephalus myops (Schneider) |
| Bothidae | Bothus panterinus (Ruppell) |
| Cynoglossidae | Cynoglossoides gilchristi (Regan) |
| Parapercidae | Parapercis nebulosa (Quay & Gaimard) |
| Callionymidae | Callinymus persicus (Regan) |
| Serranidae | Epinephelus fario (Thunberg) |
| | Epinephelus tiauvina (Forskal) |
| | Serranus carbilla (Linn) |
| Mullidae | Upeneus vittatus (Forskal) |
| | Upeneus sulphurus (Cuv. & Val) |
| | Upeneus bensasi (Schlegel) |
| | Mulloidichtys auriflama (Forskal) |
| | Upeneus tragula (Richardson) |
| Leiognathidae | Leiognathus bindus (Cuv. & Val) |
| Gerridae | Gerres rappi (Barnard) |
| Nemipteridae | Nemipterus japonicus (Bloch) |
| | Nemipterus marginatus (Cuv. & Val) |
| Pomadasyidae | Rhonciscus striatus (Gilchrist & Thompson) |
| | Rhonciscus stridens (Forskal) |
| Scolopsidae | Scolopsis ghanam (Forskal) |
| | Parascolopsis eriomma (J. & Richardson) |
| Caesiodidae | Caesio caerulureus (Lacepede) |
| Pomacentridae | Pomacentrus jerdoni (Day) |
| Sparidae | Argyrops spinifer (Forskal) |
| | Argyrops flamentosus (Val) |
| | Crenidens (Forskal) |
| | Diplodus annelareus (Linnaeus) |
| Labridae | Cheilinus trilobatus (Lacepede) |
| Scomberomoridae | Scomberomorus commersonii (Lacepede) |
| Platycephlidae | Platycephalus indicus (Linnaeus) |
| | Platycephalus tuberculatus (Cuv. & Val) |
| | Platycephalus pristis (Peters) |



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TABLE VII-6 (Continued)

FISH FAUNA IN THE GULF OF SUEZ

AND NORTH-WESTERN PART OF THE RED SEA

| Family | Scientific Name |
|---|---|
| Triglidae | Lepidotrig a longipinnis (Alcock) |
| Aluteridae | Alatera monoceros (Linn) |
| Tetraodontidae | Lagocephalus suezensis (Clark & Gohar) |
| | Lagocephalus lunaris (Bloch & Schneider) |
| Scorpaenidae | Dendrochirus brachyterus (Cuv.) |
| | Apsistus carinatus (Bloch) |
| Carcharinidae | Galeocerda cuvier (Leseur) |
| | Eulamia melanoptera |
| Sphyrnidae | Sphyrna zygaena (Linnaeus) |
| Trygonidae | Dasybatis sephon (Day) |
| Torpedinidae | Narcine bunnea (Annadale) |
| Clupeidae | Sardinella melanura (Guvier) |
| | Sardinella jussieu (Lacepede) |
| Dussumieridae | Dussumieria productissina (Chabanaud) |
| | Sprateloides gracilis |
| Engraulidae | Stolephorus heterolobus (Rupp.) |
| Chirocentridae | Chiro centrus nudus (Swaison) |
| Congridae | Conger cinereus (Ruppel) |
| Belonidae | Belone hians (Valenciennes) |
| | Tylosurus crocodilus (Lesseur) |
| Fistularidae | Fistularia petimba (Lacepede) |
| Syngnathidae | Hippocampus kuda (Bleeker) |
| Gadidae | Bregmaceres maeclellandii (Thompson) |
| Holocentridae | Holocentrus sammara (Forskal) |
| | Holocentrus caudimaculatus (Ruppell) |
| Sphyraenidae | Sphyraena picuda (Bloch) |
| | Sphyraena longsar (Bleeker) |
| Mugilidae | Mugil specie |
| Atherinidae | Pranosus duoacimeles (Valenciennes) |
| Champsodontidae | Champsodon Sp. |
| Theraponidae | Autistres puta (Cuvier) |
| | Therapon Jarbua (Forskal) |
| Priacanthidae | Cookeslus boops (Schneider) |
| Apogonidae | Apogonichthys ellioti (Day) |
| | Apogon septemstriatus (Gunther) |
| Sillaginidae | Sillago sihama (Forskal) |
| Carangidae | Trachurus sp. |
| | Decapterus russellii (Ruppell) |
| Rachycentridae | Rachycentron canadus (Linnaeus) |

TABLE VII-6 Continued)

FISH FAUNA IN THE GULF OF SUEZ

AND NORTH-WESTERN PART OF THE RED SEA

| Family | Scientific Name |
|---|---|
| Coryphaenidal | Coryphaena hippurus (Linnaeus) |
| Lutianidae | Aprion sp. |
| Plectorhynchidae | Pseudopristipoma nigra (Cuvier) |
| | Diagramma sp. |
| Lathrinidae | Lethrinus variegatus (Valenciennes) |
| | Lethrinus nebulosus (Forskal) |
| Pomacanthidae | Pomacanthodos sp. |
| Chaetodontidae | Linophora auriga (Forskal) |
| Scaridae | Callyodon sp. |
| Siganidae | Siganus siganus (Gunther) |
| Acanthuridae | Ctenochaetus strigosus (Bennet) |
| | Zebrasoma sp. |
| Scombridae | Scomber colias (Gmelin) |
| | Rastrelliger kanagurta (Guvier) |
| Thunnidae | Katsuwonus pelamis (Linnaeus) |
| | Euthynnus affinis (Cantor) |
| Histiophoridae | Histiophorus gladius (Broussonet) |
| Trichiuridae | Trichiurus lepturus (Linnaeus) |
| Scorpaeridae | Apistus carinatus (Bloch) |
| | Pterois antenattus |
| Pleuronectidae | Pleuronectes sp. |
| Soleidae | Solea sp. |
| Balistidae | Pseudobalistes fuscus (Bloch) |
| | Balistes sp. |
| Ostraciontidae | Tetrosomus gibbosus (Linnaeus) |
| | Ostracion cubicus (Linnaeus) |
| Diodontidae | Dioden hystrix (Linnaeus) |
| Lagocephalidae | Lagocephalus sceleratus (Forster) |
| | Lagocephalus lunaris (Bloch & Schneider) |

Sources: Bayoumi, A.R., "Recent Biological Investigations in the Red Sea along the A.R.E. Coasts," Bulletin of the Institute of Oceonography and Fisheries, pp. 159-183.

"Results of the Soviet Fishery Research in the Northwestern Port of the Red Sea," Ministry of Fisheries, U.S.S.R., Volumes I & II, Kerch, 1966.

Cited in Parsons Brinckerhoff International, Port of Suez: Rehabilitation and Modernization of Existing Facilities, Appendix B, 1978.



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Suez Governorate was evacuated, and it was not until mid-1974 that resettlement was permitted. At that time, an initial rapid inflow of ex-Suez area residents occurred, with the population increasing from 8,000 to 65,000 between June and September 1974. The number of residents in late 1975 was estimated to be in the vicinity of 170,000.

Since that time, the Suez area population has experienced more stable--and slightly less than predicted--growth. Estimates for 1979 indicate population was between 225,000 and 250,000. While Suez is thus at or approaching its maximum size before the 1967 war, it has apparently not kept pace with projections made in the Suez Master Plan of 1976, which predicted a population of 300,000 by 1980.

According to the Suez Master Plan, the population of Suez and surrounding adjacent settlements is projected to reach one million persons by the year 2000. Between 1978 and that time, its share of the national urban population will have increased from 1.1 percent to 2.6 percent, assuming a natinal urban population of 38 million by 2000 AD.

Employment and the Economy. The existing total resident labor force in the Suez area is estimated to be in excess of 80,000 persons, or approximately one-third of the area's population. Of this, about 9,800 persons are employed in the formal manufacturing sector (defined as comprising activities employing more than ten persons). Major employers include the oil refineries, fertilizer company, and shipbuilding activities.

Outside of the formal manufacturing sector, primary employment sources include canal transportation services, fishing, import/export activities, government, commerce, and personal services. By far the largest employer in recent years has beeen constituted by construction and rebuilding, which in 1975 accounted for some 27,000 workers. Most of these tend to be transitory; according to the Suez Master Plan, of the 27,000 only 7,000 were believed to be local residents with families in Suez.

Social Services and Housing. Offices for all major government ministries are in Suez city. Educational facilities for primary and secondary levels exist, although these are presently overcrowded. University facilities are planned for the future. The city presently has one government and two private hospitals, although these are considered insufficient to serve the existing population.

Recreation facilities are adequate, and include various social clubs, a sports stadium, parks and open space, and beaches to the west and southwest of Suez. A marina and supportive facilities are planned in the Suez Creek area, near the southern entrance of the Suez Canal.

After severe damage of the housing stock during the hostilities a massive reconstruction program was undertaken by the Ministry of Housing and Reconstruction. Most of the damaged buildings have now been restored, and additional housing has been provided in new communities

such as Faisal City and the Tradesmen's Housing. A dwelling shortage still persists, however, and the area's larger companies have been forced to provide their own housing for employees.

Transportation. The Suez area is well served by road, rail, and water transportation. The newly four-laned highway from Suez to Cairo provides access to Cairo International Airport within two hours' drive. The regional road system also connects Ismailia to the north and the oil operations to the south, although this latter road is in need of resurfacing and realignment. The Hamdy Tunnel located 10 km to the north of Suez will provide ready road access to the Sinai and adjacent neighboring countries when completed in 1980. Within the city of Suez, there is a limited network of good roads. Modes of transportation are by bus, car, truck, wagons and carriages, bicycle, and by foot.

The railway system provides transportation to Ismailia, Cairo, and local service to the south. The Suez-Cairo line is presently unsuitable for heavy freight traffic, however, because of steep gradients.

The most important transportation mode with regard to commerce and the prosperity of the region is the Suez Canal, which links Mediterranean ports with the Red Sea and markets to the south. The Suez Canal Authority is currently undertaking a massive, two-stage development program to widen, deepen, and straighten the canal in order to allow the passage of VLCCs (very large crude carriers).

The proposed site is currently served by both road and rail, and is within 6 km of the port of Adabiya.

Utilities. At the outbreak of the 1967 war, the Suez power system had just been augmented by a 100 MW steam station fueled by petroleum coke, and interconnected with Cairo by a double circuit 220 kv line. The station received severe war-time damage, however, in addition to corrosion in the sea water cooling plant. After an 11-year stoppage, the station has been restarted. In addition, a 13.5 MW gas turbine unit has recently begun operation.

The foundation stone of a new thermal power plant was laid in February 1980. Eventually designed to provide 600 MW, the plant's first stage supplying 300 MW will be completed in March 1982. The plant is intended to supply power to the city's surrounding petroleum and industrial companies, as well as the proposed Adabiya Industrial Free Zone.

At the existing power generating station, power leaves the plant at 220 kv to substations which drop it to 66 kv. It is then dropped further to 11 kv for transmittal to the user or distribution network. Distribution lines currently transverse the proposed site, and a new larger 11 kv line is being run through the site parallel to the existing lines.

As mentioned in a previous section (Water Supply), the only major existing source of potable water is from the Nile River which is brought via Sweetwater canals via Ismailia. The water treatment plants' current

capacity of 60,000 cubic meters/day is being increased initially to 100,000 cubic meters/day, and subsequently in a second phase to 215,000 cubic meters/day. The latter phase is planned to be completed in approximately two years (Pirnie-Harris International: Volume 3, 1979, p. I-3).

A 400 millimeter (16 inch) cement asbestos water main is located in the existing right-of-way transversing the proposed industrial free zone site from north to south. This main terminates at Ataka Harbor. Pressure is 30 meters leaving a net head of 20 meters. The line is currently being supplemented by an 800 millimeter main.

As with the other engineering infrastructures in the Suez region, wastewater facilities incurred considerable damage during the recent hostilities. Since 1974, work has proceeded to rehabilitate and expand the existing system. The 1979 Water and Wastewater Facilities Master Plan provides for phased development of the wastewater facilities to effectively dispose of 317,800 cubic meters/day by the year 2000.

At present, there is no existing sanitary sewerage system available in the vicinity of the proposed site.

Solid wastes in the Suez area consist of garbage and other household refuse, as well as a range of commercial, industrial and agricultural wastes, wastewater, and treatment sludges. Collection of refuse is on an informal basis, since municipal collection services are not provided. Disposal of non-salvageable items is on vacant land, although some farmers will accept refuse in order to burn and use it for soil enrichment.

All telecommunications facilities are old, poorly housed, and are limited in their capacity for expansion. The present telephone service has a 2,000 line automatic exchange, with manual connections for direct trunk calls. The teleprinter service is very limited. The Suez Master Plan indicates that a new 4,000 line automatic exchange and a 250 line telex terminal should be provided by 1981.

Land Use. Suez City has grown in an uncoordinated fashion, primarily along the main road and rail axis towards Cairo. The structure of the city is not coherent, and no clearly defined commercial focus exists. Residential areas frequently border communication routes.

The area of Port Ibranim and Port Tawfik are located immediate southwest of the city. The central portion of the city's bay waterfront is dominated by oil refinery and storage plants. To the city's west, a large industrial complex is developing, which includes the fertilizer plant and the nearby completed textile spinning plant. Major new residential development has occurred to the north and northwest of the old city, and it is in this sector that the Suez Master Plan envisages further housing expansion.

The proposed Adabiya site is currently uninhabited. Its southern segment contains commercial ruins in a very dilapidated state.

Immediately to the south of the proposed site lies Ataka Harbor, which serves a small fishing fleet and offers limited warehousing. The workers associated with Ataka Harbor's operations reside in Suez City.

Historical/Archeological. The only archeological excavations in the general region were undertaken in the early 1930s by Bernard Bruyere in the Qalzam area in Suez City (cited by Pirnie-Harris International, 1979, p. 3-8). Suez was an important site in the ancient world, both as a military fort and trading post, from pre-Hellenic times to the end of the Turkish domination. No archeological finds are known to have occurred in the vicinity of the proposed site.

Visual Quality. The surrounding visual quality of Suez City is high, with the Gebel Ataka rising steeply on its western flank and the blue stretches of Suez Bay to its south. The older portions of the city itself, however, show distinct signs of decay. Progress has been made, however, in reconstruction of dwellings and salvaging of sunken ships since the end of the hostilities. The mixed land use of the region, with heavy industries in close proximity to the bay, lowers the overall visual quality. The area of the proposed action is typical of the western coastline of the bay, and offers no outstanding aesthetic appeal.

## FUTURE SETTING WITHOUT THE PROPOSED SITE

The Government of Egypt's stated intentions are for the city of Suez to expand at a rapid rate to become a major urban center of one million inhabitants by the year 2000. This population will derive its living primarily from increased shipping and commercial activities associated with the Suez Canal, an enlarged administrative sector, mineral extraction, and an expanded industrial base. In addition, the Gulf of Suez area in general is anticipated to cater to increased tourism activities.

Major recent industrial growth has occurred to the west of Suez and southwards along the western side of the Bay of Suez and it is likely that this growth pattern will continue in the future. To the south, construction of a cement plant capable of producing one million tons per annum is currently underway at Okeida, near El Sadat. Ain Sukhna serves as a terminal for the Suez-Mediterranean pipeline (SUMED), and has associated storage and terminal facilities. This site will also serve as a base for oil and gas field services as well as the construction of offshore oil rigs. The proposed Adabiya Free Zone site is located along this industrial growth axis. The Suez Master Plan demarcates the general site area as a heavy manufacturing free zone. Should the proposed action not occur, it is probable that the land would be utilized for the future expansion of other industrial activities.

The City of Suez would continue to grow without the proposed project. The creation of an estimated 8,400 manufacturing jobs and 7,800 indirect jobs created by the proposed action, however, would not occur. Unless other industrial activities or employment sectors expanded sufficiently to offset these jobs, a potentially important employment base would be lost to the Suez region.



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## RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS

The 1976 Suez Master Plan has been accepted by the Government of Egypt as the overall policy for current and future development of the Suez area. The proposed project is consistent with the findings of the Suez Master Plan, and its site would be in the vicinity of that proposed by this Master Plan for the development of a heavy manufacturing free zone. The creation of industrial activities and associated employment resulting from the proposed action are also consistent with the Suez Master Plan's stated objectives of increasing socioeconomic vitality and broadening the economic base of the Suez region through increased industrial growth.

## IMPACTS OF THE PROPOSED ACTION

### Physical Systems

Topography. The topography of the site area is nearly flat, ranging from two to three meters above sea level. The surface of the general area comprises sandy beach material and granular fill which overlie reworked clay at depths not exceeding 1.5 meters (Suez Master Plan, Draft Appendices, August, 1975). No indications of soil erosion are evident which would significantly impact the construction of the infrastructures required.

Because of the general uniformity of the topography, land disturbance and dumping during site excavation should be minimal. The higher topography of the western edge could be utilized to advantage in infrastructural layout without any major modifications. The proposed site is adjacent to both road and rail transport, and utility networks (electricity, water, and wastewater treatment) either exist or are planned in the next few years within the site's general vicinity. Thus, no major off-site excavation or other land disturbance relating to the free zone is envisaged.

Air Quality. Air quality in Suez has been recently studied by Institut Ecoplan (Suez City Air Quality Study, April, 1979) for the Ministry of Development and New Communities. In general, the study found meteorological conditions to be favorable for dispersion of pollutants. Prevailing winds are from the north or northwest for 70 percent of the time, and calms and stagnant conditions are rare. The location of major industrial sources affect existing residential areas upwind. The study further concluded that, specifically, the proposed Adabiya Industrial Free Zone would comprise only a minor pollution risk with relation to Suez City, although certain export processing industries could generate very specific emissions (pp. 4.19-4.20) that may need monitoring and control. These emissions were not identified in the study.

No human occupation presently occurs on the proposed site and the general area is sparsely populated other than for daytime workers of a small fishing port (Ataka) within one kilometer south of the proposed

free zone boundary. A certain increase in air pollution may be experienced in this area, especially in the form of dust pollution during the construction phase.

In addition, an increase in vehicular traffic and the short-term use of construction equipment would increase the general levels of carbon monoxide, hydrocarbon, nitrogen oxide, and sulfur. Because of the prevailing winds and the sparsely populated nature of the surrounding environment, no significant adverse impact is considered likely.

Noise Pollution. An increase in noise levels would occur from on-site construction as well as from normal operation of the free zone activities. Because of the level topography of the site, however, the need for excavation blasting would be minimal. Increased vehicular traffic noise would also occur, both during construction and as a result of operations, although most of this traffic would not be routed through the major residential areas of Suez.

Water Quality. In view of the potential wide range of industrial activities that could occur at the proposed industrial free zone, it is impossible to accurately determine the future type or quantity of contaminants, such as industrial residues and other by-products, that could be subject to land disposal. Although shallow groundwater lenses (most of brackish nature) are known to exist along the western shore of the Gulf of Suez, their presence in the site area could not be determined because of the declared existence of land mines. Land disposal, especially of industrial residues, would need to be carefuly monitored and controlled should the proposed action occur, and the existence of groundwater be further explored, when feasible, to prevent any potential pollution of these resources.

Aquatic Environment. The ongoing development of the Suez area as a major industrial center (and of which the proposed free zone would comprise an important element) at the northern extremity of the Gulf warrants serious attention to the potential risk of environmental degradation of local marine resources. Suez Bay offers a limited pollution threshold for the discharge of sewage, oil, and industrial effluents, and is already polluted to a certain extent from these sources. Of particular concern to an industrial free zone operation would be the control of disposal of untreated industrial residues into the bay. These contaminants, in conjunction with those from other existing and planned industrial activities as well as from oil tanker traffic, would have a serious, adverse impact upon the bay's resources. The industrial free zone would utilize on-site wastewater facilities prior to disposal of any wastewater. The disposal would be used for on-site green area irrigation.

Terrestrial Environment. Many of the rarer avian species in the Suez region are not tolerant of human activities. Although presently undeveloped, the proposed site is located in a busy coastal area, where intensive military operations have only recently ceased, and where industrial and quarrying activities already exist. It is doubtful,



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therefore, that an industrial free zone operation would contribute in any major way to the probable continuing depletion of some of these species in the general Suez area.

The proposed site provides no natural habitat for any of the rarer species of mammals that exist or may exist in the Suez area. In addition, no land features such as wadis that are known to harbor plant species that are apparently unique to the Suez coastal area are evident on the site, or within its immediate vicinity, and the site is almost totally devoid of vegetation. In summary, it appears improbable that any known terrestrial biota would be significantly affected by the physical alteration of the proposed site or subsequent industrial free zone operations.

Socioeconomic Systems

Population. Before the outbreak of hostilities in 1967, Suez City was a thriving community with an estimated 1966 population of 235,000. With the extensive demolition of the city and Port Tawfik, an almost complete exodus of population occurred, and it was not until 1974 that former residents began returning in large numbers. By 1975, the area's population had reached 150,000, and its growth is envisaged to be rapid, with the Suez Master Plan projecting a total population of approximately one million persons by the year 2000. The area, therefore, has exhibited little demographic stability over the past decade, and will not experience such stability in the years to come.

Construction activity at the free zone will generate a temporary influx of population to the area. It is estimated that between 200 and 300 laborers would be required in the initial construction phase of 18 months during the period 1981-82. It is highly improbable that many of these laborers would bring their dependents with them. In order to estimate a miximum population impact figure, however, it was assumed for the sake of analysis that all free zone related employees--in manufacturing, administration, and temporary construction--would have dependents. Using household size estimates contained in the Suez Master Plan, the total related population is derived below.

| Period | Average Work Force | Household Size | Total Population |
|---|---|---|---|
| 1981-1985 | 873 | 4.4 | 3,840 |
| 1986-1990 | 3,660 | 4.2 | 15,370 |
| 1991-1995 | 6,980 | 4.0 | 27,920 |
| 1996-2000 | 8,385 | 3.9 | 32,700 |

It cannot be assumed, however, that the proposed free zone would serve as a magnet to attract all the associated work force and population from areas outside of the study region. There is evident unemployment and underemployment in Suez today, and a benefit of the free zone would be to increase employment for the existing labor force. It is



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anticipated that the free zone by itself would attract skilled labor from other areas only on a gradual basis so that its impact on additional population to the Suez area would be as shown in Table VII-7.

Assuming that the total population for the Suez area of one million persons by the year 2000 is realized, the additional population related to free zone activities would represent approximately 1 percent of the total 750,000 additional population that is anticipated to reside in the area within the next 20 years. Because of the small magnitude of this proportion, it is expected that no significant population impact arising from the proposed project would occur. No relocation of population would be necessitated by the proposed action.

Employment and the Economy. The proposed action would have a positive impact upon the regional economy in the form of increased employment and wages, as well as further diversifying the economic base of the region.

As noted in the previous section, direct employment related to the free zone would increase from 873 jobs at its inception in 1981 to 8,385 jobs by the year 2000.

In addition to direct employment, indirect jobs would be created. By producing goods in the free zone which use Egypt's resources, the free zone encourages other local industry to expand output. Expansion of output eventually requires additional labor input. Using a World Bank staff paper as a guide (The Employment Impact of Investment: A Preliminary Report; Working Paper No. 225, June, 1977), it is estimated that about 1.5 offsite jobs would be created within Egypt as a whole for every industrial job. As only 61 percent of Adabiya Free Zone industry purchases are anticipated to be local purchases, a ratio approximating one outside job for every one on-site industry job results. Eventually, therefore, some 7,800 indirect jobs might be created in Egypt serving to produce support goods or to distribute finished goods. At LE 3 per day, this employment represents wages of LE 5.85 million per annum. It is anticipated that a significant portion of the indirect employment created would benefit the Suez regional economy.

No relocation or interruption of existing economic activities would be necessitated by the proposed action.

Social Services and Housing. The impact of the additional projected project-related persons upon the area's social services needs to be analyzed in context of the overall development strategy for the areas as a whole. The proposed new Suez City will encompass 80 square kilometers, and will require an annual construction labor force of about 50,000 for its completion. A massive reconstruction program has already begun, with the restoration or replacement of damaged buildings and the construction of new housing communities such as Faisal City and the Trademen's housing. Even so, an additional 8,000 new housing units will need to be constructed each year for the remainder of this century. According to the 1976 Suez Master Plan:



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TABLE VII-7

PROJECTED ADDITIONAL POPULATION IN SUEZ REGION

DIRECTLY ASSOCIATED WITH THE PROPOSED ACTION

1987 - 2000

| Period | Average Work Force | Work Force From Local Population (%) | Incoming Work Force | Household Size | Added Population |
|---|---|---|---|---|---|
| 1981-1985 | 873 | 90 | 87 | 4.4 | 384 |
| 1986-1990 | 3,660 | 80 | 557 | 4.2 | 2,341 |
| 1991-1995 | 6,980 | 70 | 996 | 4.0 | 3,984 |
| 1996-2000 | 8,385 | 60 | 562 | 3.9 | 2,192 |
| Total | | | 2,202 | | 8,901 |

Source: Reynolds, Smith and Hills, 1980.

The present and next generation of Suez inhabitants will live in an environment where constant change and massive construction activity are features of everyday life.

Within this overall "boom town" context, the proposed project's impact would be relatively insignificant in terms of associated housing and services demand. Since the free zone would be in easy commuting distance (8 km) of Suez City, it is anticipated that employees would reside within the city and occupy housing that is already constructed or is planned.

As addressed in a previous section (Air Pollution), the location of the free zone to the southwest of Suez would minimize any adverse impact of pollution on residential areas. The proposed activity would, however, affect beach-oriented recreation activities within the immediate area, necessitating the use of other beaches further from Suez City. No beaches of above average quality for the region are located within the proposed action's general vicinity.

Transportation. An adverse impact would occur because of an increase in heavy-duty traffic on the Suez-Zafarene Road and the proposed Suez Ring Road. Most of the traffic would not affect conditions within Suez City itself, other than for the movement of goods and raw materials via Port Ibrahim and Port Tawfik. The proposed expansion of Port Adabiya for containers and bulk cargo handling would direct a significant proportion of free zone-related traffic away from Suez City toward an area south of the free zone.

A minor disruption of traffic on the existing roadway and railroad adjacent to the free zone would occur during the construction phases, as heavy equipment entered and left the site. Also, increased passenger traffic along the roadway would result during normal project operation because of employee commuting. At present, it is estimated that about 6 percent of households in the area own cars, and the Suez Master Plan projects that this proportion will increase to 14 percent by the year 2000. Assuming that the latter figure is more indicative of free zone employees because of projected higher-than-average earnings, private automobile traffic is estimated to be an additional 122 cars by 1985, and approximately 1,200 cars by the year 2000. Since it is common practice for major companies to provide their own employee transportation, however, it is probable that private employee traffic would, in realty, be less than these figures. Also, although presently in poor repair, the Suez-Zafarene Road is scheduled to be improved and realigned at some future time.

Should investors require rail transportation during normal operation, additional sidings, loading and unloading facilities would be required to serve the free zone site.

Utilities. The existing 11 kv electrical distribution lines that transverse the site are insufficient to provide the needs of the proposed



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free zone. It is apparent that the Free Zone Sector of the General Authority for Investment and Free Zones would be required to contribute to the cost of the construction of a new distribution line from a presently available source approximately 7 km to the north.

The new thermal power plant, which is under construction, will supply 300 MW to the region by March 1982. Its planned service area includes the proposed Adabiya Industrial Free Zone, and it is assumed that prior planning will meet the free zone's power needs.

The quantity and pressure available from the existing 400 millimeter water main that transverses the site is marginal for the first phase of development of the Adabiya site. Therefore, the Free Zone Sector would be responsible for paying additional costs relating to additional piping installations from a new pumping station currently under construction approximately 13 km north of the site.

During the preparation of this report, it was found that the Suez Cement Company (SCC) will construct a separate 800 millimeter water main for their site approximately 30 km south of the proposed free zone. This main could also provide the free zone with up to 4,000 cubic meters/day. Completion of the pipeline will be by 1982.

If any industry situated in the free zone required more work than the two lines could supply, the water supplier (Suez Canal Authority Water Distribution Department) would install additional service at the expense of the owner.

Other alternative sources of supply for the site plant include groundworks and desalinized sea water. Groundwork sources appear to be inadequate for supplying site operating quantity requirements. It is also quite possible that any significant groundwater supplies found would be high in dissolved solids, thus requiring expensive and sophisticated desalination technology such as reverse osmosis, electrodialysis or distillation. The applicability of desalination of sea water is similarly constrained.

Since there is presently no sanitary sewerage system in the vicinty of the proposed site, the development of the free zone would require an initial investment in waste collection facilities during the first phase of construction. However, an off-site waste treatment plant is included in the Suez Master Plan, and there are plans for its construction approximately 1 km north of the proposed free zone site. A 350 millimeter force main from an on-site pumping station would convey sewerage to the new plant. Investors would be required to install necessary equipment to pretreat toxic industrial wastes.

Since the proposed project is flanked on its western side by large expanses of desert which presently are used only for military maneuvers, the disposal of non-toxic solid waste poses no foreseeable problems. Disposal of solid toxic wastes would be the responsibility of the



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investor, as prescribed by Egyptian law and in concurrence with the free zone's administrative policy.

Land Use. The execution of the project is consistent with the area's existing land use plans. The proposed action would significantly alter existing land use of the site, however, which is currently wasteland, and transform it into industrial use.

Historical/Archeological. No archeological or historic finds are known to have occurred in the general site area, and given its present-day characteristics and distance from Suez City, it appears improbable that any site of significance would be located within its near proximity.

Visual Quality. The generally unspoiled nature of the proposed site would be significantly altered with the introduction of industrial activities. The construction of the free zone, however, would necessitate the clearance of unsightly industrial ruins located in its southern area. Overall, it is anticipated that the proposed action would have an adverse impact upon the vicinity's existing aesthetic quality.

## POTENTIAL MITIGATING MEASURES

The major areas for concern with an industrial free zone operation are the emission of air pollutants, wastewater disposal, and solid waste disposal. The free zone would be located in a favorable position downwind of major existing and planned residential areas. The study undertaken by Institut Ecoplan (1979) indicated that the long-term concentration of sulfur dioxide emanating from industrial activities (including the proposed free zone) will always be low. It did suggest, however, that short-term pollution episodes were possible when winds blew pollutants across Suez City, and that in some cases pollution from various sources could exceed 24-hour average standards. If a major source of sulfur dioxide emittance did locate in the free zone, its impact over these infrequent short periods could be mitigated by the provision of smoke stacks.

The infrastructural costs outlined in the main report include the provision of adequate sewage and industrial effluent treatment facilities, which would minimize the danger of untreated wastewater resources. The 1979 study by Pirnie-Harris International suggested several means of disposing secondary treated industrial wastes. If discharged into the bay using optimum diffusion, the resulting BOD level would be acceptable, and could in fact prove an asset to the bay by increasing nutrients for fish production. This method of disposal appeared feasible and convenient, and could be undertaken by a single wastewater treatment plant and outfall extending approximately 2 km out from the shoreline to a bottom depth of about 15 m. The preferred treatment plant is in the general vicinity of the proposed free zone.

Another solution suggested by Pirnie-Harris International was that of transporting the treated wastewater beyond the bay to the Gulf of Suez. In this instance, the degree of treatment required should be less.

A rising main from the treatment facilities to south of Ras El Adabiya--a distance of 10.5 km--would be needed to convey the treated wastewater to an outfall that would extend 3 to 4 km into the Gulf to a depth of 40 m.

Of particular relevance to a free zone operation, the study also suggested the use of treated wastewater for the purpose of irrigation. In an arid region such as Suez, this source of water could be advantageously used for the purpose of landscaping within the free zone, especially since the associated plants would not be used for human consumption. This option has formed the basis for the engineering costs established in Chapter IV of the analysis.

As recommended in the 1976 Suez Master Plan, however, an environmental analysis should be undertaken for every major industrial project in the proposed Adabiya Industrial Free Zone so as to ensure that no particular pollutant adversely affects the surrounding environment. Secondly, continuous monitoring of industrial activities should be undertaken based upon defined standards, with enforced regulation.

The current provisions at existing free zones may be described as inadequate. According to conversations held with Free Zone Sector personnel, each local Free Zone Board of Directors conveys the impression to potential investors that anti-pollution measures are required. Any arrangement made by the Board and the investor are in verbal form only, and are not included in any formal written agreement.

Even if such anti-pollution measures were clearly stated in the agreement, their enforcement at best would be difficult under existing Egyptian legislation. The 1979 Institut Ecoplan study concluded that laws and acts are not effectively enforced and the administrative machinery to do so is lacking. No law in Egypt deals directly with the subject of environmental pollution, although laws are found in general public legislation which can be applied to specific cases. Law No. 93 of 1962, for example, regulates the disposal of wastewater into the sea, while Law No. 470 of 1971 sets standards for the outdoor environment of working places. The latter law, however, proscribes unreasonably low standards in an environment where dust levels are exceedingly high.

The use of World Health Organization (WHO) standards would be beneficial for an industrial free zone operation until other specific standards were formulated that applied more directly to the Suez area. These standards could be enforced under existing legislation--that of Law No. 359 of 1956, which applies to various industrial and workshop activities. This law authorizes each Governor to formulate inspection procedures, and gives him the power to close down totally or partially a work place or some of its operations if they present any danger to the public health. It is recommended that a nucleus team of specialists be assigned to the Governor's Office in Suez to help establish standards and monitor source pollutants not only relating to the proposed free zone but also other existing and proposed industrial activities within the area.



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## ALTERNATIVES TO THE PROPOSED ACTION

According to the 1976 Suez Master Plan and other subsequent studies mentioned in this section, the proposed project is located in a favorable position with regard to minimizing potential pollution in major residential areas. A location further north would increase the probability of such pollution, while any location further south would impose problems of work force availability because of increased commuting times. A site further west of the bay would necessitate high, and probably uneconomic, infrastructure costs to service the project.

The findings of the main report indicate that the proposed project appears to represent an opportunity for substantial advancement of the free zone concept in Egypt. The site has a strategic location and the entire sector in which it is located is due for substantial development activities. The alternative of not proceeding with the project would obviously negate any advantages that would accrue to Egypt or the region through the operation of this free zone.

## ADVERSE UNAVOIDABLE IMPACTS

The levels of air and noise pollution within the general vicinity of the site would increase, but not to the extent that a significant impact would occur. Likewise, although traffic along the Suez-Zafarene Road would increase, its magnitude would not result in a substantial adverse impact.

The only significant adverse impact that is identified would be a deterioration in the existing aesthetic quality of the site.

## SHORT-TERM USES VERSUS LONG-TERM PRODUCTIVITY

The utilization of the site as an industrial free zone would provide additional employment for the Suez region and help to diversify its economic base. The site's continuance as barren wasteland would contribute little, if anything, to the productivity of the region, other than as a future potential site for economic or other activities.

## IRREVERSIBLE/IRRETRIEVABLE COMMITMENT OF NATURAL OR CULTURAL RESOURCES

Construction of the free zone, entailing personnel and equipment, represents an irreversible and irretrievable commitment of resources. Similarly, the investment and materials used to construct infrastructures serving the free zone would be irretrievably committed.

## BENEFITS TO HOST AND DONOR NATIONS

The "Open Door" Economic Policy was initiated to stimulate foreign investment for the express purpose of developing the Egyptian economy. Law No. 65 of 1971 was passed to initiate the new foreign investment policy, and was replaced by Law No. 43 of 1974, as amended by Law No. 32 of 1977.



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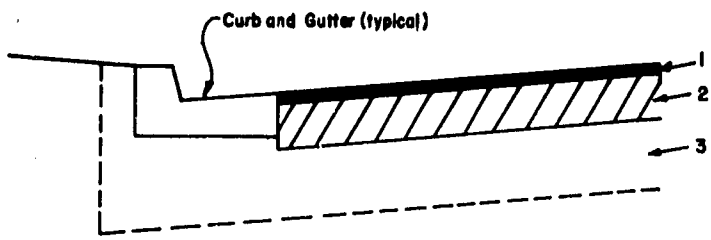
Free zone development has an important role within the overall "Open Door" policy. Free zones have the potential to significantly contribute to the Egyptian economy by creating jobs, attracting foreign investment, and by providing technology and training to Egyptians in the labor force. With support, the program will create private sector development support activity, and arouse interest in general for investment in Egypt.

With regard to the Suez area specifically, the Adabiya Industrial Free Zone would have a significant, beneficial impact upon the regional economy. By diversifying and enlarging the industrial base of Suez, the proposed action is in accordance with the national development policy of transforming the city into a major urban center by the end of this century.

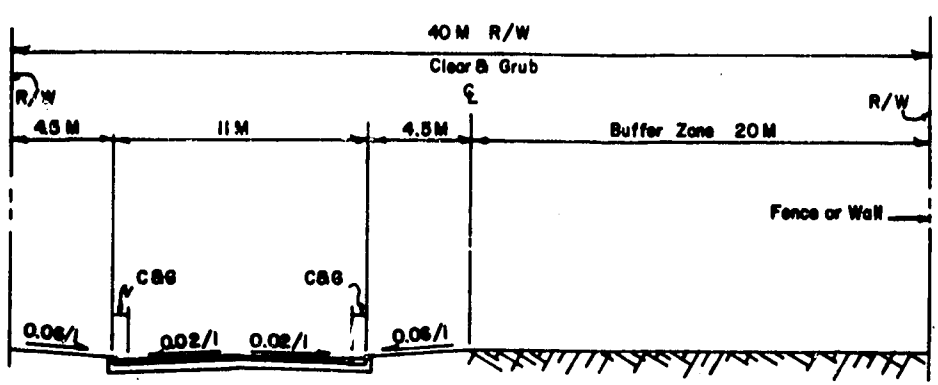
See
Maps
on
Fiche
5, 6, 7, 8, 9

APPENDIX 6




Area 1 - Asphaltic Concrete Surface
Area 2 - Aggregate Base
Area 3 - Stabilized Subgrade

PAVEMENT DESIGN




2-Way traffic - 1 lane each way with parking on one side (inside).
Utility strips on each side. Plus buffer zone on side with security wall.

PERIMETER ROADWAY

| | | |
|---|---|---|
| ADABIYA FREE ZONE | TYPICAL SECTIONS | REYNOLDS, SMITH AND HILLS<br>ARCHITECTS - ENGINEERS - PLANNERS |



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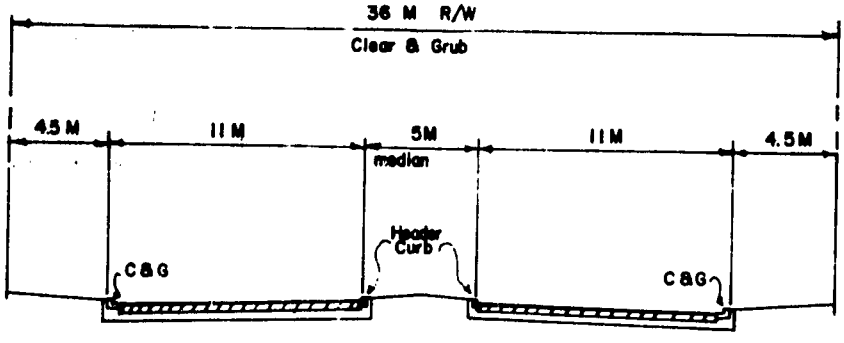
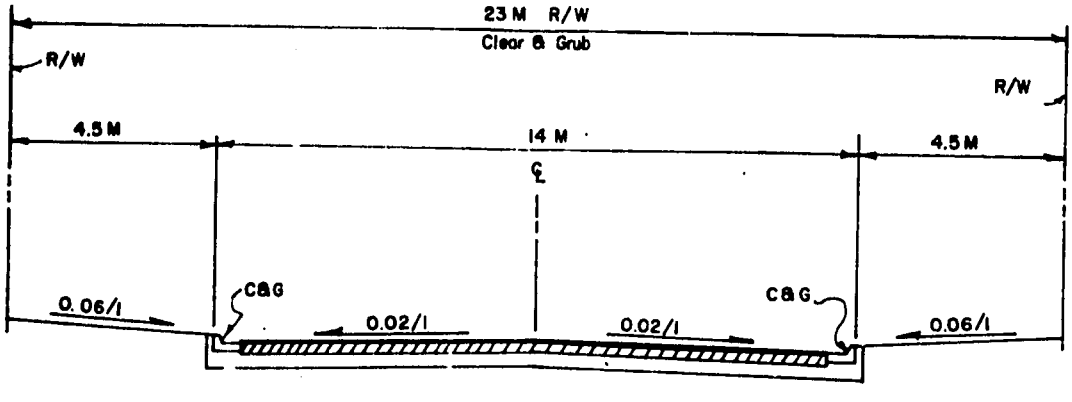
## APPENDIX 6




2-Way traffic - divided Roadway 2 lanes each way
1 parking lane each side (outside). Plus utility strips each side.

*COLLECTOR STREETS*




2-Way traffic - 1 lane each way with parking on both sides. Utility strips each side of roadway.

*LOCAL STREETS*

| | | |
|---|---|---|
| ADABIYA FREE ZONE | TYPICAL SECTIONS | REYNOLDS, SMITH AND HILLS<br>ARCHITECTS-ENGINEERS-PLANNERS |



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See map on
Fiche - 10

APPENDIX TABLE 8-1

CRITERIA FAVORABILITY RATINGS FOR POTENTIAL

INDUSTRIAL COMMODITIES AT ADABIYA

| SITC Code | Criteria 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Weight Criteria Total (A) | Total (B) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 2 | 3 | 3 | 3 | 4 | 4 | 3 | 4 | 4 | 1 | 170 | 162 |
| 02 | 2 | 3 | 3 | 4 | 3 | 4 | 4 | 4 | 3 | 3 | 178 | 170 |
| 03 | 2 | 5 | 3 | 4 | 5 | 5 | 2 | 4 | 4 | 1 | 178 | 187 |
| 042 | 3 | 5 | 1 | 4 | 5 | 4 | 5 | 4 | 4 | 4 | 199 | 204 |
| 05 | 3 | 5 | 3 | 4 | 5 | 4 | 4 | 4 | 4 | 3 | 205 | 208 |
| 06 | 3 | 4 | 2 | 4 | 3 | 4 | 5 | 4 | 4 | 4 | 195 | 194 |
| 074 | 5 | 4 | 3 | 4 | 4 | 2 | 5 | 5 | 5 | 2 | 210 | 205 |
| 075 | 3 | 4 | 3 | 4 | 4 | 2 | 3 | 5 | 4 | 3 | 182 | 182 |
| 111 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 213 | 208 |
| 112 | 2 | 2 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 5 | 189 | 180 |
| 122 | 4 | 3 | 4 | 3 | 4 | 2 | 5 | 4 | 4 | 4 | 211 | 191 |
| 233 | 3 | 1 | 3 | 3 | 4 | 2 | 3 | 3 | 4 | 5 | 176 | 168 |
| 24 | 2 | 5 | 2 | 3 | 4 | 1 | 5 | 3 | 3 | 3 | 166 | 165 |
| 25 | 3 | 1 | 2 | 3 | 2 | 1 | 3 | 3 | 3 | 5 | 142 | 147 |
| 263 | 3 | 5 | 3 | 5 | 4 | 4 | 3 | 4 | 4 | 1 | 182 | 192 |
| 264 | 1 | 5 | 3 | 4 | 4 | 2 | 3 | 4 | 4 | 1 | 162 | 162 |
| 266 | 2 | 3 | 3 | 3 | 3 | 2 | 3 | 4 | 4 | 2 | 159 | 148 |
| 267 | 2 | 3 | 3 | 3 | 3 | 2 | 4 | 4 | 4 | 2 | 168 | 153 |
| 273 | 2 | 4 | 2 | 4 | 5 | 5 | 3 | 4 | 4 | 1 | 175 | 186 |
| 278 | 3 | 4 | 2 | 4 | 4 | 3 | 3 | 4 | 4 | 4 | 178 | 188 |
| 281 | 2 | 1 | 3 | 3 | 3 | 4 | 3 | 3 | 3 | 4 | 164 | 152 |
| 282 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 2 | 156 | 139 |
| 29 | 3 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 5 | 1 | 195 | 187 |
| 323 | 5 | 4 | 3 | 4 | 4 | 2 | 3 | 2 | 4 | 4 | 183 | 193 |
| 33 | 5 | 1 | 2 | 4 | 2 | 4 | 5 | 2 | 2 | 5 | 164 | 174 |
| 34 | 5 | 1 | 2 | 4 | 2 | 4 | 3 | 3 | 2 | 5 | 150 | 166 |
| 42 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 205 | 201 |
| 43 | 4 | 3 | 3 | 4 | 4 | 4 | 2 | 4 | 4 | 5 | 191 | 197 |
| 51 | 4 | 2 | 3 | 3 | 2 | 4 | 5 | 3 | 3 | 5 | 181 | 174 |
| 52 | 5 | 1 | 3 | 3 | 2 | 4 | 2 | 3 | 3 | 5 | 156 | 161 |
| 53 | 3 | 2 | 4 | 4 | 2 | 4 | 5 | 3 | 3 | 2 | 174 | 163 |
| 54 | 3 | 2 | 3 | 4 | 2 | 3 | 5 | 4 | 3 | 3 | 178 | 163 |
| 55 | 3 | 3 | 4 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 202 | 181 |
| 56 | 3 | 3 | 2 | 4 | 2 | 4 | 4 | 3 | 3 | 5 | 162 | 173 |
| 57 | 3 | 2 | 3 | 2 | 2 | 3 | 2 | 4 | 3 | 2 | 142 | 127 |
| 58 | 4 | 1 | 4 | 4 | 2 | 3 | 5 | 3 | 3 | 5 | 196 | 175 |
| 59 | 3 | 3 | 3 | 3 | 2 | 3 | 5 | 3 | 3 | 4 | 179 | 162 |



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APPENDIX TABLE 8-1 (Continued)

CRITERIA FAVORABILITY RATINGS FOR POTENTIAL

INDUSTRIAL COMMODITIES AT ADABIYA

| SITC Code | Criteria 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Weight Criteria Total (A) | Total (B) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 611 | 2 | 5 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 1 | 186 | 180 |
| 612 | 4 | 4 | 4 | 4 | 3 | 4 | 3 | 4 | 4 | 2 | 181 | 184 |
| 62 | 4 | 3 | 5 | 4 | 4 | 3 | 5 | 3 | 3 | 4 | 217 | 208 |
| 63 | 2 | 3 | 4 | 4 | 3 | 2 | 4 | 4 | 4 | 3 | 185 | 168 |
| 64 | 3 | 3 | 4 | 4 | 4 | 2 | 5 | 3 | 3 | 5 | 203 | 190 |
| 651 | 2 | 5 | 5 | 4 | 5 | 4 | 3 | 4 | 4 | 4 | 217 | 206 |
| 652 | 3 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 3 | 222 | 208 |
| 653 | 2 | 5 | 4 | 4 | 4 | 3 | 4 | 5 | 4 | 3 | 204 | 192 |
| 656 | 2 | 4 | 5 | 4 | 4 | 3 | 4 | 5 | 4 | 1 | 203 | 180 |
| 657 | 2 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 2 | 166 | 159 |
| 658 | 3 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 4 | 2 | 233 | 214 |
| 659 | 3 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 2 | 224 | 209 |
| 661 | 4 | 3 | 2 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 210 | 218 |
| 662 | 3 | 4 | 2 | 5 | 4 | 3 | 5 | 4 | 4 | 3 | 193 | 201 |
| 663 | 3 | 3 | 3 | 4 | 3 | 3 | 3 | 4 | 4 | 4 | 180 | 177 |
| 664 | 3 | 3 | 3 | 5 | 4 | 4 | 3 | 4 | 4 | 4 | 193 | 199 |
| 665 | 3 | 4 | 4 | 4 | 3 | 4 | 5 | 4 | 4 | 4 | 215 | 198 |
| 666 | 4 | 4 | 4 | 5 | 4 | 3 | 3 | 5 | 4 | 1 | 193 | 193 |
| 667 | 3 | 3 | 4 | 4 | 4 | 2 | 3 | 5 | 4 | 1 | 180 | 170 |
| 67 | 3 | 1 | 3 | 4 | 2 | 3 | 5 | 2 | 2 | 3 | 161 | 149 |
| 68 | 3 | 1 | 3 | 2 | 2 | 3 | 3 | 2 | 2 | 5 | 149 | 133 |
| 69 | 4 | 2 | 4 | 4 | 2 | 3 | 5 | 3 | 3 | 5 | 198 | 179 |
| 71 | 4 | 1 | 4 | 3 | 1 | 2 | 5 | 3 | 3 | 4 | 178 | 148 |
| 721 | 4 | 2 | 4 | 4 | 2 | 3 | 4 | 3 | 3 | 3 | 179 | 164 |
| 722 | 4 | 1 | 3 | 4 | 1 | 3 | 4 | 3 | 3 | 3 | 161 | 149 |
| 723 | 4 | 2 | 4 | 3 | 2 | 3 | 4 | 3 | 3 | 2 | 172 | 151 |
| 724 | 2 | 3 | 4 | 4 | 3 | 3 | 5 | 4 | 4 | 2 | 194 | 173 |
| 726 | 4 | 2 | 5 | 3 | 2 | 3 | 4 | 4 | 4 | 2 | 193 | 161 |
| 727 | 4 | 2 | 4 | 4 | 2 | 3 | 4 | 4 | 4 | 2 | 185 | 167 |
| 728 | 4 | 2 | 3 | 3 | 2 | 3 | 5 | 4 | 4 | 2 | 182 | 162 |
| 73 | 3 | 1 | 4 | 4 | 1 | 2 | 5 | 4 | 4 | 2 | 177 | 148 |
| 74 | 4 | 2 | 3 | 3 | 1 | 2 | 4 | 4 | 3 | 2 | 155 | 137 |
| 751 | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 5 | 4 | 3 | 164 | 144 |
| 752 | 4 | 2 | 3 | 2 | 2 | 2 | 4 | 5 | 4 | 4 | 180 | 156 |
| 76 | 3 | 4 | 5 | 3 | 3 | 2 | 4 | 4 | 4 | 3 | 199 | 172 |
| 771 | 4 | 3 | 4 | 2 | 3 | 2 | 5 | 5 | 4 | 3 | 202 | 171 |



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APPENDIX TABLE 8-1 (Continued)

CRITERIA FAVORABILITY RATINGS FOR POTENTIAL

INDUSTRIAL COMMODITIES AT ADABIYA

| SITC Code | Criteria 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Weight Criteria Total (A) | Total (B) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 772 | 4 | 3 | 4 | 3 | 2 | 2 | 5 | 5 | 4 | 3 | 197 | 170 |
| 773 | 4 | 4 | 5 | 3 | 3 | 3 | 5 | 4 | 3 | 2 | 205 | 177 |
| 774 | 5 | 3 | 4 | 2 | 2 | 2 | 3 | 4 | 4 | 3 | 178 | 156 |
| 775 | 4 | 4 | 5 | 3 | 4 | 3 | 5 | 4 | 3 | 2 | 211 | 186 |
| 778 | 4 | 4 | 4 | 3 | 3 | 3 | 5 | 4 | 3 | 3 | 200 | 180 |
| 781 | 4 | 1 | 2 | 4 | 2 | 3 | 5 | 3 | 2 | 5 | 169 | 160 |
| 782 | 4 | 2 | 2 | 4 | 2 | 3 | 5 | 3 | 2 | 4 | 166 | 166 |
| 783 | 4 | 2 | 2 | 4 | 2 | 3 | 5 | 3 | 2 | 4 | 166 | 166 |
| 785 | 2 | 3 | 3 | 4 | 3 | 3 | 5 | 3 | 3 | 3 | 178 | 168 |
| 786 | 4 | 3 | 3 | 4 | 3 | 3 | 5 | 3 | 3 | 2 | 181 | 175 |
| 791 | 3 | 2 | 2 | 3 | 2 | 3 | 5 | 4 | 3 | 3 | 166 | 153 |
| 792 | 3 | 1 | 2 | 1 | 1 | 2 | 3 | 3 | 2 | 5 | 130 | 111 |
| 793 | 5 | 3 | 2 | 4 | 3 | 3 | 4 | 4 | 3 | 3 | 175 | 181 |
| 81 | 3 | 4 | 4 | 4 | 3 | 3 | 4 | 4 | 3 | 2 | 184 | 172 |
| 82 | 4 | 4 | 4 | 3 | 3 | 2 | 4 | 4 | 3 | 1 | 176 | 160 |
| 83 | 5 | 5 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 2 | 203 | 203 |
| 84 | 4 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 4 | 1 | 226 | 206 |
| 85 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 4 | 1 | 217 | 201 |
| 87 | 3 | 3 | 5 | 2 | 2 | 2 | 5 | 4 | 4 | 3 | 197 | 166 |
| 881 | 4 | 2 | 5 | 2 | 2 | 2 | 3 | 4 | 3 | 5 | 194 | 152 |
| 882 | 4 | 2 | 5 | 3 | 2 | 2 | 3 | 4 | 3 | 4 | 191 | 155 |
| 883 | 2 | 3 | 3 | 3 | 3 | 3 | 5 | 3 | 3 | 4 | 181 | 165 |
| 885 | 4 | 4 | 5 | 3 | 3 | 2 | 4 | 5 | 4 | 2 | 202 | 175 |
| 892 | 3 | 2 | 3 | 4 | 2 | 2 | 5 | 4 | 4 | 2 | 175 | 159 |
| 893 | 4 | 4 | 3 | 4 | 4 | 3 | 5 | 4 | 4 | 3 | 205 | 201 |
| 894 | 3 | 5 | 4 | 4 | 4 | 3 | 3 | 4 | 4 | 2 | 190 | 186 |
| 895 | 3 | 4 | 3 | 4 | 3 | 3 | 4 | 4 | 4 | 2 | 181 | 176 |
| 897 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 5 | 4 | 1 | 219 | 203 |
| 899 | 3 | 4 | 5 | 4 | 4 | 4 | 4 | 5 | 4 | 3 | 221 | 201 |

Source: Reynolds, Smith and Hills, 1979.



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APPENDIX TABLE 8-2

RELATIVE RANKINGS OF INDUSTRIES

| SITC | Method A | Method B | SITC | Method A | Method B |
|---|---|---|---|---|---|
| 658 | 1 (223) | 2 (214) | 042 | 28 (199) | 11 (204) |
| 84 | 2 (226) | 8 (206) | 76 | 28 (199) | 54 (172) |
| 659 | 3 (224) | 3 (209) | 69 | 30 (198) | 43 (179) |
| 652 | 4 (222) | 4 (208) | 772 | 31 (197) | 57 (170) |
| 899 | 5 (221) | 14 (201) | 87 | 31 (197) | 64 (166) |
| 897 | 6 (219) | 12 (203) | 58 | 33 (196) | 47 (175) |
| 62 | 7 (217) | 4 (208) | 06 | 34 (195) | 22 (194) |
| 651 | 7 (217) | 8 (206) | 29 | 34 (195) | 30 (187) |
| 85 | 7 (217) | 14 (201) | 724 | 36 (194) | 52 (173) |
| 665 | 10 (215) | 20 (198) | 881 | 36 (194) | 87 (152) |
| 111 | 11 (213) | 4 (208) | 662 | 38 (193) | 14 (201) |
| 122 | 12 (211) | 27 (191) | 664 | 38 (193) | 19 (199) |
| 775 | 12 (211) | 32 (186) | 666 | 38 (193) | 23 (193) |
| 074 | 14 (210) | 10 (205) | 726 | 38 (193) | 76 (161) |
| 661 | 14 (210) | 1 (218) | 43 | 42 (191) | 21 (197) |
| 05 | 16 (205) | 4 (208) | 882 | 42 (191) | 84 (155) |
| 42 | 16 (205) | 14 (201) | 894 | 44 (190) | 32 (186) |
| 773 | 16 (205) | 44 (177) | 112 | 45 (189) | 39 (180) |
| 893 | 16 (205) | 14 (201) | 611 | 46 (186) | 39 (180) |
| 653 | 20 (204) | 25 (192) | 63 | 47 (185) | 60 (168) |
| 64 | 21 (203) | 28 (190) | 727 | 47 (185) | 63 (167) |
| 656 | 21 (203) | 39 (180) | 81 | 49 (184) | 54 (172) |
| 83 | 21 (203) | 12 (203) | 323 | 50 (183) | 23 (193) |
| 55 | 24 (202) | 37 (181) | 075 | 51 (182) | 36 (182) |
| 771 | 24 (202) | 56 (171) | 263 | 51 (182) | 25 (192) |
| 885 | 24 (202) | 47 (175) | 728 | 51 (182) | 72 (162) |
| 778 | 27 (200) | 39 (180) | 51 | 54 (181) | 50 (174) |
| 612 | 54 (181) | 35 (184) | 24 | 82 (166) | 68 (165) |
| 786 | 54 (181) | 47 (175) | 657 | 82 (166) | 80 (159) |
| 883 | 54 (181) | 68 (165) | 782 | 82 (166) | 64 (166) |
| 895 | 54 (181) | 46 (176) | 783 | 82 (166) | 64 (166) |
| 663 | 59 (180) | 44 (177) | 791 | 82 (166) | 85 (153) |
| 667 | 59 (180) | 57 (170) | 281 | 87 (164) | 87 (152) |
| 752 | 59 (180) | 82 (156) | 33 | 87 (164) | 50 (174) |
| 59 | 62 (179) | 72 (162) | 751 | 87 (164) | 97 (144) |
| 721 | 62 (179) | 70 (164) | 264 | 90 (162) | 72 (162) |
| 02 | 64 (178) | 57 (170) | 56 | 90 (162) | 52 (173) |
| 03 | 64 (178) | 30 (187) | 67 | 92 (161) | 91 (149) |
| 278 | 64 (178) | 29 (188) | 722 | 92 (161) | 91 (149) |



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APPENDIX TABLE 8-2 (Continued)

RELATIVE RANKINGS OF INDUSTRIES

| SITC | Method A | Method B | SITC | Method A | Method B |
|---|---|---|---|---|---|
| 54 | 64 (178) | 71 (163) | 266 | 94 (159) | 93 (148) |
| 71 | 64 (178) | 93 (148) | 282 | 95 (156) | 98 (139) |
| 774 | 64 (178) | 82 (156) | 52 | 95 (156) | 76 (161) |
| 785 | 64 (178) | 60 (168) | 74 | 97 (155) | 99 (137) |
| 73 | 71 (177) | 93 (148) | 34 | 98 (150) | 64 (166) |
| 233 | 72 (176) | 60 (168) | 68 | 99 (149) | 100 (133) |
| 82 | 72 (176) | 78 (160) | 25 | 100 (142) | 96 (147) |
| 273 | 74 (175) | 32 (186) | 57 | 100 (142) | 101 (127) |
| 793 | 74 (175) | 37 (181) | 792 | 102 (130) | 102 (111) |
| 892 | 74 (175) | 80 (159) | | | |
| 53 | 77 (174) | 71 (163) | | | |
| 723 | 78 (172) | 89 (151) | | | |
| 01 | 79 (170) | 72 (162) | | | |
| 781 | 80 (169) | 78 (160) | | | |
| 267 | 81 (168) | 85 (153) | | | |

Source: Reynolds, Smith and Hills, 1979.

## APPENDIX 9

### MEASURES OF THE RELATIONSHIP OF LABOR TO OUTPUT IN COUNTRIES WITH INCOME OF ABOUT $200*

| Sector | Coefficients: Direct Labor Coef. | Direct Labor Rank | Total Labor Coef. | Total Labor Rank | Multipliers: Labor Mult. | Labor Rank |
|---|---|---|---|---|---|---|
| Transportation | 1.51 | (1) | 1.64 | (1) | 1.08 | (28) |
| Services, n.e.s. | 0.86 | (2) | 1.00 | (2) | 1.17 | (27) |
| Communications | 0.62 | (3) | 0.81 | (3) | 1.31 | (26) |
| Furniture and Fixtures | 0.51 | (4) | 0.80 | (4) | 1.58 | (24) |
| Construction | 0.49 | (5) | 0.75 | (5) | 1.52 | (25) |
| Wood and Cork | 0.42 | (6) | 0.67 | (8) | 1.59 | (23) |
| Glass | 0.34 | (7) | 0.69 | (6) | 2.03 | (17) |
| Cement | 0.34 | (8) | 0.68 | (7) | 2.00 | (18) |
| Printing | 0.31 | (9) | 0.53 | (11) | 1.71 | (21) |
| Primary Metal Processing | 0.29 | (10) | 0.57 | (9) | 1.99 | (19) |
| Resource Extraction, n.e.s. | 0.29 | (11) | 0.47 | (13) | 1.66 | (22) |
| Trade | 0.21 | (12) | 0.37 | (20) | 1.78 | (20) |
| Textiles, Wearing Apparel | 0.19 | (13) | 0.39 | (18) | 2.07 | (16) |
| Machinery | 0.15 | (14) | 0.36 | (23) | 2.47 | (15) |
| Chemical Products, n.e.s. | 0.15 | (15) | 0.46 | (14) | 3.17 | (10) |
| Industrial Chemicals | 0.14 | (16) | 0.37 | (19) | 2.84 | (14) |
| Fertilizer | 0.14 | (17) | 0.55 | (10) | 4.02 | (7) |
| Shipbuilding | 0.13 | (18) | 0.37 | (21) | 2.93 | (13) |
| Rubber | 0.12 | (19) | 0.37 | (22) | 3.15 | (11) |
| Metal Products | 0.12 | (20) | 0.39 | (17) | 3.29 | (9) |
| Paper | 0.11 | (21) | 0.43 | (15) | 4.09 | (6) |
| Food Processing | 0.10 | (22) | 0.41 | (16) | 3.95 | (8) |
| Professional Instruments | 0.09 | (23) | 0.27 | (26) | 3.01 | (12) |



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APPENDIX 9 (Continued)

MEASURES OF THE RELATIONSHIP OF LABOR TO

OUTPUT IN COUNTRIES WITH INCOME OF ABOUT $200*

| Sector | Coefficients | | | | Multipliers | |
|---|---|---|---|---|---|---|
| | Direct Labor | | Total Labor | | Labor | |
| | Coef. | Rank | Coef. | Rank | Mult. | Rank |
| Electricity, Gas, Water | 0.06 | (24) | 0.29 | (24) | 5.32 | (5) |
| Electrical Machinery | 0.05 | (25) | 0.25 | (27) | 5.52 | (4) |
| Motor Vehicles | 0.04 | (26) | 0.24 | (28) | 6.30 | (3) |
| Industry, n.e.s. | 0.04 | (27) | 0.28 | (25) | 6.67 | (2) |
| Petroleum | 0.04 | (28) | 0.52 | (12) | 14.51 | (1) |

* Per annum.

Note: Direct labor is defined as average man-years of labor required in an industry per one thousand U.S. dollars of output.
Indirect labor is labor required in other sectors to produce inputs for a particular sector. The total labor coefficient is defined as: (man-years of direct and indirect labor) ÷ (value of output in U.S. $1,000).
n.e.s. = not elsewhere specified.

Source: Stern, Joseph J., The Employment Impact of Investment: A Preliminary Report, World Bank Staff Working Paper No. 255, June, 1977.

APPENDIX 10
FREE ZONE ANALYSIS
FREE ZONE PROJECTS AWAITING IMPLEMENTATION(1)

| Name of Company | Type of Product | Nationality | Project* Status | Total Capital (LE 000) | Egyptian Labor Jobs | Egyptian Labor Wages (LE 000) |
|---|---|---|---|---|---|---|
| **Alexandria Free Zone** | | | | | | |
| 1. Dovac Co. | Blanket Manuf. | Egypt | E | 2,100 | 122 | 133 |
| 2. Seif Co. | Velvet Manuf. | Egypt | E | 770 | 42 | 44 |
| 3. Misr Kuwait Co. | Spinning & Weaving | United States/ Kuwait/Egypt | E | 4,200 | 592 | 659 |
| 4. S.A.A. Co. | Tea Packing | United Kingdom/ Egypt | E | 111.5 | 45 | 60 |
| 5. Misroject Co. | Disposable Syringes | German/Kuwait/ Egypt | E | 6,000 | 50 | 65 |
| 6. Rocheim Egypt | Chemical Manuf. | Egypt | E | 714 | 144 | 263 |
| 7. Elfisco Egypt Co. | Petroleum Equipt. | Switzerland | E | 552 | 90 | 216 |
| 8. Delta Co. | Petroleum Equipt. | United Kingdom/ Egypt | E | 175 | 11 | 14 |
| 9. W.G. Tawel Co. | Cold Stores | Kuwait/Iraq | E | 1,050 | 12 | 18 |
| 10. Rainbow Co. | Bldg. Materials Storage | Libya/Egypt | E | 700 | 20 | 24 |
| 11. Middle East Co. | Furniture Storage | Yugoslavia/Egypt | E | 1,330 | 13 | 10 |
| 12. Enbro Engineering | Storage | Germany | E | 840 | 30 | 35 |
| 13. El Tawil Co. | Crane Storage | Egypt | E | 70 | 11 | 28 |
| 14. Development & Trade Center | Car Storage | Egypt | E | 560 | 145 | 127 |
| 15. El Khorafi Inc. | Storage | Kuwait | E | 1,290 | 22 | 36 |
| 16. Magar Egypt Co. | Car Storage | Egypt | E | 49 | 28 | 46 |
| 17. Automobilt Free | Car Storage | Egypt | E | 2,100 | 32 | 32 |
| 18. Coca Cola Co. | Food Manuf. | United States | A | 8,906 | 40 | N/A |
| 19. Molin Egypt Factories | Paint Manuf. | | A | 543 | 43 | 40 |
| 20. Intermagnetic | N/A | N/A | A | 140 | 120 | 50 |



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APPENDIX 10 (Continued)
FREE ZONE ANALYSIS
FREE ZONE PROJECTS AWAITING IMPLEMENTATION(1)

| Name of Company | Type of Product | Nationality | Project* Status | Total Capital (LE 000) | Egyptian Labor Jobs | Egyptian Labor Wages (LE 000) |
|---|---|---|---|---|---|---|
| **Alexandria Free Zone** | | | | | | |
| 21. Saxson Egypt Co. | Copier Assembly | United States | A | 2,300 | 195 | 360 |
| 22. R.M.G. Co. | Metal Manuf. | United States | A | 300 | 20 | 15 |
| 23. Modern Furniture Co. | Furniture Manuf. | Egypt | A | 290 | 16 | 7 |
| 24. Green Valley Co. | Bldg. Material Manuf. | Egypt | A | 420 | 20 | 15 |
| 25. N/A | Vacuum Cleaner Assembly | Egypt | A | 210 | 20 | 30 |
| 26. Jack El Shamaran Co. | Storage | N/A | A | 154 | 20 | 37 |
| 27. Middle East Trade Co. | Storage | Yugoslavia/ | A | 350 | 7 | 7 |
| 28. El Arafi Agency | Storage | N/A | A | 100 | 10 | 7 |
| 29. Shomola Co. | Storage | N/A | A | 150 | 20 | 12 |
| 30. Alexandria Foods Co. | Storage | Egypt | A | 140 | 11 | 15 |
| 31. Toyota Egypt Co. | Car Storage | Egypt | A | 1,000 | 48 | 290 |
| 32. Mokhtar Co. | Bldg. Material Storage | Egypt | A | 210 | 13 | 9 |
| 33. Ashram International Co. | Storage | N/A | A | 1,224 | 14 | 13 |
| 34. Saudi Car Co. | Storage | N/A | A | 210 | 22 | 18 |
| 35. Arab Trade Group | Storage | Egypt | A | 700 | 22 | 46 |
| 36. International Trade Agency | Car Storage | Egypt | A | 210 | 15 | 17 |
| 37. Yousef Fahmy Inc. | Bldg. Material Storage | Egypt | A | 310 | 18 | 20 |
| 38. Saad Hassanien Co. | Car Storage | Egypt | A | 260 | 6 | 4 |
| 39. Arab Investment Co. | Cold Storage | Egypt | A | 1,700 | 15 | 31 |
| 40. Intercommerce Inc. | Storage | Egypt | A | 1,400 | 20 | 16 |

* A-Approved; E-Under execution.

(1) All based on preliminary estimates contained in project application forms.



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APPENDIX 10
FREE ZONE ANALYSIS
FREE ZONE PROJECTS AWAITING IMPLEMENTATION(1)

| Name of Company | Type of Product | Nationality | Project* Status | Total Capital (LE 000) | Egyptian Labor | |
|---|---|---|---|---|---|---|
| | | | | | Jobs | Wages (LE 000) |
| **Nasr City Free Zone** | | | | | | |
| 1. Massif | Electrical Equipt. Storage | Egypt | A | 525 | 16 | 14 |
| 2. El Soudi Auto | Auto Storage | Egypt | A | 210 | 22 | 18 |
| 3. Sherif Alexan | N/A | Egypt | A | 350 | 40 | 70 |
| 4. Addas and Amer Factories | Ready-Made Clothing | Saudi Arabia/ Egypt | A | 420 | 100 | 140 |
| 5. Hebatalla Ahmed | Glass Cutting & Glazing | Kenya | A | 350 | 48 | 64 |
| 6. Marintak & Couzi | Cosmetics Manuf. | United Kingdom/ Spain | A | 2,391 | 94 | 226 |
| 7. Ibrahim Beshay | Bldg. Materials Storage | Egypt | A | 350 | 40 | 70 |
| 8. El Salam Co. | Video Cassette Units | Egypt | A | 525 | 65 | 126 |
| 9. Emil Quismaler | Scaffolding | France | A | 560 | 60 | 50 |
| 10. El Sherif & Co. | Petrochemical Products | Egypt | A | 8,400 | 124 | 419 |
| 11. Hassan Abu Makaren | Cassette Tapes | Egypt | A | 350 | 27 | 96 |
| 12. El Sherif Co. | Coffee & Tea Packing | Egypt | A | 2,450 | 75 | 139 |
| 13. Egypt for Free Zone Trade | Storage | Egypt | E | 2,369 | 45 | 48 |
| 14. Amar and Haty | Catering Equipt. Storage | Saudi Arabia/ Lebanon | A | 84 | 5 | 7 |



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APPENDIX 10 (Continued)
FREE ZONE ANALYSIS
FREE ZONE PROJECTS AWAITING IMPLEMENTATION(1)

| Name of Company | Type of Product | Nationality | Project* Status | Total Capital (LE 000) | Egyptian Labor Jobs | Egyptian Labor Wages (LE 000) |
|---|---|---|---|---|---|---|
| **Nasr City Free Zone** | | | | | | |
| 15. The Egyptian Cold Stores | Cold Storage | United Kingdom/ Egypt | E | 98 | N/A | N/A |
| 16. Automobile Free Zone Co. | Auto Storage | United Kingdom/ Egypt | A | 98 | 32 | 154 |
| 17. Middle East Co. Resins | Resins Manuf. | Germany/Syria/ Egypt | E | 600 | 95 | 460 |
| 18. Abd El Aziz El Menalawy | Furniture Manuf. | Egypt | E | 994 | 85 | 50 |
| 19. Wafaa Hegazy | Prefab. Bldg. Components | Switzerland/ Egypt | E | 560 | 116 | 214 |
| 20. Prodrill-Anstalt Co. | Petroleum Services | Switzerland | E | 490 | 16 | 17 |

* A-Approved: E-Under execution.

(1) All based on preliminary estimates contained in project application forms.



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APPENDIX 10
FREE ZONE ANALYSIS
FREE ZONE PROJECTS AWAITING IMPLEMENTATION(1)

| Name of Company | Type of Product | Nationality | Project* Status | Total Capital (LE 000) | Egyptian Labor Jobs | Egyptian Labor Wages (LE 000) |
|---|---|---|---|---|---|---|
| **Port Said Free Zone** | | | | | | |
| 1. Sponge Industrial Group | Sponge Manuf. | Saudi Arabia | E | 420 | 32 | 40 |
| 2. Abd El Rehim Co. | N/A | Kuwait/Somalia | E | 350 | 61 | 59 |
| 3. Marinjak Co. | Cement Block Manuf. | United Kingdom | E | 490 | 21 | N/A |
| 4. Port Said Corp. | Metal Chasis Manuf. | Panama | E | 350 | 57 | 40 |
| 5. Egyptila Co. | Cement Mixer Assembly | Germany/Egypt | E | 332 | 19 | 46 |
| 6. Queens Co. | Knit Wear Manuf. | Saudi Arabia/ Egypt | E | 560 | 30 | 16 |
| 7. Memphis Co. | Metal Tools Manuf. | Dutch | E | 633 | 27 | 7 |
| 8. Marinjak Factories | Stainless Steel | United Kingdom | E | 2,100 | 32 | N/A |
| 9. Aluminum Addas | Alumin-Manuf. | Saudi Arabia | E | 378 | 30 | N/A |
| 10. African Union | Chemical Manuf. | Algeria | E | 490 | 62 | 63 |
| 11. Saturn Co. | N/A | Sudan/Egypt | E | 332 | 140 | 99 |
| 12. Tadr Skan Co. | N/A | Egypt | E | 950 | 500 | 240 |
| 13. Bavaria Co. | Fire Extinguishers | German | E | 91 | 10 | 2 |
| 14. Romandia Co. | Storage | Syria | E | 344 | 12 | 12 |
| 15. El Nahr Co. | Storage | Saudi Arabia/ Yemen | E | 490 | 4 | 7 |
| 16. Abu Dabi Co. | Bldg. Materials Storage | United Arab Emirates | E | 350 | 26 | 20 |
| 17. Rafik El Sherif Co. | Storage | Lebanon | E | 1,540 | 15 | 21 |
| 18. Free Port Co. | Storage | Egypt | E | Branch | 147 | 218 |
| 19. Egypt for Foreign Trade | Storage | Egypt | E | 3,150 | 54 | 60 |



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APPENDIX 10 (Continued)
FREE ZONE ANALYSIS
FREE ZONE PROJECTS AWAITING IMPLEMENTATION(1)

| Name of Company | Type of Product | Nationality | Project* Status | Total Capital (LE 000) | Egyptian Labor Jobs | Egyptian Labor Wages (LE 000) |
|---|---|---|---|---|---|---|
| **Port Said Free Zone** | | | | | | |
| 20. Ropal Co. | Spare Parts Storage | Panama | E | 167 | 4 | 5 |
| 21. Middle East Exporting Co. | Storage | Lebanon | E | 590 | 55 | 40 |
| 22. International Communication Co. | Storage | Saudi Arabia | E | 350 | 7 | 13 |
| 23. Sadoon El Bania | Storage | Iraq | E | 175 | 15 | 11 |
| 24. The Arabian Trade Co. | Cold Storage | Egypt | E | 475 | 7 | 5 |
| 25. Trade Organization Estabt. | Cold Storage | Argentina | E | 1,775 | 20 | 43 |
| 26. Baromer & Palomian Stores | Cold Storage | Lebanon | E | 490 | 15 | 22 |
| 27. Marinjak for Overseas Investment | Cold Storage | United Kingdom | E | 5,793 | 32 | 53 |
| 28. Leegapo/Seida Co. | Cold Storage | Italy/Egypt | E | 60 | 12 | N/A |
| 29. Hasoco Cold Stores | Cold Storage | Egypt | E | 63 | 300 | 144 |
| 30. Arab World Co. | Cold Storage | Saudi Arabia/ Egypt | E | 1,750 | 105 | 187 |
| 31. Misr Cold Stores | Cold Storage | Egypt | E | 400 | N/A | 268 |
| 32. Aziz El Masry Co. | Storage | Uganda | A | 288 | 2 | 48 |
| 33. Spanish Cement Co. | Cement Manuf. | Spain/Switz. | A | 2,100 | 54 | 43 |
| 34. Ideal Italian-Egyptian | N/A | Italy/Egypt | A | 1,050 | 164 | 563 |



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APPENDIX 10 (Continued)
FREE ZONE ANALYSIS
FREE ZONE PROJECTS AWAITING IMPLEMENTATION(1)

| Name of Company | Type of Product | Nationality | Project* Status | Total Capital (LE 000) | Egyptian Labor Jobs | Egyptian Labor Wages (LE 000) |
|---|---|---|---|---|---|---|
| Port Said Free Zone | | | | | | |
| 35. Port Said Reconstruction Co. | N/A | Egypt | A | 2,555 | 80 | 65 |
| 36. Essotechnic | N/A | Germany | A | 1,387 | N/A | 240 |
| 37. Golden Party | N/A | Egypt | A | 399 | 80 | 43 |
| 38. Akbar Co. | Plastic Manuf. | Ethiopia | A | 1,400 | 80 | 43 |
| 39. N/A | Precast Concrete Manuf. | Egypt | A | 9,800 | N/A | N/A |
| 40. N/A | Fiberglass Manuf. | N/A | A | 700 | NA | N/A |
| 41. Teera Co. | Catering Services | N/A | A | 70 | N/A | N/A |
| 42. Ropal Co. | Cold Storage | N/A | A | 166 | N/A | N/A |

* A-Approved; E-Under execution.

(1) All based on preliminary estimates contained in project application form.

Source: General Authority for Investment and Free Zones, 1979.
Reynolds, Smith and Hills, 1979.

## APPENDIX 10
## FREE ZONE ANALYSIS
## SUMMARY TABLE OF PROJECTS AWAITING IMPLEMENTATION*

| Free Zone | No. of Projects | Total Capital (LE 000) | Total Identified Egyptian Input | |
|---|---|---|---|---|
| | | | Jobs | Wages (LE 000) |
| Alexandria | 40 | 43,839 | 2,144 | 2,874 |
| Nasr City | 20 | 22,174 | 1,105 | 2,382 |
| Port Said | 42 | 45,353 | 2,311 | 2,786 |
| Total | 102 | 111,366 | 5,560 | 8,042 |

* All data based on preliminary estimates contained in project application forms.

Source: General Authority for Investment and Free Zones, 1979.
Reynolds, Smith and Hills, 1979.

# APPENDIX 11

## FOREIGN EXCHANGE DEVALUATIONS AT 10 AND 20 PERCENT

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | | |
| 221 | PURCHASES | 132,852 | | | | | | 231 | 649 | 1,283 | 2,112 | 3,183 |
| 222 | LABOR | 63,113 | | | | | 925 | 1,448 | 1,932 | 2,354 | 2,790 | 3,192 |
| 223 | UTILITIES | 27,050 | | | | | | 48 | 136 | 269 | 443 | 658 |
| 224 | OTHER EXPENSES | 23,136 | | | | 227 | 464 | 679 | 893 | 1,064 | 1,147 | 1,297 |
| 225 | PROFIT | 13,571 | | | | -18 | -185 | -243 | -252 | -289 | -116 | 12 |
| 226 | INVESTMENT | 21,381 | | | | 1,055 | 1,918 | 2,034 | 2,219 | 2,162 | 2,096 | 1,985 |
| 227 | PRINCIPAL | 4,158 | | 32 | 108 | 152 | 146 | 148 | 162 | 182 | 197 | 233 |
| 228 | INTEREST | 3,980 | | 63 | 205 | 272 | 239 | 218 | 237 | 257 | 269 | 317 |
| 229 | TOTAL EXCHANGE CREATION | 278,983 | | -96 | -314 | 840 | 2,737 | 3,958 | 5,179 | 6,434 | 7,974 | 9,621 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | |
| 221 | PURCHASES | 4,060 | 5,805 | 5,862 | 6,665 | 7,399 | 8,054 | 8,487 | 8,488 | 8,357 | 8,887 |
| 222 | LABOR | 3,410 | 3,395 | 3,642 | 3,846 | 3,631 | 3,372 | 3,157 | 2,948 | 2,769 | 2,592 |
| 223 | UTILITIES | 953 | 1,049 | 1,229 | 1,397 | 1,551 | 1,688 | 1,762 | 1,778 | 1,792 | 1,679 |
| 224 | OTHER EXPENSES | 1,428 | 1,569 | 1,680 | 1,763 | 1,634 | 1,519 | 1,443 | 1,357 | 1,271 | 1,176 |
| 225 | PROFIT | 143 | 319 | 448 | 559 | 753 | 929 | 1,039 | 1,093 | 1,189 | 1,072 |
| 226 | INVESTMENT | 1,843 | 1,837 | 1,789 | 1,627 | 739 | | | | | |
| 227 | PRINCIPAL | 244 | 234 | 225 | 216 | 207 | 199 | 191 | 183 | 176 | 169 |
| 228 | INTEREST | 314 | 273 | 237 | 204 | 174 | 148 | 124 | 103 | 84 | 67 |
| 229 | TOTAL EXCHANGE CREATION | 11,185 | 12,666 | 14,181 | 15,437 | 15,296 | 15,216 | 15,453 | 15,370 | 14,993 | 14,288 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | |
| 221 | PURCHASES | 7,496 | 6,815 | 6,388 | 5,978 | 5,595 | 5,240 | 4,906 | 4,433 | 4,299 | 4,026 |
| 222 | LABOR | 2,426 | 2,206 | 2,065 | 1,935 | 1,811 | 1,696 | 1,528 | 1,435 | 1,399 | 1,303 |
| 223 | UTILITIES | 1,571 | 1,429 | 1,337 | 1,253 | 1,173 | 1,099 | 1,029 | 929 | 901 | 844 |
| 224 | OTHER EXPENSES | 1,078 | 989 | 937 | 833 | 764 | 701 | 644 | 570 | 543 | 498 |
| 225 | PROFIT | 1,035 | 913 | 856 | 854 | 753 | 787 | 663 | 688 | 582 | 546 |
| 226 | INVESTMENT | | | | | | | | | | |
| 227 | PRINCIPAL | 163 | 142 | 102 | 76 | 73 | 70 | 56 | 40 | 38 | 9 |
| 228 | INTEREST | 53 | 40 | 29 | 22 | 16 | 11 | 7 | 4 | 1 | |
| 229 | TOTAL EXCHANGE CREATION | 13,362 | 12,170 | 11,415 | 10,793 | 10,006 | 9,362 | 8,767 | 7,924 | 7,486 | 7,288 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | | |
| 221 | PURCHASES | 30,329 | | | | | | 150 | 385 | 698 | 1,893 | 1,418 |
| 222 | LABOR | 16,880 | | | | | 694 | 938 | 1,144 | 1,288 | 1,376 | 1,418 |
| 223 | UTILITIES | 6,358 | | | | | | 31 | 91 | 144 | 221 | 297 |
| 224 | OTHER EXPENSES | 8,411 | | | | 173 | 328 | 439 | 530 | 578 | 572 | 593 |
| 225 | PROFIT | 2,276 | | | | -14 | -131 | -156 | -150 | -113 | -58 | 4 |
| 226 | INVESTMENT | 15,778 | | | | 812 | 1,394 | 1,317 | 1,317 | 1,176 | 1,849 | 987 |
| 227 | PRINCIPAL | 1,553 | | 38 | 91 | 117 | 183 | 91 | 96 | 99 | 98 | 186 |
| 228 | INTEREST | 1,893 | | 58 | 172 | 209 | 169 | 136 | 149 | 148 | 134 | 145 |
| 229 | TOTAL EXCHANGE CREATION | 73,786 | | -88 | -264 | 647 | 1,933 | 2,492 | 3,072 | 3,524 | 3,976 | 4,187 |

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CN | | | | | | | | | | |
| 221 | PURCHASES | 1,785 | 1,922 | 2,064 | 2,151 | 2,189 | 2,183 | 2,098 | 1,938 | 1,747 | 1,533 |
| 222 | LABOR | 1,429 | 1,304 | 1,203 | 1,241 | 1,065 | 914 | 785 | 674 | 579 | 496 |
| 223 | UTILITIES | 357 | 403 | 433 | 451 | 459 | 458 | 438 | 436 | 386 | 321 |
| 224 | OTHER EXPENSES | 594 | 602 | 592 | 569 | 483 | 412 | 359 | 318 | 266 | 225 |
| 225 | PROFIT | 69 | 123 | 155 | 180 | 223 | 252 | 258 | 258 | 231 | 209 |
| 226 | INVESTMENT | 771 | 786 | 630 | 525 | 219 | | | | | |
| 227 | PRINCIPAL | 102 | 90 | 79 | 70 | 61 | 54 | 48 | 42 | 37 | 32 |
| 228 | INTEREST | 132 | 105 | 83 | 66 | 51 | 43 | 31 | 23 | 18 | 13 |
| 229 | TOTAL EXCHANGE CREATION | 4,686 | 4,864 | 4,994 | 4,992 | 4,525 | 4,125 | 3,857 | 3,913 | 3,134 | 2,735 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | |
| 221 | PURCHASES | 1,317 | 1,095 | 940 | 808 | 695 | 596 | 509 | 448 | 378 | 326 |
| 222 | LABOR | 426 | 394 | 304 | 262 | 225 | 193 | 165 | 142 | 123 | 105 |
| 223 | UTILITIES | 276 | 229 | 197 | 169 | 146 | 125 | 107 | 92 | 79 | 68 |
| 224 | OTHER EXPENSES | 187 | 159 | 134 | 113 | 95 | 80 | 67 | 57 | 48 | 40 |
| 225 | PROFIT | 177 | 147 | 126 | 109 | 94 | 80 | 69 | 59 | 51 | 44 |
| 226 | INVESTMENT | | | | | | | | | | |
| 227 | PRINCIPAL | 29 | 23 | 15 | 10 | 9 | 8 | 6 | 4 | 3 | 1 |
| 228 | INTEREST | 9 | 6 | 4 | 3 | 2 | 1 | 1 | | | |
| 229 | TOTAL EXCHANGE CREATION | 2,347 | 1,955 | 1,683 | 1,447 | 1,242 | 1,065 | 909 | 786 | 677 | 583 |



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# APPENDIX 12

## LAND ABSORPTION REDUCED BY 10 PERCENT

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CASH FLOW | | | | | | | | | | | |
| | REVENUE | | | | | | | | | | | |
| 132 | PEDDANS ABSORBED | 235 | | | | 13 | 13 | 18 | 28 | 21 | 92 | 27 |
| 133 | SALES REVENUE | 717 | | | | 135 | 139 | 143 | 148 | 152 | | |
| 134 | LEASE INCOME | 86,075 | | | | 54 | 278 | 589 | 921 | 1,245 | 1,595 | 1,954 |
| 135 | FEES AND CHARGES | 32,828 | | | | | | 18 | 94 | 116 | 298 | 334 |
| 136 | RESIDUAL VALUE | 8,989 | | | | | | | | | | |
| | TOTAL REVENUE | 128,921 | | | | 198 | 429 | 758 | 1,192 | 1,513 | 1,883 | 2,2[illegible] |
| | DEVELOPMENT EXPENDITURES | | | | | | | | | | | |
| 111 | WORKING CAPITAL | -5 | | 9 | 5 | 9 | 1 | 3 | 9 | | 18 | 18 |
| 112 | SITE DEVELOPMENT | 791 | | 104 | 110 | | | | 174 | | 177 | 187 |
| 113 | ELECTRIC UTIL | 11,987 | | 1,586 | 1,681 | | | | 2,666 | | 2,706 | 2,86[illegible] |
| 114 | WATER SYSTEM | 1,425 | | 196 | 208 | | | | 3[illegible]8 | | 335 | 35[illegible] |
| 115 | SEWAGE SYSTEM | 1,277 | | 176 | 186 | | | | 296 | | 3[illegible]8 | 31[illegible] |
| 116 | SOLID WASTE DIS | 1,883 | | 245 | 263 | | | | 418 | | 424 | 449 |
| 117 | FENCES | 1,824 | | 251 | 266 | | | | 423 | | 429 | 455 |
| 118 | IRRIGATION SYS. | 577 | | 80 | 84 | | | | 134 | | 136 | 144 |
| 119 | STREETS | 5,136 | | 708 | 750 | | | | 1,198 | | 1,208 | 1,28[illegible] |
| 120 | LAND | 1,293 | 1,293 | | | | | | | | | |
| 122 | INCUBATOR | 382 | | | 382 | | | | | | | |
| 123 | COMMUNICATIONS | 1,056 | | 146 | 154 | | | | 245 | | 248 | 263 |
| 124 | SUPPORT BUILDINGS | 1,769 | | 244 | 258 | | | | 418 | | 416 | 441 |
| 125 | VEHICLES | 1,[illegible]69 | | | 280 | | | | 184 | | | 605 |
| 126 | DESIGN AND CONST. MG | 1,965 | | 243 | 408 | | | | 421 | | 415 | 479 |
| 127 | WAREHOUSE CONSTRUCTI | 1,652 | | | 1,652 | | | | | | | |
| 128 | CONTINGENCY - OTHER | 9,060 | | 1,121 | 1,883 | | | | 1,941 | | 1,913 | 2,21[illegible] |
| | TOTAL INVESTMENT | 42,347 | 1,293 | 5,112 | 8,572 | 9 | 1 | 3 | 6,848 | | 8,715 | 10,364 |
| | OPERATING COSTS | | | | | | | | | | | |
| 131 | LABOR | 4,987 | | 36 | 37 | 53 | 55 | 74 | 77 | 89 | 1[illegible]0 | 1[illegible]3 |
| 132 | PROMOTION | 828 | | | | 48 | 48 | 49 | 48 | 28 | 28 | 29 |
| 133 | GENERAL AND ADMIN | 2,[illegible]72 | | | | 1 | 7 | 15 | 24 | 34 | 45 | 57 |
| 134 | SECURITY | 2,645 | | 13 | 13 | 25 | 29 | 30 | 46 | 48 | 65 | 64 |
| 135 | INTEREST | | | | | | | | | | | |
| 136 | MAINTENANCE | 5,212 | | 26 | 68 | 68 | 68 | 68 | 113 | 113 | 156 | 206 |
| 137 | DEPRECIATION | 33,308 | | 170 | 455 | 455 | 494 | 453 | 747 | 746 | 1,036 | 1,37[illegible] |
| | TOTAL OPERATING COST | 48,617 | | 244 | 573 | 646 | 654 | 681 | 1,046 | 1,049 | 1,4[illegible] | 1,842 |
| 139 | NET CASH FLOW | 78,657 | -1,293 | -5,186 | -8,698 | -11 | 229 | 519 | -8,817 | 1,218 | -7,[illegible] | -8,246 |

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CASH FLOW | | | | | | | | | | |
| | REVENUE | | | | | | | | | | |
| 102 | FEDDANS ABSORBED | 23 | 27 | 27 | 27 | | | | | | |
| 103 | SALES REVENUE | | | | | | | | | | |
| 104 | LEASE INCOME | 2,339 | 2,787 | 3,250 | 3,726 | 3,775 | 3,826 | 3,878 | 3,932 | 3,987 | 4,044 |
| 105 | FEES AND CHARGES | 477 | 638 | 813 | 1,004 | 1,213 | 1,435 | 1,623 | 1,774 | 1,877 | 1,931 |
| 106 | RESIDUAL VALUE | | | | | | | | | | |
| | TOTAL REVENUE | 2,815 | 3,425 | 4,092 | 4,731 | 4,988 | 5,261 | 5,501 | 5,706 | 5,864 | 5,974 |
| | DEVELOPMENT EXPENDITURES | | | | | | | | | | |
| 111 | WORKING CAPITAL | 5 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| 112 | SITE DEVELOPMENT | | | | | | | | | | |
| 113 | ELECTRIC UTIL | | | | | | | | | | |
| 114 | WATER SYSTEM | | | | | | | | | | |
| 115 | SEWAGE SYSTEM | | | | | | | | | | |
| 116 | SOLID WASTE DIS | | | | | | | | | | |
| 117 | FENCES | | | | | | | | | | |
| 118 | IRRIGATION SYS. | | | | | | | | | | |
| 119 | STREETS | | | | | | | | | | |
| 120 | LAND | | | | | | | | | | |
| 122 | INCUBATOR | | | | | | | | | | |
| 123 | COMMUNICATIONS | | | | | | | | | | |
| 124 | SUPPORT BUILDINGS | | | | | | | | | | |
| 125 | VEHICLES | | | | | | | | | | |
| 126 | DESIGN AND CONST. MG | | | | | | | | | | |
| 127 | WAREHOUSE CONSTRUCTI | | | | | | | | | | |
| 128 | CONTINGENCY - OTHER | | | | | | | | | | |
| | TOTAL INVESTMENT | 5 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| | OPERATING COSTS | | | | | | | | | | |
| 131 | LABOR | 130 | 134 | 138 | 142 | 146 | 151 | 155 | 160 | 165 | 170 |
| 132 | PROMOTION | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 133 | GENERAL AND ADMIN | 73 | 86 | 102 | 118 | 125 | 132 | 139 | 143 | 147 | 149 |
| 134 | SECURITY | 87 | 89 | 92 | 95 | 97 | 100 | 103 | 106 | 110 | 113 |
| 135 | INTEREST | | | | | | | | | | |
| 136 | MAINTENANCE | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 |
| 137 | DEPRECIATION | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| | TOTAL OPERATING COST | 1,884 | 1,906 | 1,928 | 1,952 | 1,966 | 1,980 | 1,993 | 2,006 | 2,018 | 2,029 |
| 139 | NET CASH FLOW | 2,297 | 2,866 | 3,562 | 4,147 | 4,191 | 4,650 | 4,977 | 5,169 | 5,715 | 5,315 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS  IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CASH FLOW | | | | | | | | | | |
| | REVENUE | | | | | | | | | | |
| 102 | FEDTANS ABSORBED | | | | | | | | | | |
| 103 | SALES REVENUE | | | | | | | | | | |
| 104 | LEASE INCOME | 4,102 | 4,161 | 4,221 | 4,283 | 4,348 | 4,413 | 4,481 | 4,551 | 4,623 | 4,698 |
| 105 | FEES AND CHARGES | 1,931 | 1,931 | 1,931 | 1,931 | 1,931 | 1,931 | 1,931 | 1,931 | 1,931 | 1,931 |
| 106 | RESIDUAL VALUE | | | | | | | | | | 8,959 |
| | TOTAL REVENUE | 6,033 | 6,092 | 6,152 | 6,214 | 6,278 | 6,344 | 6,412 | 6,482 | 6,554 | 15,538 |
| | DEVELOPMENT EXPENDITURES | | | | | | | | | | |
| 111 | WORKING CAPITAL | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -95 |
| 112 | SITE DEVELOPMENT | | | | | | | | | | |
| 113 | ELECTRIC UTIL | | | | | | | | | | |
| 114 | WATER SYSTEM | | | | | | | | | | |
| 115 | SEWAGE SYSTEM | | | | | | | | | | |
| 116 | SOLID WASTE DIS | | | | | | | | | | |
| 117 | FENCES | | | | | | | | | | |
| 118 | IRRIGATION SYS. | | | | | | | | | | |
| 119 | STREETS | | | | | | | | | | |
| 120 | LAND | | | | | | | | | | |
| 122 | INCUBATOR | | | | | | | | | | |
| 123 | COMMUNICATIONS | | | | | | | | | | |
| 124 | SUPPORT BUILDINGS | | | | | | | | | | |
| 125 | VEHICLES | | | | | | | | | | |
| 126 | DESIGN AND CONST. MG | | | | | | | | | | |
| 127 | WAREHOUSE CONSTRUCTI | | | | | | | | | | |
| 128 | CONTINGENCY - OTHER | | | | | | | | | | |
| | TOTAL INVESTMENT | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -95 |
| | OPERATING COSTS | | | | | | | | | | |
| 131 | LABOR | 175 | 179 | 188 | 186 | 191 | 197 | 203 | 209 | 215 | 222 |
| 132 | PROMOTION | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 133 | GENERAL AND ADMIN | 151 | 152 | 154 | 155 | 157 | 159 | 160 | 162 | 164 | 166 |
| 134 | SECURITY | 116 | 116 | 120 | 123 | 127 | 131 | 135 | 139 | 143 | 147 |
| 135 | INTEREST | | | | | | | | | | |
| 136 | MAINTENANCE | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 |
| 137 | DEPRECIATION | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| | TOTAL OPERATING COST | 2,039 | 2,043 | 2,051 | 2,061 | 2,072 | 2,083 | 2,095 | 2,107 | 2,119 | 2,132 |
| 139 | NET CASH FLOW | 5,363 | 5,422 | 5,471 | 5,522 | 5,575 | 5,630 | 5,684 | 5,745 | 5,804 | 20,872 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | FINANCIAL CASH FLOW | | | | | | | | | | | |
| 301 | TOTAL REVENUE | 128,921 | | | | 190 | 429 | 759 | 1,122 | 1,513 | 1,893 | 2,288 |
| 302 | OPERATING COSTS | 15,317 | | 74 | 118 | 191 | 200 | 228 | 300 | 303 | 387 | 471 |
| 303 | OPR. CASH FLOW | 113,204 | | -74 | -118 | -2 | 230 | 522 | 822 | 1,210 | 1,416 | 1,817 |
| 305 | EQUITY FOR CAPTIAL NEEDS | 24,771 | 1,293 | 2,568 | 4,289 | 9 | 1 | 3 | 5,397 | | 5,233 | 6,842 |
| 306 | FOREIGN DEBT SERVICE | | | | | | | | | | | |
| 307 | PRINCIPAL REPAYMENTS | 17,548 | | 36 | 131 | 282 | 214 | 226 | 286 | 355 | 423 | 548 |
| 308 | INTEREST | 11,419 | | 70 | 248 | 362 | 350 | 338 | 419 | 501 | 578 | 747 |
| 310 | PAID IN EQUITY | 38,254 | 1,293 | 3,248 | 5,370 | 667 | 428 | 137 | 6,293 | | 5,995 | 6,823 |
| 313 | RETAINED EARNINGS | 80,016 | | | | | | | | 281 | | |
| 315 | FINANCIAL CASH FLOW | 59,568 | -1,293 | -2,739 | -4,786 | -575 | -336 | -45 | -5,191 | 354 | -4,816 | -5,928 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 380 | FINANCIAL CASH FLOW | | | | | | | | | | |
| 381 | TOTAL REVENUE | 2,815 | 3,425 | 4,082 | 4,731 | 4,988 | 5,261 | 5,581 | 5,766 | 5,884 | 5,974 |
| 382 | OPERATING COSTS | 513 | 535 | 558 | 581 | 595 | 609 | 622 | 635 | 647 | 658 |
| 383 | OPR. CASH FLOW | 2,302 | 2,890 | 3,585 | 4,149 | 4,393 | 4,652 | 4,879 | 5,078 | 5,217 | 5,316 |
| 385 | EQUITY FOR CAPTIAL NEEDS | 5 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| 386 | FOREIGN DEBT SERVICE | | | | | | | | | | |
| 387 | PRINCIPAL REPAYMENTS | 632 | 668 | 705 | 745 | 787 | 832 | 878 | 928 | 980 | 1,036 |
| 388 | INTEREST | 816 | 788 | 742 | 783. | 661 | 616 | 569 | 520 | 467 | 412 |
| 310 | PAID IN EQUITY | | | | | | | | | | |
| 313 | RETAINED EARNINGS | 564 | 1,157 | 1,772 | 2,416 | 2,661 | 2,928 | 3,147 | 3,338 | 3,485 | 3,584 |
| 315 | FINANCIAL CASH FLOW | 849 | 1,448 | 2,094 | 2,699 | 2,944 | 3,282 | 3,429 | 3,621 | 3,768 | 3,867 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | FINANCIAL CASH FLOW | | | | | | | | | | |
| 301 | TOTAL REVENUE | 6,033 | 6,092 | 6,152 | 6,214 | 6,278 | 6,344 | 6,412 | 6,482 | 6,554 | 15,938 |
| 302 | OPERATING COSTS | 668 | 670 | 680 | 691 | 701 | 713 | 724 | 736 | 748 | 761 |
| 303 | OPR. CASH FLOW | 5,365 | 5,422 | 5,472 | 5,524 | 5,577 | 5,631 | 5,688 | 5,746 | 5,806 | 14,777 |
| 305 | EQUITY FOR CAPTIAL NEEDS | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| 306 | FOREIGN DEBT SERVICE | | | | | | | | | | |
| 307 | PRINCIPAL REPAYMENTS | 1,094 | 1,058 | 829 | 683 | 722 | 762 | 663 | 544 | 430 | 151 |
| 308 | INTEREST | 354 | 293 | 240 | 200 | 162 | 121 | 80 | 48 | 19 | 2 |
| 310 | PAID IN EQUITY | | | | | | | | | | |
| 313 | RETAINED EARNINGS | 3,633 | 3,816 | 4,180 | 4,438 | 4,491 | 4,546 | 4,778 | 5,085 | 5,235 | 14,655 |
| 315 | FINANCIAL CASH FLOW | 3,916 | 4,079 | 4,401 | 4,639 | 4,492 | 4,746 | 4,644 | 5,152 | 5,355 | 14,710 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | INVESTOR INCOME STATEM | | | | | | | | | | | |
| 320 | SALES REVENUE | 4,168,585 | | | | | | 1,755 | 5,424 | 11,795 | 21,355 | 34,5[illegible] |
| 321 | COST OF SALES | | | | | | | | | | | |
| 322 | FOREIGN | 795,420 | | | | | | 335 | 1,035 | 2,251 | 4,075 | 6,585 |
| 323 | LOCAL | 1,244,118 | | | | | | 524 | 1,619 | 3,520 | 6,374 | 10,269 |
| 324 | TOTAL | 2,039,540 | | | | | | 859 | 2,654 | 5,771 | 10,448 | 16,883 |
| 325 | VALUE ADDED | 2,129,043 | | | | | | 897 | 2,770 | 6,024 | 10,907 | 17,624 |
| 326 | OPERATING EXPENSES | | | | | | | | | | | |
| 327 | FOR. LABOR | 179,331 | | | | | 958 | 1,634 | 2,393 | 3,281 | 4,172 | 5,365 |
| 328 | LOCAL LABOR | 432,161 | | | | | 1,515 | 2,606 | 3,817 | 5,106 | 6,574 | 8,12[illegible] |
| 329 | TOTAL | 611,492 | | | | | 2,445 | 4,239 | 6,210 | 8,387 | 10,696 | 13,22[illegible] |
| 330 | UTILITIES | 166,743 | | | | | | 70 | 217 | 472 | 854 | 1,38[illegible] |
| 331 | OTHER | 134,504 | | | | 293 | 641 | 1,022 | 1,470 | 1,917 | 2,253 | 2,76[illegible] |
| 332 | TOTAL | 912,739 | | | | 293 | 3,106 | 5,331 | 7,897 | 10,697 | 13,883 | 17,399 |
| 333 | OPERATING PROFIT/LOS | | | | | | | | | | | |
| 334 | LOCAL | 97,304 | | | | -23 | -248 | -355 | -410 | -374 | -292 | 18 |
| 335 | FOREIGN | 1,118,999 | | | | -269 | -2,857 | -4,080 | -4,717 | -4,299 | -2,645 | 208 |
| 336 | TOTAL | 1,216,303 | | | | -293 | -3,106 | -4,435 | -5,127 | -4,673 | -2,896 | 226 |
| | INVESTMENT | | | | | | | | | | | |
| 338 | LOCAL CAPITAL | 43,073 | | | | 1,264 | 2,577 | 2,948 | 3,578 | 3,791 | 4,044 | 4,212 |
| 339 | FOREIGN CAPITAL | 102,504 | | | | 2,948 | 5,847 | 6,880 | 8,256 | 8,845 | 9,475 | 9,[illegible] |
| 340 | TOTAL | 146,577 | | | | 4,212 | 8,424 | 9,828 | 11,794 | 12,636 | 13,478 | 14,[illegible] |
| 341 | WORKING CAPITAL | 625,286 | | | | | | 263 | 814 | 1,769 | 3,2[illegible]3 | 5,[illegible]74 |
| 342 | TOTAL INVESTMENT | 771,863 | | | | 4,212 | 8,424 | 10,091 | 12,607 | 14,405 | 16,692 | 19,21[illegible] |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | INVESTOR INCOME STATEM | | | | | | | | | | |
| 320 | SALES REVENUE | 49,787 | 67,353 | 86,784 | 108,536 | 132,537 | 158,684 | 182,231 | 202,715 | 219,111 | 230,994 |
| 321 | COST OF SALES | | | | | | | | | | |
| 322 | FOREIGN | 9,500 | 12,852 | 16,560 | 20,794 | 25,290 | 30,279 | 34,772 | 38,681 | 41,809 | 44,077 |
| 323 | LOCAL | 14,859 | 20,101 | 25,901 | 32,394 | 39,456 | 47,360 | 54,387 | 60,501 | 65,394 | 68,941 |
| 324 | TOTAL | 24,359 | 32,953 | 42,460 | 53,088 | 64,845 | 77,639 | 89,159 | 99,181 | 107,203 | 113,017 |
| 325 | VALUE ADDED | 25,428 | 34,399 | 44,324 | 55,418 | 67,691 | 81,046 | 93,072 | 103,534 | 111,908 | 117,977 |
| 326 | OPERATING EXPENSES | | | | | | | | | | |
| 327 | FOR. LABOR | 6,157 | 4,949 | 5,839 | 6,779 | 6,983 | 7,192 | 7,408 | 7,630 | 7,859 | 8,095 |
| 328 | LOCAL LABOR | 9,820 | 12,536 | 14,792 | 17,172 | 17,688 | 18,219 | 18,765 | 19,328 | 19,908 | 20,505 |
| 329 | TOTAL | 15,977 | 17,485 | 20,631 | 23,951 | 24,671 | 25,411 | 26,173 | 26,958 | 27,767 | 28,600 |
| 330 | UTILITIES | 1,991 | 2,694 | 3,471 | 4,340 | 5,321 | 6,347 | 7,269 | 8,139 | 8,764 | 9,240 |
| 331 | OTHER | 3,383 | 4,082 | 4,806 | 5,541 | 5,455 | 5,787 | 6,051 | 6,276 | 6,451 | 6,572 |
| 332 | TOTAL | 21,351 | 24,261 | 28,908 | 33,832 | 35,428 | 37,545 | 39,513 | 41,343 | 42,982 | 44,412 |
| 333 | OPERATING PROFIT/LOS | | | | | | | | | | |
| 334 | LOCAL | 326 | 811 | 1,233 | 1,727 | 2,565 | 3,480 | 4,289 | 4,975 | 5,914 | 5,885 |
| 335 | FOREIGN | 3,750 | 9,327 | 14,182 | 19,859 | 29,498 | 40,020 | 49,274 | 57,216 | 63,419 | 67,680 |
| 336 | TOTAL | 4,076 | 10,138 | 15,415 | 21,586 | 32,063 | 43,500 | 53,558 | 62,191 | 68,924 | 73,565 |
| | INVESTMENT | | | | | | | | | | |
| 338 | LOCAL CAPITAL | 4,294 | 4,717 | 5,354 | 5,054 | 2,527 | | | | | |
| 339 | FOREIGN CAPITAL | 10,025 | 11,007 | 11,794 | 11,794 | 5,897 | | | | | |
| 340 | TOTAL | 14,321 | 15,725 | 16,848 | 16,848 | 8,424 | | | | | |
| 341 | WORKING CAPITAL | 7,461 | 10,153 | 13,318 | 16,275 | 19,850 | 23,803 | 27,335 | 30,407 | 32,867 | 34,649 |
| 342 | TOTAL INVESTMENT | 21,782 | 25,876 | 29,866 | 33,124 | 28,324 | 23,803 | 27,335 | 30,407 | 32,867 | 34,649 |

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | INVESTOR INCOME STATEM | | | | | | | | | | |
| 320 | SALES REVENUE | 237,926 | 237,926 | 245,063 | 252,417 | 259,988 | 267,790 | 275,827 | 284,097 | 292,415 | 301,401 |
| 321 | COST OF SALES | | | | | | | | | | |
| 322 | FOREIGN | 45,399 | 45,399 | 46,761 | 48,164 | 49,639 | 51,098 | 52,638 | 54,209 | 55,835 | 57,511 |
| 323 | LOCAL | 71,009 | 71,009 | 73,139 | 75,334 | 77,594 | 79,922 | 82,329 | 84,789 | 87,331 | 89,994 |
| 324 | TOTAL | 116,409 | 116,409 | 119,901 | 123,499 | 127,233 | 131,020 | 134,956 | 138,999 | 143,166 | 147,465 |
| 325 | VALUE ADDED | 121,517 | 121,517 | 125,162 | 128,918 | 132,785 | 136,770 | 140,872 | 145,098 | 149,449 | 153,936 |
| 326 | OPERATING EXPENSES | | | | | | | | | | |
| 327 | FOR. LABOR | 8,335 | 8,336 | 8,588 | 8,846 | 9,111 | 9,384 | 9,666 | 9,956 | 10,254 | 10,562 |
| 328 | LOCAL LABOR | 21,121 | 21,121 | 21,754 | 22,407 | 23,079 | 23,772 | 24,485 | 25,219 | 25,975 | 26,755 |
| 329 | TOTAL | 29,456 | 29,456 | 30,342 | 31,253 | 32,190 | 33,156 | 34,150 | 35,175 | 36,230 | 37,316 |
| 330 | UTILITIES | 9,517 | 9,517 | 9,803 | 10,097 | 10,400 | 10,712 | 11,033 | 11,364 | 11,705 | 12,056 |
| 331 | OTHER | 6,636 | 6,701 | 6,767 | 6,835 | 6,906 | 6,978 | 7,053 | 7,130 | 7,209 | 7,291 |
| 332 | TOTAL | 45,612 | 45,676 | 46,912 | 48,185 | 49,495 | 50,846 | 52,236 | 53,669 | 55,144 | 56,665 |
| 333 | OPERATING PROFIT/LOS | | | | | | | | | | |
| 334 | LOCAL | 6,072 | 6,067 | 6,260 | 6,459 | 6,663 | 6,874 | 7,091 | 7,314 | 7,544 | 7,782 |
| 335 | FOREIGN | 69,833 | 69,774 | 71,991 | 74,275 | 76,627 | 79,050 | 81,545 | 84,115 | 86,761 | 89,490 |
| 336 | TOTAL | 75,906 | 75,841 | 78,251 | 80,734 | 83,290 | 85,924 | 88,636 | 91,429 | 94,305 | 97,272 |
| | INVESTMENT | | | | | | | | | | |
| 338 | LOCAL CAPITAL | | | | | | | | | | |
| 339 | FOREIGN CAPITAL | | | | | | | | | | |
| 340 | TOTAL | | | | | | | | | | |
| 341 | WORKING CAPITAL | 35,689 | 35,689 | 36,759 | 37,863 | 38,998 | 40,169 | 41,373 | 42,614 | 43,892 | 45,213 |
| 342 | TOTAL INVESTMENT | 35,689 | 35,689 | 36,759 | 37,863 | 38,998 | 40,169 | 41,373 | 42,614 | 43,892 | 45,213 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECONOMIC COST BENEFIT | | | | | | | | | | | |
| 351 | F Z BENEFIT | | | | | | | | | | | |
| 352 | REVENUE | 120,521 | | | | 190 | 429 | 756 | 1,172 | 1,513 | 1,883 | 2,288 |
| 353 | LABOR | 6,712 | | 48 | 59 | 82 | 84 | 104 | 123 | 136 | 166 | 187 |
| 354 | OPERATIONS | 8,605 | | 26 | 68 | 110 | 116 | 124 | 177 | 167 | 221 | 264 |
| 356 | F Z COSTS (NET) | | | | | | | | | | | |
| 357 | OPERATIONS | 8,605 | | 26 | 68 | 110 | 116 | 124 | 177 | 167 | 221 | 264 |
| 358 | PAID IN EQUITY | 53,731 | 1,293 | 2,666 | 4,668 | 573 | 565 | 569 | 6,013 | 856 | 6,233 | 7,338 |
| 359 | NET BENEFIT | 81,502 | -1,293 | -2,617 | -4,618 | -302 | -92 | 287 | -4,748 | 794 | -4,264 | -4,862 |
| 360 | INVESTOR CONTRIBUTION | | | | | | | | | | | |
| 361 | LOCAL PURCHASES | 1,244,118 | | | | | | 524 | 1,619 | 3,528 | 6,374 | 10,299 |
| 362 | LABOR | 521,827 | | | | | 1,990 | 3,422 | 5,013 | 6,787 | 8,635 | 15,673 |
| 363 | OPERATIONS | 331,247 | | | | 293 | 641 | 1,092 | 1,687 | 2,389 | 3,187 | 4,178 |
| 364 | PROFIT | 97,384 | | | | -23 | -248 | -355 | -410 | -374 | -232 | 18 |
| 365 | CAPITAL | 43,973 | | | | 1,264 | 2,527 | 2,948 | 3,538 | 3,791 | 4,044 | 4,217 |
| 366 | INVESTOR BENEFIT TOTAL | 2,238,471 | | | | 1,533 | 4,939 | 7,632 | 11,437 | 16,833 | 21,998 | 29,384 |
| 367 | INVESTOR COSTS | | | | | | | | | | | |
| 368 | OPERATIONS | 289,286 | | | | 274 | 598 | 1,017 | 1,575 | 2,236 | 2,927 | 3,959 |
| 369 | PURCHASES | 622,859 | | | | | | 262 | 879 | 1,768 | 3,187 | 5,149 |
| 370 | CAPITAL | 35,179 | | | | 1,011 | 2,022 | 2,359 | 2,830 | 3,033 | 3,235 | 3,372 |
| 371 | INVESTOR COST TOTAL | 946,523 | | | | 1,285 | 2,619 | 3,638 | 5,215 | 7,031 | 9,348 | 12,469 |
| 373 | NET BENEFIT | 1,291,948 | | | | 248 | 2,320 | 3,994 | 6,223 | 9,802 | 12,570 | 16,912 |
| 375 | PROJECT BENEFIT | 1,343,448 | -1,293 | -2,617 | -4,618 | -54 | 2,228 | 4,281 | 1,444 | 9,796 | 8,315 | 12,[illegible] |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECONOMIC COST BENEFIT | | | | | | | | | | |
| 351 | F Z BENEFIT | | | | | | | | | | |
| 352 | REVENUE | 2,815 | 3,425 | 4,082 | 4,731 | 4,988 | 5,261 | 5,501 | 5,788 | 5,884 | 5,974 |
| 353 | LABOR | 217 | 223 | 230 | 237 | 244 | 251 | 259 | 266 | 274 | 283 |
| 354 | OPERATIONS | 297 | 312 | 328 | 345 | 351 | 358 | 364 | 369 | 373 | 376 |
| 356 | F Z COSTS (NET) | | | | | | | | | | |
| 357 | OPERATIONS | 297 | 312 | 328 | 345 | 351 | 358 | 364 | 369 | 373 | 376 |
| 358 | PAID IN EQUITY | 1,453 | 1,450 | 1,450 | 1,451 | 1,449 | 1,449 | 1,449 | 1,449 | 1,449 | 1,449 |
| 359 | NET BENEFIT | 1,579 | 2,198 | 2,842 | 3,517 | 3,782 | 4,062 | 4,311 | 4,523 | 4,689 | 4,848 |
| 360 | INVESTOR CONTRIBUTION | | | | | | | | | | |
| 361 | LOCAL PURCHASES | 14,859 | 20,101 | 25,901 | 32,384 | 39,556 | 47,360 | 54,387 | 60,501 | 65,394 | 68,941 |
| 362 | LABOR | 12,899 | 15,010 | 17,712 | 20,561 | 21,180 | 21,815 | 22,469 | 23,143 | 23,838 | 24,553 |
| 363 | OPERATIONS | 5,374 | 6,774 | 8,277 | 9,881 | 10,957 | 12,124 | 13,341 | 14,385 | 15,215 | 15,612 |
| 364 | PROFIT | 326 | 811 | 1,233 | 1,727 | 2,565 | 3,480 | 4,285 | 4,975 | 5,514 | 5,885 |
| 365 | CAPITAL | 4,296 | 4,717 | 5,054 | 5,054 | 2,527 | | | | | |
| 366 | INVESTOR BENEFIT TOTAL | 37,754 | 47,417 | 58,177 | 69,607 | 76,785 | 84,789 | 94,401 | 103,004 | 109,961 | 115,190 |
| 367 | INVESTOR COSTS | | | | | | | | | | |
| 368 | OPERATIONS | 5,093 | 6,434 | 7,871 | 9,458 | 10,458 | 11,608 | 12,791 | 13,814 | 14,629 | 15,214 |
| 369 | PURCHASES | 7,429 | 10,051 | 12,950 | 16,192 | 19,778 | 23,680 | 27,193 | 30,250 | 32,697 | 34,470 |
| 370 | CAPITAL | 3,437 | 3,774 | 4,344 | 4,044 | 2,022 | | | | | |
| 371 | INVESTOR COST TOTAL | 15,959 | 20,258 | 24,865 | 29,643 | 32,257 | 35,288 | 39,984 | 44,064 | 47,326 | 49,684 |
| 373 | NET BENEFIT | 21,795 | 27,158 | 33,312 | 39,964 | 44,527 | 49,501 | 54,497 | 58,939 | 62,635 | 65,506 |
| 375 | PROJECT BENEFIT | 23,374 | 29,356 | 35,154 | 43,481 | 48,309 | 53,563 | 58,808 | 63,462 | 67,724 | 70,383 |

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ABANITA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECONOMIC COST BENEFIT | | | | | | | | | | |
| 351 | F Z BENEFIT | | | | | | | | | | |
| 352 | REVENUE | 6,033 | 6,092 | 6,152 | 6,214 | 6,278 | 6,344 | 6,412 | 6,482 | 6,554 | 15,538 |
| 353 | LABOR | 291 | 291 | 300 | 309 | 318 | 328 | 337 | 348 | 358 | 369 |
| 354 | OPERATIONS | 377 | 379 | 380 | 382 | 383 | 385 | 387 | 388 | 390 | 392 |
| 356 | F Z COSTS (NET) | | | | | | | | | | |
| 357 | OPERATIONS | 377 | 379 | 380 | 382 | 383 | 385 | 387 | 388 | 390 | 392 |
| 358 | PAID IN EQUITY | 1,440 | 1,343 | 1,070 | 885 | 885 | 885 | 744 | 594 | 451 | 153 |
| 359 | NET BENEFIT | 4,875 | 5,039 | 5,381 | 5,638 | 5,711 | 5,787 | 6,005 | 6,236 | 6,461 | 15,753 |
| 360 | INVESTOR CONTRIBUTION | | | | | | | | | | |
| 361 | LOCAL PURCHASES | 71,087 | 71,089 | 73,139 | 75,334 | 77,594 | 79,922 | 82,320 | 84,789 | 87,331 | 89,954 |
| 362 | LABOR | 25,289 | 25,289 | 26,048 | 26,830 | 27,635 | 28,464 | 29,317 | 30,197 | 31,102 | 32,036 |
| 363 | OPERATIONS | 16,153 | 16,218 | 16,570 | 16,932 | 17,305 | 17,690 | 18,084 | 18,494 | 18,914 | 19,347 |
| 364 | PROFIT | 6,072 | 6,067 | 6,260 | 6,459 | 6,663 | 6,874 | 7,091 | 7,314 | 7,544 | 7,782 |
| 365 | CAPITAL | | | | | | | | | | |
| 366 | INVESTOR BENEFIT TOTAL | 118,525 | 118,584 | 122,017 | 125,555 | 129,197 | 132,950 | 136,814 | 140,794 | 144,892 | 149,119 |
| 367 | INVESTOR COSTS | | | | | | | | | | |
| 368 | OPERATIONS | 15,553 | 15,609 | 15,954 | 16,311 | 16,678 | 17,056 | 17,445 | 17,846 | 18,259 | 18,684 |
| 369 | PURCHASES | 35,505 | 35,505 | 36,570 | 37,647 | 38,797 | 39,961 | 41,160 | 42,395 | 43,666 | 44,977 |
| 370 | CAPITAL | | | | | | | | | | |
| 371 | INVESTOR COST TOTAL | 51,059 | 51,113 | 52,524 | 53,978 | 55,475 | 57,017 | 58,605 | 60,240 | 61,924 | 63,661 |
| 373 | NET BENEFIT | 67,470 | 67,471 | 69,493 | 71,577 | 73,722 | 75,933 | 78,209 | 80,554 | 82,969 | 85,458 |
| 375 | PROJECT BENEFIT | 72,345 | 72,510 | 74,874 | 77,215 | 79,434 | 81,720 | 84,219 | 86,790 | 89,429 | 101,211 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | | |
| 221 | PURCHASES | 799,420 | | | | | | 335 | 1,035 | 2,251 | 4,875 | 6,585 |
| 222 | LABOR | 385,746 | | | | | 1,233 | 2,120 | 3,195 | 4,154 | 5,348 | 6,615 |
| 223 | UTILITIES | 166,743 | | | | | | 73 | 217 | 472 | 854 | 1,38[illegible] |
| 224 | OTHER EXPENSES | 134,984 | | | | 293 | 641 | 1,022 | 1,478 | 1,917 | 2,293 | 2,769 |
| 225 | PROFIT | 97,384 | | | | -23 | -248 | -355 | -418 | -374 | -232 | 18 |
| 226 | INVESTMENT | 43,973 | | | | 1,264 | 2,527 | 2,949 | 3,538 | 3,791 | [illegible] | 4,217 |
| 227 | PRINCIPAL (-) | 17,943 | | 36 | 131 | 232 | 214 | 226 | 296 | 355 | [illegible] | 548 |
| 228 | INTEREST (-) | 11,419 | | 78 | 248 | 362 | 358 | 339 | 419 | 581 | 576 | 749 |
| 229 | TOTAL EXCHANGE CREATION | 1,514,738 | | -105 | -379 | 969 | 3,548 | 5,576 | 8,249 | 11,355 | 15,343 | 20,38[illegible] |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | |
| 221 | PURCHASES | 9,580 | 12,852 | 16,500 | 20,704 | 25,290 | 30,279 | 34,772 | 38,601 | 41,989 | 44,877 |
| 222 | LABOR | 7,989 | 8,742 | 10,316 | 11,975 | 12,336 | 12,705 | 13,086 | 13,479 | 13,984 | 14,358 |
| 223 | UTILITIES | 1,991 | 2,694 | 3,471 | 4,340 | 5,301 | 6,347 | 7,280 | 8,109 | 8,760 | 9,245 |
| 224 | OTHER EXPENSES | 3,383 | 4,082 | 4,956 | 5,541 | 5,455 | 5,787 | 6,051 | 6,276 | 6,451 | 6,572 |
| 225 | PROFIT | 326 | 811 | 1,233 | 1,727 | 2,565 | 3,488 | 4,285 | 4,975 | 5,914 | 5,889 |
| 226 | INVESTMENT | 4,296 | 4,717 | 5,354 | 5,054 | 2,527 | | | | | |
| 227 | PRINCIPAL (-) | 632 | 668 | 705 | 745 | 787 | 832 | 879 | 928 | 980 | 1,036 |
| 228 | INTEREST (-) | 816 | 766 | 742 | 703 | 661 | 616 | 569 | 520 | 467 | 412 |
| 229 | TOTAL EXCHANGE CREATION | 26,037 | 32,451 | 39,992 | 47,894 | 52,927 | 57,151 | 64,836 | 70,672 | 74,974 | 78,626 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADANIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | |
| 221 | PURCHASES | 45,399 | 45,399 | 46,701 | 48,144 | 49,609 | 51,098 | 52,630 | 54,289 | 55,935 | 57,511 |
| 222 | LABOR | 14,729 | 14,729 | 15,171 | 15,626 | 16,095 | 16,578 | 17,075 | 17,587 | 18,115 | 18,659 |
| 223 | UTILITIES | 9,517 | 9,517 | 9,803 | 10,097 | 10,430 | 10,712 | 11,033 | 11,364 | 11,705 | 12,056 |
| 224 | OTHER EXPENSES | 6,635 | 6,701 | 6,767 | 6,835 | 6,904 | 6,978 | 7,053 | 7,130 | 7,209 | 7,291 |
| 225 | PROFIT | 6,072 | 6,067 | 6,260 | 6,459 | 6,663 | 6,874 | 7,091 | 7,314 | 7,544 | 7,782 |
| 226 | INVESTMENT | | | | | | | | | | |
| 227 | PRINCIPAL (-) | 1,094 | 1,058 | 829 | 683 | 722 | 712 | 663 | 544 | 430 | 151 |
| 228 | INTEREST (-) | 354 | 293 | 240 | 229 | 162 | 121 | 89 | 48 | 19 | 2 |
| 229 | TOTAL EXCHANGE CREATION | 88,987 | 81,871 | 83,693 | 86,298 | 88,789 | 91,356 | 94,148 | 97,013 | 99,959 | 103,146 |



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# APPENDIX 13

## REDUCTION IN LOCAL PURCHASES OF 15 PERCENT

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS  IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CASH FLOW | | | | | | | | | | | |
| | REVENUE | | | | | | | | | | | |
| 102 | FEEDBANS ABSORBED | 261 | | | | 15 | 15 | 20 | 22 | 23 | 25 | 25 |
| 103 | SALES REVENUE | 717 | | | | 135 | 139 | 143 | 148 | 152 | | |
| 104 | LEASE INCOME | 93,308 | | | | 54 | 338 | 633 | 992 | 1,348 | 1,731 | 2,124 |
| 105 | FEES AND CHARGES | 36,466 | | | | | | 20 | 63 | 129 | 232 | 371 |
| 106 | RESIDUAL VALUE | 8,909 | | | | | | | | | | |
| | TOTAL REVENUE | 139,431 | | | | 190 | 447 | 795 | 1,2[illegible]0 | 1,629 | 1,963 | 2,467 |
| | DEVELOPMENT EXPENDITURES | | | | | | | | | | | |
| 111 | WORKING CAPITAL | -4 | | 9 | 5 | 9 | 1 | 3 | 9 | 1 | 10 | 1[illegible] |
| 112 | SITE DEVELOPMENT | 751 | | 184 | 110 | | | | 174 | | 177 | 187 |
| 113 | ELECTRIC UTIL | 11,507 | | 1,580 | 1,681 | | | | 2,666 | | 2,700 | 2,6[illegible] |
| 114 | WATER SYSTEM | 1,425 | | 196 | 238 | | | | 330 | | 335 | 355 |
| 115 | SEWAGE SYSTEM | 1,277 | | 176 | 186 | | | | 296 | | 300 | 31[illegible] |
| 116 | SOLID WASTE DIS | 1,833 | | 248 | 263 | | | | 418 | | 474 | 449 |
| 117 | FENCES | 1,924 | | 251 | 266 | | | | 423 | | 479 | 455 |
| 118 | IRRIGATION SYS. | 577 | | 80 | 84 | | | | 1[illegible]4 | | 136 | 144 |
| 119 | STREETS | 5,136 | | 708 | 750 | | | | 1,190 | | 1,208 | 1,2[illegible] |
| 120 | LAND | 1,293 | 1,293 | | | | | | | | | |
| 122 | INCUBATOR | 382 | | | 382 | | | | | | | |
| 123 | COMMUNICATIONS | 1,056 | | 146 | 154 | | | | 245 | | 248 | 263 |
| 124 | SUPPORT BUILDINGS | 1,769 | | 244 | 258 | | | | 410 | | 416 | 441 |
| 125 | VEHICLES | 1,369 | | | 288 | | | | 184 | | | 609 |
| 126 | DESIGN AND CONST. MG | 1,965 | | 243 | 408 | | | | 471 | | 415 | 479 |
| 127 | WAREHOUSE CONSTRUCTI | 1,652 | | | 1,652 | | | | | | | |
| 128 | CONTINGENCY - OTHER | 9,568 | | 1,121 | 1,833 | | | | 1,941 | | 1,913 | 2,21[illegible] |
| | TOTAL INVESTMENT | 42,549 | 1,293 | 5,112 | 8,572 | 9 | 1 | 3 | 8,848 | 1 | 8,715 | 10,064 |
| | OPERATING COSTS | | | | | | | | | | | |
| 131 | LABOR | 4,367 | | 36 | 37 | 53 | 55 | 74 | 77 | 89 | 100 | 103 |
| 132 | PROMOTION | 628 | | | | 40 | 40 | 40 | 40 | 20 | 28 | 2[illegible] |
| 133 | GENERAL AND ADMIN | 3,244 | | | | 1 | 8 | 16 | 26 | 37 | 49 | 62 |
| 134 | SECURITY | 2,645 | | 13 | 13 | 29 | 29 | 30 | 46 | 48 | 65 | 84 |
| 135 | INTEREST | | | | | | | | | | | |
| 136 | MAINTENANCE | 5,712 | | 26 | 68 | 68 | 68 | 68 | 113 | 113 | 196 | 206 |
| 137 | DEPRECIATION | 33,303 | | 170 | 455 | 455 | 454 | 453 | 747 | 746 | 1,036 | 1,371 |
| | TOTAL OPERATING COST | 48,889 | | 244 | 573 | 646 | 654 | 682 | 1,048 | 1,052 | 1,477 | 1,847 |
| 139 | NET CASH FLOW | 81,263 | -1,293 | -5,186 | -8,690 | -11 | 246 | 563 | -7,942 | 1,322 | -7,143 | -8,[illegible] |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADAMIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CASH FLOW | | | | | | | | | | |
| | REVENUE | | | | | | | | | | |
| 102 | FEDDANS ABSORBED | 24 | 38 | 39 | 38 | | | | | | |
| 103 | SALES REVENUE | | | | | | | | | | |
| 104 | LEASE INCOME | 2,548 | 3,042 | 3,591 | 4,075 | 4,124 | 4,174 | 4,226 | 4,280 | 4,339 | 4,392 |
| 105 | FEES AND CHARGES | 533 | 709 | 903 | 1,116 | 1,347 | 1,594 | 1,884 | 1,971 | 2,086 | 2,145 |
| 106 | RESIDUAL VALUE | | | | | | | | | | |
| | TOTAL REVENUE | 3,078 | 3,751 | 4,494 | 5,191 | 5,471 | 5,769 | 6,038 | 6,251 | 6,421 | 6,537 |
| | DEVELOPMENT EXPENDITURES | | | | | | | | | | |
| 111 | WORKING CAPITAL | 5 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| 112 | SITE DEVELOPMENT | | | | | | | | | | |
| 113 | ELECTRIC UTIL | | | | | | | | | | |
| 114 | WATER SYSTEM | | | | | | | | | | |
| 115 | SEWAGE SYSTEM | | | | | | | | | | |
| 116 | SOLID WASTE DIS | | | | | | | | | | |
| 117 | FENCES | | | | | | | | | | |
| 118 | IRRIGATION SYS. | | | | | | | | | | |
| 119 | STREETS | | | | | | | | | | |
| 120 | LAND | | | | | | | | | | |
| 122 | INCUBATOR | | | | | | | | | | |
| 123 | COMMUNICATIONS | | | | | | | | | | |
| 124 | SUPPORT BUILDINGS | | | | | | | | | | |
| 125 | VEHICLES | | | | | | | | | | |
| 126 | DESIGN AND CONST. MG | | | | | | | | | | |
| 127 | WAREHOUSE CONSTRUCTI | | | | | | | | | | |
| 128 | CONTINGENCY - OTHER | | | | | | | | | | |
| | TOTAL INVESTMENT | 5 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| | OPERATING COSTS | | | | | | | | | | |
| 131 | LABOR | 136 | 134 | 138 | 142 | 146 | 151 | 155 | 160 | 165 | 170 |
| 132 | PROMOTION | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 133 | GENERAL AND ADMIN | 77 | 94 | 111 | 130 | 137 | 144 | 151 | 156 | 161 | 163 |
| 134 | SECURITY | 87 | 89 | 92 | 95 | 97 | 100 | 103 | 106 | 110 | 113 |
| 135 | INTEREST | | | | | | | | | | |
| 136 | MAINTENANCE | 236 | 206 | 236 | 206 | [illegible] | 236 | 236 | 206 | 206 | 236 |
| 137 | DEPRECIATION | 1,371 | 1,371 | 1,371 | 1,371 | 1,[illegible] | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| | TOTAL OPERATING COST | 1,6[illegible] | 1,914 | 1,9[illegible] | 1,963 | 1,978 | 1,992 | 2,0[illegible] | 2,0[illegible] | 2,039 | 2,043 |
| 139 | NET CASH FLOW | 2,55[illegible] | 3,2[illegible] | 3,843 | 4,595 | 4,763 | 5,145 | 5,[illegible] | 5,[illegible] | 5,750 | 5,[illegible] |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADAMIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CASH FLOW | | | | | | | | | | |
| | REVENUE | | | | | | | | | | |
| 102 | FEDDANS ABSORBED | | | | | | | | | | |
| 103 | SALES REVENUE | | | | | | | | | | |
| 104 | LEASE INCOME | 4,451 | 4,589 | 4,578 | 4,632 | 4,696 | 4,762 | 4,830 | 4,898 | 4,972 | 5,046 |
| 105 | FEES AND CHARGES | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 |
| 106 | RESIDUAL VALUE | | | | | | | | | | 8,930 |
| | TOTAL REVENUE | 6,596 | 6,654 | 6,719 | 6,777 | 6,841 | 6,907 | 6,975 | 7,045 | 7,117 | 16,151 |
| | DEVELOPMENT EXPENDITURES | | | | | | | | | | |
| 111 | WORKING CAPITAL | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -95 |
| 112 | SITE DEVELOPMENT | | | | | | | | | | |
| 113 | ELECTRIC UTIL | | | | | | | | | | |
| 114 | WATER SYSTEM | | | | | | | | | | |
| 115 | SEWAGE SYSTEM | | | | | | | | | | |
| 116 | SOLID WASTE DIS | | | | | | | | | | |
| 117 | FENCES | | | | | | | | | | |
| 118 | IRRIGATION SYS. | | | | | | | | | | |
| 119 | STREETS | | | | | | | | | | |
| 120 | LAND | | | | | | | | | | |
| 122 | INCUBATOR | | | | | | | | | | |
| 123 | COMMUNICATIONS | | | | | | | | | | |
| 124 | SUPPORT BUILDINGS | | | | | | | | | | |
| 125 | VEHICLES | | | | | | | | | | |
| 126 | DESIGN AND CONST. MG | | | | | | | | | | |
| 127 | WAREHOUSE CONSTRUCTI | | | | | | | | | | |
| 128 | CONTINGENCY - OTHER | | | | | | | | | | |
| | TOTAL INVESTMENT | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -95 |
| | OPERATING COSTS | | | | | | | | | | |
| 131 | LABOR | 175 | 175 | 180 | 186 | 191 | 197 | 203 | 209 | 215 | 222 |
| 132 | PROMOTION | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 133 | GENERAL AND ADMIN | 165 | 166 | 168 | 169 | 171 | 173 | 174 | 176 | 178 | 180 |
| 134 | SECURITY | 116 | 116 | 120 | 123 | 127 | 131 | 135 | 139 | 143 | 147 |
| 135 | INTEREST | | | | | | | | | | |
| 136 | MAINTENANCE | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 |
| 137 | DEPRECIATION | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| | TOTAL OPERATING COST | 2,053 | 2,054 | 2,065 | 2,075 | 2,086 | 2,097 | 2,109 | 2,121 | 2,133 | 2,146 |
| 139 | NET CASH FLOW | 5,912 | 5,971 | 6,023 | 6,071 | 6,124 | 6,179 | 6,235 | 6,293 | 6,353 | 13,921 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ABADIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 380 | FINANCIAL CASH FLOW | | | | | | | | | | | |
| 381 | TOTAL REVENUE | 139,481 | | | | 198 | 447 | 795 | 1,298 | 1,629 | 1,943 | 2,497 |
| 382 | OPERATING COSTS | 15,589 | | 74 | 118 | 191 | 200 | 229 | 371 | 306 | 391 | 476 |
| 383 | OPR. CASH FLOW | 123,912 | | -74 | -118 | -2 | 247 | 567 | 898 | 1,323 | 1,572 | 2,021 |
| 384 | DEPRECIATION FUNDS | 33,383 | | 170 | 455 | 455 | 454 | 453 | 747 | 744 | 1,036 | 1,375 |
| 385 | EQUITY FOR CAPTIAL NEEDS | 24,773 | 1,293 | 2,568 | 4,289 | 0 | 1 | 3 | 5,387 | -1 | 5,233 | 6,947 |
| 386 | FOREIGN DEBT SERVICE | | | | | | | | | | | |
| 387 | PRINCIPAL REPAYMENTS | 17,540 | | 34 | 131 | 282 | 214 | 226 | 296 | 355 | 473 | 548 |
| 388 | INTEREST | 11,419 | | 78 | 248 | 362 | 350 | 338 | 419 | 501 | 576 | 747 |
| 389 | TOTAL EQUITY REQUIREMENT | 53,733 | 1,293 | 2,646 | 4,668 | 573 | 565 | 568 | 6,013 | 656 | 6,233 | 7,338 |
| 319 | FINANCIAL CASH FLOW | 103,379 | -1,293 | -2,579 | -4,331 | -128 | 136 | 452 | -4,348 | 1,213 | -3,695 | -3,946 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | FINANCIAL CASH FLOW | | | | | | | | | | |
| 301 | TOTAL REVENUE | 3,078 | 3,751 | 4,454 | 5,191 | 5,471 | 5,769 | 6,038 | 6,251 | 6,421 | 6,937 |
| 302 | OPERATING COSTS | 528 | 543 | 567 | 593 | 607 | 622 | 636 | 649 | 661 | 672 |
| 303 | OPR. CASH FLO. | 2,550 | 3,207 | 3,886 | 4,598 | 4,864 | 5,147 | 5,394 | 5,602 | 5,760 | 5,865 |
| 304 | DEPRECIATION FUNDS | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| 305 | EQUITY FOR CAPTIAL NEEDS | 5 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| 306 | FOREIGN DEBT SERVICE | | | | | | | | | | |
| 307 | PRINCIPAL REPAYMENTS | 632 | 668 | 705 | 745 | 787 | 832 | 878 | 928 | 980 | 1,036 |
| 308 | INTEREST | 816 | 788 | 742 | 753 | 661 | 616 | 569 | 520 | 467 | 412 |
| 309 | TOTAL EQUITY REQUIREMENT | 1,453 | 1,451 | 1,451 | 1,451 | 1,449 | 1,450 | 1,449 | 1,449 | 1,449 | 1,449 |
| 315 | FINANCIAL CASH FLOW | 2,475 | 3,128 | 3,884 | 4,918 | 4,785 | 5,068 | 5,316 | 5,523 | 5,681 | 5,787 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | FINANCIAL CASH FLOW | | | | | | | | | | |
| 301 | TOTAL REVENUE | 6,596 | 6,654 | 6,715 | 6,777 | 6,841 | 6,907 | 6,975 | 7,045 | 7,117 | 16,101 |
| 302 | OPERATING COSTS | 682 | 684 | 694 | 705 | 715 | 727 | 738 | 753 | 762 | 775 |
| 303 | OPR. CASH FLOW | 5,914 | 5,971 | 6,021 | 6,072 | 6,126 | 6,180 | 6,237 | 6,295 | 6,355 | 15,326 |
| 304 | DEPRECIATION FUNDS | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| 305 | EQUITY FOR CAPTIAL NEEDS | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| 306 | FOREIGN DEBT SERVICE | | | | | | | | | | |
| 307 | PRINCIPAL REPAYMENTS | 1,094 | 1,050 | 829 | 693 | 722 | 762 | 687 | 544 | 436 | 151 |
| 308 | INTEREST | 354 | 293 | 240 | 203 | 162 | 121 | 80 | 48 | 19 | 2 |
| 309 | TOTAL EQUITY REQUIREMENT | 1,449 | 1,343 | 1,070 | 845 | 885 | 885 | 744 | 594 | 451 | 153 |
| 315 | FINANCIAL CASH FLOW | 5,835 | 5,998 | 6,321 | 6,558 | 6,611 | 6,666 | 6,863 | 7,072 | 7,275 | 16,543 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | INVESTOR INCOME STATEM | | | | | | | | | | | |
| 320 | SALES REVENUE | 4,631,700 | | | | | | 1,950 | 6,827 | 13,185 | 23,728 | 38,349 |
| 321 | COST OF SALES | | | | | | | | | | | |
| 322 | FOREIGN | 1,110,414 | | | | | | 468 | 1,445 | 3,142 | 5,689 | 9,192 |
| 323 | LOCAL | 1,155,739 | | | | | | 487 | 1,504 | 3,270 | 5,921 | 9,567 |
| 324 | TOTAL | 2,266,157 | | | | | | 954 | 2,949 | 6,412 | 11,609 | 18,759 |
| 325 | VALUE ADDED | 2,365,603 | | | | | | 996 | 3,076 | 6,693 | 12,119 | 19,589 |
| 326 | OPERATING EXPENSES | | | | | | | | | | | |
| 327 | FOR. LABOR | 198,723 | | | | | 1,044 | 1,798 | 2,638 | 3,536 | 4,558 | 5,638 |
| 328 | LOCAL LABOR | 478,960 | | | | | 1,666 | 2,868 | 4,208 | 5,639 | 7,278 | 8,997 |
| 329 | TOTAL | 677,682 | | | | | 2,710 | 4,666 | 6,846 | 9,175 | 11,828 | 14,635 |
| 330 | UTILITIES | 185,278 | | | | | | 78 | 241 | 524 | 949 | 1,534 |
| 331 | OTHER | 146,798 | | | | 382 | 679 | 1,093 | 1,582 | 2,072 | 2,459 | 3,859 |
| 332 | TOTAL | 1,009,758 | | | | 382 | 3,389 | 5,837 | 8,669 | 11,772 | 15,235 | 19,223 |
| 333 | OPERATING PROFIT/LOS | | | | | | | | | | | |
| 334 | LOCAL | 188,468 | | | | -24 | -271 | -387 | -447 | -486 | -249 | 29 |
| 335 | FOREIGN | 1,247,383 | | | | -278 | -3,118 | -4,454 | -5,144 | -4,672 | -2,867 | 339 |
| 336 | TOTAL | 1,355,851 | | | | -382 | -3,389 | -4,841 | -5,591 | -5,079 | -3,117 | 359 |
| | INVESTMENT | | | | | | | | | | | |
| 338 | LOCAL CAPITAL | 48,859 | | | | 1,404 | 2,838 | 3,276 | 3,971 | 4,212 | 4,493 | 4,68[illegible] |
| 339 | FOREIGN CAPITAL | 114,005 | | | | 3,276 | 6,552 | 7,644 | 9,173 | 9,828 | 10,483 | 10,928 |
| 340 | TOTAL | 162,864 | | | | 4,680 | 9,390 | 10,920 | 13,104 | 14,040 | 14,976 | 15,608 |
| 341 | WORKING CAPITAL | 494,762 | | | | | | 293 | 904 | 1,966 | 3,559 | 5,751 |
| 342 | TOTAL INVESTMENT | 657,625 | | | | 4,680 | 9,390 | 11,213 | 14,008 | 16,006 | 18,535 | 21,351 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | INVESTOR INCOME STATEM | | | | | | | | | | |
| 320 | SALES REVENUE | 55,319 | 74,836 | 96,427 | 120,563 | 147,263 | 176,316 | 202,470 | 229,239 | 243,457 | 256,663 |
| 321 | COST OF SALES | | | | | | | | | | |
| 322 | FOREIGN | 13,262 | 17,941 | 23,117 | 28,904 | 35,305 | 42,273 | 48,542 | 53,999 | 58,366 | 61,532 |
| 323 | LOCAL | 13,803 | 18,673 | 24,061 | 30,083 | 36,746 | 43,995 | 52,527 | 56,253 | 60,749 | 64,043 |
| 324 | TOTAL | 27,065 | 36,615 | 47,178 | 58,987 | 72,051 | 86,265 | 99,069 | 110,292 | 119,115 | 125,575 |
| 325 | VALUE ADDED | 28,253 | 38,222 | 49,249 | 61,576 | 75,212 | 90,051 | 103,419 | 115,038 | 124,342 | 131,086 |
| 326 | OPERATING EXPENSES | | | | | | | | | | |
| 327 | FOR. LABOR | 6,818 | 5,483 | 6,472 | 7,515 | 7,741 | 7,973 | 8,212 | 8,459 | 8,713 | 8,974 |
| 328 | LOCAL LABOR | 10,874 | 13,888 | 16,394 | 19,037 | 19,610 | 20,197 | 20,803 | 21,427 | 22,070 | 22,732 |
| 329 | TOTAL | 17,692 | 19,371 | 22,866 | 26,552 | 27,351 | 28,171 | 29,015 | 29,886 | 30,783 | 31,707 |
| 330 | UTILITIES | 2,213 | 2,993 | 3,857 | 4,823 | 5,891 | 7,053 | 8,099 | 9,010 | 9,738 | 10,246 |
| 331 | OTHER | 3,784 | 4,475 | 5,273 | 6,084 | 6,205 | 6,346 | 6,637 | 6,876 | 7,463 | 7,191 |
| 332 | TOTAL | 23,688 | 26,840 | 31,996 | 37,459 | 39,447 | 41,569 | 43,748 | 45,772 | 47,985 | 49,164 |
| 333 | OPERATING PROFIT/LOS | | | | | | | | | | |
| 334 | LOCAL | 372 | 911 | 1,380 | 1,929 | 2,861 | 3,879 | 4,773 | 5,541 | 6,141 | 6,554 |
| 335 | FOREIGN | 4,273 | 10,471 | 15,872 | 22,187 | 32,904 | 44,803 | 54,892 | 63,725 | 70,417 | 75,368 |
| 336 | TOTAL | 4,645 | 11,382 | 17,253 | 24,117 | 35,765 | 48,682 | 59,665 | 69,266 | 76,757 | 81,922 |
| | INVESTMENT | | | | | | | | | | |
| 337 | LOCAL CAPITAL | 4,774 | 5,242 | 5,616 | 5,616 | 2,808 | | | | | |
| 338 | FOREIGN CAPITAL | 11,131 | 12,230 | 13,104 | 13,104 | 6,552 | | | | | |
| 339 | TOTAL | 15,913 | 17,472 | 18,720 | 18,720 | 9,360 | | | | | |
| 340 | WORKING CAPITAL | 8,298 | 11,225 | 14,464 | 18,034 | 22,089 | 26,447 | 30,377 | 33,786 | 36,519 | 38,499 |
| 341 | TOTAL INVESTMENT | 24,211 | 28,697 | 33,184 | 36,754 | 31,449 | 26,447 | 30,372 | 33,786 | 36,519 | 38,499 |

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADAWIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | INVESTOR INCOME STATEM | | | | | | | | | | |
| 320 | SALES REVENUE | 264,363 | 264,363 | 272,292 | 280,463 | 289,878 | 297,544 | 306,469 | 315,663 | 325,128 | 334,896 |
| 321 | COST OF SALES | | | | | | | | | | |
| 322 | FOREIGN | 63,379 | 63,378 | 65,279 | 67,238 | 69,255 | 71,333 | 73,473 | 75,677 | 77,946 | 80,297 |
| 323 | LOCAL | 65,965 | 65,965 | 67,944 | 69,983 | 72,082 | 74,245 | 76,479 | 78,766 | 81,129 | 83,564 |
| 324 | TOTAL | 129,343 | 129,343 | 133,223 | 137,221 | 141,337 | 145,578 | 149,945 | 154,443 | 159,074 | 163,858 |
| 325 | VALUE ADDED | 135,019 | 135,019 | 139,069 | 143,243 | 147,539 | 151,967 | 156,525 | 161,220 | 166,054 | 171,040 |
| 326 | OPERATING EXPENSES | | | | | | | | | | |
| 327 | FOR. LABOR | 9,243 | 9,243 | 9,521 | 9,806 | 10,101 | 10,404 | 10,716 | 11,037 | 11,368 | 11,710 |
| 329 | LOCAL LABOR | 23,414 | 23,414 | 24,117 | 24,841 | 25,586 | 26,353 | 27,144 | 27,958 | 28,796 | 29,661 |
| 329 | TOTAL | 32,657 | 32,658 | 33,638 | 34,647 | 35,686 | 36,757 | 37,860 | 38,995 | 40,165 | 41,371 |
| 330 | UTILITIES | 10,575 | 10,575 | 10,892 | 11,219 | 11,555 | 11,902 | 12,259 | 12,627 | 13,005 | 13,396 |
| 331 | OTHER | 7,255 | 7,320 | 7,386 | 7,455 | 7,525 | 7,598 | 7,672 | 7,749 | 7,829 | 7,913 |
| 332 | TOTAL | 50,499 | 50,552 | 51,916 | 53,320 | 54,766 | 56,257 | 57,791 | 59,371 | 60,998 | 62,677 |
| 333 | OPERATING PROFIT/LOS | | | | | | | | | | |
| 334 | LOCAL | 6,763 | 6,797 | 6,972 | 7,194 | 7,422 | 7,657 | 7,899 | 8,148 | 8,404 | 8,669 |
| 335 | FOREIGN | 77,769 | 77,769 | 80,181 | 82,729 | 85,351 | 88,053 | 90,835 | 93,701 | 96,651 | 99,695 |
| 336 | TOTAL | 84,531 | 84,467 | 87,154 | 89,922 | 92,773 | 95,710 | 98,734 | 101,849 | 105,056 | 108,364 |
| | INVESTMENT | | | | | | | | | | |
| 338 | LOCAL CAPITAL | | | | | | | | | | |
| 339 | FOREIGN CAPITAL | | | | | | | | | | |
| 340 | TOTAL | | | | | | | | | | |
| 341 | WORKING CAPITAL | 39,654 | 39,654 | 40,844 | 42,049 | 43,331 | 44,632 | 45,978 | 47,349 | 48,769 | 50,234 |
| 342 | TOTAL INVESTMENT | 39,654 | 39,654 | 40,844 | 42,049 | 43,331 | 44,632 | 45,978 | 47,349 | 48,769 | 50,234 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECONOMIC COST BENEFIT | | | | | | | | | | | |
| 351 | F Z BENEFIT | | | | | | | | | | | |
| 352 | REVENUE | 139,401 | | | | 190 | 447 | 795 | 1,203 | 1,629 | 1,983 | 2,497 |
| 353 | LABOR | 6,712 | | 48 | 50 | 82 | 94 | 104 | 123 | 136 | 146 | 187 |
| 354 | OPERATIONS | 8,877 | | 26 | 68 | 110 | 116 | 125 | 179 | 169 | 295 | 289 |
| 356 | F Z COSTS (NET) | | | | | | | | | | | |
| 357 | OPERATIONS | 8,877 | | 26 | 68 | 110 | 116 | 125 | 179 | 169 | 295 | 289 |
| 358 | PAID IN EQUITY | 53,733 | 1,293 | 2,666 | 4,668 | 573 | 565 | 568 | 6,013 | 856 | 6,233 | 7,338 |
| 359 | NET BENEFIT | 92,381 | -1,293 | -2,417 | -4,618 | -302 | -34 | 332 | -4,691 | 909 | -4,184 | -4,653 |
| 361 | INVESTOR CONTRIBUTION | | | | | | | | | | | |
| 361 | LOCAL PURCHASES | 1,155,739 | | | | | | 487 | 1,594 | 3,278 | 5,971 | 9,567 |
| 362 | LABOR | 978,321 | | | | | 2,148 | 3,767 | 5,577 | 7,407 | 9,549 | 11,912 |
| 363 | OPERATIONS | 332,067 | | | | 382 | 679 | 1,171 | 1,823 | 2,597 | 3,498 | 4,593 |
| 364 | PROFIT | 198,468 | | | | -24 | -271 | -387 | -447 | -406 | -249 | 29 |
| 365 | CAPITAL | 48,859 | | | | 1,404 | 2,838 | 3,276 | 3,931 | 4,212 | 4,493 | 4,68[illegible] |
| 366 | INVESTOR BENEFIT TOTAL | 2,223,457 | | | | 1,662 | 5,434 | 8,313 | 12,338 | 17,080 | 23,171 | 30,685 |
| 367 | INVESTOR COSTS | | | | | | | | | | | |
| 368 | OPERATIONS | 319,818 | | | | 283 | 635 | 1,092 | 1,703 | 2,434 | 3,211 | 4,343 |
| 369 | PURCHASES | 577,869 | | | | | | 243 | 792 | 1,635 | 2,940 | 4,784 |
| 370 | CAPITAL | 39,087 | | | | 1,123 | 2,246 | 2,621 | 3,145 | 3,370 | 3,594 | 3,744 |
| 371 | INVESTOR COST TOTAL | 935,975 | | | | 1,436 | 2,891 | 3,956 | 5,640 | 7,438 | 9,746 | 12,471 |
| 373 | NET BENEFIT | 1,287,479 | | | | 274 | 2,523 | 4,358 | 6,738 | 9,641 | 13,395 | 17,81[illegible] |
| 375 | PROJECT BENEFIT | 1,373,[illegible] | -1,293 | -2,417 | -4,618 | -29 | 2,4[illegible] | 4,[illegible] | 7,[illegible] | [illegible] | 9,29[illegible] | 13,1[illegible] |

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECONOMIC COST BENEFIT | | | | | | | | | | |
| 351 | F Z BENEFIT | | | | | | | | | | |
| 352 | REVENUE | 3,078 | 3,751 | 4,494 | 5,191 | 5,471 | 5,769 | 6,036 | 6,251 | 6,421 | 6,537 |
| 353 | LABOR | 217 | 223 | 230 | 237 | 244 | 251 | 259 | 266 | 274 | 293 |
| 354 | OPERATIONS | 303 | 320 | 338 | 356 | 363 | 371 | 377 | 383 | 387 | 398 |
| 356 | F Z COSTS (NET) | | | | | | | | | | |
| 357 | OPERATIONS | 303 | 320 | 338 | 356 | 363 | 371 | 377 | 383 | 387 | 398 |
| 358 | PAID IN EQUITY | 1,453 | 1,451 | 1,451 | 1,451 | 1,449 | 1,450 | 1,449 | 1,449 | 1,449 | 1,449 |
| 359 | NET BENEFIT | 1,841 | 2,523 | 3,233 | 3,977 | 4,265 | 4,570 | 4,830 | 5,068 | 5,246 | 5,371 |
| 363 | INVESTOR CONTRIBUTION | | | | | | | | | | |
| 361 | LOCAL PURCHASES | 13,883 | 18,673 | 24,001 | 30,883 | 36,746 | 43,995 | 53,529 | 56,283 | 60,749 | 64,043 |
| 362 | LABOR | 14,283 | 16,638 | 19,630 | 22,705 | 23,488 | 24,184 | 24,980 | 25,657 | 26,427 | 27,219 |
| 363 | OPERATIONS | 5,916 | 7,469 | 9,138 | 10,957 | 12,496 | 13,398 | 14,739 | 15,[illegible] | 16,882 | 17,457 |
| 364 | PROFIT | 372 | 911 | 1,380 | 1,929 | 2,861 | 3,879 | 4,773 | 5,541 | 6,141 | 6,554 |
| 365 | CAPITAL | 4,774 | 5,242 | 5,616 | 5,616 | 2,808 | | | | | |
| 366 | INVESTOR BENEFIT TOTAL | 39,148 | 48,924 | 59,817 | 71,330 | 77,991 | 85,456 | 94,939 | 103,286 | 110,118 | 115,274 |
| 367 | INVESTOR COSTS | | | | | | | | | | |
| 368 | OPERATIONS | 5,689 | 7,094 | 8,665 | 10,388 | 11,549 | 12,821 | 14,129 | 15,261 | 16,168 | 16,884 |
| 369 | PURCHASES | 6,982 | 9,337 | 12,030 | 15,842 | 18,373 | 21,998 | 25,269 | 28,181 | 30,374 | 32,022 |
| 370 | CAPITAL | 3,819 | 4,193 | 4,493 | 4,493 | 2,246 | | | | | |
| 371 | INVESTOR COST TOTAL | 16,329 | 20,624 | 25,208 | 29,922 | 32,168 | 34,819 | 39,391 | 43,362 | 46,534 | 48,825 |
| 373 | NET BENEFIT | 22,819 | 28,300 | 34,609 | 41,408 | 45,823 | 50,637 | 55,547 | 59,924 | 63,584 | 66,448 |
| 375 | PROJECT BENEFIT | 24,66[illegible] | 31,824 | 37,941 | 45,394 | 50,[illegible]9 | 55,2[illegible] | 6[illegible],384 | 64,592 | 68,830 | 71,819 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECONOMIC COST BENEFIT | | | | | | | | | | |
| 351 | F Z BENEFIT | | | | | | | | | | |
| 352 | REVENUE | 6,596 | 6,654 | 6,715 | 6,777 | 6,841 | 6,957 | 6,974 | 7,045 | 7,117 | 16,101 |
| 353 | LABOR | 291 | 291 | 308 | 309 | 318 | 328 | 337 | 348 | 358 | 369 |
| 354 | OPERATIONS | 391 | 393 | 394 | 396 | 397 | 399 | 401 | 402 | 404 | 406 |
| 356 | F Z COSTS (NET) | | | | | | | | | | |
| 357 | OPERATIONS | 391 | 393 | 394 | 396 | 397 | 399 | 401 | 402 | 404 | 406 |
| 358 | PAID IN EQUITY | 1,449 | 1,343 | 1,078 | 865 | 885 | 865 | 744 | 594 | 451 | 153 |
| 359 | NET BENEFIT | 5,439 | 5,602 | 5,944 | 6,281 | 6,274 | 6,350 | 6,468 | 6,799 | 7,024 | 16,316 |
| 360 | INVESTOR CONTRIBUTION | | | | | | | | | | |
| 361 | LOCAL PURCHASES | 65,965 | 65,965 | 67,944 | 69,983 | 72,082 | 74,245 | 76,472 | 78,766 | 81,128 | 83,564 |
| 362 | LABOR | 26,036 | 28,036 | 28,877 | 29,744 | 30,636 | 31,555 | 32,502 | 33,477 | 34,481 | 35,516 |
| 363 | OPERATIONS | 17,836 | 17,894 | 18,278 | 18,673 | 19,080 | 19,499 | 19,931 | 20,376 | 20,834 | 21,306 |
| 364 | PROFIT | 6,763 | 6,757 | 6,972 | 7,194 | 7,422 | 7,657 | 7,899 | 8,148 | 8,404 | 8,669 |
| 365 | CAPITAL | | | | | | | | | | |
| 366 | INVESTOR BENEFIT TOTAL | 116,594 | 119,693 | 122,871 | 125,593 | 129,220 | 132,956 | 136,803 | 140,767 | 144,846 | 149,055 |
| 367 | INVESTOR COSTS | | | | | | | | | | |
| 368 | OPERATIONS | 17,173 | 17,229 | 17,687 | 17,996 | 18,396 | 18,809 | 19,234 | 19,671 | 20,122 | 20,587 |
| 369 | PURCHASES | 32,983 | 32,983 | 33,972 | 34,991 | 36,041 | 37,122 | 38,236 | 39,383 | 40,564 | 41,782 |
| 370 | CAPITAL | | | | | | | | | | |
| 371 | INVESTOR COST TOTAL | 50,155 | 50,212 | 51,578 | 52,987 | 54,437 | 55,931 | 57,470 | 59,054 | 60,686 | 62,369 |
| 373 | NET BENEFIT | 66,441 | 68,442 | 70,493 | 72,607 | 74,783 | 77,025 | 79,334 | 81,712 | 84,160 | 86,686 |
| 375 | PROJECT BENEFIT | 71,879 | 74,044 | 76,437 | 78,887 | 81,057 | 83,375 | 85,803 | 88,511 | 91,184 | 103,002 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | | |
| 221 | PURCHASES | 1,110,416 | | | | | | 468 | 1,445 | 3,142 | 5,689 | 9,197 |
| 222 | LABOR | 338,841 | | | | | 1,355 | 2,333 | 3,473 | 4,588 | 5,914 | 7,315 |
| 223 | UTILITIES | 185,270 | | | | | | 78 | 241 | 524 | 949 | 1,534 |
| 224 | OTHER EXPENSES | 146,796 | | | | 382 | 679 | 1,093 | 1,582 | 2,072 | 2,459 | 3,359 |
| 225 | PROFIT | 188,468 | | | | -24 | -271 | -387 | -447 | -486 | -249 | 20 |
| 226 | INVESTMENT | 48,859 | | | | 1,484 | 2,038 | 3,276 | 3,931 | 4,212 | 4,493 | 4,685 |
| 227 | PRINCIPAL (-) | 17,540 | | 30 | 131 | 202 | 214 | 226 | 284 | 355 | 473 | 548 |
| 228 | INTEREST (-) | 11,419 | | 78 | 248 | 362 | 350 | 338 | 419 | 581 | 576 | 747 |
| 229 | TOTAL EXCHANGE CREATION | 1,989,694 | | -108 | -379 | 1,115 | 4,037 | 6,296 | 9,446 | 13,276 | 18,254 | 24,513 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | |
| 221 | PURCHASES | 13,202 | 17,941 | 23,117 | 28,914 | 35,705 | 42,270 | 48,542 | 53,999 | 58,366 | 61,532 |
| 222 | LABOR | 8,846 | 9,690 | 11,433 | 13,276 | 13,470 | 14,385 | 14,988 | 14,943 | 15,392 | 15,853 |
| 223 | UTILITIES | 2,213 | 2,993 | 3,857 | 4,823 | 5,891 | 7,053 | 8,099 | 9,316 | 9,739 | 10,260 |
| 224 | OTHER EXPENSES | 3,794 | 4,479 | 5,273 | 6,084 | 6,235 | 6,346 | 6,639 | 6,876 | 7,463 | 7,191 |
| 225 | PROFIT | 372 | 911 | 1,380 | 1,929 | 2,461 | 3,879 | 4,773 | 5,541 | 6,141 | 6,554 |
| 226 | INVESTMENT | 4,774 | 5,242 | 5,616 | 5,616 | 2,838 | | | | | |
| 227 | PRINCIPAL (-) | 632 | 648 | 705 | 745 | 787 | 832 | 878 | 928 | 980 | 1,036 |
| 228 | INTEREST (-) | 816 | 786 | 742 | 753 | 861 | 616 | 569 | 528 | 467 | 412 |
| 229 | TOTAL EXCHANGE CREATION | 31,722 | 39,885 | 49,229 | 59,184 | 65,298 | 72,154 | 81,184 | 88,921 | 95,752 | 99,948 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | |
| 221 | PURCHASES | 63,378 | 65,378 | 65,279 | 67,238 | 69,255 | 71,333 | 73,473 | 75,677 | 77,946 | 80,247 |
| 222 | LABOR | 16,320 | 16,329 | 16,819 | 17,323 | 17,843 | 18,379 | 18,934 | 19,498 | 20,082 | 20,675 |
| 223 | UTILITIES | 10,573 | 10,575 | 10,892 | 11,219 | 11,555 | 11,982 | 12,290 | 12,627 | 13,005 | 13,396 |
| 224 | OTHER EXPENSES | 7,255 | 7,320 | 7,386 | 7,455 | 7,525 | 7,598 | 7,672 | 7,749 | 7,829 | 7,910 |
| 225 | PROFIT | 6,763 | 6,797 | 6,972 | 7,194 | 7,422 | 7,657 | 7,899 | 8,148 | 8,404 | 8,669 |
| 226 | INVESTMENT | | | | | | | | | | |
| 227 | PRINCIPAL (-) | 1,094 | 1,058 | 829 | 693 | 722 | 762 | 663 | 544 | 436 | 151 |
| 228 | INTEREST (-) | 354 | 293 | 248 | 298 | 162 | 121 | 89 | 48 | 19 | 2 |
| 229 | TOTAL EXCHANGE CREATION | 102,852 | 103,816 | 106,279 | 109,545 | 112,717 | 115,984 | 119,498 | 123,166 | 126,917 | 130,704 |



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# APPENDIX 14

## LOCAL LABOR REDUCED BY 10 PERCENT

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ABADIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CASH FLOW | | | | | | | | | | | |
| | REVENUE | | | | | | | | | | | |
| 132 | FEDDANS ABSORBED | 261 | | | | 15 | 15 | 20 | 22 | 23 | 25 | 25 |
| 133 | SALES REVENUE | 717 | | | | 135 | 139 | 143 | 148 | 152 | | |
| 134 | LEASE INCOME | 93,306 | | | | 54 | 308 | 633 | 992 | 1,348 | 1,731 | 2,126 |
| 135 | FEES AND CHARGES | 36,466 | | | | | | 20 | 48 | 129 | 232 | 371 |
| 136 | RESIDUAL VALUE | 8,989 | | | | | | | | | | |
| | TOTAL REVENUE | 139,481 | | | | 198 | 447 | 795 | 1,208 | 1,629 | 1,963 | 2,497 |
| | DEVELOPMENT EXPENDITURES | | | | | | | | | | | |
| 111 | WORKING CAPITAL | -4 | | 9 | -5 | 9 | 1 | 3 | 9 | -1 | 10 | 10 |
| 112 | SITE DEVELOPMENT | 791 | | 184 | 110 | | | | 174 | | 177 | 187 |
| 113 | ELECTRIC UTIL | 11,987 | | 1,586 | 1,681 | | | | 2,646 | | 2,706 | 2,268 |
| 114 | WATER SYSTEM | 1,425 | | 194 | 208 | | — | | 329 | | 335 | 352 |
| 115 | SEWAGE SYSTEM | 1,277 | | 176 | 186 | | | | 296 | | 308 | 318 |
| 116 | SOLID WASTE DIS | 1,883 | | 248 | 263 | | | | 418 | | 424 | 440 |
| 117 | FENCES | 1,824 | | 251 | 266 | | | | 423 | | 429 | 454 |
| 118 | IRRIGATION SYS. | 977 | | 88 | 84 | | | | 134 | | 136 | 144 |
| 119 | STREETS | 9,136 | | 788 | 758 | | | | 1,198 | | 1,248 | 1,288 |
| 120 | LAND | 1,293 | 1,293 | | | | | | | | | |
| 122 | INCUBATOR | 382 | | | 382 | | | | | | | |
| 123 | COMMUNICATIONS | 1,056 | | 148 | 154 | | | | 245 | | 248 | 263 |
| 124 | SUPPORT BUILDINGS | 1,769 | | 244 | 256 | | | | 418 | | 416 | 441 |
| 125 | VEHICLES | 1,269 | | | 280 | | | | 194 | | | 685 |
| 126 | DESIGN AND CONST. MG | 1,965 | | 243 | 408 | | | | 471 | | 415 | 479 |
| 127 | WAREHOUSE CONSTRUCTI | 1,652 | | | 1,652 | | | | | | | |
| 128 | CONTINGENCY - OTHER | 9,864 | | 1,121 | 1,883 | | | | 1,941 | | 1,913 | 2,218 |
| | TOTAL INVESTMENT | 42,549 | 1,293 | 5,112 | 8,572 | 9 | 1 | 3 | 8,848 | 1 | 8,715 | 10,364 |
| | OPERATING COSTS | | | | | | | | | | | |
| 131 | LABOR | 4,367 | | 36 | 37 | 53 | 55 | 74 | 77 | 80 | 108 | 103 |
| 132 | PROMOTION | 628 | | | | 49 | 48 | 48 | 48 | 28 | 28 | 2[illegible] |
| 133 | GENERAL AND ADMIN | 3,244 | | | | 1 | 8 | 16 | 26 | 37 | 49 | 62 |
| 134 | SECURITY | 2,645 | | 13 | 13 | 28 | 29 | 30 | [illegible] | 48 | 65 | 84 |
| 135 | INTEREST | | | | | | | | | | | |
| 136 | MAINTENANCE | 5,812 | | 26 | 68 | 68 | 68 | 68 | 113 | 113 | 156 | 264 |
| 137 | DEPRECIATION | 33,388 | | 178 | 455 | 455 | 454 | 453 | 747 | 746 | 1,636 | 1,371 |
| | TOTAL OPERATING COST | 48,889 | | 244 | 573 | 646 | 694 | 682 | 1,048 | 1,052 | 1,497 | 1,847 |
| 139 | NET CASH FLOW | 81,263 | -1,293 | -5,184 | -8,698 | -11 | 246 | 543 | -7,947 | 1,322 | -7,148 | -8,247 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1989 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CASH FLOW | | | | | | | | | | |
| | REVENUE | | | | | | | | | | |
| 102 | FEDDANS ABSORBED | 26 | 30 | 38 | 38 | | | | | | |
| 103 | SALES REVENUE | | | | | | | | | | |
| 104 | LEASE INCOME | 2,546 | 3,042 | 3,591 | 4,075 | 4,124 | 4,174 | 4,226 | 4,288 | 4,335 | 4,392 |
| 105 | FEES AND CHARGES | 533 | 709 | 903 | 1,116 | 1,347 | 1,594 | 1,864 | 1,971 | 2,086 | 2,145 |
| 106 | RESIDUAL VALUE | | | | | | | | | | |
| | TOTAL REVENUE | 3,078 | 3,751 | 4,494 | 5,191 | 5,471 | 5,769 | 6,030 | 6,251 | 6,421 | 6,537 |
| | DEVELOPMENT EXPENDITURES | | | | | | | | | | |
| 111 | WORKING CAPITAL | 5 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| 112 | SITE DEVELOPMENT | | | | | | | | | | |
| 113 | ELECTRIC UTIL | | | | | | | | | | |
| 114 | WATER SYSTEM | | | | | | | | | | |
| 115 | SEWAGE SYSTEM | | | | | | | | | | |
| 116 | SOLID WASTE DIS | | | | | | | | | | |
| 117 | FENCES | | | | | | | | | | |
| 118 | IRRIGATION SYS. | | | | | | | | | | |
| 119 | STREETS | | | | | | | | | | |
| 120 | LAND | | | | | | | | | | |
| 122 | INCUBATOR | | | | | | | | | | |
| 123 | COMMUNICATIONS | | | | | | | | | | |
| 124 | SUPPORT BUILDINGS | | | | | | | | | | |
| 125 | VEHICLES | | | | | | | | | | |
| 126 | DESIGN AND CONST. MG | | | | | | | | | | |
| 127 | WAREHOUSE CONSTRUCTI | | | | | | | | | | |
| 128 | CONTINGENCY - OTHER | | | | | | | | | | |
| | TOTAL INVESTMENT | 5 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| | OPERATING COSTS | | | | | | | | | | |
| 131 | LABOR | 129 | 134 | 138 | 142 | 146 | 151 | 155 | 160 | 164 | 170 |
| 132 | PROMOTION | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 133 | GENERAL AND ADMIN | 77 | 94 | 111 | 130 | 137 | 144 | 151 | 156 | 161 | 163 |
| 134 | SECURITY | 87 | 89 | 92 | 95 | 97 | 100 | 103 | 106 | 110 | 113 |
| 135 | INTEREST | | | | | | | | | | |
| 136 | MAINTENANCE | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 |
| 137 | DEPRECIATION | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| | TOTAL OPERATING COST | 1,891 | 1,914 | 1,938 | 1,963 | 1,976 | 1,992 | 2,006 | 2,020 | 2,032 | 2,043 |
| 139 | NET CASH FLOW | 2,552 | 3,235 | 3,493 | 4,505 | 4,463 | 5,145 | 5,369 | 5,631 | 5,750 | 5,844 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CASH FLOW | | | | | | | | | | |
| | REVENUE | | | | | | | | | | |
| 102 | FEEDBACK ABSORBED | | | | | | | | | | |
| 103 | SALES REVENUE | | | | | | | | | | |
| 104 | LEASE INCOME | 4,451 | 4,509 | 4,570 | 4,632 | 4,696 | 4,762 | 4,830 | 4,900 | 4,972 | 5,046 |
| 105 | FEES AND CHARGES | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 |
| 106 | RESIDUAL VALUE | | | | | | | | | | 8,989 |
| | TOTAL REVENUE | 6,596 | 6,654 | 6,715 | 6,777 | 6,841 | 6,907 | 6,975 | 7,045 | 7,117 | 16,181 |
| | DEVELOPMENT EXPENDITURES | | | | | | | | | | |
| 111 | WORKING CAPITAL | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -95 |
| 112 | SITE DEVELOPMENT | | | | | | | | | | |
| 113 | ELECTRIC UTIL | | | | | | | | | | |
| 114 | WATER SYSTEM | | | | | | | | | | |
| 115 | SEWAGE SYSTEM | | | | | | | | | | |
| 116 | SOLID WASTE DIS | | | | | | | | | | |
| 117 | FENCES | | | | | | | | | | |
| 118 | IRRIGATION SYS. | | | | | | | | | | |
| 119 | STREETS | | | | | | | | | | |
| 120 | LAND | | | | | | | | | | |
| 122 | INCUBATOR | | | | | | | | | | |
| 123 | COMMUNICATIONS | | | | | | | | | | |
| 124 | SUPPORT BUILDINGS | | | | | | | | | | |
| 125 | VEHICLES | | | | | | | | | | |
| 126 | DESIGN AND CONST. MG | | | | | | | | | | |
| 127 | WAREHOUSE CONSTRUCTI | | | | | | | | | | |
| 128 | CONTINGENCY - OTHER | | | | | | | | | | |
| | TOTAL INVESTMENT | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -95 |
| | OPERATING COSTS | | | | | | | | | | |
| 131 | LABOR | 175 | 175 | 180 | 186 | 191 | 197 | 203 | 209 | 215 | 222 |
| 132 | PROMOTION | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 133 | GENERAL AND ADMIN | 165 | 166 | 168 | 169 | 171 | 173 | 174 | 176 | 178 | 180 |
| 134 | SECURITY | 116 | 116 | 120 | 123 | 127 | 131 | 135 | 139 | 143 | 147 |
| 135 | INTEREST | | | | | | | | | | |
| 136 | MAINTENANCE | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 |
| 137 | DEPRECIATION | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| | TOTAL OPERATING COST | 2,053 | 2,054 | 2,065 | 2,075 | 2,086 | 2,097 | 2,109 | 2,121 | 2,133 | 2,146 |
| 139 | NET CASH FLOW | 5,912 | 5,971 | 6,120 | 6,271 | 6,124 | 6,177 | 6,238 | 6,293 | 6,353 | 13,671 |

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | FINANCIAL CASH FLOW | | | | | | | | | | | |
| 301 | TOTAL REVENUE | 139,481 | | | | 190 | 447 | 795 | 1,238 | 1,629 | 1,963 | 2,497 |
| 302 | OPERATING COSTS | 15,589 | | 74 | 118 | 191 | 200 | 229 | 301 | 306 | 301 | 476 |
| 303 | OPR. CASH FLOW | 123,812 | | -74 | -118 | -2 | 247 | 567 | 898 | 1,323 | 1,972 | 2,021 |
| 304 | DEPRECIATION FUNDS | 33,300 | | 170 | 455 | 455 | 454 | 453 | 747 | 746 | 1,036 | 1,371 |
| 305 | EQUITY FOR CAPITAL NEEDS | 24,773 | 1,293 | 2,560 | 4,269 | 9 | 1 | 3 | 5,307 | 1 | 5,233 | 6,047 |
| 306 | FOREIGN DEBT SERVICE | | | | | | | | | | | |
| 307 | PRINCIPAL REPAYMENTS | 17,540 | | 36 | 131 | 202 | 214 | 226 | 246 | 355 | 493 | 540 |
| 308 | INTEREST | 11,419 | | 78 | 248 | 362 | 330 | 330 | 419 | 581 | 976 | 747 |
| 309 | TOTAL EQUITY REQUIREMENT | 53,733 | 1,293 | 2,666 | 4,668 | 573 | 545 | 568 | 6,013 | 656 | 6,233 | 7,336 |
| 315 | FINANCIAL CASH FLOW | 103,379 | -1,293 | -2,578 | -4,331 | -120 | 136 | 452 | -4,368 | 1,213 | -3,629 | -3,946 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | FINANCIAL CASH FLOW | | | | | | | | | | |
| 301 | TOTAL REVENUE | 3,878 | 3,751 | 4,454 | 5,191 | 5,471 | 5,769 | 6,639 | 6,251 | 6,421 | 6,537 |
| 302 | OPERATING COSTS | 526 | 543 | 567 | 593 | 607 | 622 | 636 | 649 | 661 | 672 |
| 303 | OPR. CASH FLOW | 2,550 | 3,207 | 3,884 | 4,598 | 4,864 | 5,147 | 3,394 | 5,602 | 5,760 | 5,865 |
| 304 | DEPRECIATION FUNDS | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| 305 | EQUITY FOR CAPTIAL NEEDS | 5 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| 306 | FOREIGN DEBT SERVICE | | | | | | | | | | |
| 307 | PRINCIPAL REPAYMENTS | 632 | 668 | 705 | 745 | 787 | 832 | 878 | 928 | 980 | 1,036 |
| 308 | INTEREST | 816 | 780 | 742 | 703 | 661 | 616 | 569 | 520 | 467 | 412 |
| 309 | TOTAL EQUITY REQUIREMENT | 1,453 | 1,451 | 1,451 | 1,451 | 1,449 | 1,450 | 1,449 | 1,449 | 1,449 | 1,449 |
| 315 | FINANCIAL CASH FLOW | 2,479 | 3,128 | 3,886 | 4,518 | 4,785 | 5,068 | 5,316 | 5,523 | 5,681 | 5,787 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ABADIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | FINANCIAL CASH FLOW | | | | | | | | | | |
| 301 | TOTAL REVENUE | 6,996 | 6,654 | 6,715 | 6,777 | 6,841 | 6,907 | 6,975 | 7,045 | 7,117 | 16,101 |
| 302 | OPERATING COSTS | 682 | 684 | 694 | 705 | 715 | 727 | 738 | 750 | 762 | 775 |
| 303 | OPR. CASH FLOW | 5,914 | 5,971 | 6,021 | 6,072 | 6,126 | 6,180 | 6,237 | 6,295 | 6,355 | 15,326 |
| 304 | DEPRECIATION FLOWS | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| 305 | EQUITY FOR CAPTIAL NEEDS | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| 306 | FOREIGN DEBT SERVICE | | | | | | | | | | |
| 307 | PRINCIPAL REPAYMENTS | 1,094 | 1,050 | 829 | 643 | 722 | 762 | 663 | 544 | 438 | 151 |
| 308 | INTEREST | 354 | 293 | 240 | 200 | 162 | 121 | 80 | 40 | 10 | 2 |
| 309 | TOTAL EQUITY REQUIREMENT | 1,449 | 1,343 | 1,070 | 885 | 885 | 885 | 744 | 594 | 451 | 153 |
| 315 | FINANCIAL CASH FLOW | 5,035 | 5,998 | 6,321 | 6,558 | 6,411 | 6,666 | 6,863 | 7,072 | 7,275 | 16,543 |

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADAMIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | INVESTOR INCOME STATEM | | | | | | | | | | | |
| 320 | SALES REVENUE | 4,631,760 | | | | | | 1,950 | 6,027 | 13,185 | 23,728 | 38,342 |
| 321 | COST OF SALES | | | | | | | | | | | |
| 322 | FOREIGN | 883,801 | | | | | | 372 | 1,153 | 2,501 | 4,598 | 7,316 |
| 323 | LOCAL | 1,382,355 | | | | | | 582 | 1,799 | 3,911 | 7,192 | 11,443 |
| 324 | TOTAL | 2,266,157 | | | | | | 954 | 2,949 | 6,412 | 11,690 | 18,759 |
| 325 | VALUE ADDED | 2,365,603 | | | | | | 996 | 3,078 | 6,693 | 12,119 | 19,583 |
| 326 | OPERATING EXPENSES | | | | | | | | | | | |
| 327 | FOR. LABOR | 179,331 | | | | | 958 | 1,634 | 2,393 | 3,201 | 4,172 | 5,265 |
| 328 | LOCAL LABOR | 432,162 | | | | | 1,515 | 2,606 | 3,817 | 5,106 | 6,576 | 8,126 |
| 329 | TOTAL | 611,492 | | | | | 2,465 | 4,239 | 6,210 | 8,307 | 10,696 | 13,228 |
| 330 | UTILITIES | 185,278 | | | | | | 78 | 241 | 524 | 949 | 1,534 |
| 331 | OTHER | 146,472 | | | | 293 | 661 | 1,571 | 1,556 | 2,044 | 2,429 | 3,028 |
| 332 | TOTAL | 943,234 | | | | 293 | 3,126 | 5,389 | 8,007 | 10,976 | 14,074 | 17,782 |
| 333 | OPERATING PROFIT/LOS | | | | | | | | | | | |
| 334 | LOCAL | 113,789 | | | | -23 | -258 | -351 | -393 | -335 | -156 | 144 |
| 335 | FOREIGN | 1,309,978 | | | | -269 | -2,876 | -4,941 | -4,536 | -3,848 | -1,749 | 1,657 |
| 336 | TOTAL | 1,422,367 | | | | -293 | -3,126 | -5,393 | -4,929 | -4,183 | -1,995 | 1,801 |
| | INVESTMENT | | | | | | | | | | | |
| 338 | LOCAL CAPITAL | 43,973 | | | | 1,264 | 2,527 | 2,948 | 3,538 | 3,791 | 4,044 | 4,217 |
| 339 | FOREIGN CAPITAL | 102,604 | | | | 2,945 | 5,897 | 6,880 | 8,256 | 8,845 | 9,435 | 9,829 |
| 340 | TOTAL | 146,577 | | | | 4,212 | 8,424 | 9,828 | 11,794 | 12,636 | 13,478 | 14,045 |
| 341 | WORKING CAPITAL | 694,762 | | | | | | 293 | 904 | 1,966 | 3,559 | 5,751 |
| 342 | TOTAL INVESTMENT | 841,339 | | | | 4,212 | 8,424 | 10,121 | 12,698 | 14,602 | 17,038 | 19,791 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADAMIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | INVESTOR INCOME STATEM | | | | | | | | | | |
| 320 | SALES REVENUE | 55,319 | 74,836 | 96,427 | 120,563 | 147,263 | 176,316 | 202,470 | 225,239 | 243,457 | 256,640 |
| 321 | COST OF SALES | | | | | | | | | | |
| 322 | FOREIGN | 10,556 | 14,280 | 18,399 | 23,005 | 28,130 | 33,643 | 38,634 | 42,979 | 46,455 | 48,974 |
| 323 | LOCAL | 16,513 | 22,335 | 28,779 | 35,982 | 43,951 | 52,622 | 60,438 | 67,223 | 72,469 | 76,401 |
| 324 | TOTAL | 27,065 | 36,615 | 47,178 | 58,987 | 72,081 | 86,265 | 99,066 | 110,202 | 119,115 | 125,575 |
| 325 | VALUE ADDED | 28,253 | 38,222 | 49,249 | 61,576 | 75,212 | 90,051 | 103,417 | 115,038 | 124,342 | 131,066 |
| 326 | OPERATING EXPENSES | | | | | | | | | | |
| 327 | FOR. LABOR | 6,157 | 4,949 | 5,839 | 6,779 | 6,983 | 7,192 | 7,408 | 7,630 | 7,859 | 8,095 |
| 328 | LOCAL LABOR | 9,820 | 12,536 | 14,792 | 17,172 | 17,688 | 18,219 | 18,765 | 19,328 | 19,908 | 20,505 |
| 329 | TOTAL | 15,977 | 17,485 | 20,631 | 23,951 | 24,671 | 25,411 | 26,173 | 26,958 | 27,767 | 28,600 |
| 330 | UTILITIES | 2,213 | 2,993 | 3,457 | 4,873 | 5,891 | 7,053 | 8,099 | 9,010 | 9,738 | 10,266 |
| 331 | OTHER | 3,672 | 4,440 | 5,236 | 6,047 | 6,187 | 6,346 | 6,433 | 6,876 | 7,463 | 7,101 |
| 332 | TOTAL | 21,862 | 24,919 | 29,724 | 34,870 | 36,749 | 38,809 | 40,905 | 42,844 | 44,569 | 46,358 |
| 333 | OPERATING PROFIT/LOS | | | | | | | | | | |
| 334 | LOCAL | 511 | 1,064 | 1,562 | 2,140 | 3,577 | 4,099 | 5,001 | 5,776 | 6,382 | 6,852 |
| 335 | FOREIGN | 5,883 | 12,234 | 17,962 | 24,615 | 35,787 | 47,142 | 57,507 | 66,418 | 73,391 | 78,226 |
| 336 | TOTAL | 6,391 | 13,303 | 19,524 | 26,756 | 38,464 | 51,242 | 62,508 | 72,194 | 79,773 | 85,078 |
| | INVESTMENT | | | | | | | | | | |
| 339 | LOCAL CAPITAL | 4,296 | 4,717 | 5,054 | 5,054 | 2,527 | | | | | |
| 339 | FOREIGN CAPITAL | 10,025 | 11,007 | 11,794 | 11,794 | 5,897 | | | | | |
| 340 | TOTAL | 14,321 | 15,725 | 16,848 | 16,848 | 8,424 | | | | | |
| 341 | WORKING CAPITAL | 8,298 | 11,225 | 14,464 | 18,084 | 22,089 | 26,447 | 30,379 | 33,786 | 36,919 | 38,499 |
| 342 | TOTAL INVESTMENT | 22,619 | 26,950 | 31,312 | 34,932 | 30,513 | 26,447 | 30,379 | 33,786 | 36,919 | 38,499 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | INVESTOR INCOME STATEM | | | | | | | | | | |
| 320 | SALES REVENUE | 264,363 | 264,363 | 272,292 | 280,463 | 288,876 | 297,544 | 306,469 | 315,663 | 325,128 | 334,890 |
| 321 | COST OF SALES | | | | | | | | | | |
| 322 | FOREIGN | 50,444 | 50,444 | 51,957 | 53,516 | 55,121 | 56,775 | 58,478 | 60,233 | 62,039 | 63,902 |
| 323 | LOCAL | 78,899 | 78,899 | 81,266 | 83,705 | 86,216 | 88,803 | 91,466 | 94,210 | 97,035 | 99,949 |
| 324 | TOTAL | 129,343 | 129,343 | 133,223 | 137,221 | 141,337 | 145,578 | 149,945 | 154,442 | 159,074 | 163,850 |
| 325 | VALUE ADDED | 135,019 | 135,019 | 139,069 | 143,243 | 147,539 | 151,967 | 156,525 | 161,220 | 166,054 | 171,040 |
| 326 | OPERATING EXPENSES | | | | | | | | | | |
| 327 | FOR. LABOR | 8,338 | 8,338 | 8,588 | 8,846 | 9,111 | 9,384 | 9,666 | 9,956 | 10,254 | 10,562 |
| 328 | LOCAL LABOR | 21,121 | 21,121 | 21,754 | 22,407 | 23,079 | 23,772 | 24,485 | 25,219 | 25,975 | 26,755 |
| 329 | TOTAL | 29,458 | 29,458 | 30,342 | 31,253 | 32,190 | 33,156 | 34,150 | 35,175 | 36,230 | 37,318 |
| 330 | UTILITIES | 10,575 | 10,575 | 10,892 | 11,219 | 11,555 | 11,902 | 12,259 | 12,627 | 13,005 | 13,396 |
| 331 | OTHER | 7,255 | 7,320 | 7,386 | 7,455 | 7,525 | 7,598 | 7,672 | 7,749 | 7,829 | 7,910 |
| 332 | TOTAL | 47,288 | 47,353 | 48,620 | 49,926 | 51,270 | 52,655 | 54,082 | 55,551 | 57,063 | 58,623 |
| 333 | OPERATING PROFIT/LOS | | | | | | | | | | |
| 334 | LOCAL | 7,018 | 7,013 | 7,236 | 7,465 | 7,702 | 7,945 | 8,195 | 8,454 | 8,719 | 8,993 |
| 335 | FOREIGN | 80,712 | 80,693 | 83,213 | 85,851 | 88,567 | 91,366 | 94,248 | 97,216 | 100,272 | 103,424 |
| 336 | TOTAL | 87,731 | 87,666 | 90,449 | 93,317 | 96,269 | 99,311 | 102,443 | 105,669 | 108,991 | 112,417 |
| | INVESTMENT | | | | | | | | | | |
| 338 | LOCAL CAPITAL | | | | | | | | | | |
| 339 | FOREIGN CAPITAL | | | | | | | | | | |
| 340 | TOTAL | | | | | | | | | | |
| 341 | WORKING CAPITAL | 39,654 | 39,654 | 40,844 | 42,069 | 43,331 | 44,632 | 45,970 | 47,349 | 48,769 | 50,234 |
| 342 | TOTAL INVESTMENT | 39,654 | 39,654 | 40,844 | 42,069 | 43,331 | 44,632 | 45,970 | 47,349 | 48,769 | 50,234 |

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECONOMIC COST BENEFIT | | | | | | | | | | | |
| 351 | F Z BENEFIT | | | | | | | | | | | |
| 352 | REVENUE | 139,481 | | | | 190 | 447 | 795 | 1,290 | 1,629 | 1,963 | 2,497 |
| 353 | LABOR | 6,712 | | 48 | 58 | 82 | 84 | 104 | 123 | 136 | 144 | 187 |
| 354 | OPERATIONS | 8,877 | | 26 | 68 | 110 | 114 | 125 | 179 | 169 | 225 | 289 |
| 356 | F Z COSTS (NET) | | | | | | | | | | | |
| 357 | OPERATIONS | 8,877 | | 26 | 68 | 110 | 116 | 125 | 179 | 169 | 225 | 289 |
| 358 | PAID IN EQUITY | 53,733 | 1,293 | 2,644 | 4,668 | 573 | 565 | 568 | 6,013 | 856 | 6,233 | 7,338 |
| 359 | NET BENEFIT | 92,381 | -1,293 | -2,617 | -4,618 | -302 | -34 | 332 | -4,691 | 909 | -4,184 | -4,653 |
| 363 | INVESTOR CONTRIBUTION | | | | | | | | | | | |
| 361 | LOCAL PURCHASES | 1,382,355 | | | | | | 582 | 1,799 | 3,911 | 7,882 | 11,443 |
| 362 | LABOR | 521,827 | | | | | 1,990 | 3,422 | 5,813 | 6,797 | 8,639 | 12,673 |
| 363 | OPERATIONS | 331,742 | | | | 293 | 641 | 1,150 | 1,797 | 2,568 | 3,378 | 4,567 |
| 364 | PROFIT | 113,789 | | | | -23 | -295 | -351 | -394 | -335 | -156 | 144 |
| 365 | CAPITAL | 43,973 | | | | 1,264 | 2,527 | 2,948 | 3,538 | 3,791 | 4,044 | 4,212 |
| 366 | INVESTOR BENEFIT TOTAL | 2,393,688 | | | | 1,533 | 4,928 | 7,751 | 11,753 | 16,643 | 22,942 | 31,03[illegible] |
| 367 | INVESTOR COSTS | | | | | | | | | | | |
| 368 | OPERATIONS | 318,693 | | | | 274 | 616 | 1,070 | 1,677 | 2,406 | 3,182 | 4,312 |
| 369 | PURCHASES | 691,177 | | | | | | 291 | 899 | 1,956 | 3,541 | 5,722 |
| 370 | CAPITAL | 35,179 | | | | 1,011 | 2,022 | 2,359 | 2,830 | 3,033 | 3,235 | 3,379 |
| 371 | INVESTOR COST TOTAL | 1,045,049 | | | | 1,285 | 2,638 | 3,720 | 5,406 | 7,394 | 9,957 | 13,463 |
| 373 | NET BENEFIT | 1,343,638 | | | | 248 | 2,290 | 4,031 | 6,346 | 9,249 | 13,025 | 17,631 |
| 375 | PROJECT BENEFIT | 1,441,019 | -1,293 | -2,617 | -4,618 | -54 | 2,257 | 4,[illegible] | [illegible] | [illegible] | 8,620 | [illegible] |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECONOMIC COST BENEFIT | | | | | | | | | | |
| 351 | F Z BENEFIT | | | | | | | | | | |
| 352 | REVENUE | 3,070 | 3,791 | 4,494 | 5,191 | 5,471 | 5,769 | 6,030 | 6,251 | 6,421 | 6,537 |
| 353 | LABOR | 217 | 223 | 230 | 237 | 244 | 251 | 259 | 266 | 274 | 283 |
| 354 | OPERATIONS | 333 | 320 | 338 | 356 | 363 | 371 | 377 | 383 | 387 | 390 |
| 356 | F Z COSTS (NET) | | | | | | | | | | |
| 357 | OPERATIONS | 333 | 320 | 338 | 356 | 363 | 371 | 377 | 383 | 387 | 390 |
| 358 | PAID IN EQUITY | 1,453 | 1,451 | 1,451 | 1,451 | 1,449 | 1,450 | 1,449 | 1,449 | 1,449 | 1,449 |
| 359 | NET BENEFIT | 1,841 | 2,523 | 3,233 | 3,977 | 4,265 | 4,578 | 4,830 | 5,068 | 5,246 | 5,371 |
| 360 | INVESTOR CONTRIBUTION | | | | | | | | | | |
| 361 | LOCAL PURCHASES | 16,910 | 22,335 | 28,779 | 35,982 | 43,951 | 52,622 | 60,430 | 67,223 | 72,460 | 76,601 |
| 362 | LABOR | 12,890 | 15,818 | 17,712 | 20,561 | 21,180 | 21,815 | 22,469 | 23,143 | 23,838 | 24,553 |
| 363 | OPERATIONS | 5,084 | 7,436 | 9,093 | 10,869 | 12,077 | 13,398 | 14,732 | 15,886 | 16,982 | 17,457 |
| 364 | PROFIT | 911 | 1,864 | 1,562 | 2,148 | 3,077 | 4,899 | 5,801 | 5,776 | 6,382 | 6,882 |
| 365 | CAPITAL | 4,296 | 4,717 | 5,054 | 5,054 | 2,527 | | | | | |
| 366 | INVESTOR BENEFIT TOTAL | 40,101 | 50,561 | 62,199 | 74,608 | 82,812 | 91,934 | 102,432 | 112,027 | 119,481 | 125,413 |
| 367 | INVESTOR COSTS | | | | | | | | | | |
| 368 | OPERATIONS | 5,577 | 7,859 | 8,648 | 10,350 | 11,530 | 12,821 | 14,120 | 15,261 | 16,160 | 16,884 |
| 369 | PURCHASES | 8,255 | 11,167 | 14,389 | 17,991 | 21,975 | 26,311 | 30,215 | 33,612 | 36,330 | 38,308 |
| 370 | CAPITAL | 3,437 | 3,774 | 4,044 | 4,044 | 2,022 | | | | | |
| 371 | INVESTOR COST TOTAL | 17,269 | 22,800 | 27,080 | 32,385 | 35,527 | 39,132 | 44,344 | 48,872 | 52,490 | 55,104 |
| 373 | NET BENEFIT | 22,832 | 28,541 | 35,119 | 42,223 | 47,285 | 52,832 | 58,287 | 63,155 | 67,192 | 70,309 |
| 375 | PROJECT BENEFIT | 24,673 | 31,064 | 38,452 | 46,199 | 51,550 | 57,372 | 63,127 | 68,223 | 72,438 | 75,680 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECONOMIC COST BENEFIT | | | | | | | | | | |
| 351 | F Z BENEFIT | | | | | | | | | | |
| 352 | REVENUE | 6,596 | 6,654 | 6,715 | 6,777 | 6,841 | 6,907 | 6,975 | 7,045 | 7,117 | 16,181 |
| 353 | LABOR | 291 | 291 | 300 | 309 | 318 | 328 | 337 | 348 | 358 | 369 |
| 354 | OPERATIONS | 391 | 393 | 394 | 396 | 397 | 399 | 401 | 402 | 404 | 406 |
| 356 | F Z COSTS (NET) | | | | | | | | | | |
| 357 | OPERATIONS | 391 | 393 | 394 | 396 | 397 | 399 | 401. | 402 | 404 | 406 |
| 358 | PAID IN EQUITY | 1,449 | 1,343 | 1,070 | 885 | 885 | 885 | 744 | 594 | 451 | 153 |
| 359 | NET BENEFIT | 5,438 | 5,602 | 5,944 | 6,281 | 6,274 | 6,358 | 6,568 | 6,799 | 7,024 | 16,316 |
| 360 | INVESTOR CONTRIBUTION | | | | | | | | | | |
| 361 | LOCAL PURCHASES | 78,899 | 78,899 | 81,266 | 83,702 | 86,216 | 88,833 | 91,466 | 94,218 | 97,035 | 99,949 |
| 362 | LABOR | 25,289 | 25,289 | 26,048 | 26,830 | 27,635 | 28,464 | 29,317 | 30,197 | 31,102 | 32,036 |
| 363 | OPERATIONS | 17,833 | 17,894 | 18,278 | 18,673 | 19,080 | 19,499 | 19,931 | 20,376 | 20,834 | 21,306 |
| 364 | PROFIT | 7,018 | 7,013 | 7,236 | 7,465 | 7,732 | 7,943 | 8,195 | 8,454 | 8,719 | 8,993 |
| 365 | CAPITAL | | | | | | | | | | |
| 366 | INVESTOR BENEFIT TOTAL | 129,037 | 129,097 | 132,828 | 136,673 | 140,632 | 144,711 | 148,919 | 153,237 | 157,690 | 162,284 |
| 367 | INVESTOR COSTS | | | | | | | | | | |
| 368 | OPERATIONS | 17,178 | 17,229 | 17,687 | 17,996 | 18,396 | 18,809 | 19,234 | 19,671 | 20,122 | 20,587 |
| 369 | PURCHASES | 39,459 | 39,458 | 40,633 | 41,852 | 43,108 | 44,401 | 45,733 | 47,105 | 48,517 | 49,974 |
| 370 | CAPITAL | | | | | | | | | | |
| 371 | INVESTOR COST TOTAL | 56,629 | 56,679 | 58,240 | 59,848 | 61,504 | 63,210 | 64,967 | 66,777 | 68,640 | 70,561 |
| 373 | NET BENEFIT | 72,417 | 72,418 | 74,588 | 76,825 | 79,128 | 81,501 | 83,944 | 86,460 | 89,05[illegible] | 91,723 |
| 375 | PROJECT BENEFIT | 77,855 | 78,020 | 81,533 | 83,106 | 85,402 | 87,850 | 91,512 | 93,259 | 96,079 | 108,[illegible] |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | | |
| 221 | PURCHASES | 883,001 | | | | | | 372 | 1,150 | 2,501 | 4,578 | 7,314 |
| 222 | LABOR | 385,746 | | | | | 1,233 | 2,120 | 3,1[illegible]5 | 4,150 | 5,348 | 6,619 |
| 223 | UTILITIES | 185,270 | | | | | | 78 | 241 | 524 | 949 | 1,534 |
| 224 | OTHER EXPENSES | 146,472 | | | | 293 | 661 | 1,071 | 1,556 | 2,044 | 2,429 | 3,228 |
| 225 | PROFIT | 113,789 | | | | -23 | -256 | -351 | -394 | -335 | -156 | 144 |
| 226 | INVESTMENT | 43,973 | | | | 1,264 | 2,527 | 2,948 | 3,538 | 3,791 | 4,044 | 4,217 |
| 227 | PRINCIPAL (-) | 17,540 | | 34 | 131 | 202 | 214 | 226 | 2[illegible]6 | 355 | 493 | 569 |
| 228 | INTEREST (-) | 11,419 | | 78 | 248 | 362 | 350 | 338 | 419 | 581 | 576 | 747 |
| 229 | TOTAL EXCHANGE CREATION | 1,658,891 | | -189 | -379 | 969 | 3,636 | 5,674 | 8,498 | 11,823 | 16,141 | 21,548 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADAMIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | |
| 221 | PURCHASES | 10,556 | 14,290 | 18,399 | 23,025 | 28,100 | 33,443 | 38,634 | 42,679 | 46,455 | 48,974 |
| 222 | LABOR | 7,939 | 8,742 | 10,316 | 11,975 | 12,336 | 12,705 | 13,086 | 13,479 | 13,884 | 14,3[illegible] |
| 223 | UTILITIES | 2,213 | 2,993 | 3,857 | 4,823 | 5,891 | 7,053 | 8,299 | 9,310 | 9,738 | 10,266 |
| 224 | OTHER EXPENSES | 3,672 | 4,443 | 5,238 | 6,047 | 6,187 | 6,348 | 6,633 | 6,876 | 7,[illegible]63 | 7,191 |
| 225 | PROFIT | 511 | 1,064 | 1,582 | 2,140 | 3,077 | 4,099 | 5,801 | 5,776 | 6,389 | 6,802 |
| 226 | INVESTMENT | 4,296 | 4,717 | 5,054 | 5,054 | 2,527 | | | | | |
| 227 | PRINCIPAL (-) | 632 | 666 | 705 | 745 | 787 | 832 | 879 | 928 | 980 | 1,036 |
| 228 | INTEREST (-) | 816 | 783 | 742 | 703 | 661 | 616 | 569 | 520 | 467 | 412 |
| 229 | TOTAL EXCHANGE CREATION | 27,788 | 34,790 | 42,977 | 51,597 | 56,469 | 62,399 | 70,807 | 76,671 | 82,474 | 86,096 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | |
| 221 | PURCHASES | 50,444 | 50,444 | 51,957 | 53,516 | 55,121 | 56,775 | 58,478 | 60,233 | 62,039 | 63,932 |
| 222 | LABOR | 14,729 | 14,729 | 15,171 | 15,626 | 16,095 | 16,578 | 17,075 | 17,587 | 18,115 | 18,659 |
| 223 | UTILITIES | 10,575 | 10,575 | 10,892 | 11,219 | 11,555 | 11,902 | 12,259 | 12,627 | 13,005 | 13,396 |
| 224 | OTHER EXPENSES | 7,255 | 7,320 | 7,386 | 7,455 | 7,525 | 7,598 | 7,672 | 7,749 | 7,829 | 7,913 |
| 225 | PROFIT | 7,018 | 7,013 | 7,230 | 7,465 | 7,702 | 7,945 | 8,195 | 8,454 | 8,719 | 8,993 |
| 226 | INVESTMENT | | | | | | | | | | |
| 227 | PRINCIPAL (-) | 1,094 | 1,058 | 829 | 683 | 722 | 762 | 663 | 544 | 439 | 151 |
| 228 | INTEREST (-) | 354 | 293 | 240 | 288 | 162 | 121 | 89 | 48 | 19 | 2 |
| 229 | TOTAL EXCHANGE CREATION | 88,574 | 88,738 | 91,573 | 94,397 | 97,114 | 99,914 | 102,937 | 106,058 | 109,297 | 112,788 |



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# SHADOW PRICE IMPACT

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CASH FLOW | | | | | | | | | | | | |
| | REVENUE | | | | | | | | | | | |
| 102 | FEDDANS ABSORBED | 261 | | | | 15 | 19 | 28 | 72 | 23 | 29 | 29 |
| 103 | SALES REVENUE | 717 | | | | 135 | 139 | 143 | 148 | 152 | | |
| 104 | LEASE INCOME | 93,308 | | | | 54 | 308 | 633 | 992 | 1,348 | 1,731 | 2,124 |
| 105 | FEES AND CHARGES | 36,466 | | | | | | 20 | 63 | 129 | 232 | 371 |
| 106 | RESIDUAL VALUE | 8,989 | | | | | | | | | | |
| | TOTAL REVENUE | 139,481 | | | | 198 | 447 | 795 | 1,285 | 1,629 | 1,943 | 2,497 |
| | DEVELOPMENT EXPENDITURES | | | | | | | | | | | |
| 111 | WORKING CAPITAL | -4 | | 9 | 5 | 9 | 1 | 3 | 9 | 1 | 18 | 15 |
| 112 | SITE DEVELOPMENT | 751 | | 104 | 118 | | | | 174 | | 177 | 187 |
| 113 | ELECTRIC UTIL | 11,587 | | 1,586 | 1,681 | | | | 2,646 | | 2,746 | 2,828 |
| 114 | WATER SYSTEM | 1,425 | | 196 | 208 | | | | 333 | | 335 | 355 |
| 115 | SEWAGE SYSTEM | 1,277 | | 176 | 186 | | | | 296 | | 300 | 318 |
| 116 | SOLID WASTE DIS | 1,883 | | 248 | 263 | | | | 418 | | 424 | 449 |
| 117 | FENCES | 1,824 | | 251 | 266 | | | | 423 | | 429 | 455 |
| 118 | IRRIGATION SYS. | 577 | | 80 | 84 | | | | 134 | | 136 | 144 |
| 119 | STREETS | 9,136 | | 748 | 758 | | | | 1,198 | | 1,288 | 1,285 |
| 120 | LAND | 1,293 | 1,293 | | | | | | | | | |
| 122 | INCUBATOR | 382 | | | 382 | | | | | | | |
| 123 | COMMUNICATIONS | 1,056 | | 146 | 154 | | | | 245 | | 248 | 263 |
| 124 | SUPPORT BUILDINGS | 1,769 | | 244 | 258 | | | | 410 | | 416 | 441 |
| 125 | VEHICLES | 1,069 | | | 288 | | | | 184 | | | 605 |
| 126 | DESIGN AND CONST. MG | 1,965 | | 243 | 408 | | | | 471 | | 415 | 479 |
| 127 | WAREHOUSE CONSTRUCTI | 1,652 | | | 1,652 | | | | | | | |
| 128 | CONTINGENCY - OTHER | 9,068 | | 1,121 | 1,883 | | | | 1,941 | | 1,913 | 2,218 |
| | TOTAL INVESTMENT | 42,549 | 1,293 | 5,112 | 8,572 | 9 | 1 | 3 | 8,843 | 1 | 8,715 | 10,364 |
| | OPERATING COSTS | | | | | | | | | | | |
| 131 | LABOR | 4,067 | | 36 | 37 | 53 | 55 | 74 | 77 | 80 | 108 | 103 |
| 132 | PROMOTION | 620 | | | | 48 | 48 | 48 | 48 | 28 | 28 | 28 |
| 133 | GENERAL AND ADMIN | 3,244 | | | | 1 | 8 | 16 | 26 | 37 | 49 | 62 |
| 134 | SECURITY | 2,645 | | 13 | 13 | 28 | 29 | 30 | 46 | 48 | 65 | 84 |
| 135 | INTEREST | | | | | | | | | | | |
| 136 | MAINTENANCE | 5,012 | | 26 | 68 | 68 | 68 | 68 | 113 | 113 | 156 | 204 |
| 137 | DEPRECIATION | 33,300 | | 170 | 455 | 455 | 454 | 453 | 747 | 746 | 1,036 | 1,371 |
| | TOTAL OPERATING COST | 48,889 | | 244 | 573 | 646 | 654 | 682 | 1,048 | 1,059 | 1,427 | 1,847 |
| 139 | NET CASH FLOW | 81,763 | -1,293 | -5,186 | -8,690 | -11 | 246 | 563 | -7,942 | 1,322 | -7,143 | -8,045 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CASH FLOW | | | | | | | | | | |
| | REVENUE | | | | | | | | | | |
| 102 | FEDMANS ABSORBED | 26 | 30 | 30 | 30 | | | | | | |
| 103 | SALES REVENUE | | | | | | | | | | |
| 104 | LEASE INCOME | 2,548 | 3,042 | 3,551 | 4,075 | 4,124 | 4,174 | 4,226 | 4,280 | 4,335 | 4,392 |
| 105 | FEES AND CHARGES | 530 | 709 | 903 | 1,116 | 1,347 | 1,594 | 1,884 | 1,971 | 2,086 | 2,145 |
| 106 | RESIDUAL VALUE | | | | | | | | | | |
| | TOTAL REVENUE | 3,078 | 3,751 | 4,454 | 5,191 | 5,471 | 5,769 | 6,030 | 6,251 | [illegible] | 6,537 |
| | DEVELOPMENT EXPENDITURES | | | | | | | | | | |
| 111 | WORKING CAPITAL | 9 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| 112 | SITE DEVELOPMENT | | | | | | | | | | |
| 113 | ELECTRIC UTIL | | | | | | | | | | |
| 114 | WATER SYSTEM | | | | | | | | | | |
| 115 | SEWAGE SYSTEM | | | | | | | | | | |
| 116 | SOLID WASTE DIS | | | | | | | | | | |
| 117 | FENCES | | | | | | | | | | |
| 118 | IRRIGATION SYS. | | | | | | | | | | |
| 119 | STREETS | | | | | | | | | | |
| 120 | LAND | | | | | | | | | | |
| 122 | INCUBATOR | | | | | | | | | | |
| 123 | COMMUNICATIONS | | | | | | | | | | |
| 124 | SUPPORT BUILDINGS | | | | | | | | | | |
| 125 | VEHICLES | | | | | | | | | | |
| 126 | DESIGN AND CONSPT. MB | | | | | | | | | | |
| 127 | WAREHOUSE CONSTRUCTI | | | | | | | | | | |
| 128 | CONTINGENCY - OTHER | | | | | | | | | | |
| | TOTAL INVESTMENT | 9 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| | OPERATING COSTS | | | | | | | | | | |
| 131 | LABOR | 133 | 134 | 138 | 142 | 146 | 151 | 155 | 160 | 165 | 170 |
| 132 | PROMOTION | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 133 | GENERAL AND ADMIN | 77 | 94 | 111 | 130 | 137 | 144 | 151 | 156 | 161 | 165 |
| 134 | SECURITY | 87 | 89 | 92 | 95 | 97 | 100 | 103 | 106 | 110 | 113 |
| 135 | INTEREST | | | | | | | | | | |
| 136 | MAINTENANCE | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 |
| 137 | DEPRECIATION | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| | TOTAL OPERATING COST | 1,891 | 1,914 | 1,938 | 1,963 | 1,978 | 1,992 | 2,006 | 2,020 | 2,032 | 2,043 |
| 139 | NET CASH FLOW | 2,559 | 3,205 | 3,933 | 4,595 | 4,863 | 5,145 | 5,389 | 5,671 | 5,750 | 5,844 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CASH FLOW | | | | | | | | | | |
| | REVENUE | | | | | | | | | | |
| 102 | FEDDANS ABSORBED | | | | | | | | | | |
| 103 | SALES REVENUE | | | | | | | | | | |
| 104 | LEASE INCOME | 4,451 | 4,509 | 4,570 | 4,632 | 4,690 | 4,762 | 4,838 | 4,900 | 4,972 | 5,046 |
| 105 | FEES AND CHARGES | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 | 2,145 |
| 106 | RESIDUAL VALUE | | | | | | | | | | 8,909 |
| | TOTAL REVENUE | 6,596 | 6,654 | 6,715 | 6,777 | 6,841 | 6,907 | 6,975 | 7,045 | 7,117 | 16,101 |
| | DEVELOPMENT EXPENDITURES | | | | | | | | | | |
| 111 | WORKING CAPITAL | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -95 |
| 112 | SITE DEVELOPMENT | | | | | | | | | | |
| 113 | ELECTRIC UTIL | | | | | | | | | | |
| 114 | WATER SYSTEM | | | | | | | | | | |
| 115 | SEWAGE SYSTEM | | | | | | | | | | |
| 116 | SOLID WASTE DIS | | | | | | | | | | |
| 117 | FENCES | | | | | | | | | | |
| 118 | IRRIGATION SYS. | | | | | | | | | | |
| 119 | STREETS | | | | | | | | | | |
| 120 | LAND | | | | | | | | | | |
| 122 | INCUBATOR | | | | | | | | | | |
| 123 | COMMUNICATIONS | | | | | | | | | | |
| 124 | SUPPORT BUILDINGS | | | | | | | | | | |
| 125 | VEHICLES | | | | | | | | | | |
| 126 | DESIGN AND CONSTY. MG | | | | | | | | | | |
| 127 | WAREHOUSE CONSTRUCTI | | | | | | | | | | |
| 128 | CONTINGENCY - OTHER | | | | | | | | | | |
| | TOTAL INVESTMENT | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -95 |
| | OPERATING COSTS | | | | | | | | | | |
| 131 | LABOR | 175 | 175 | 180 | 186 | 191 | 197 | 203 | 209 | 215 | 222 |
| 132 | PROMOTION | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 133 | GENERAL AND ADMIN | 165 | 166 | 168 | 169 | 171 | 173 | 174 | 176 | 178 | 180 |
| 134 | SECURITY | 116 | 118 | 120 | 123 | 127 | 131 | 135 | 139 | 143 | 147 |
| 135 | INTEREST | | | | | | | | | | |
| 136 | MAINTENANCE | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 |
| 137 | DEPRECIATION | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| | TOTAL OPERATING COST | 2,053 | 2,054 | 2,065 | 2,075 | 2,086 | 2,097 | 2,109 | 2,121 | 2,133 | 2,146 |
| 139 | NET CASH FLOW | 5,912 | 5,971 | 6,020 | 6,071 | 6,124 | 6,179 | 6,235 | 6,293 | 6,353 | 15,421 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | FINANCIAL CASH FLOW | | | | | | | | | | | |
| 301 | TOTAL REVENUE | 139,401 | | | | 190 | 447 | 705 | 1,270 | 1,629 | 1,963 | 2,497 |
| 302 | OPERATING COSTS | 15,589 | | 74 | 118 | 191 | 200 | 229 | 351 | 306 | 391 | 474 |
| 303 | OPR. CASH FLOW | 123,812 | | -74 | -118 | -2 | 247 | 567 | 898 | 1,323 | 1,572 | 2,021 |
| 304 | DEPRECIATION FUNDS | 33,300 | | 170 | 455 | 455 | 454 | 453 | 747 | 746 | 1,036 | 1,371 |
| 305 | EQUITY FOR CAPTIAL NEEDS | 24,773 | 1,293 | 2,500 | 4,289 | 9 | 1 | 3 | 5,307 | 1 | 5,233 | 6,347 |
| 306 | FOREIGN DEBT SERVICE | | | | | | | | | | | |
| 307 | PRINCIPAL REPAYMENTS | 17,540 | | 36 | 131 | 202 | 214 | 226 | 286 | 355 | 493 | 540 |
| 308 | INTEREST | 11,419 | | 70 | 248 | 362 | 350 | 338 | 419 | 581 | 576 | 747 |
| 309 | TOTAL EQUITY REQUIREMENT | 53,733 | 1,293 | 2,666 | 4,668 | 573 | 565 | 568 | 6,013 | 856 | 6,233 | 7,338 |
| 315 | FINANCIAL CASH FLOW | 183,379 | -1,293 | -2,570 | -4,331 | -120 | 136 | 452 | -4,368 | 1,213 | -3,629 | -3,946 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADANIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | FINANCIAL CASH FLOW | | | | | | | | | | |
| 301 | TOTAL REVENUE | 3,074 | 3,751 | 4,454 | 5,191 | 5,471 | 5,769 | 6,039 | 6,251 | 6,421 | 6,537 |
| 302 | OPERATING COSTS | 523 | 543 | 567 | 593 | 607 | 622 | 636 | 649 | 661 | 672 |
| 303 | OPR. CASH FLOW | 2,550 | 3,207 | 3,886 | 4,598 | 4,864 | 5,147 | 5,394 | 5,602 | 5,760 | 5,865 |
| 304 | DEPRECIATION FUNDS | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| 305 | EQUITY FOR CAPTIAL NEEDS | 5 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| 306 | FOREIGN DEBT SERVICE | | | | | | | | | | |
| 307 | PRINCIPAL REPAYMENTS | 632 | 668 | 705 | 745 | 787 | 832 | 878 | 928 | 980 | 1,036 |
| 308 | INTEREST | 816 | 780 | 742 | 703 | 661 | 616 | 569 | 520 | 467 | 412 |
| 309 | TOTAL EQUITY REQUIREMENT | 1,453 | 1,451 | 1,451 | 1,451 | 1,449 | 1,450 | 1,449 | 1,449 | 1,449 | 1,449 |
| 315 | FINANCIAL CASH FLOW | 2,475 | 3,128 | 3,806 | 4,518 | 4,785 | 5,068 | 5,316 | 5,523 | 5,681 | 5,787 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADANIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 380 | FINANCIAL CASH FLOW | | | | | | | | | | |
| 381 | TOTAL REVENUE | 6,596 | 6,654 | 6,715 | 6,777 | 6,841 | 6,907 | 6,974 | 7,045 | 7,117 | 16,101 |
| 382 | OPERATING COSTS | 682 | 684 | 694 | 705 | 715 | 727 | 738 | 750 | 762 | 775 |
| 383 | OPR. CASH FLOW | 5,914 | 5,971 | 6,021 | 6,072 | 6,126 | 6,180 | 6,237 | 6,295 | 6,355 | 15,326 |
| 384 | DEPRECIATION FUNDS | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 | 1,371 |
| 385 | EQUITY FOR CAPTIAL NEEDS | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| 386 | FOREIGN DEBT SERVICE | | | | | | | | | | |
| 387 | PRINCIPAL REPAYMENTS | 1,094 | 1,050 | 829 | 683 | 722 | 762 | 669 | 544 | 430 | 151 |
| 388 | INTEREST | 354 | 293 | 240 | 200 | 162 | 121 | 84 | 48 | 19 | 2 |
| 389 | TOTAL EQUITY REQ'MENT | 1,449 | 1,343 | 1,070 | 885 | 885 | 885 | 744 | 594 | 451 | 153 |
| 315 | FINANCIAL CASH FLOW | 5,835 | 5,998 | 6,321 | 6,558 | 6,411 | 6,666 | 6,863 | 7,072 | 7,275 | 16,543 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | INVESTOR INCOME STATEM | | | | | | | | | | | |
| 320 | SALES REVENUE | 4,631,760 | | | | | | 1,950 | 6,027 | 13,105 | 23,728 | 38,342 |
| 321 | COST OF SALES | | | | | | | | | | | |
| 322 | FOREIGN | 883,801 | | | | | | 372 | 1,150 | 2,501 | 4,528 | 7,318 |
| 323 | LOCAL | 1,382,355 | | | | | | 582 | 1,799 | 3,911 | 7,082 | 11,443 |
| 324 | TOTAL | 2,266,157 | | | | | | 954 | 2,949 | 6,412 | 11,609 | 18,759 |
| 325 | VALUE ADDED | 2,365,603 | | | | | | 996 | 3,078 | 6,693 | 12,119 | 19,583 |
| 326 | OPERATING EXPENSES | | | | | | | | | | | |
| 327 | FOR. LABOR | 198,723 | | | | | 1,044 | 1,768 | 2,638 | 3,536 | 4,598 | 5,638 |
| 328 | LOCAL LABOR | 478,960 | | | | | 1,666 | 2,868 | 4,208 | 5,639 | 7,270 | 8,992 |
| 329 | TOTAL | 677,682 | | | | | 2,710 | 4,666 | 6,846 | 9,175 | 11,878 | 14,631 |
| 330 | UTILITIES | 185,270 | | | | | | 78 | 241 | 524 | 949 | 1,534 |
| 331 | OTHER | 146,798 | | | | 302 | 679 | 1,093 | 1,582 | 2,072 | 2,459 | 3,059 |
| 332 | TOTAL | 1,009,750 | | | | 302 | 3,389 | 5,837 | 8,669 | 11,772 | 15,235 | 19,223 |
| 333 | OPERATING PROFIT/LOS | | | | | | | | | | | |
| 334 | LOCAL | 108,468 | | | | -24 | -271 | -387 | -467 | -406 | -249 | 29 |
| 335 | FOREIGN | 1,247,383 | | | | -278 | -3,118 | -4,454 | -5,144 | -4,672 | -2,867 | 331 |
| 336 | TOTAL | 1,355,851 | | | | -302 | -3,389 | -4,841 | -5,591 | -5,079 | -3,117 | 359 |
| | INVESTMENT | | | | | | | | | | | |
| 338 | LOCAL CAPITAL | 48,859 | | | | 1,404 | 2,808 | 3,276 | 3,931 | 4,213 | 4,493 | 4,685 |
| 339 | FOREIGN CAPITAL | 114,005 | | | | 3,276 | 6,552 | 7,644 | 9,173 | 9,828 | 10,483 | 10,920 |
| 340 | TOTAL | 162,864 | | | | 4,680 | 9,360 | 10,920 | 13,104 | 14,040 | 14,976 | 15,600 |
| 341 | WORKING CAPITAL | 694,762 | | | | | | 293 | 984 | 1,966 | 3,559 | 5,751 |
| 342 | TOTAL INVESTMENT | 857,625 | | | | 4,680 | 9,360 | 11,213 | 14,088 | 16,006 | 18,539 | 21,351 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | INVESTOR INCOME STATEM | | | | | | | | | | |
| 320 | SALES REVENUE | 55,319 | 74,836 | 96,427 | 120,543 | 147,263 | 176,316 | 202,479 | 229,239 | 243,457 | 256,688 |
| 321 | COST OF SALES | | | | | | | | | | |
| 322 | FOREIGN | 10,556 | 14,280 | 18,399 | 23,005 | 28,108 | 33,643 | 38,636 | 42,979 | 46,455 | 48,974 |
| 323 | LOCAL | 16,513 | 22,335 | 28,779 | 35,982 | 43,951 | 52,622 | 60,438 | 67,223 | 72,669 | 76,651 |
| 324 | TOTAL | 27,065 | 36,615 | 47,178 | 58,987 | 72,051 | 86,265 | 99,066 | 110,202 | 119,119 | 125,575 |
| 325 | VALUE ADDED | 28,253 | 38,222 | 49,249 | 61,576 | 75,212 | 90,051 | 103,413 | 115,038 | 124,342 | 131,086 |
| 326 | OPERATING EXPENSES | | | | | | | | | | |
| 327 | FOR. LABOR | 6,818 | 5,483 | 6,472 | 7,515 | 7,741 | 7,973 | 8,212 | 8,459 | 8,713 | 8,974 |
| 328 | LOCAL LABOR | 10,874 | 13,888 | 16,394 | 19,037 | 19,410 | 20,197 | 20,803 | 21,427 | 22,070 | 22,732 |
| 329 | TOTAL | 17,692 | 19,371 | 22,866 | 26,552 | 27,351 | 28,171 | 29,015 | 29,886 | 30,783 | 31,707 |
| 330 | UTILITIES | 2,213 | 2,993 | 3,857 | 4,823 | 5,891 | 7,053 | 8,099 | 9,010 | 9,738 | 10,266 |
| 331 | OTHER | 3,734 | 4,475 | 5,273 | 6,094 | 6,205 | 6,346 | 6,637 | 6,876 | 7,063 | 7,191 |
| 332 | TOTAL | 23,638 | 26,840 | 31,996 | 37,459 | 39,447 | 41,569 | 43,749 | 45,772 | 47,585 | 49,164 |
| 333 | OPERATING PROFIT/LOS | | | | | | | | | | |
| 334 | LOCAL | 372 | 911 | 1,388 | 1,929 | 2,861 | 3,879 | 4,773 | 5,541 | 6,141 | 6,554 |
| 335 | FOREIGN | 4,273 | 10,471 | 15,872 | 22,187 | 32,904 | 44,603 | 54,892 | 63,725 | 70,617 | 75,368 |
| 336 | TOTAL | 4,645 | 11,382 | 17,253 | 24,117 | 35,765 | 48,482 | 59,665 | 69,266 | 76,757 | 81,922 |
| | INVESTMENT | | | | | | | | | | |
| 338 | LOCAL CAPITAL | 4,774 | 5,242 | 5,616 | 5,616 | 2,808 | | | | | |
| 339 | FOREIGN CAPITAL | 11,138 | 12,230 | 13,104 | 13,104 | 6,552 | | | | | |
| 340 | TOTAL | 15,912 | 17,472 | 18,720 | 18,720 | 9,360 | | | | | |
| 341 | WORKING CAPITAL | 8,299 | 11,225 | 14,464 | 18,084 | 22,089 | 26,447 | 30,379 | 33,786 | 36,519 | 38,499 |
| 342 | TOTAL INVESTMENT | 24,211 | 28,697 | 33,184 | 36,804 | 31,449 | 26,447 | 30,379 | 33,786 | 36,519 | 38,499 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | INVESTOR INCOME STATEM | | | | | | | | | | |
| 320 | SALES REVENUE | 264,363 | 264,363 | 272,292 | 280,463 | 288,876 | 297,544 | 306,469 | 315,663 | 325,128 | 334,893 |
| 321 | COST OF SALES | | | | | | | | | | |
| 322 | FOREIGN | 50,444 | 50,444 | 51,957 | 53,516 | 55,121 | 56,775 | 58,478 | 60,233 | 62,039 | 63,902 |
| 323 | LOCAL | 78,899 | 78,899 | 81,266 | 83,705 | 86,216 | 88,803 | 91,466 | 94,210 | 97,039 | 99,949 |
| 324 | TOTAL | 129,343 | 129,343 | 133,223 | 137,221 | 141,337 | 145,578 | 149,945 | 154,443 | 159,074 | 163,856 |
| 325 | VALUE ADDED | 135,019 | 135,019 | 139,069 | 143,243 | 147,539 | 151,967 | 156,525 | 161,220 | 166,054 | 171,040 |
| 326 | OPERATING EXPENSES | | | | | | | | | | |
| 327 | FOR. LABOR | 9,243 | 9,243 | 9,521 | 9,806 | 10,101 | 10,404 | 10,716 | 11,037 | 11,368 | 11,710 |
| 328 | LOCAL LABOR | 23,414 | 23,414 | 24,117 | 24,841 | 25,586 | 26,353 | 27,144 | 27,958 | 28,796 | 29,661 |
| 329 | TOTAL | 32,658 | 32,658 | 33,638 | 34,647 | 35,686 | 36,757 | 37,860 | 38,995 | 40,165 | 41,371 |
| 330 | UTILITIES | 10,575 | 10,575 | 10,892 | 11,219 | 11,555 | 11,902 | 12,259 | 12,627 | 13,005 | 13,396 |
| 331 | OTHER | 7,255 | 7,320 | 7,386 | 7,455 | 7,525 | 7,596 | 7,672 | 7,749 | 7,829 | 7,910 |
| 332 | TOTAL | 50,489 | 50,552 | 51,916 | 53,320 | 54,766 | 56,257 | 57,791 | 59,371 | 60,998 | 62,677 |
| 333 | OPERATING PROFIT/LOS | | | | | | | | | | |
| 334 | LOCAL | 6,763 | 6,757 | 6,972 | 7,194 | 7,422 | 7,657 | 7,899 | 8,148 | 8,404 | 8,669 |
| 335 | FOREIGN | 77,769 | 77,769 | 80,181 | 82,729 | 85,351 | 88,053 | 90,835 | 93,701 | 96,651 | 99,695 |
| 336 | TOTAL | 84,531 | 84,467 | 87,154 | 89,922 | 92,773 | 95,710 | 98,734 | 101,849 | 105,056 | 108,364 |
| | INVESTMENT | | | | | | | | | | |
| 338 | LOCAL CAPITAL | | | | | | | | | | |
| 339 | FOREIGN CAPITAL | | | | | | | | | | |
| 340 | TOTAL | | | | | | | | | | |
| 341 | WORKING CAPITAL | 39,654 | 39,654 | 40,844 | 42,069 | 43,331 | 44,632 | 45,970 | 47,349 | 48,769 | 50,234 |
| 342 | TOTAL INVESTMENT | 39,654 | 39,654 | 40,844 | 42,069 | 43,331 | 44,632 | 45,970 | 47,349 | 48,769 | 50,234 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADANIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECONOMIC COST BENEFIT | | | | | | | | | | | |
| 351 | F Z BENEFIT | | | | | | | | | | | |
| 352 | REVENUE | 139,401 | | | | 195 | 447 | 795 | 1,298 | 1,629 | 1,963 | 2,497 |
| 353 | LABOR | 6,712 | | 48 | 50 | 82 | 94 | 104 | 123 | 136 | 146 | 187 |
| 354 | OPERATIONS | 8,877 | | 26 | 60 | 110 | 110 | 125 | 179 | 169 | 225 | 249 |
| 356 | F Z COSTS (NET) | | | | | | | | | | | |
| 357 | OPERATIONS | 11,442 | | 40 | 88 | 141 | 149 | 163 | 227 | 228 | 299 | 364 |
| 358 | PAID IN EQUITY | 64,479 | 1,552 | 3,199 | 5,652 | 487 | 678 | 681 | 7,216 | 1,027 | 7,479 | 8,855 |
| 359 | NET BENEFIT | 70,068 | -1,552 | -3,165 | -5,571 | -443 | -179 | 180 | -5,942 | 687 | -5,415 | -8,104 |
| 363 | INVESTOR CONTRIBUTION | | | | | | | | | | | |
| 361 | LOCAL PURCHASES | 1,382,355 | | | | | | 582 | 1,799 | 3,911 | 7,092 | 11,443 |
| 362 | LABOR | 578,321 | | | | | 2,188 | 3,767 | 5,527 | 7,407 | 9,549 | 11,812 |
| 363 | OPERATIONS | 332,567 | | | | 382 | 679 | 1,171 | 1,823 | 2,597 | 3,498 | 4,597 |
| 364 | PROFIT | 188,466 | | | | -24 | -271 | -387 | -447 | -486 | -249 | 29 |
| 365 | CAPITAL | 48,859 | | | | 1,404 | 2,808 | 3,276 | 3,931 | 4,212 | 4,493 | 4,68[illegible] |
| 366 | INVESTOR BENEFIT TOTAL | 2,458,072 | | | | 1,682 | 5,406 | 8,409 | 12,633 | 17,721 | 24,282 | 32,556 |
| 367 | INVESTOR COSTS | | | | | | | | | | | |
| 368 | OPERATIONS | 531,393 | | | | 283 | 1,051 | 1,848 | 2,875 | 4,186 | 5,583 | 7,35[illegible] |
| 369 | PURCHASES | 1,036,766 | | | | | | 437 | 1,349 | 2,933 | 5,311 | 8,587 |
| 370 | CAPITAL | 48,859 | | | | 1,404 | 2,818 | 3,276 | 3,931 | 4,212 | 4,493 | 4,68[illegible] |
| 371 | INVESTOR COST TOTAL | 1,617,019 | | | | 1,687 | 3,959 | 5,560 | 8,156 | 11,251 | 15,378 | 20,62[illegible] |
| 373 | NET BENEFIT | 833,052 | | | | -5 | 1,545 | 2,849 | 4,477 | 6,470 | 8,974 | 11,936 |
| 375 | PROJECT BENEFIT | 912,12[illegible] | -1,552 | -3,165 | -5,571 | -451 | 1,3[illegible] | [illegible] | -1,445 | 7,156 | 3,559 | 9,739 |

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (SDR)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ECONOMIC COST BENEFIT | | | | | | | | | | | |
| 351 | F Z BENEFIT | | | | | | | | | | |
| 352 | REVENUE | 3,878 | 3,751 | 4,494 | 5,191 | 5,471 | 5,769 | 6,035 | 6,251 | 6,421 | 6,537 |
| 353 | LABOR | 217 | 223 | 230 | 237 | 244 | 251 | 259 | 266 | 274 | 283 |
| 354 | OPERATIONS | 303 | 328 | 338 | 356 | 363 | 371 | 377 | 383 | 387 | 390 |
| 356 | F Z COSTS (NET) | | | | | | | | | | |
| 357 | OPERATIONS | 388 | 408 | 429 | 451 | 468 | 478 | 479 | 487 | 494 | 499 |
| 358 | PAID IN EQUITY | 1,744 | 1,741 | 1,741 | 1,741 | 1,739 | 1,739 | 1,739 | 1,739 | 1,739 | 1,739 |
| 359 | NET BENEFIT | 1,466 | 2,143 | 2,851 | 3,592 | 3,876 | 4,181 | 4,447 | 4,673 | 4,849 | 4,971 |
| 360 | INVESTOR CONTRIBUTION | | | | | | | | | | |
| 361 | LOCAL PURCHASES | 16,519 | 22,335 | 28,779 | 35,982 | 43,951 | 52,622 | 60,436 | 67,223 | 72,468 | 76,631 |
| 362 | LABOR | 14,283 | 16,630 | 19,630 | 22,705 | 23,488 | 24,184 | 24,969 | 25,657 | 26,427 | 27,219 |
| 363 | OPERATIONS | 5,916 | 7,449 | 9,130 | 10,987 | 12,396 | 13,398 | 14,732 | 15,886 | 16,807 | 17,457 |
| 364 | PROFIT | 372 | 911 | 1,380 | 1,929 | 2,861 | 3,879 | 4,773 | 5,541 | 6,141 | 6,554 |
| 365 | CAPITAL | 4,774 | 5,242 | 5,616 | 5,616 | 2,938 | | | | | |
| 366 | INVESTOR BENEFIT TOTAL | 41,854 | 52,566 | 64,535 | 77,229 | 85,196 | 94,083 | 104,845 | 114,307 | 122,829 | 127,831 |
| 367 | INVESTOR COSTS | | | | | | | | | | |
| 368 | OPERATIONS | 9,433 | 12,062 | 14,712 | 17,558 | 19,396 | 21,387 | 23,389 | 25,122 | 26,946 | 27,620 |
| 369 | PURCHASES | 12,382 | 16,751 | 21,584 | 26,987 | 32,963 | 39,466 | 45,327 | 50,417 | 54,495 | 57,491 |
| 370 | CAPITAL | 4,774 | 5,242 | 5,616 | 5,616 | 2,938 | | | | | |
| 371 | INVESTOR COST TOTAL | 26,589 | 34,055 | 41,912 | 50,161 | 55,168 | 60,863 | 68,707 | 75,540 | 81,441 | 85,071 |
| 373 | NET BENEFIT | 15,265 | 18,530 | 22,623 | 27,068 | 30,029 | 33,219 | 36,143 | 38,767 | 40,988 | 42,761 |
| 375 | PROJECT BENEFIT | 16,731 | 20,676 | 25,474 | 30,660 | 33,927 | 37,400 | 40,590 | 43,441 | 45,837 | 47,732 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
AQABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ECONOMIC COST BENEFIT | | | | | | | | | | |
| 351 | F Z BENEFIT | | | | | | | | | | |
| 352 | REVENUE | 6,596 | 6,654 | 6,715 | 6,777 | 6,841 | 6,907 | 6,975 | 7,045 | 7,117 | 16,101 |
| 353 | LABOR | 291 | 291 | 300 | 309 | 318 | 328 | 337 | 348 | 358 | 369 |
| 354 | OPERATIONS | 391 | 393 | 394 | 396 | 397 | 399 | 401 | 402 | 404 | 406 |
| 356 | F Z COSTS (NET) | | | | | | | | | | |
| 357 | OPERATIONS | 503 | 505 | 509 | 513 | 517 | 521 | 525 | 530 | 534 | 539 |
| 358 | PAID IN EQUITY | 1,739 | 1,612 | 1,285 | 1,042 | 1,062 | 1,082 | 893 | 712 | 541 | 184 |
| 359 | NET BENEFIT | 5,036 | 5,222 | 5,616 | 5,937 | 5,978 | 6,051 | 6,293 | 6,553 | 6,804 | 16,153 |
| 360 | INVESTOR CONTRIBUTION | | | | | | | | | | |
| 361 | LOCAL PURCHASES | 78,899 | 78,899 | 81,266 | 83,705 | 86,216 | 88,803 | 91,464 | 94,210 | 97,035 | 99,949 |
| 362 | LABOR | 28,036 | 28,036 | 28,877 | 29,744 | 30,636 | 31,555 | 32,502 | 33,477 | 34,481 | 35,516 |
| 363 | OPERATIONS | 17,833 | 17,894 | 18,278 | 18,673 | 19,080 | 19,499 | 19,931 | 20,376 | 20,834 | 71,306 |
| 364 | PROFIT | 6,763 | 6,757 | 6,972 | 7,194 | 7,422 | 7,657 | 7,899 | 8,148 | 8,404 | 8,669 |
| 365 | CAPITAL | | | | | | | | | | |
| 366 | INVESTOR BENEFIT TOTAL | 131,528 | 131,587 | 135,394 | 139,316 | 143,353 | 147,514 | 151,798 | 156,211 | 160,754 | 165,440 |
| 367 | INVESTOR COSTS | | | | | | | | | | |
| 368 | OPERATIONS | 28,311 | 28,370 | 29,082 | 29,815 | 30,570 | 31,348 | 32,149 | 32,974 | 33,824 | 34,700 |
| 369 | PURCHASES | 59,175 | 59,175 | 60,950 | 62,779 | 64,662 | 66,602 | 68,600 | 70,658 | 72,776 | 74,961 |
| 370 | CAPITAL | | | | | | | | | | |
| 371 | INVESTOR COST TOTAL | 87,486 | 87,544 | 90,031 | 92,593 | 95,232 | 97,950 | 100,749 | 103,632 | 106,600 | 109,661 |
| 373 | NET BENEFIT | 44,042 | 44,043 | 45,362 | 46,722 | 48,122 | 49,564 | 51,049 | 52,579 | 54,154 | 55,778 |
| 375 | PROJECT BENEFIT | 49,074 | 49,265 | 51,978 | 52,639 | 54,100 | 55,615 | 57,344 | 59,132 | 60,958 | 71,931 |



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GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | TOTAL | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | | |
| 221 | PURCHASES | 883,801 | | | | | | 372 | 1,150 | 2,581 | 4,928 | 7,316 |
| 222 | LABOR | 338,841 | | | | | 1,355 | 2,333 | 3,423 | 4,588 | 5,914 | 7,315 |
| 223 | UTILITIES | 185,270 | | | | | | 78 | 241 | 524 | 949 | 1,534 |
| 224 | OTHER EXPENSES | 146,794 | | | | 302 | 679 | 1,093 | 1,582 | 2,072 | 2,459 | 3,059 |
| 225 | PROFIT | 188,468 | | | | -24 | -271 | -387 | -447 | -406 | -249 | 29 |
| 226 | INVESTMENT | 48,859 | | | | 1,434 | 2,838 | 3,276 | 3,931 | 4,212 | 4,493 | 4,687 |
| 227 | PRINCIPAL (-) | 17,540 | | 36 | 131 | 202 | 214 | 226 | 286 | 355 | 423 | 548 |
| 228 | INTEREST (-) | 11,419 | | 70 | 248 | 362 | 350 | 338 | 410 | 501 | 576 | 747 |
| 229 | TOTAL EXCHANGE CREATION | 1,683,077 | | -105 | -379 | 1,118 | 4,037 | 4,201 | 9,174 | 12,635 | 17,093 | 22,637 |



313

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES  MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | |
| 221 | PURCHASES | 10,556 | 14,248 | 18,399 | 23,095 | 28,130 | 33,643 | 38,636 | 42,979 | 46,459 | 48,974 |
| 222 | LABOR | 8,846 | 9,686 | 11,433 | 13,276 | 13,676 | 14,085 | 14,508 | 14,943 | 15,392 | 15,853 |
| 223 | UTILITIES | 2,213 | 2,993 | 3,857 | 4,823 | 5,891 | 7,053 | 8,099 | 9,318 | 9,738 | 10,266 |
| 224 | OTHER EXPENSES | 3,704 | 4,475 | 5,273 | 6,084 | 6,295 | 6,346 | 6,639 | 6,876 | 7,063 | 7,191 |
| 225 | PROFIT | 372 | 911 | 1,380 | 1,929 | 2,561 | 3,879 | 4,773 | 5,541 | 6,141 | 6,554 |
| 226 | INVESTMENT | 4,774 | 5,242 | 5,616 | 5,616 | 2,808 | | | | | |
| 227 | PRINCIPAL (-) | 632 | 668 | 705 | 745 | 787 | 832 | 878 | 928 | 980 | 1,036 |
| 228 | INTEREST (-) | 816 | 780 | 742 | 703 | 661 | 616 | 569 | 520 | 467 | 412 |
| 229 | TOTAL EXCHANGE CREATION | 29,815 | 36,138 | 44,511 | 53,285 | 58,093 | 63,558 | 71,201 | 77,921 | 83,341 | 87,391 |



3/4.

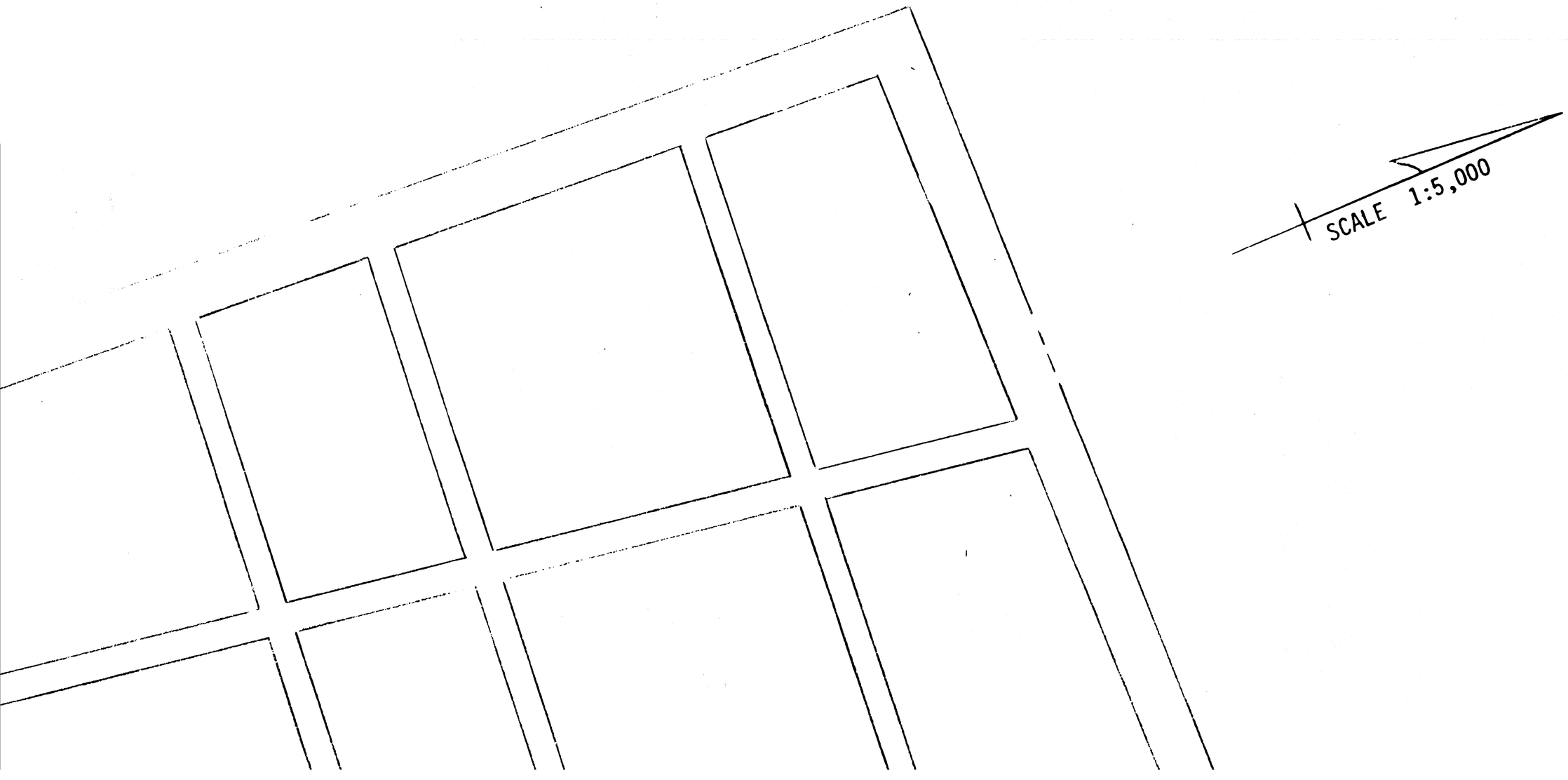
GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ADABIYA FREE ZONE

| | DESCRIPTION | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 | NET FOREIGN EXCHANGE CR | | | | | | | | | | |
| 221 | PURCHASES | 50,444 | 50,444 | 51,957 | 53,516 | 55,121 | 56,775 | 58,478 | 60,233 | 62,039 | 63,902 |
| 222 | LABOR | 16,329 | 16,329 | 16,819 | 17,323 | 17,843 | 18,379 | 18,930 | 19,498 | 20,082 | 20,685 |
| 223 | UTILITIES | 10,575 | 10,575 | 10,892 | 11,219 | 11,555 | 11,902 | 12,259 | 12,627 | 13,005 | 13,396 |
| 224 | OTHER EXPENSES | 7,255 | 7,320 | 7,386 | 7,455 | 7,525 | 7,598 | 7,672 | 7,749 | 7,829 | 7,913 |
| 225 | PROFIT | 6,763 | 6,757 | 6,972 | 7,194 | 7,422 | 7,657 | 7,899 | 8,148 | 8,404 | 8,669 |
| 226 | INVESTMENT | | | | | | | | | | |
| 227 | PRINCIPAL (-) | 1,094 | 1,050 | 829 | 683 | 722 | 762 | 663 | 544 | 430 | 151 |
| 228 | INTEREST (-) | 354 | 293 | 240 | 200 | 162 | 121 | 80 | 48 | 19 | 2 |
| 229 | TOTAL EXCHANGE CREATION | 89,919 | 90,082 | 92,957 | 95,823 | 98,583 | 101,427 | 104,495 | 107,662 | 110,918 | 114,409 |



315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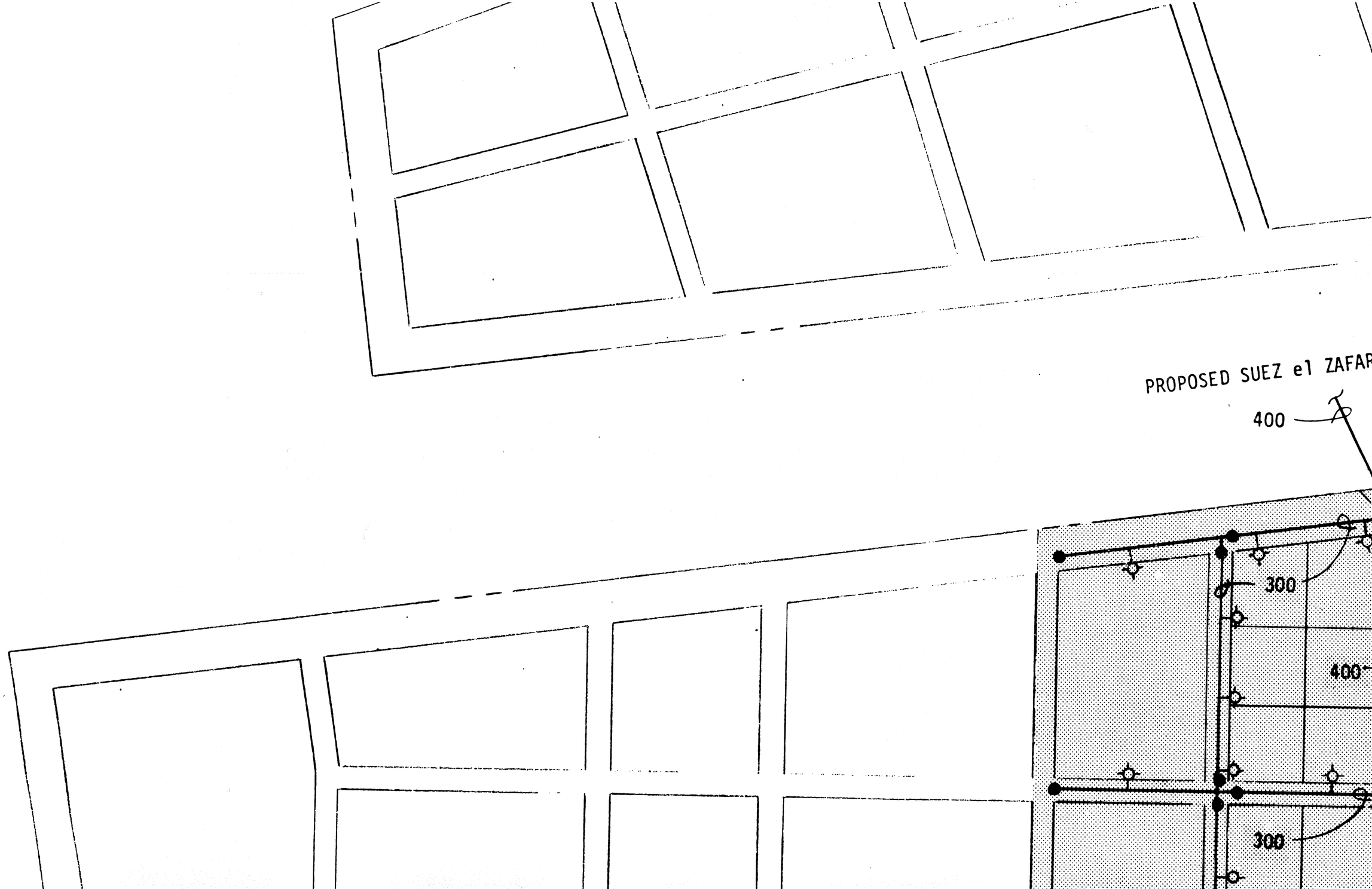
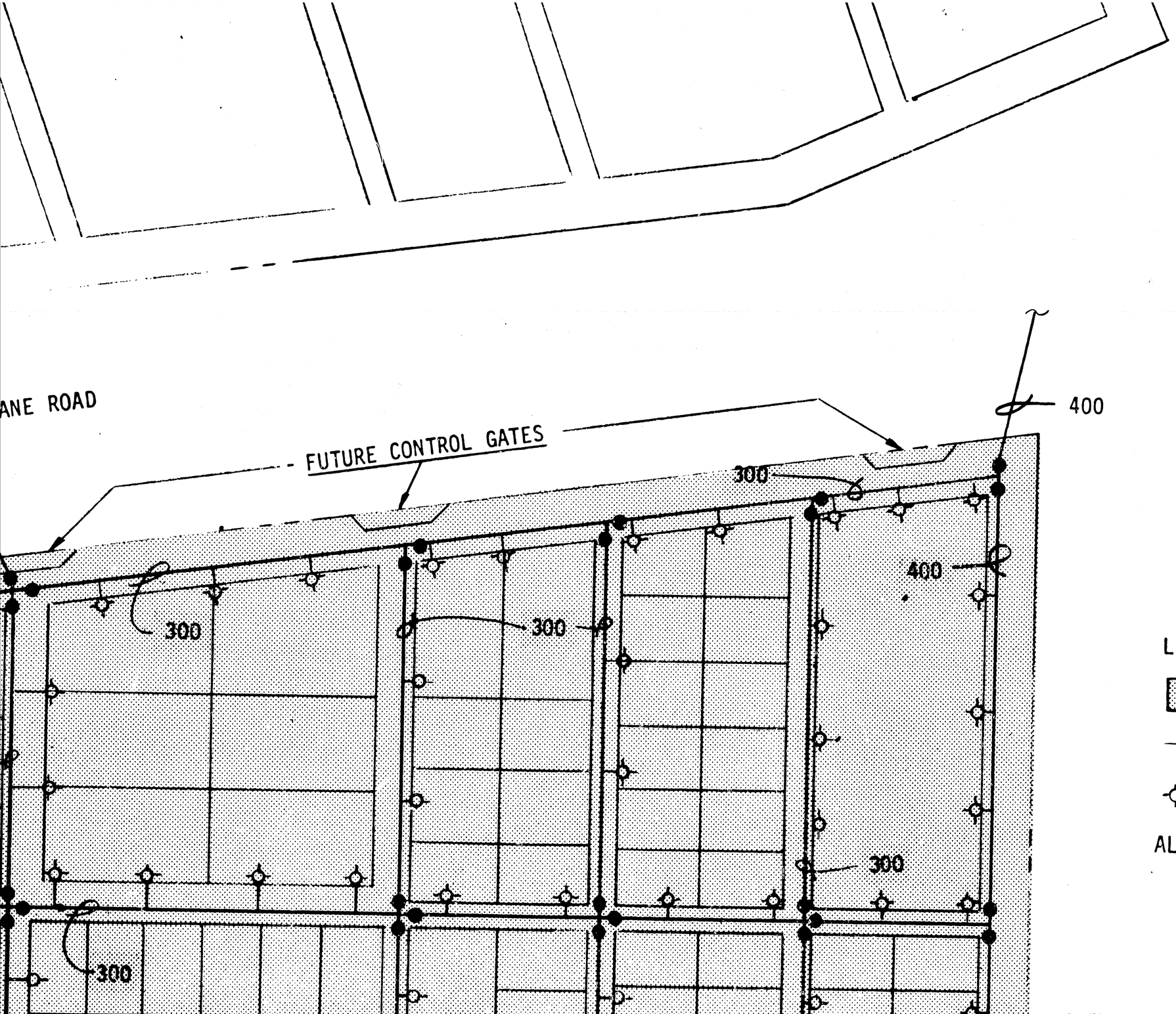

PROPOSED SUEZ el ZAFAR
400
300
400
300



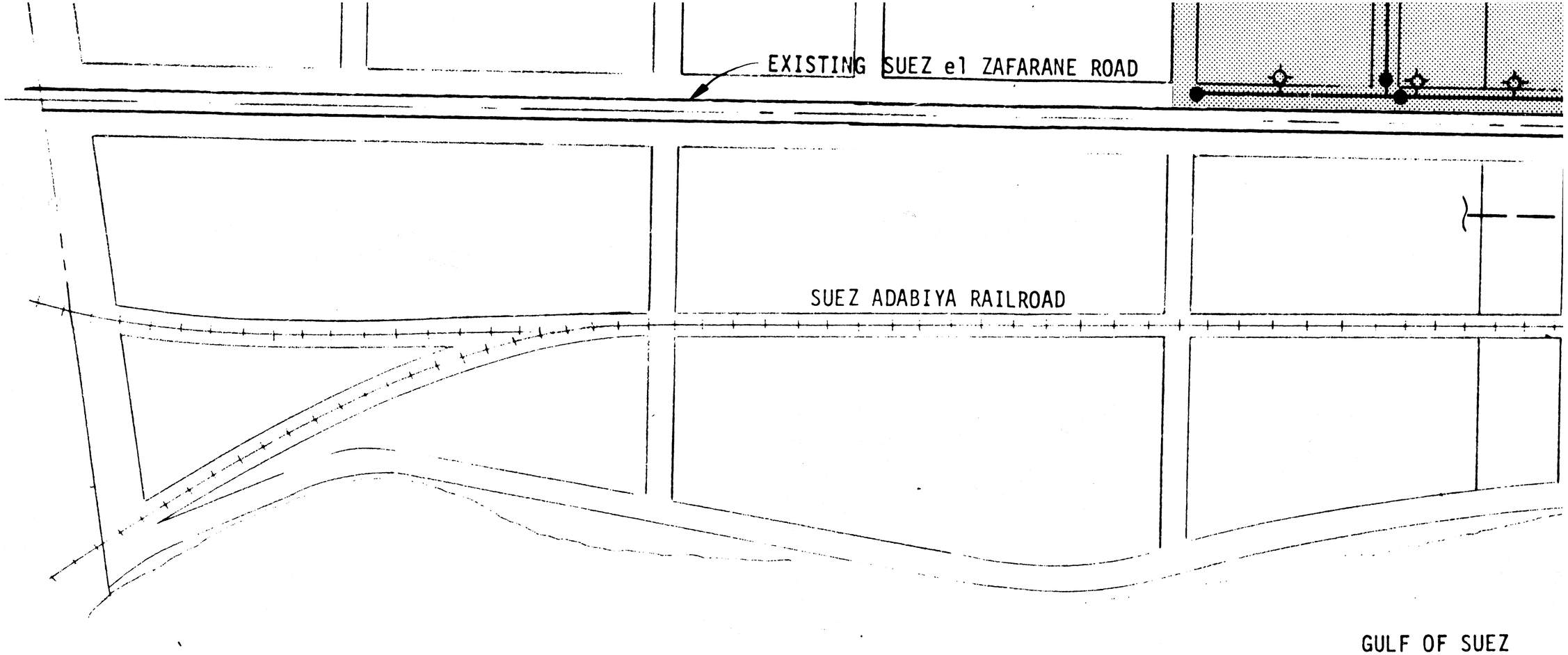

LEGEND (THIS DRAWING)

PHASE I

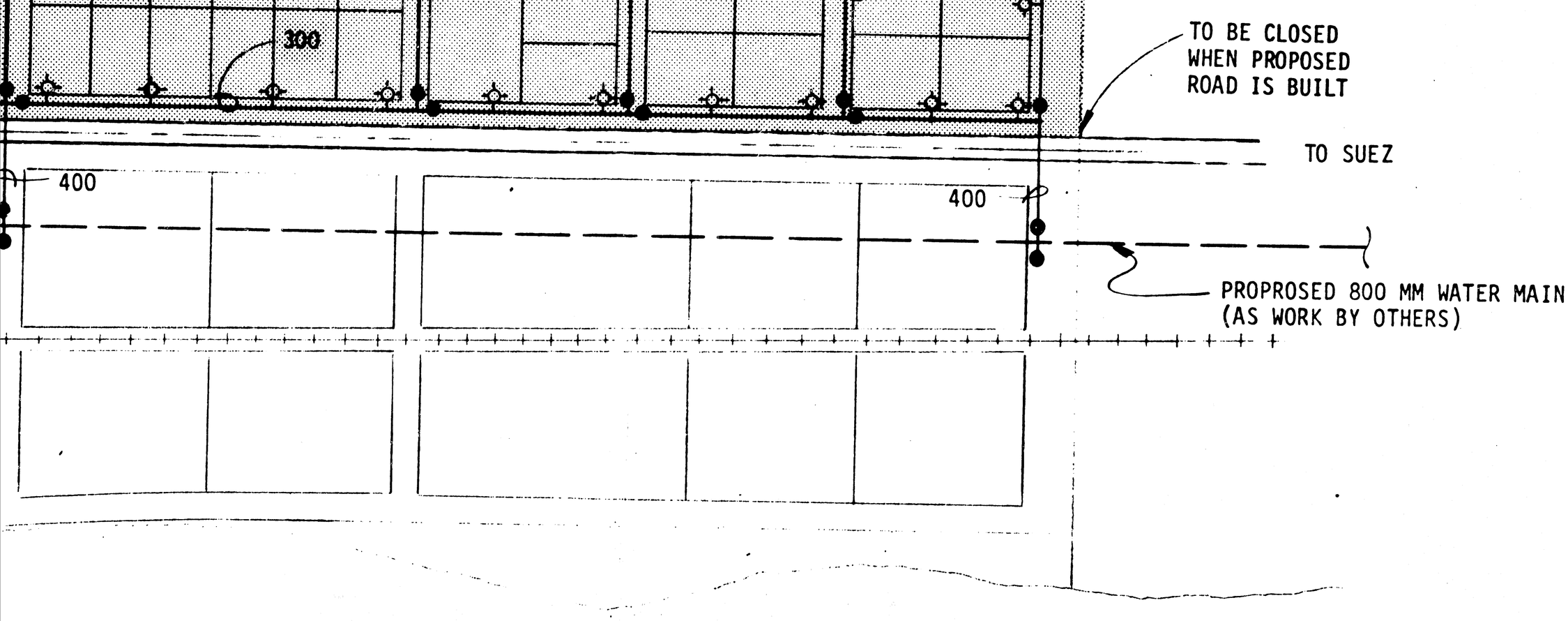
WATER MAIN WITH VALVE

FIRE HYDRANT

ALL LINE SIZES IN MM.




| DRAWING | DRAWN BY | | |
|---|---|---|---|
| 2 | CHECKED BY | PROPOSED ADABIYA FREE ZONE | PRELIMI |
| | FILE NO. | | WATER DISTRIB |
| SHEET OF | 79731-002. | | |

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ITION PLAN

| NO. | DATE | REVISION | BY |
|---|---|---|---|

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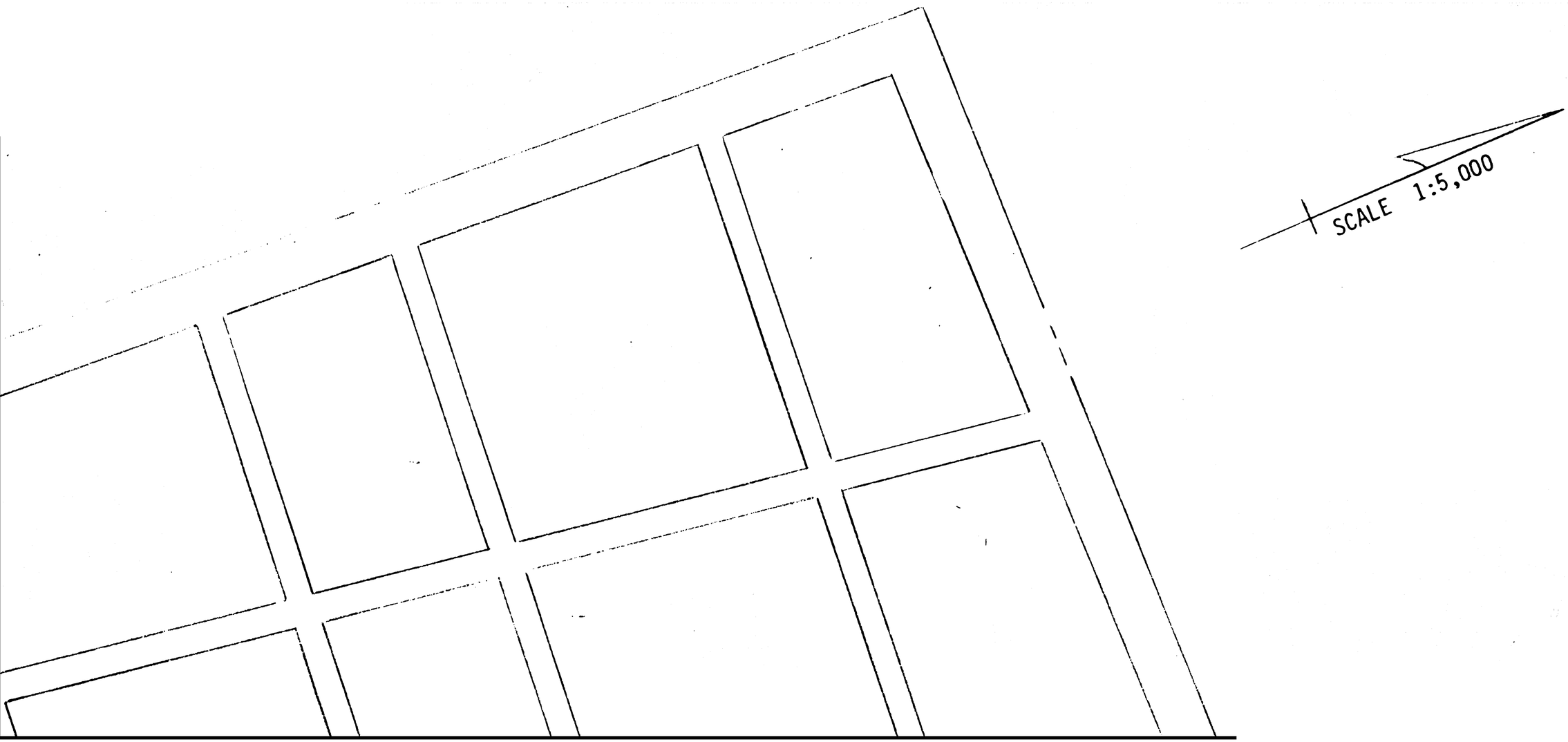
DATE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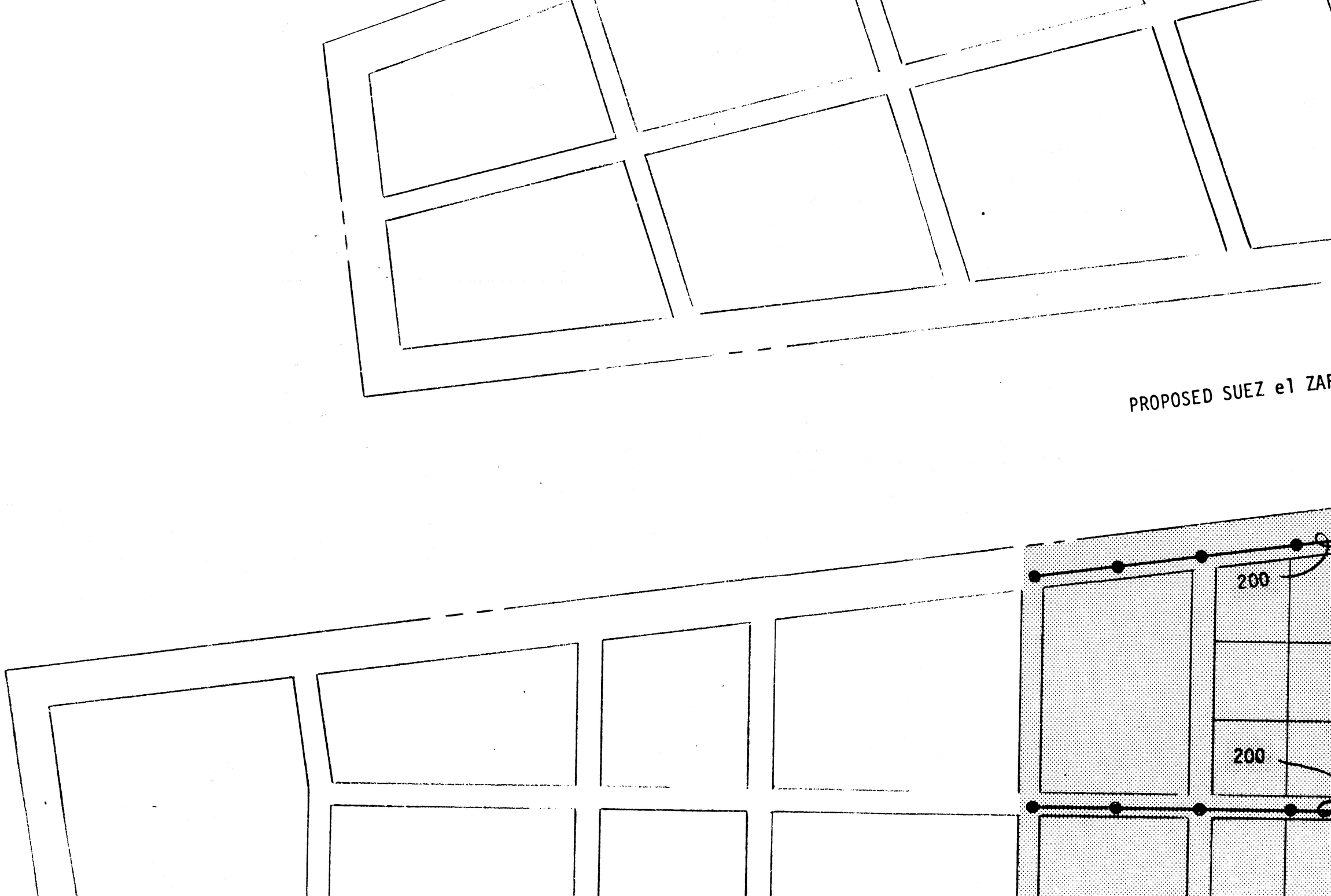
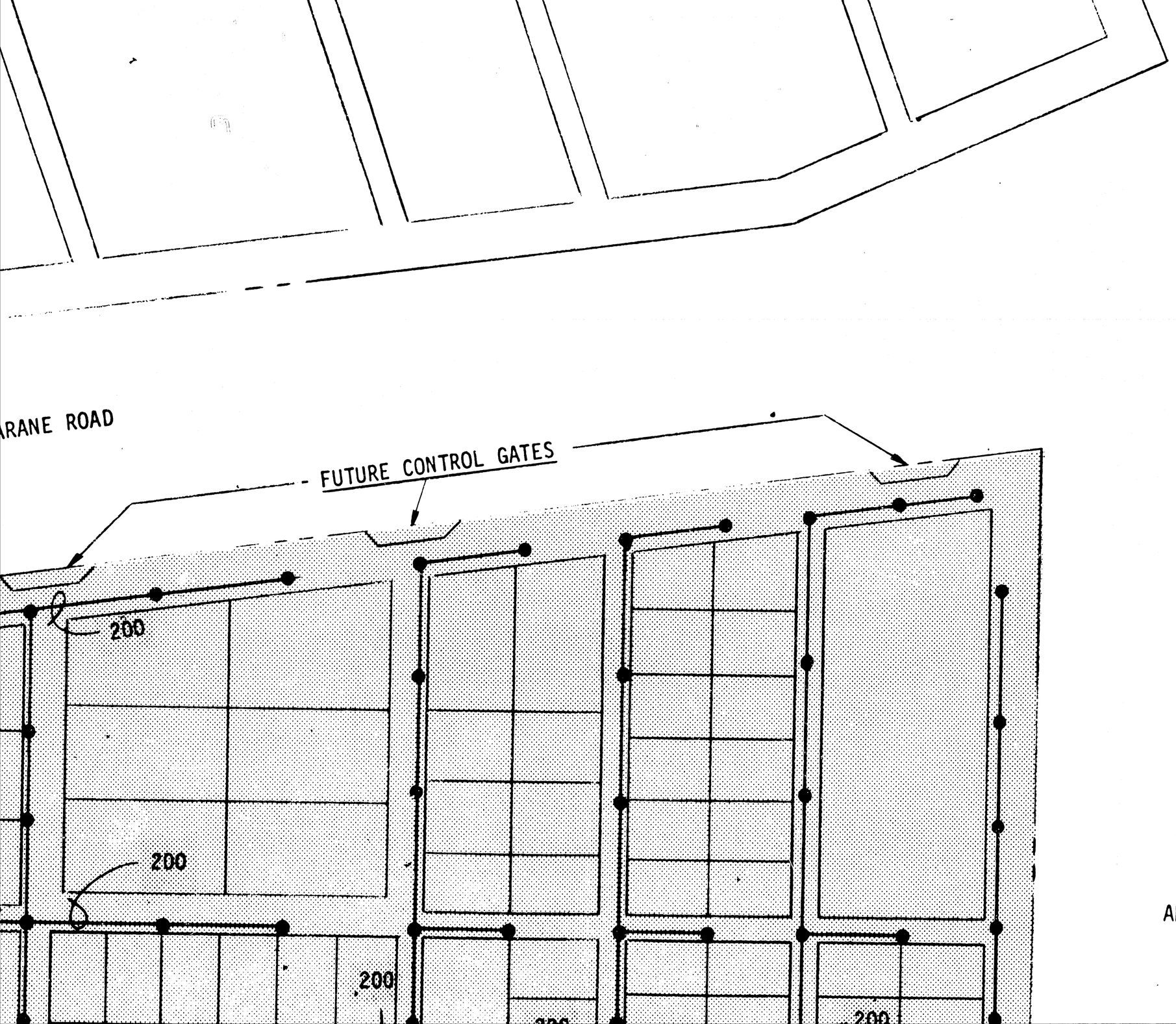

PROPOSED SUEZ el ZAR
200
200



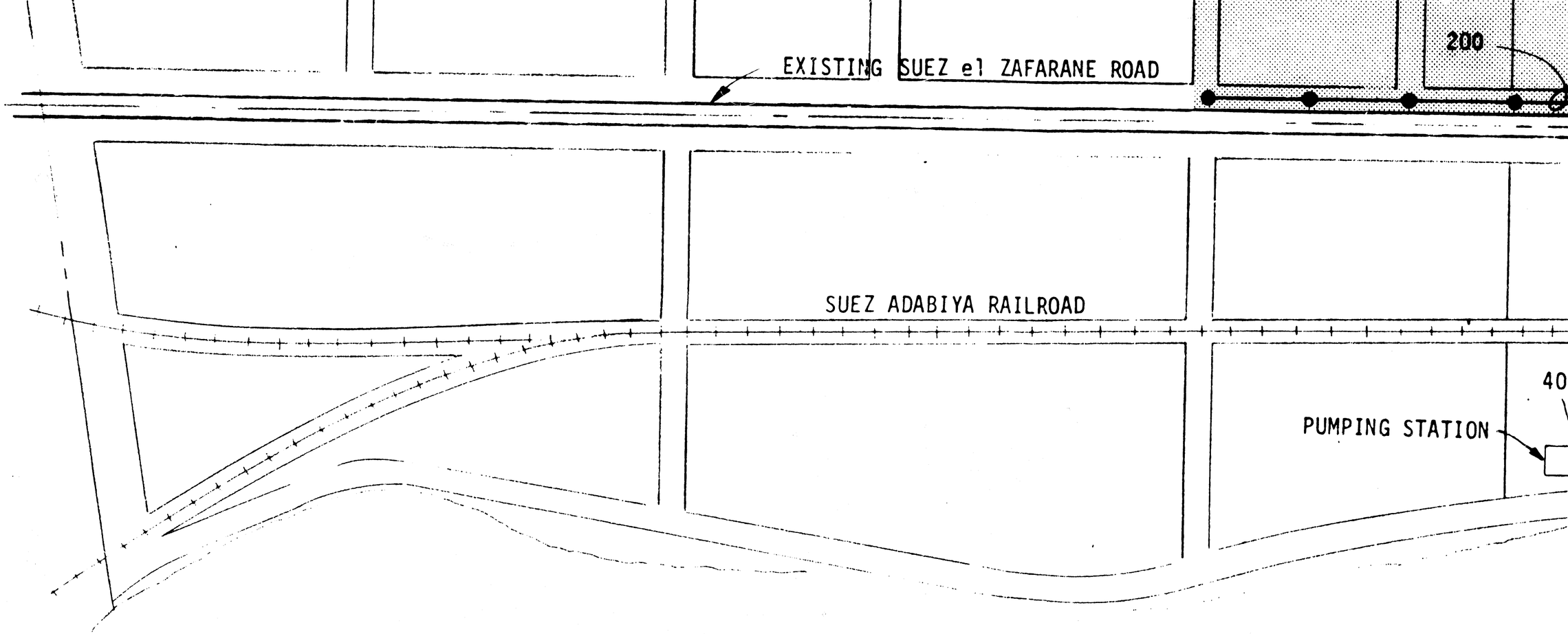

LEGEND (THIS DRAWING)

PHASE I

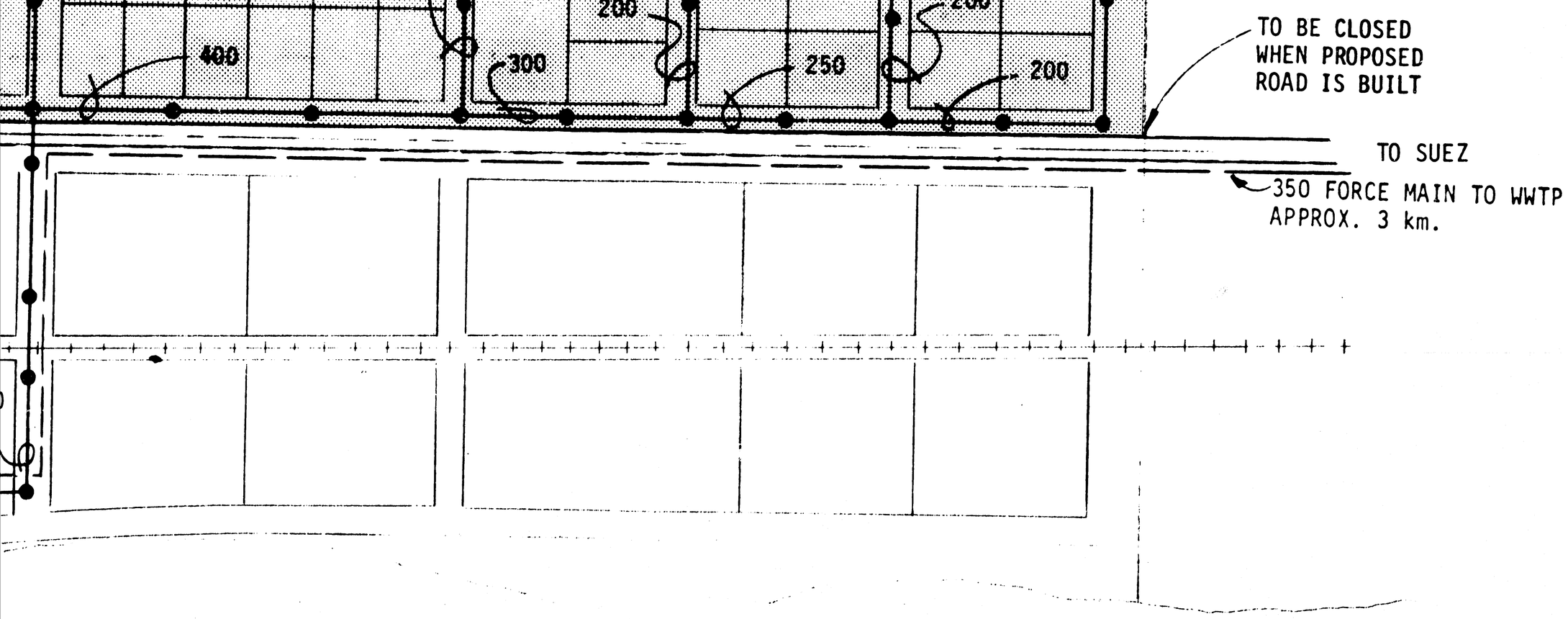
SANITARY SEWER WITH MANHOLE

FORCE MAIN

ALL LINE SIZES IN MM.




| DRAWING | DRAWN BY | | |
|---|---|---|---|
| 3 | CHECKED BY | PROPOSED ADABIYA FREE ZONE | PRELIM |
| | FILE NO. | | SANITARY S |
| SHEET OF | 79731-002 | | |

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SEWER PLAN

| NO. | DATE | REVISION | BY |
|---|---|---|---|

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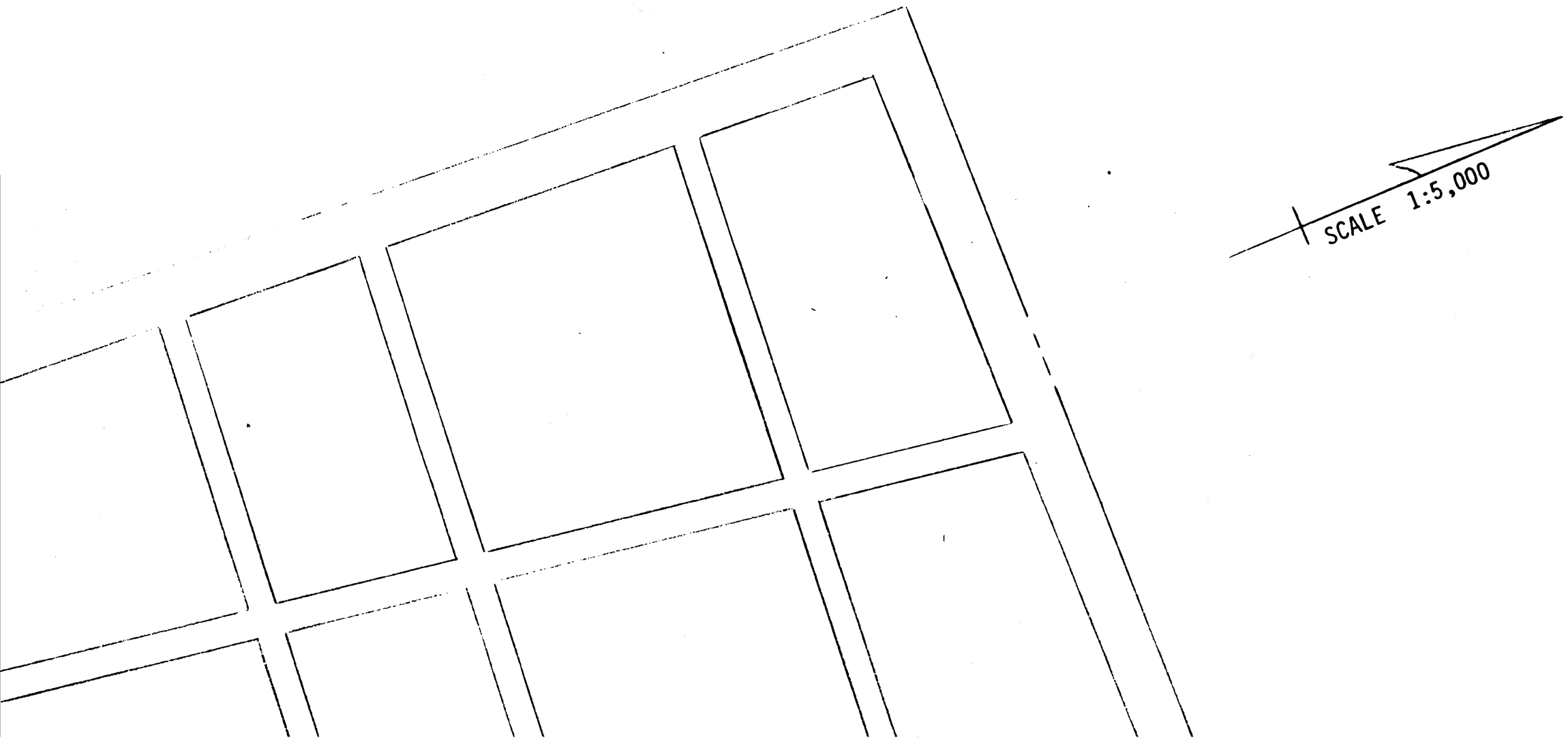
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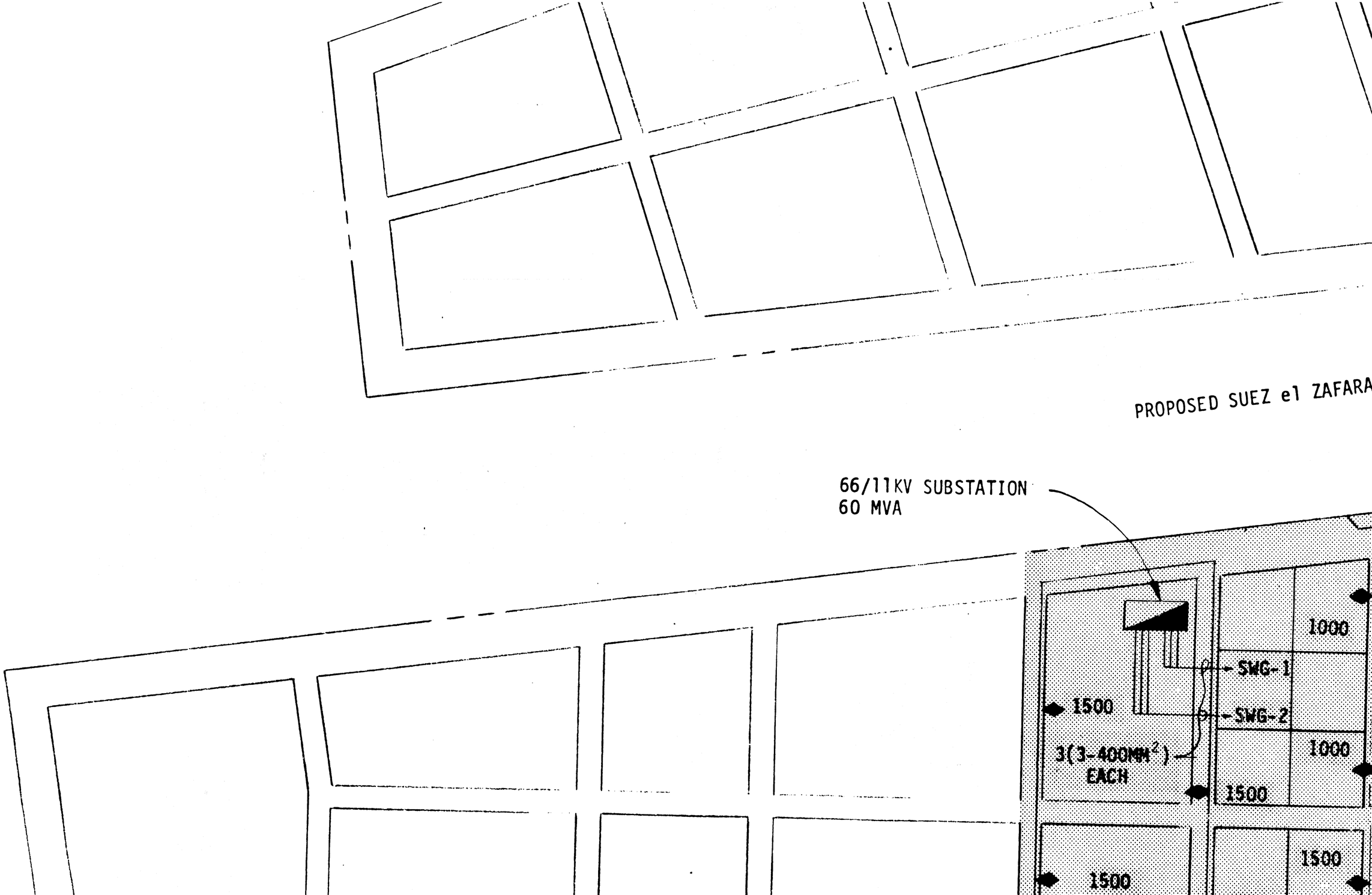
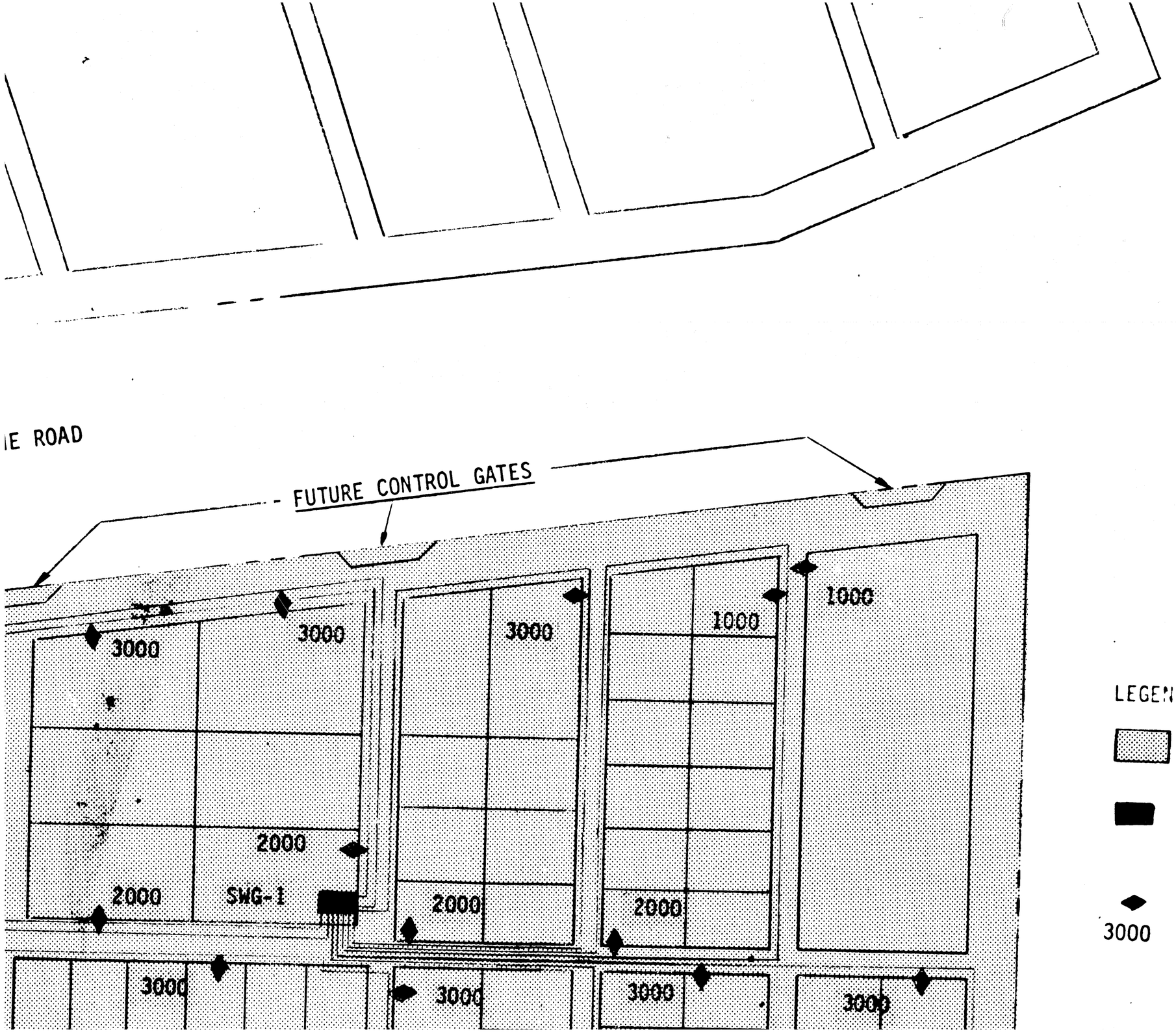

PROPOSED SUEZ el ZAFARA
66/11KV SUBSTATION
60 MVA
1000
SWG-1
1500
SWG-2
1000
3(3-400MM²)
EACH
1500
1500
1500

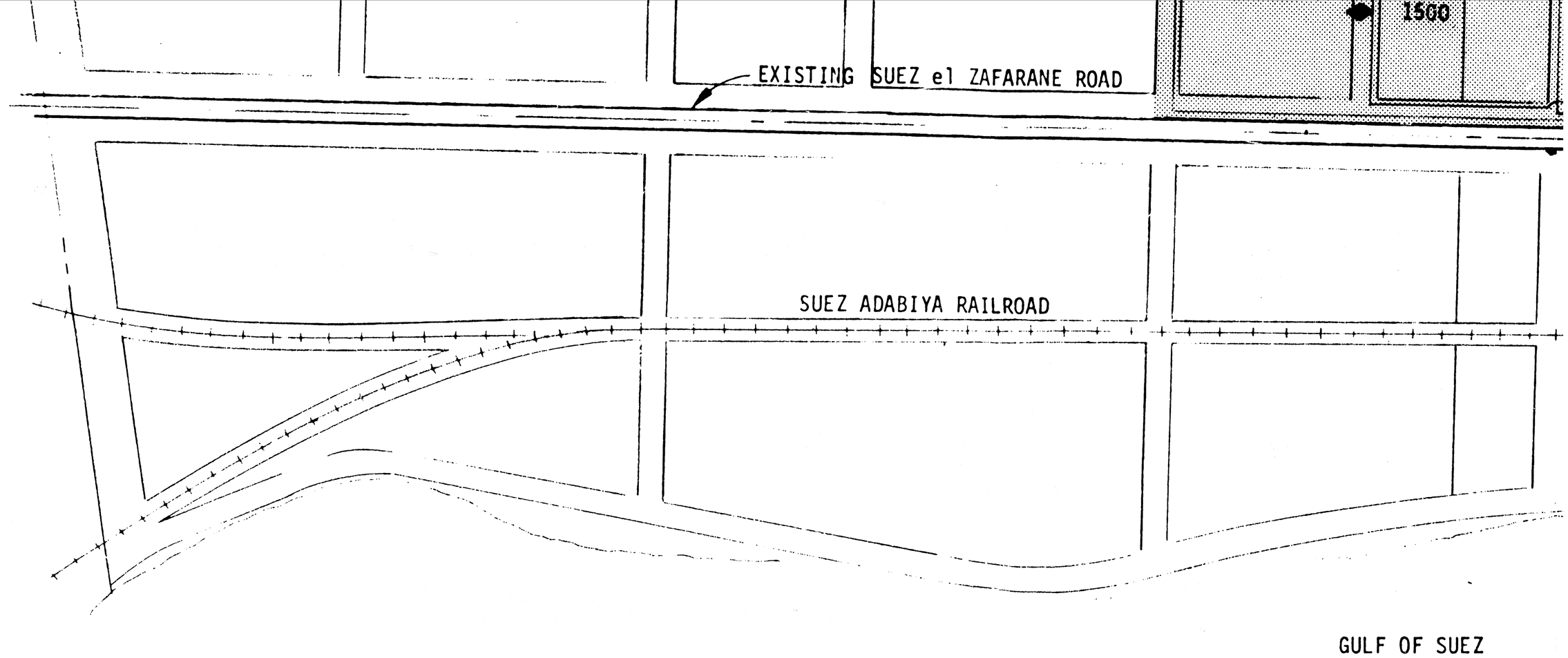



LEGEND (THIS DRAWING)

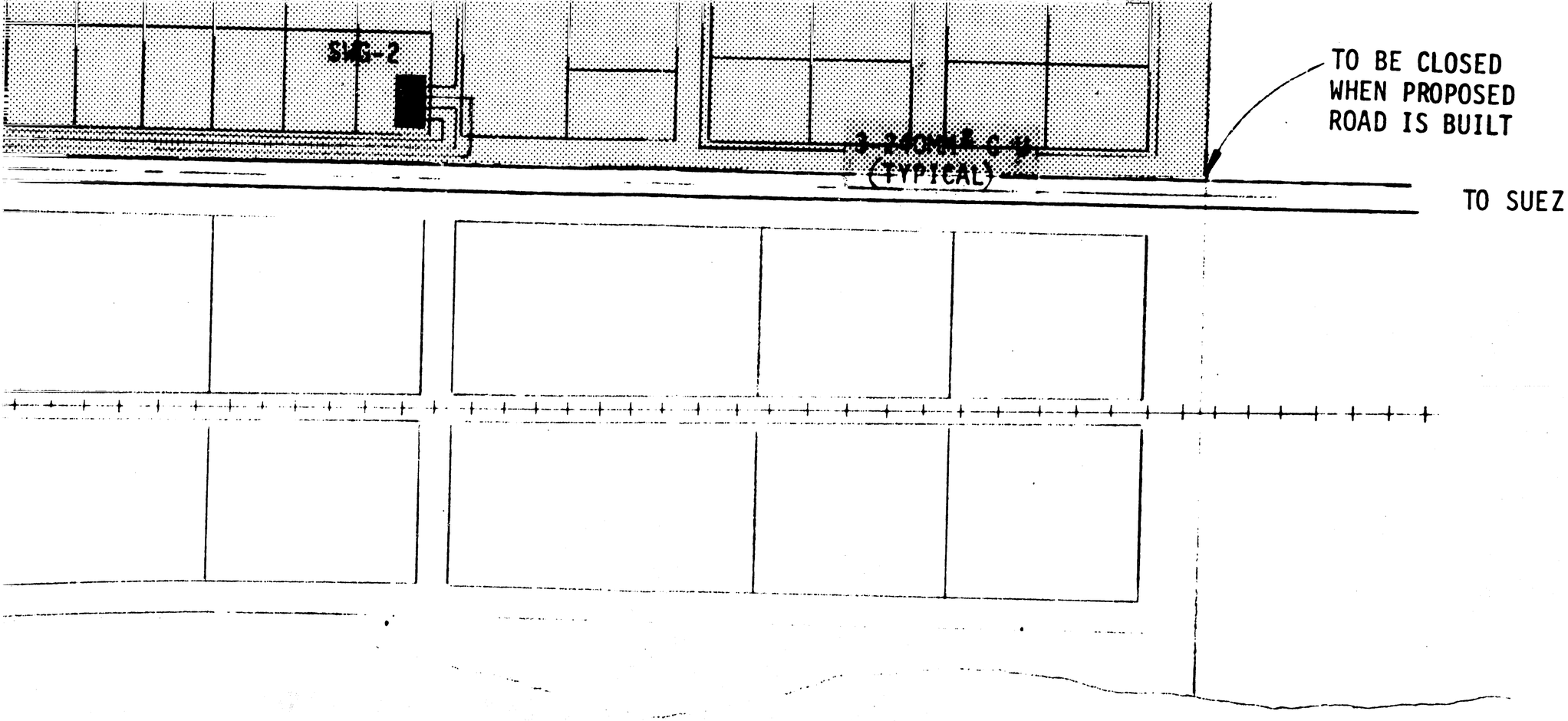
PHASE I

MAIN 11KV DISTRIBUTION CENTER

3000 — 11KV LOAD DISTRIBUTION CENTER
NUMBER INDICATES TOTAL RATING OF DISTRIBUTION TRANSFORMERS




| DRAWING | DRAWN BY | | |
|---|---|---|---|
| 4 | CHECKED BY | PROPOSED ADABIYA FREE ZONE | 11 KV DISTRIBUTIO |
| SHEET OF | FILE NO. 19734-002 | | |




SYSTEM

| NO. | DATE | REVISION | BY |
|---|---|---|---|

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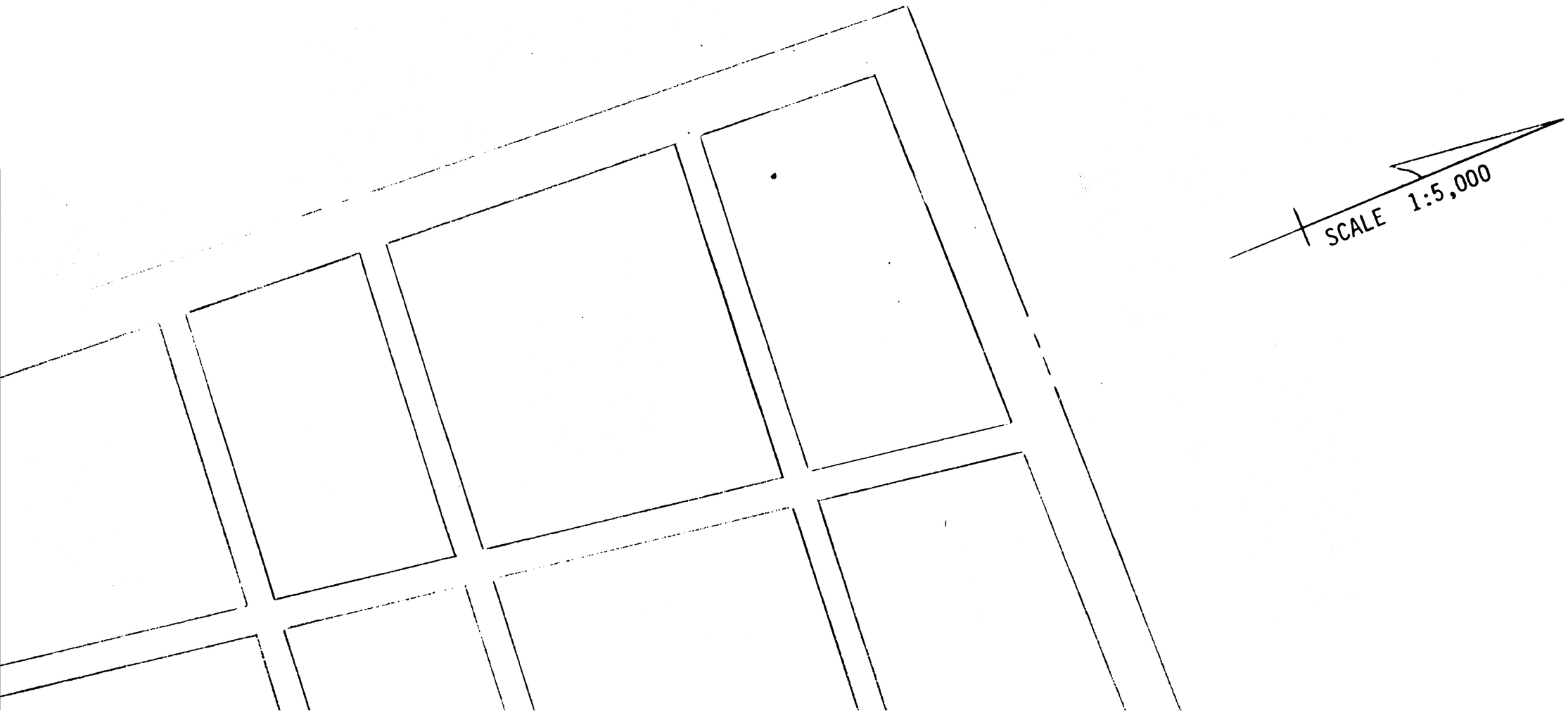
BRUNING 40-105 36212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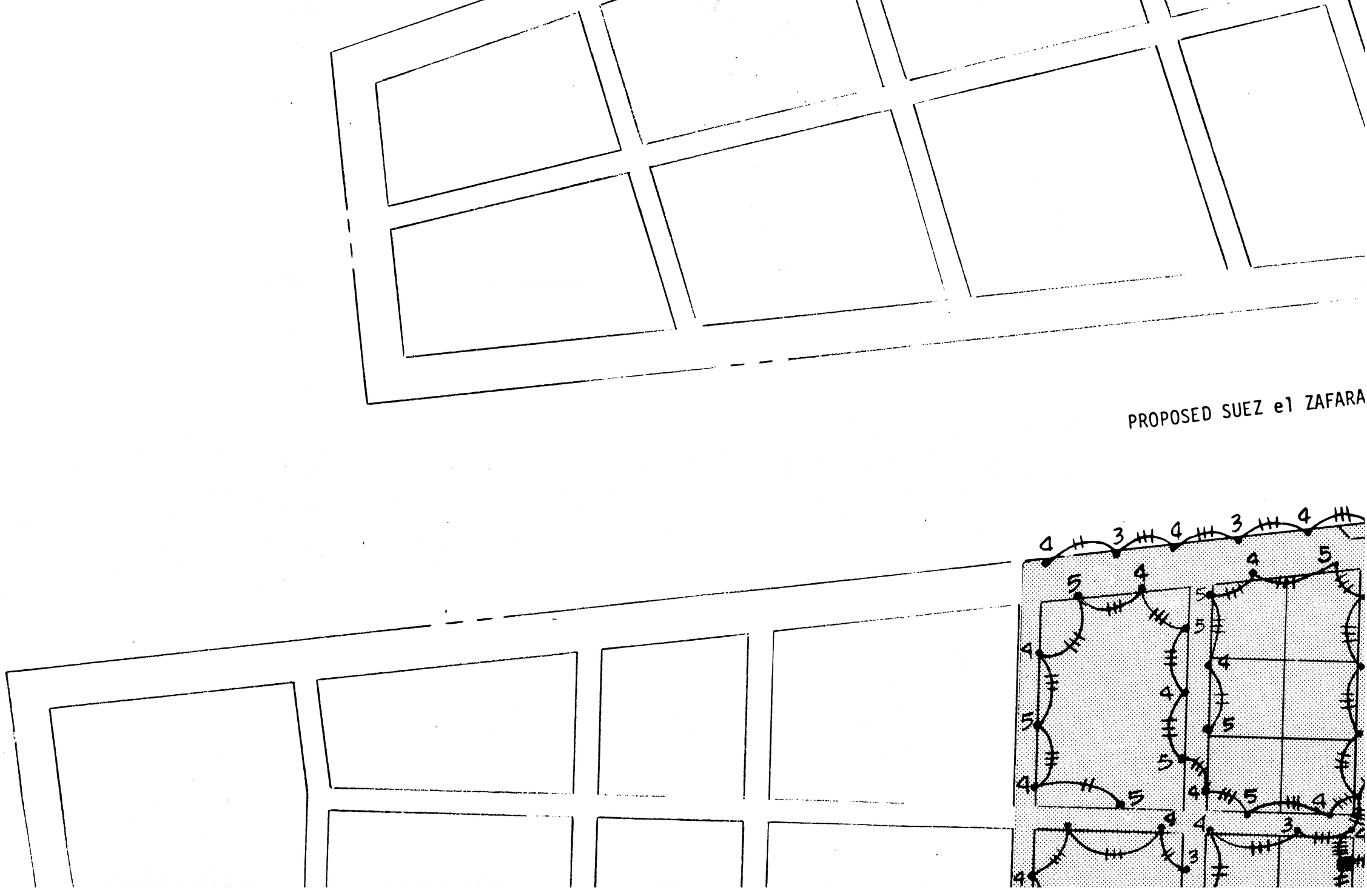
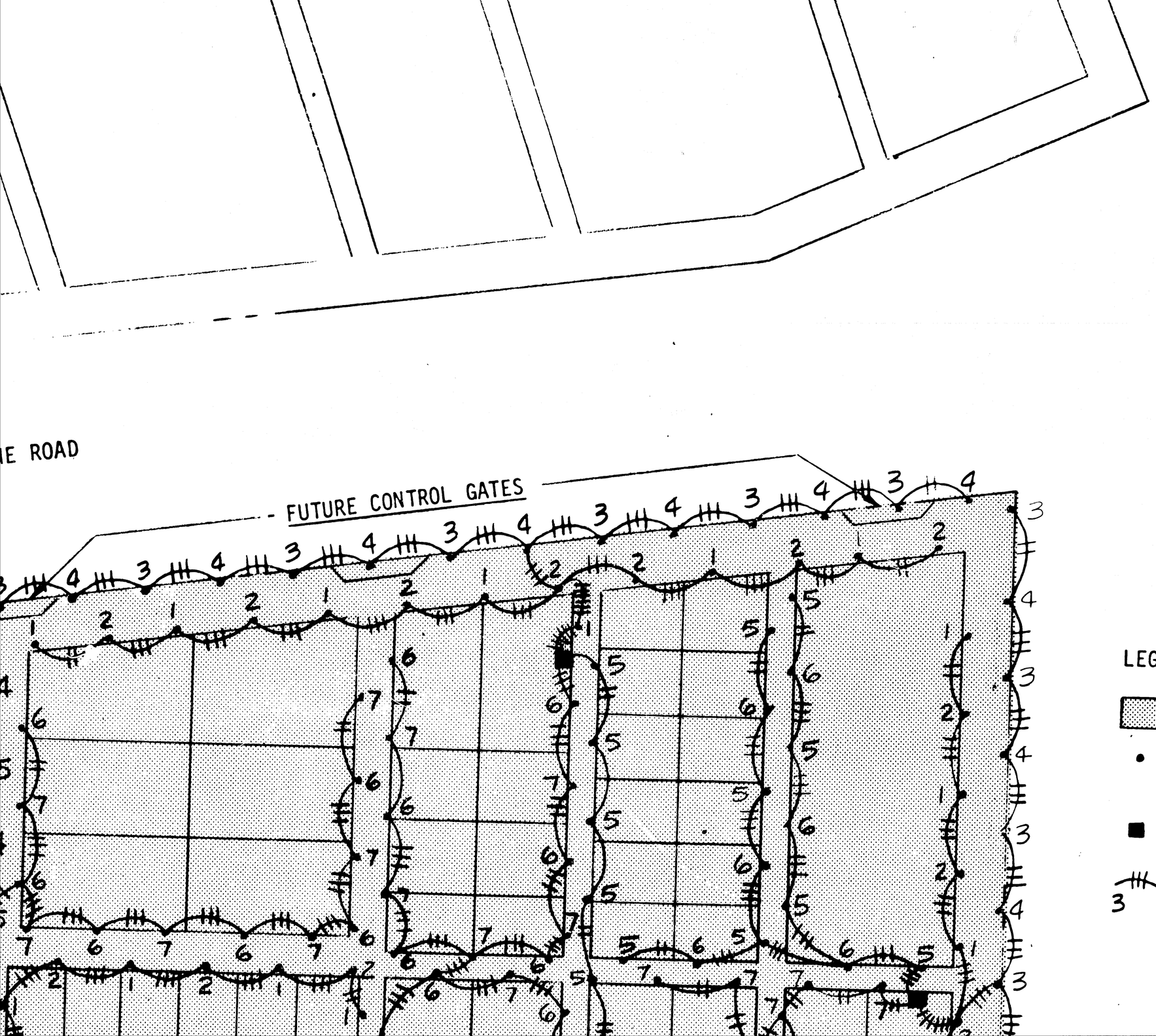

PROPOSED SUEZ el ZAFARA



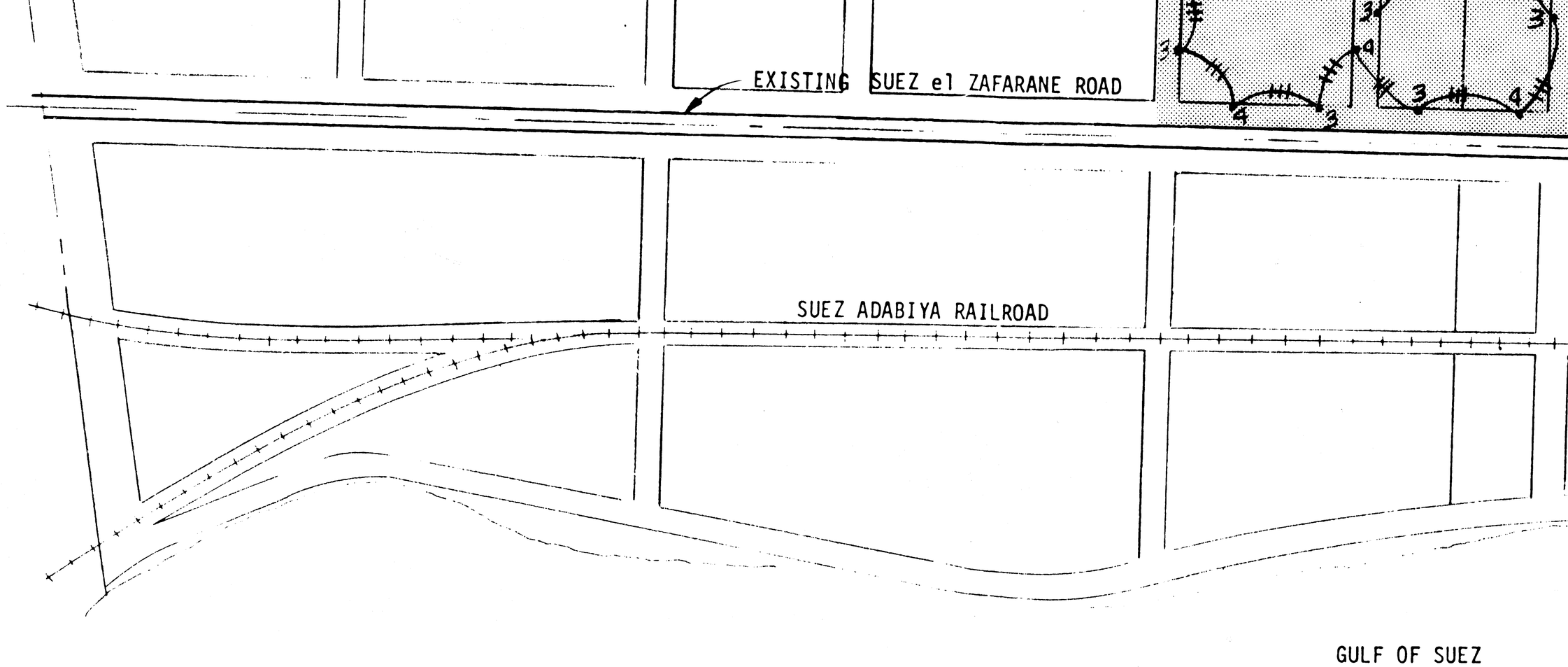

LEGEND (THIS DRAWING)

PHASE I

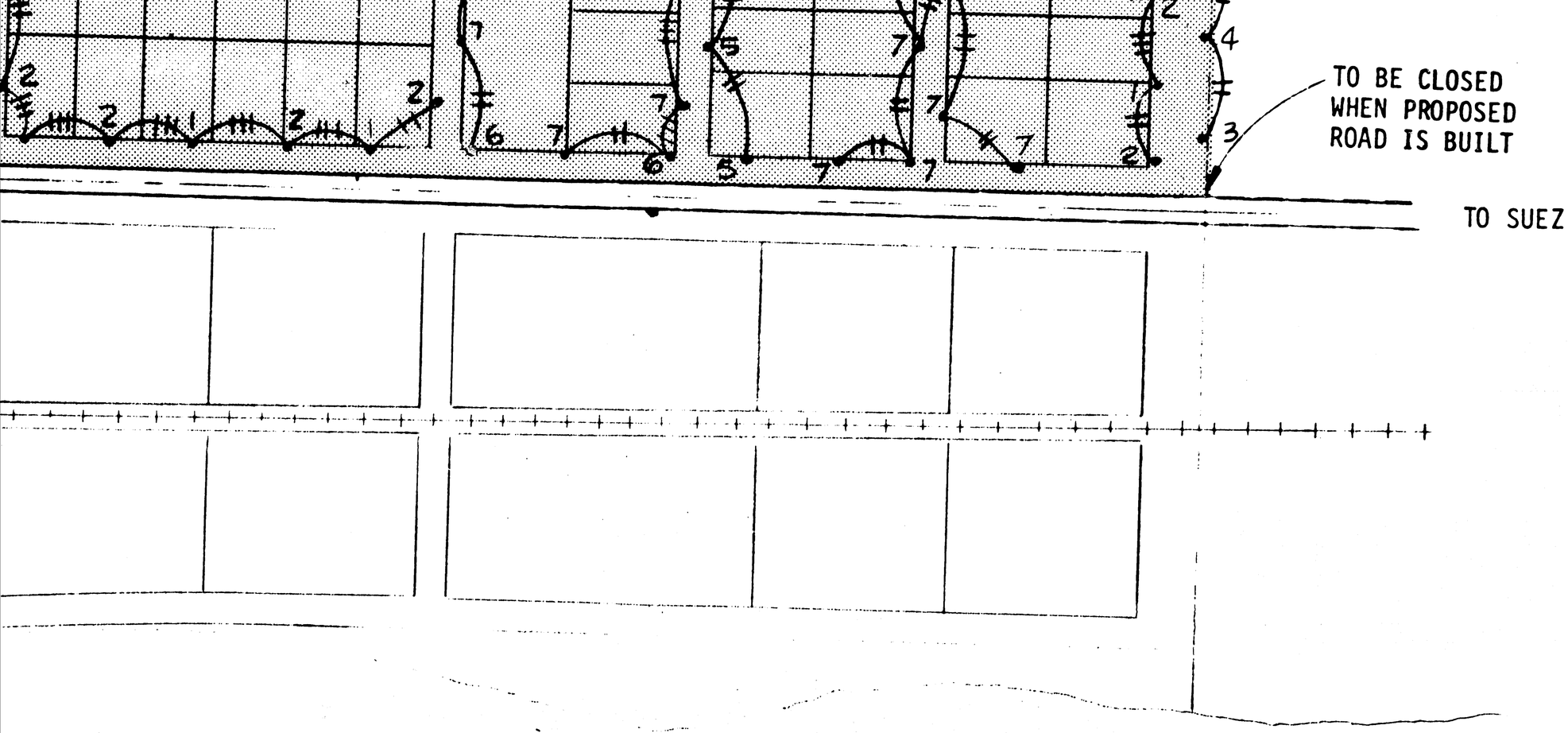
• 12M POLE WITH 250W H.P.S. LIGHTING FIXTURE

■ OUT DOOR DISTRIBUTION PANEL

3 PVC COATED RSG CONDUIT HASH MARKS INDICATE NUMBER OF CONDUCTORS, NUMBER INDICATES CIRCUIT




| DRAWING | DRAWN BY | | |
|---|---|---|---|
| 5 | CHECKED BY | PROPOSED ADABIYA FREE ZONE | OUTDOOR LIGH |
| SHEET OF | FILE NO. 9731-002 | | |

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| NO. | DATE | REVISION | BY |
|---|---|---|---|

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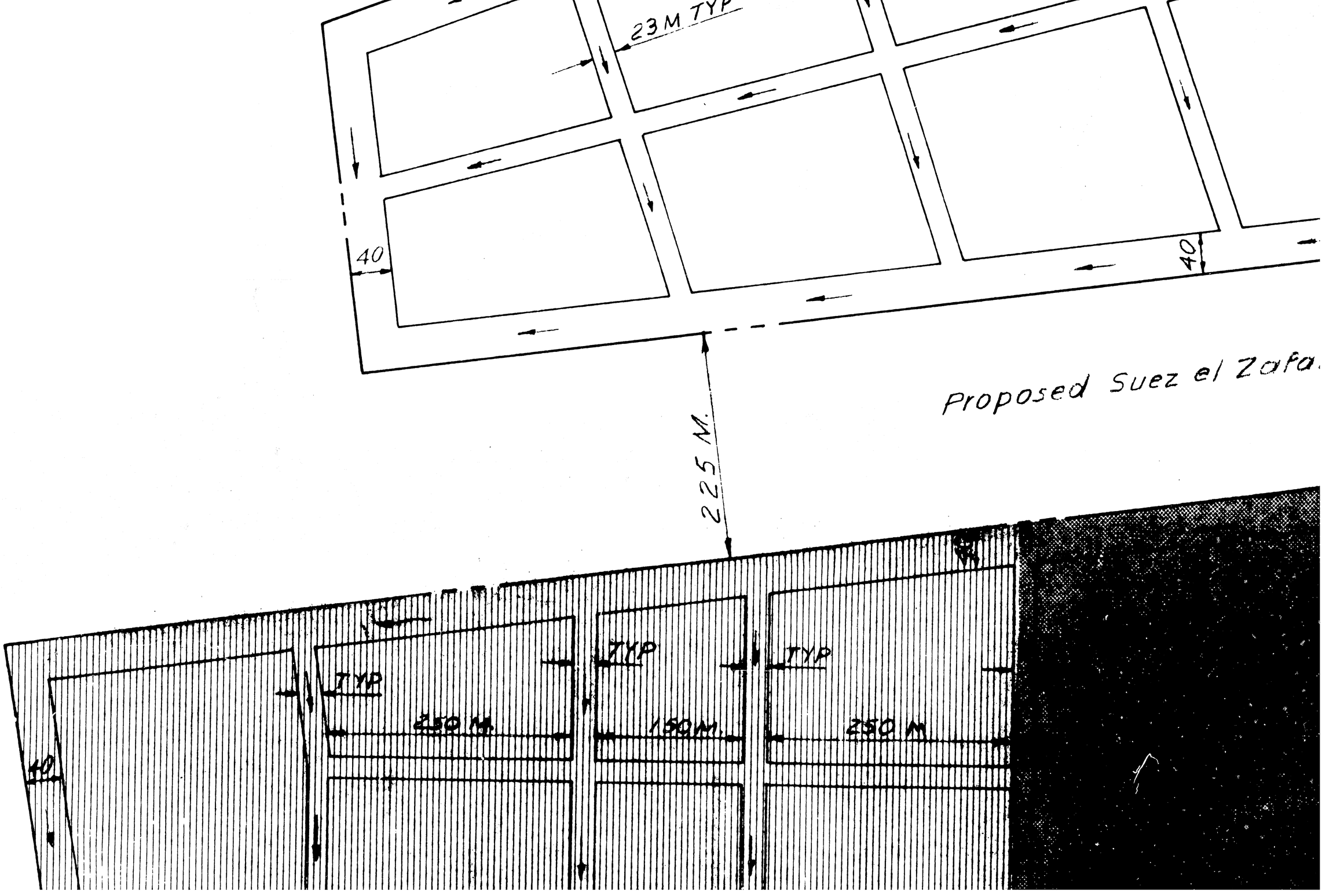
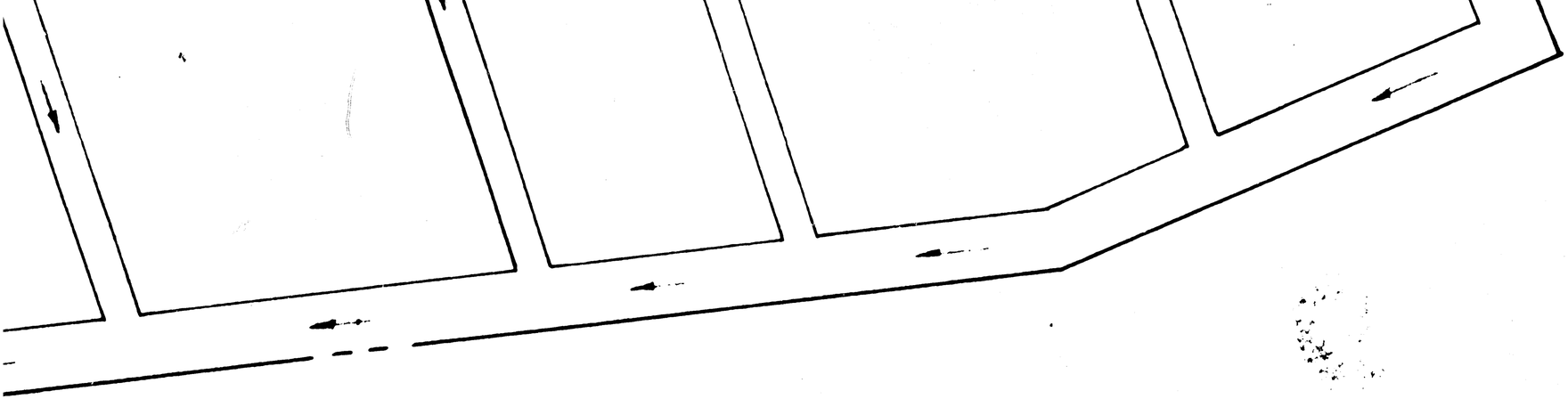
fiche 8

40

Scale 1:5,000
40

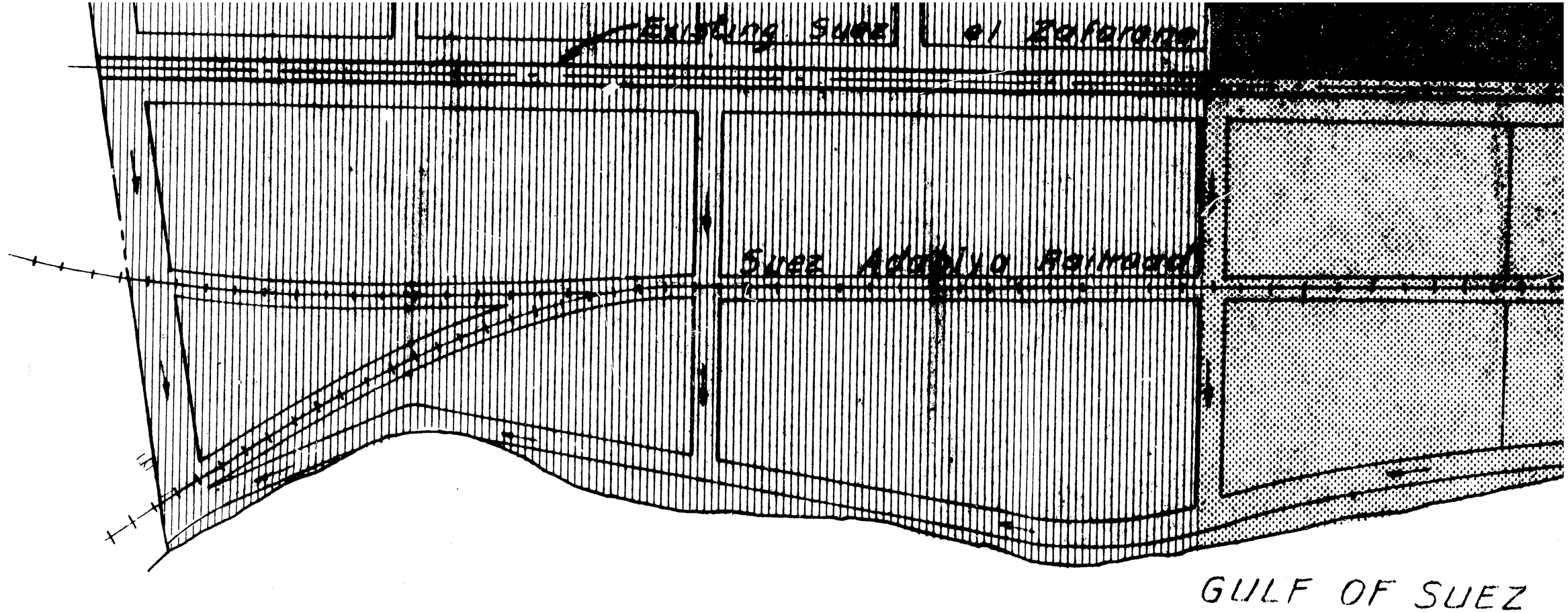

23 M TYP
40
40
Proposed Suez el Zafa
225 M.
TYP
250 M
TYP
150 M
TYP
250 M
40



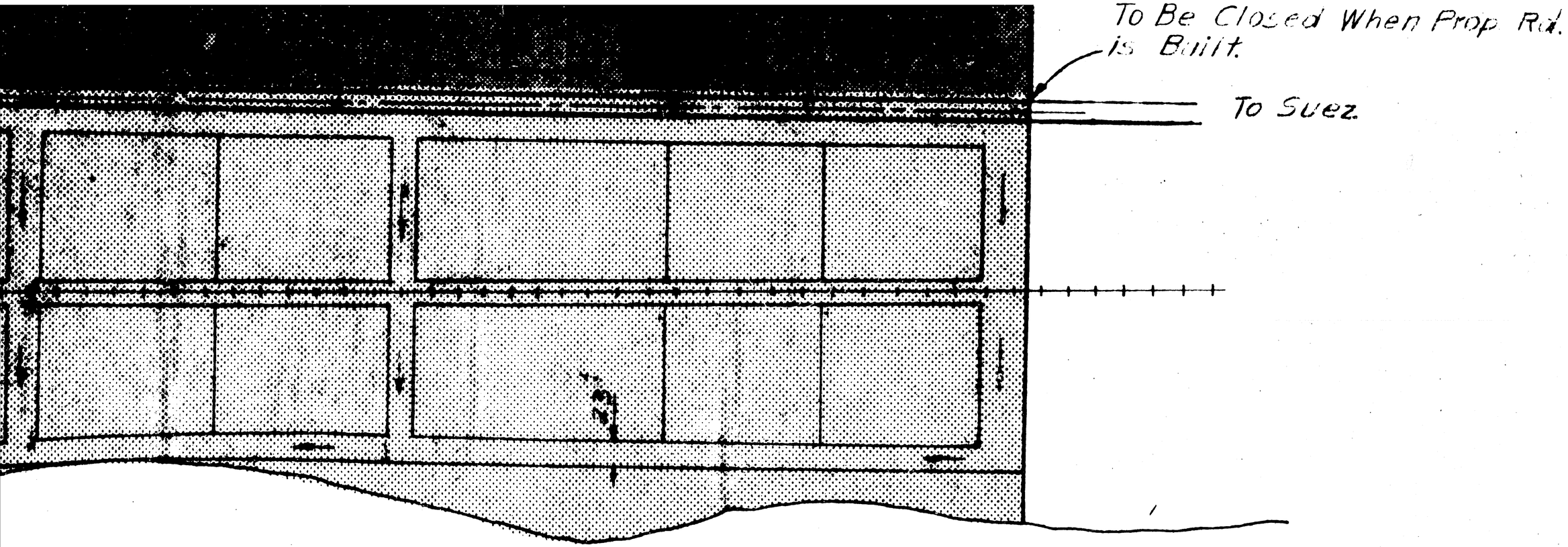
ane Road.

LEGEND (This Drawing)

- Surface Drainage
- Phase 1
- Phase 2
- Phase 3
- Potential Development Area
- Limits of Free Zone
- Existing Railroad
- 658 TARGET INDUSTRIES




| DRAWING | DRAWN BY | | |
|---|---|---|---|
| 1 | B.L.M. | PROPOSED ADABIYA FREE ZONE | PRELIMINARY |
| | CHECKED BY R.D.C. | | WITH INDUSTRY AR AND ROADWA |
| SHEET OF | FILE NO. 79731-002 | | |




SITE PLAN

EA ASSIGNMENTS
Y SYSTEM

| NO. | DATE | REVISION | BY |
|---|---|---|---|

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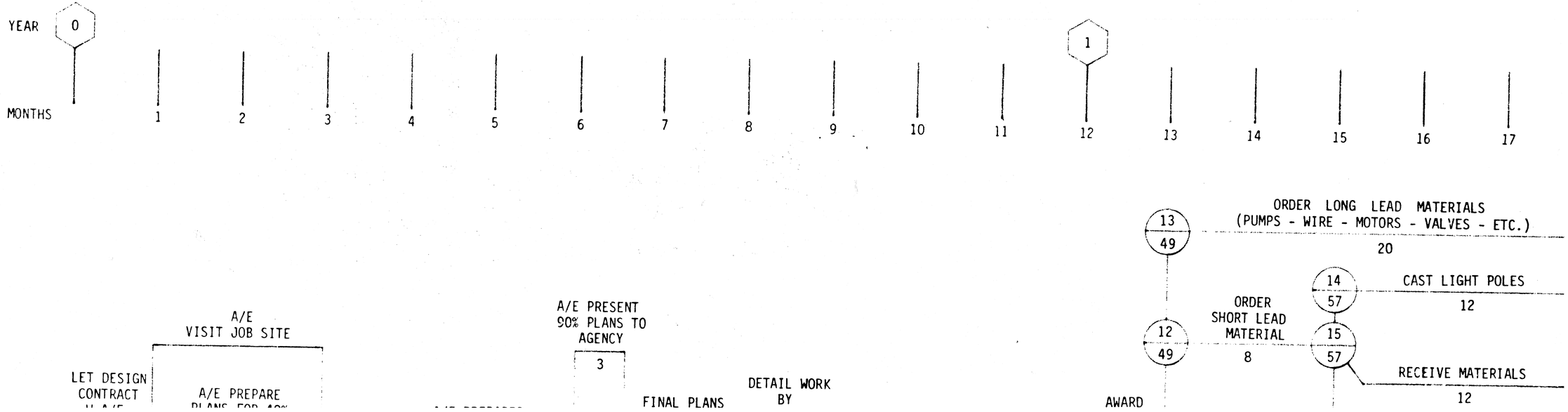
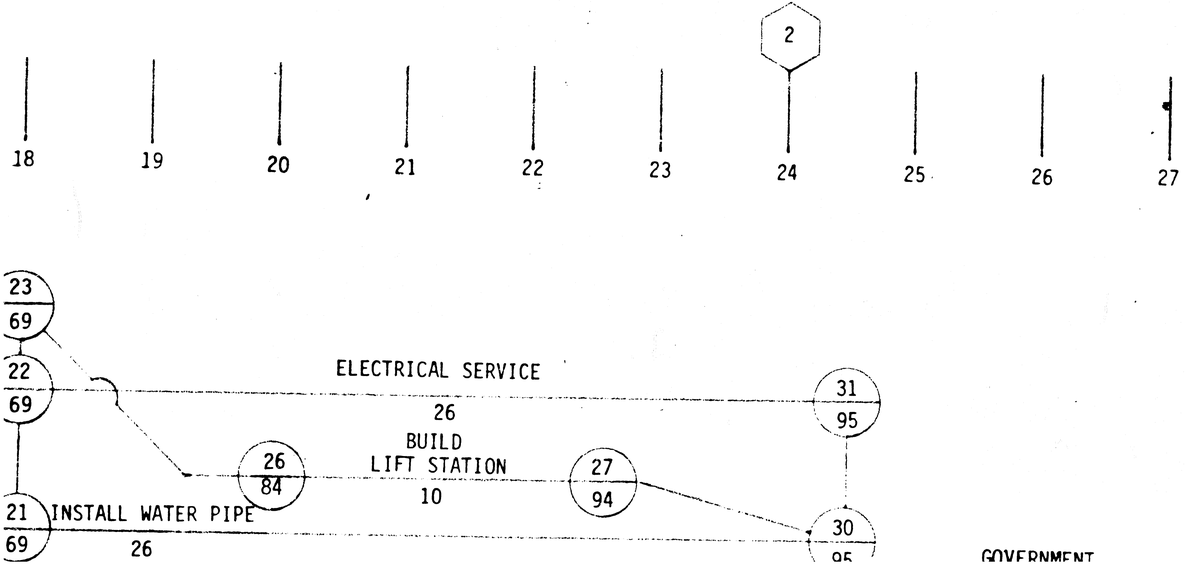
REG. PROF. ENGR. FLA. NO. DATE

fiche 9

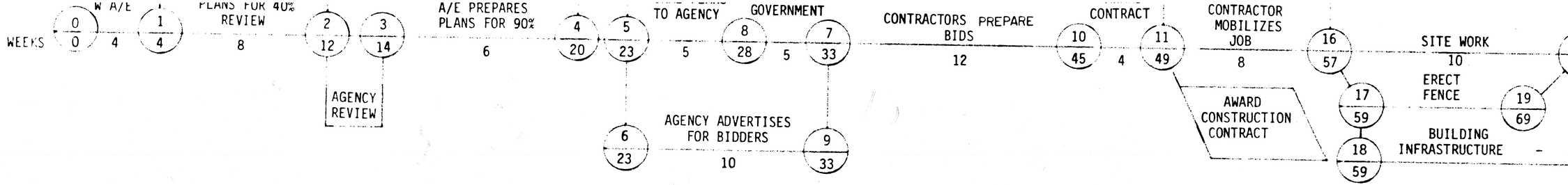
ADABIYA FREE ZONE
PRELIMINARY CPM

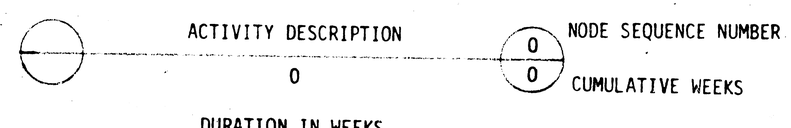


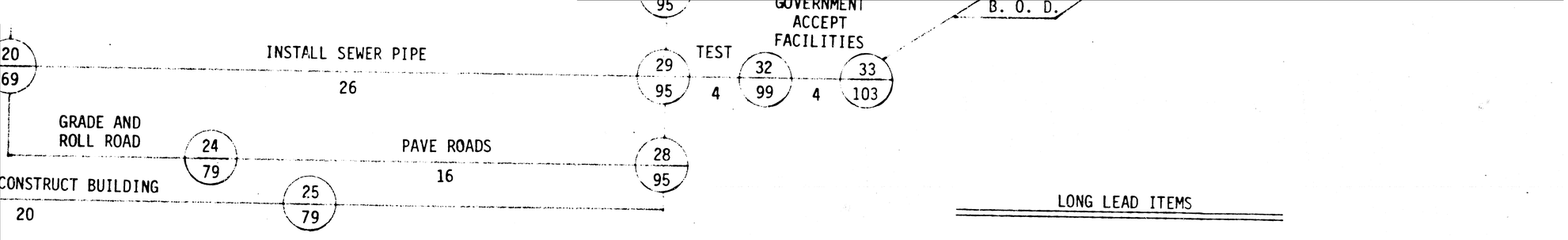



BENEFICIAL OCCUPANCY DATE

GOVERNMENT


W A/E
PLANS FOR 40% REVIEW
A/E PREPARES PLANS FOR 90%
TO AGENCY
GOVERNMENT
CONTRACTORS PREPARE BIDS
CONTRACT
CONTRACTOR MOBILIZES JOB
SITE WORK
WEEKS
0
0
4
1
4
8
2
12
3
14
6
4
20
5
23
5
8
28
5
7
33
12
10
45
4
11
49
8
16
57
10
AGENCY REVIEW
AGENCY ADVERTISES FOR BIDDERS
6
23
10
9
33
AWARD CONSTRUCTION CONTRACT
17
59
ERECT FENCE
19
69
18
59
BUILDING INFRASTRUCTURE


ACTIVITY DESCRIPTION
0
DURATION IN WEEKS
0
0
NODE SEQUENCE NUMBER
CUMULATIVE WEEKS




## LONG LEAD ITEMS

| IN COUNTRY SUPPLY | IMPORT |
|---|---|
| 1. CAST CONCRETE POLES | 1. PUMPS |
| 2. ASBESTOS WATER PIPE | 2. ARMORED WIRE |
| 3. TERRA COTTA PIPE | 3. LIGHT FIXTURES |
| 4. ASPHALT | 4. CHAIN LINK FENCE |
| 5. GENERAL BUILDING MATERIALS | 5. TRANSFORMERS |
| | 6. MECHANICAL AND ELECTRICAL CONTROLS |
| | 7. VALVES |

NOTE: WORK TO BE PERFORMED BY LOCAL TRADESMEN

fiche 10