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LOCAL DEVELOPMENT II URBAN PROJECT

Submitted to
USAID / CAIRO

Submitted by
WILBUR SMITH ASSOCIATES

in association with

PUBLIC ADMINISTRATION SERVICE
DEVELOPMENT CONSULTING OFFICE

DELOITTE HASKINS AND SELLS
ENGINEERING AND GEOLOGICAL
CONSULTING OFFICE

**Proposal for Upgrading
Cairo Governorate Paving Complex
Ghamra - Cairo**

December, 1988

LOCAL DEVELOPMENT II URBAN PROJECT

11 GAMAL EL DIN ABOUL MAHASSEN, GARDEN CITY . CAIRO, EGYPT . 354-6469 . 355-7078 . TELEX (927) 2252 SERVE UN

Special Projects - Cairo
LD-II/88/05
December 14, 1988

Mr. Mahmoud El Kholi
Secretary General
Cairo Governorate

Dear Mr. Mahmoud El Kholi,

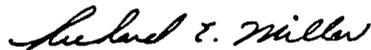
With the assistance of the staff of Cairo Road Department and the guidance contained in the "Cairo Governorate Study for Upgrading the Paving Complex" we have completed the preparation of the special project documentation for "Upgrading Cairo Governorate Paving Complex, Ghamra-Cairo". Two Arabic and two English copies of the project data are included in this submission. Should you require additional copies please advise me as to how many copies are needed. Should you have any questions about the project data we will be most happy to meet with you and discuss or clarify any portion or items that may be in question.

Should you find the project scope and detail suitable for your needs, the next step in the procedure is to submit the project data, in Arabic and English, to the ULDC for review and approval by that body. Upon ULDC approval the project will be forwarded to the AMANA for further review. Kindly note that a copy of this letter and project documentation is being sent directly to Mr. Gisiger of USAID.

We appreciate your support and assistance in implementing the various components of the LD-II Program.

With deep respect,

WILBUR SMITH ASSOCIATES



Richard E. Miller
Project Director

cc: Mr. John Gisiger, USAID

WILBUR SMITH ASSOCIATES

DELOITTE HASKINS AND SELLS
DEVELOPMENT CONSULTING GROUP

PUBLIC ADMINISTRATION SERVICE
ENGINEERING AND GEOLOGICAL
CONSULTING OFFICE

Abstract

Cairo Governorate paving complex (40,000 m²) is adequately equipped with an efficient asphalt batching plant (150 ton/hr max. original capacity, now 120 ton/hr), machines for manufacture of tiles and curbstones as well as various equipment for road paving. The facility also includes administrative buildings, stores, workshops and an asphalt laboratory. To more develop and improve the plant and optimize use of available equipment, additional equipment and laboratory testing machines are proposed for purchase under this special project. Means to re-organize and economically manage the facility are proposed.

The project budget estimate for the special project is LE 865,000

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I. Project Definition

Cairo Governorate paving complex, occupying about 40,000 m² in El Kassarat (Zawia El Hamra, Cairo South) is adequately equipped with an efficient batching plant of original maximum capacity of 150 tons of asphaltic mix per hour and machines for producing tiles and curbstones. A plan of the facility is shown in Appendix B. Figures 1 and 2 are views of the plant and equipment. The complex includes administration buildings, stores, mechanical and electrical workshops and a laboratory.

A feasibility study, Appendix A, has been conducted by Cairo Governorate to fully utilize the complex and manage it on sound economic basis. The project's main sources of revenues, considered in the study, were the value of selling asphaltic mixes, offering paving services and conducting tests related to asphalt technology for external parties (public and private sector) and for Cairo Governorate districts.

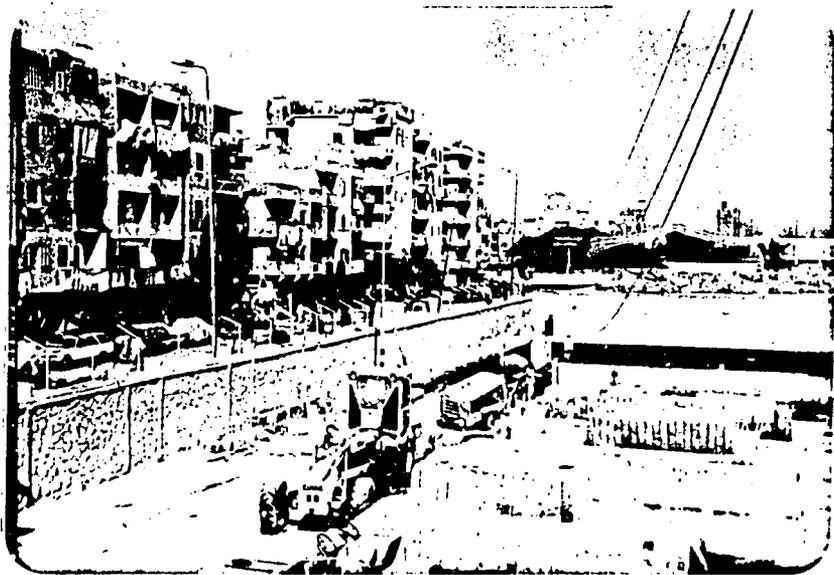
The report which follows proposes means of improved equipment utilization, recommends financing of certain machinery needed for performing the tasks assigned for the complex, especially those required for street pavements, and suggests ways for optimizing use of available human and material resources.

In general, the activities included in this special project, consist of:

- a. Completion of pavement fleet needed for accomplishment of street paving by purchase of one finisher, two compactors and additional modern asphalt laboratory equipment.
- b. Providing the facility with two 30 tons tanks, with heaters, to prepare solutions of RC2 and MCo (for tack coats).
- c. Repair of inefficiently operating heavy equipment by contract through private sector firms.
- d. Purchase of spare parts as required for serviceable machines and heavy equipment.
- e. Purchase of a computer and stationary needed for adopting efficient system of reporting.
- f. Purchase of materials and supplies.
- g. Re-organize the complex and supply management and technical training (in case the facility is not leased to public or private sector).

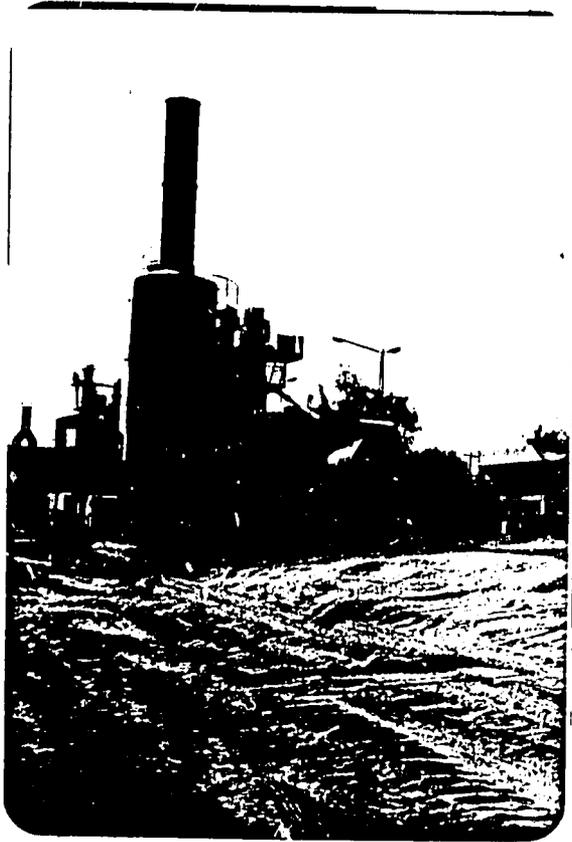
II. Project Justification

1. The paving complex of Cairo governorate is adequately equipped but not used to its full capacity. With minor up-grading, the complex will be turned into a productive unit, furnishing asphaltic pavement services to Cairo Governorate and other parties.
2. The upgraded facility will efficiently participate in paving streets of low income areas in Cairo, which are not normally contracted due to their irregularity and crowdedness. The efficiently operated facility will certainly assist in solving problems of maintenance of Cairo streets, reducing rates of accidents, discomfort in travel, vehicle damage and losses to individuals and the national economy.



Ghamra Road Complex

Fig. 1



Ghamra Road Complex

Fig. 2

3. The upgraded facility can be used as a training center for Engineers and Technicians of the public and private sector.

III. Facility Sketch and Existing Main Equipment of Complex

- a. Facility sketch is shown in Appendix B.

- b. **Batching Plant**

The batching plant is an Italian fully automated plant, manufactured by S.I.M. (Societa Italiana Machine - Verona, Italy) with a maximum capacity of 150 tons of asphaltic mixes per hour. (Present efficiency is about 80%, capacity = 120 ton/hr). The plant is of 1981 manufacture, assembled in complex in 1982, starting work on March 1983.

The plant can be manually or semi-automatically operated.

- o On October 30, 1988, the plant produced 620 tons of asphalt concrete used for paving and 135 tons of mastic asphalt.
 - o According to counter reading, the plant has produced, till November 1, 1988, 106945 batches (213890 tons)
- c. **Tiles manufacture machinery**
 - o Two automatic cement tile making machines producing tiles of sizes 20x20x2cm and 40x40x4cm (manufactured by Traoki, Italy, 1984), are each producing 240 m² of tiles per shift. Present efficiency is about 90%.
 - o One semi-automatic machine, manufactured by Langonetti-Fireuze, Italy, 1976, producing 120 m² per shift. Present efficiency is about 70%. The machine is currently under repair.
 - o The tiles are transported to curing basins by forklifts.

- d. **Curbstone manufacture machinery**

Concrete for curbstones is mixed in four mixers, each of 0.5 m³ capacity, and cast in wooden curbstone moulds locally manufactured in the complex workshop. The green concrete, in moulds, is vibrated by a table vibrator. About 150 linear meters are produced daily.

- e. **Complex Fleet**

Table 1 contains data on the main fleet of the complex; number, year manufactured and present efficiency.

Table (1)

Existing Equipment List - Ghamra Paving Complex

Equipment	No.	Year Manufactured	Present Efficiency
1. Dump Truck, Fiat Calabrise 20 tons capacity	4	1985	100%
2. Dump Truck, FOZO, Japan, 8 tons capacity	2	1975	50%
3. BH Fonix Bitumen Sprinkler, England	1	1985	100%
4. Compactor, Gallion (8 tons)	1	1984	80%
5. Compactor, Gallion (8 tons)	1	1984	20%
6. Motor Grader (Champion)	1	1985	100%
7. Motor Grader, Hanomag	1	1980	90%
8. Buldozer, with tired wheels, Hanomag	1	1983	100%
9. Buldozer, <u>track</u> , Hanomag	1	1983	100%
10. Loader, M.F. ZZ	1	1972	40%
11. Loader, Fiat Alice	1	1973	40%
12. Loader, Hanomag	1	1975	50%
13. Loader, Hanomag	1	1975	40%
14. Loader, Hanomag	1	1975	50%
15. Tractor (Romania)	1	1984	60%
16. Forklift (Clark)	1	1979	70%
17. Forklift (Clark)	2	1984	70%
18. Loader - Dumper, Asabi, Spain	1	1985	70%
19. Dumper	2	1982	80%
20. Asphalt layers removing machine	1	1985	85%

f. Mechanical and Electrical Workshops

Mechanical and electrical workshops are adequately equipped with machines needed for ordinary repairs and overall of complex equipment. Machines in workshops include 2 lathes (2.50 & 1.25 ms strokes), drill, electrical saw, grinding disks, shaping machine, forging unit, welding unit (oxygen - acetelene), metal sheets sheering and bending machines, wood saw and robot as well as battery chargers and tools.

g. Laboratory

Existing laboratory is equipped with apparatus needed to conduct the following tests:

1. Test on asphaltic mixes;

- (1) Asphalt mix analysis,
- (2) Marshal test for determination of in situ density, stability and void ratio,
- (3) Design of asphaltic mixes.

2. Tests on base coarse;

- (1) Proctor test,
- (2) C.B.R,
- (3) In situ density (sand equivalent cone),
- (4) Graduation of soil, abrasion and absorption and crushing tests,
- (5) Clay percent in sands,
- (6) Determination of liquid and plastic limits.

The laboratory is operated by qualified personnel and renders services for government, public and private sectors, and is reimbursed for services according to special rates fixed for every test.

IV. Project Budget

N.B. Specification of equipment (except lab equipment) are indicated in Section (V)

	<u>LE</u>
1. <u>Asphalt Paver</u> (8 ft width) Fig. 3	300,000
2. Drum wheel drive vibratory rollers (10 ton operating weight) (for compacting soil & base coarse). Fig. 4	140,000
3. Static roller (8tons ooperating weight) for compacting bituminous base binder and wearing coarses. Fig. 5	100,000
4. Two tanks (30 tons capacity) with heaters for heating RC2 & MCo	80,000

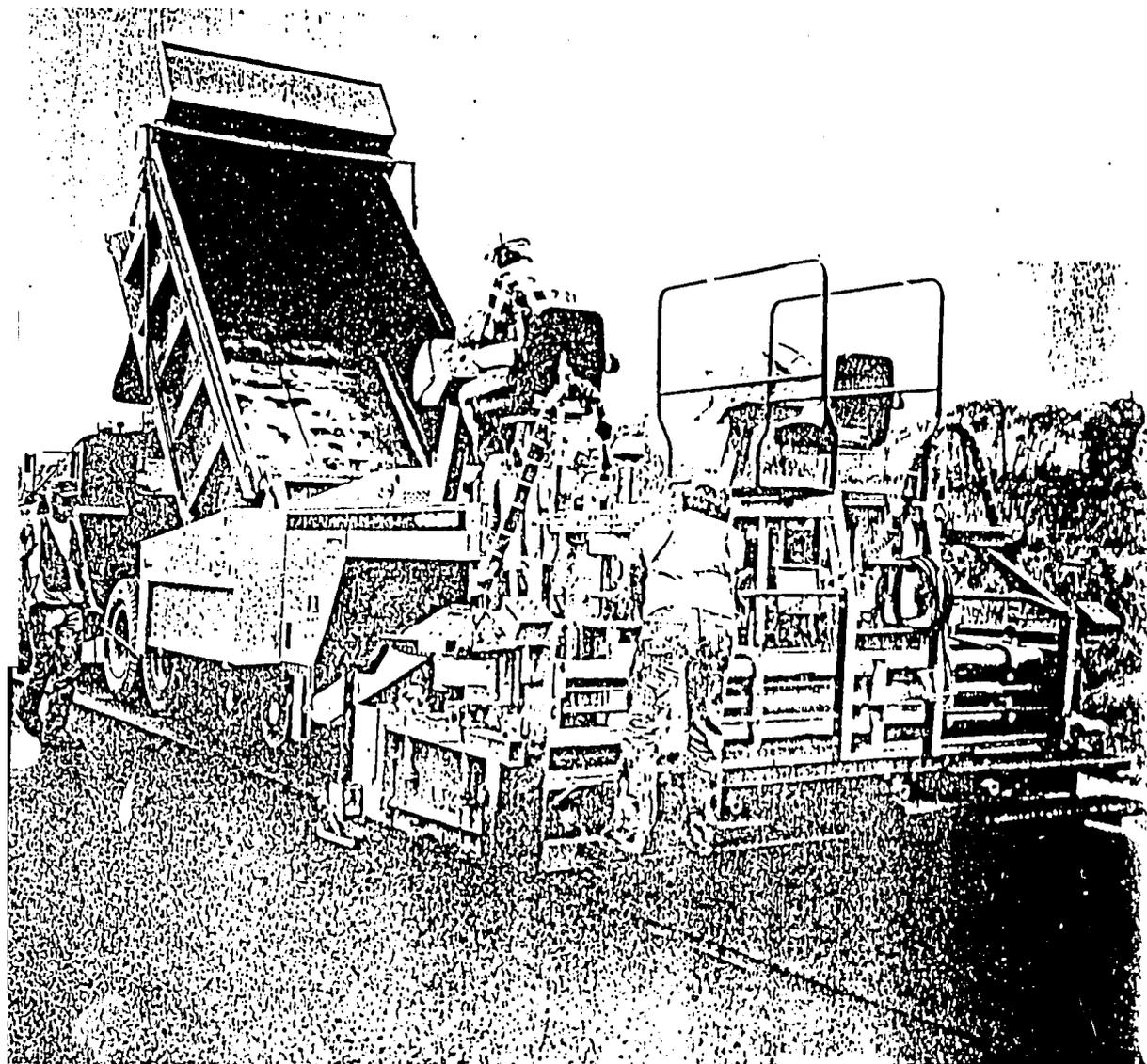


Fig. 3
Asphaltic Paver

Wheel Drive Vibratory Rollers

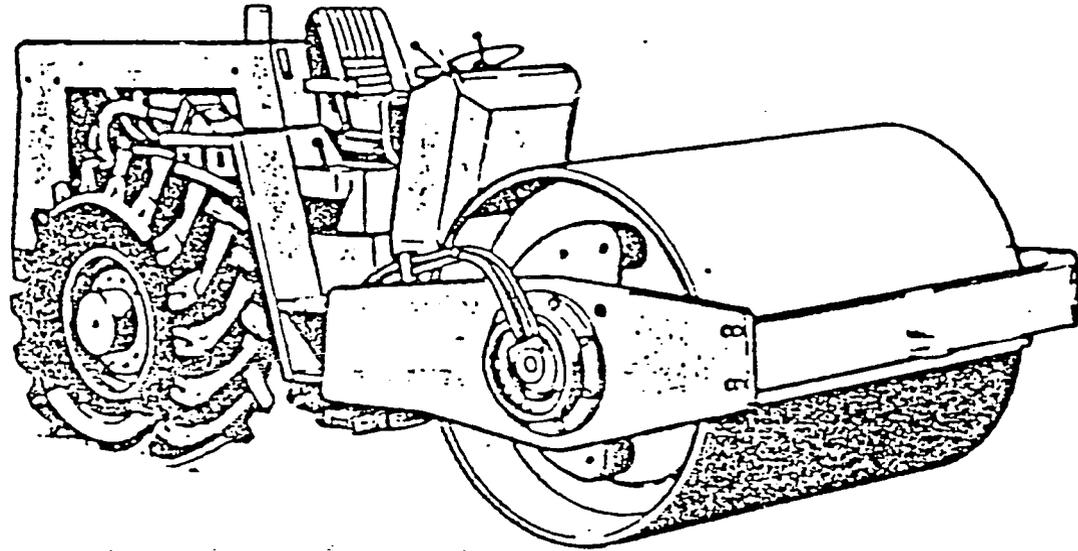


Fig. 4

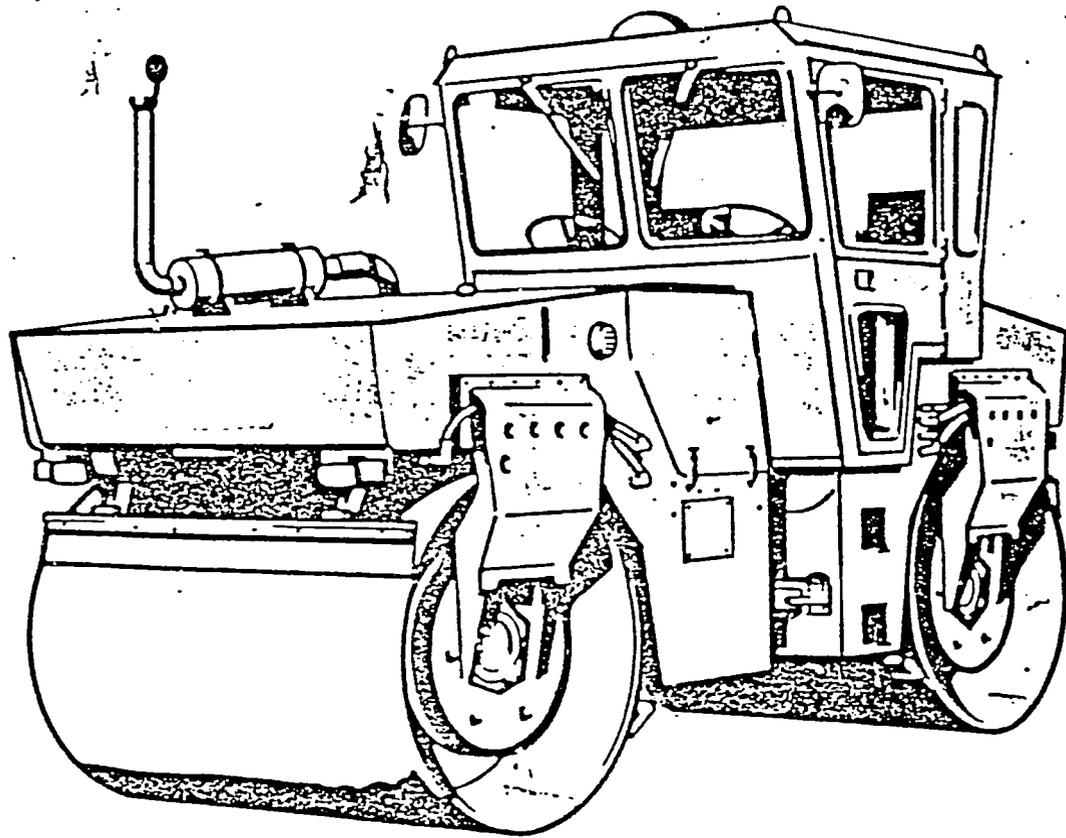


Fig. 5
Static Roller

5. Laboratory Equipment

a.	Drying oven, 225 litre, 2000 w 40 to 160 c.	6,200
b.	Test centrifuge for extraction of bitumen from bituminous mixture (0-3600 rpm, 1500 gm capacity with filter discs).	12,000
c.	Sand equivalent apparatus comprising set of 4 plastic measuring cylinders, complete with rubber bungs, irrigator tube, copper tubing, rubber tubing, complete with pinch clip, polythen funnel, siphon, assembly.	1,800
d.	Automated soil compactor, 2 inch diameter, drop (300 mm to 450 mm, adjustable rammer weight, 2.5 kg to 4.5 kg) automatically compacts specimens for proctor and C.B.R tests.	22,000
e.	Core drill with patrol motor, 3 H.P, 2 stroke engine, 180 to 400 rpm, supplied complete with water swivel.	15,000
f.	Miscellaneous (glass ware, pans, etc)	3,000
		<hr/>
		60,000
6.	<u>Repair of equipment in private sector workshop.</u>	50,000
7.	Spare parts.	40,000
8.	Operation materials (asphalt, sand, gravel, etc.)	40,000
9.	Furniture, stationary, computer.	40,000
10.	Training cost. Two Egyptian experts.(one in business administration and management and another in asphalt technology and road paving) for two months,	

Compensation 2 experts for 2 months	
@ LE 2,000 per month	8,000
Overhead 64%	5,120
Fringe Benefits 26%	2,080
Profit 6%	480
	<hr/>
	15,680
Total of Project including Training	865,680
Round to	865,000
Total of Project excluding Training (in case the facility will be leased to the Public or Private Sector)	850,000

N.B. The following services are not included in the project budget and are assumed to be rendered by the Governorate Specialists.

- a. Consulting services for preparation of tenders for purchase of equipment.
- b. Assignment of specialized technicians and skilled labor (if required).
- c. Preparation of Contracts for leasing the facility (if leased).

V. Specifications, Bidding and Contract Procedures

1. Documents pertaining to bids for procurement and installation of equipment shall include General Conditions, Special Conditions, specifications, Bills of Quantities, Period of Guarantee and Spare Part Requirements. Technical assistance contractor for USAID may review tender documents prior to calls for tender.
2. Equipment suppliers shall be limited to Western Bloc Non-Communist aligned countries.
3. Specifications will be prepared separately for each of the follow-up pieces of equipment. The following are the main requirements for each. Wherever a certain manufacturer is mentioned hereunder or in attached catalogues, an approved similar will be acceptable.
 - a. Asphalt Paver (See Fig. 3)
 - o Screed width 3.00 ms
 - o Power 90 to 100 hp
 - o Rated Engine RPM 2600

- o Speed ranges
Forward speed range
Paving

1st	35 mpm
2nd	95 mpm

 Travel

3rd	8 kph
4th	20 kph
- o Sced weight: 1350 kg
- o Wheels Solid rubber wheel

b. Single Drum Wheel Vibratory Roller (See Fig. 4)

Roller shall compact most all soil types; non cohesive soils (sand, gravel, crushed stones and rock and slightly cohesive soils).

Basic weight	10000 kg
Operating weight	10150 kg
Rolling width	2100 mm

Speed

(1)	0-5.0 km/hr
(2)	0-10 km/hr
Gradeability	30%
Performance	110 hp

c. Static Roller (See Fig. 5)

For compacting bituminous base, binder and wearing courses.

- Basic weight 8350 kg
- Operating weight 8900 kg
- Max operating weight
with ballast 10600 kg
- Rolling width 1670 mm
- Speed (1) 0-4.5 km/hr
(2) 0-9.0 km/hr
- Performance 65 hp
- Sprinkler system Pressure
- Water tank capacity 885 litre

VI. Project Management and Organization Proposals

Two main phases are proposed for the development of the facility management:

a. Phase 1 reorganization of present manpower

The following Table (2) indicates the existing numbers of employees and labor in the facility

Table 2

Serial	Category	Number
1	Engineers	12
2	Legal	1
3	Finance & Accounting	3
4	Engineer Assistants	28
5	Logistics	37
6	Technicians	204
7	Unskilled labor	188
Total		473

As can be deduced from the above table, the present number of workers is relatively larger than required for economics operation of the facility. Roughly, one third of this manpower is estimated as required for the economic operation of the upgraded facility. While a proposed organization is shown in Figure 6, the governorate should conduct a study for human resources planning and forecasting. The following procedure is recommended.

- 1) An accurate estimation should be made for the manpower needs, considering associated costs and future forecast.
- 2) Present personnel skill "inventories" should be analyzed.
- 3) Unskilled labor or personnel with unneeded specializations should be re-assigned in other Governorate departments.
- 4) Other needed personnel with adequate skills should be temporarily reserved, in other jobs, to fill future forecasted vacancies or replace retirements or terminated workers.
- 5) Specialized labor, i.e. paver drivers, should be recruited.

b. Phase II Proposal for Economic Facility Operation

Three different proposals for operation of facility are mentioned hereunder.

1) Lease of Facility to the Public or Private Sector

The facility may be leased to a public or private sector specialized contractor through a competitive bidding procedure. Only qualified well known contractors should be invited for bidding. Primarily, lease contract should run for a limited period (e.g. 2 years only) to allow for evaluation of any shortcoming in the project. The contract should contain strict legal conditions and technical

PROPOSED ORGANIZATION CHART

Paving Complex

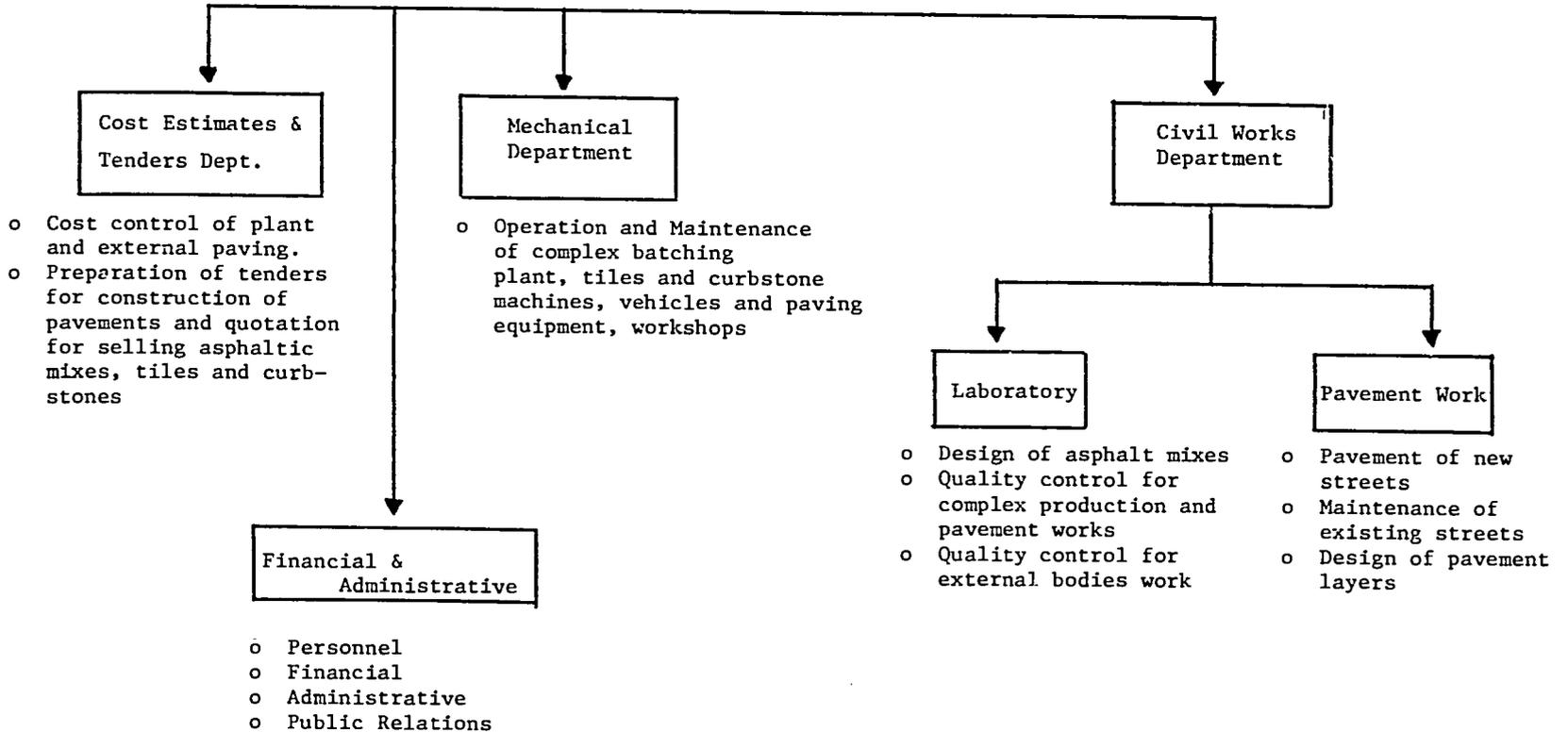


Fig. (6)

warranties to assure that all equipment will be maintained in good operating condition during the lease period. A high guarantee bond should be withheld by the Governorate till lapse of lease period. Reports on condition of the complex should be submitted periodically by Governorate engineers.

or

- 2) The facility should be managed by a partnership between the Governorate and a public or private sector specialized company. Agreement between the two partners should contain clear clauses regarding property, shares, management, authorities, distribution of profits, etc. Partnership should also be selected through competitive bidding between qualified contractors.

or

- 3) New special regulations shall be issued to operate the facility as a profitable self financed corporation, as detailed in the Feasibility Study, Appendix B.

VII. Project Implementation

The implementation schedule is determined by means of the critical path method. Arrow diagram of figure (7) shows an implementation time of 36 weeks from the time of issue of order to commence by Governortae is estimated to bring the facility into full capacity operation.

In case the facility will be leased by the private or public sector, the time of completion of project will be reduced to 27 weeks assuming that all contractual and legal procedures will be completed.

Table (3)

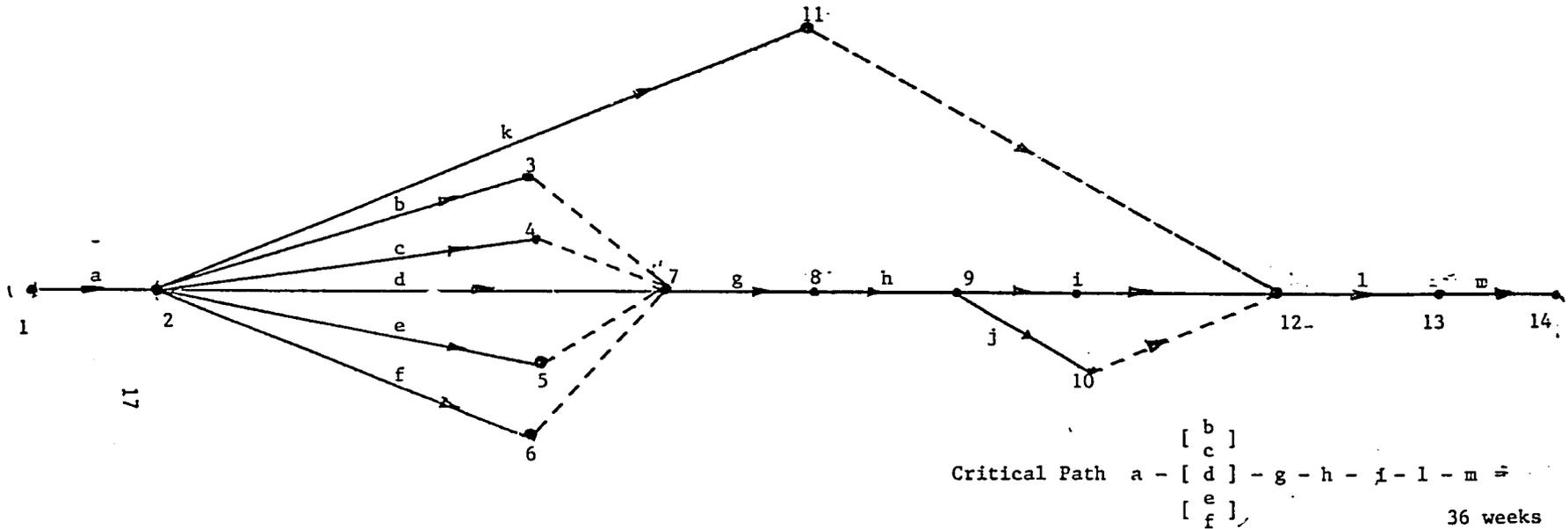
Project Activities

	Duration (weeks)	Preceding Activities (weeks)
a. Issue of Order to commence	0	-
b. Preparation of bid for purchase of spare parts	4	a
c. Preparation of bid for purchase of equipment	4	a
d. Preparation of bid for repair of existing equipment	4	a
e. Preparation of bid for laboratory equipment	4	a

f.	Preparation of bid for furnitures, stationary, equipment, etc	4	a
g.	Review of activities b, c, d, e and f by USAID Technical Assistance Contractor (TAC)	3	b, c, d, e, f
h.	Bid period and evaluation of bids tenders in activities b, c, d, e and f	6	g
i.	Purchase of equipment & spare parts, laboratory equipment, furniture, stationary and computers	12	h
j.	Repair of equipment	8	h
k.	Reorganization, assignment of needed personnel	8	a
l.	Purchase of operating materials	2	i, j, k
m.	Management training and technical (not applicable if the facility will be leased).	9	l

VIII. General Remarks

1. Appendix A contains the feasibility study conducted by the Cairo Governorate to upgrade the facility. Noting that the study is dated October, 1986, some discrepancies may be noticed between some information mentioned in this special project and the feasibility study (e.g. numbers of operable machines, etc).
2. Maintenance of facility constructions is not included in this project and will be the Governorate's responsibility.



or 27 weeks in case the facility will be leased

Fig. 7
 Schematic Arrow Diagram
 Project Activities

Appendix A

Translation

Cairo Governorate Study

Upgrading The Paving Complex

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TRANSLATION

Upgrading The Paving Complex

Summary

Feasibility Study for Paving Complex Project

Cairo Governorate has a lot of potentials and resources not fully used or in other words not economically used. The governorate is attempting to spend intensive efforts in order to make use of these potentials. The paving equipment existing at Ghamra paving complex, is currently functioning partially and constitutes a part of these unused potentials. A quick action should have been taken to make full use of these equipment and resources available at the Governorate through the establishment of investment, services, and productive projects to be financed by Development & Services Treasury and LD-II. The profits of these projects should go back to the treasury.

In order to achieve this, it was agreed to exploit such resources, the governorate made an assessment for the resources and available potentials. At this point, the idea of transferring the paving complex into an investment productive project came up. This project is operated in an adequate economical method. In order to implement this idea, and in order to carry out the project on suitable scientific basies, it is important that an economic study be made to ensure its feasibility.

The study revealed the following results and indications:-

Project Name: Productive Paving Complex

Purpose: Carry out all construction and repairing of Cairo Governorate Roads, in addition to providing asphalt mix to districts in order to repair roads.

Goal: Best use of potentials and available resources, lower the paving cost, achieving an adequate benefit in order to finance the expansion and replacement projects.

Basic Material

Resources: Paving services depend upon basic requirements in order to offer paving services. Most of these materials are available in desert areas, such as sand, lime and others together with bitumen that is locally produced at petroleum distilleries all over the country. All of these materials are available in big quantities sufficient for road paving for another 10 years.

Workmanship

This project utilizes 135 of the technical, administrative, skilled labor and normal labor. Their average wages per year is LE 245,000.

Paving Priorities

When preparing the study, it was emphasized on the first place on Cairo Governorate streets. Expected paving requests are left to the projects settlement and test its capability to cover the Governorate needs.

Economic & Financial Directives

Annual Capital Project:

It is 25% in the first year until it gradually reaches 95% in the tenth year.

<u>Annual Average of the Pound Profit (Revenue)</u>	26.6 %
<u>Annual Average of the Pound Profit (cost)</u>	36.3 %
<u>Period of Capital Refund</u>	• About 3/12 Year
<u>Average Wage/worker</u>	LE 1815, 151/mo
<u>Average cost/Ton of Asphalt mix</u>	LE 12.110
<u>Average Cost/Ton of basic materials</u> * *	LE 9.10
<u>Average Cost for paving one square meter (one layer)</u>	LE 2.60
<u>Average cost of one cubic meter of concrete (Borders manufacture)</u>	LE 60.57
<u>One cubic meter of only basic materials</u>	LE 33.13

* It should be noted that the operation capacity in the first three years is less than the maximum.

** It is composed of bitumen, sand, lime, and powder.

Production Capacity: The production capacity of the paving machines and equipment are operating on the basis of an asphalt mixing machine operated 280 days/yr, one shift/day and an operation capacity of 120 tons/hour. This makes 960 tons/day and 275,000 tons/yr. The study has considered the rule of gradual increase in capacity with ascending rates during the years of study in order for the project management to overcome any problems met.

	<u>First Year</u>	<u>Tenth Year</u>
Asphalt mix* production	70,000 tons	505,000 tons asphalt mix
Paving	315,000 m2	2,240,000 m2
Borders manufacture	2,600 m3	11,200,000 m3 of different size borders

Investment Cost and Financial Resources:

LE 3 million: representing LE 2,6 millions cost of transferred assets and LE 0,4 million cash from services treasury.

- The asphalt mix consists of: sand, betumin, lime and powder at different percentages of ingredients

Revenues:

Revenues are estimated on the basis of the proposed capacity for mixing operations, guidance is taken from the prices of paving companies, market price of mix and borders. They are estimated to be LE 55.2 million in the first ten years.

Costs:

The operation cost is estimated to be LE 40.5 millions until the end of the tenth year of the project. This is estimated after the assessment of the operation cost of each equipment/machine required, the labor needed, depreciation installment and others (all cost elements).

Benefit/Profit

Total benefit at the end of the first ten years is LE 14.7 million.

Average Cost of sale for one ton of Asphalt mix is LE 16.00

This study was submitted to respective committees formed to study the investment, services and productive projects at the local popular council.

This committee has agreed on the components of this study. In addition, the local popular council has agreed on the transferring of the paving complex into an investment project in their meeting of March 30, 1986.

**A Summary of
Economic Feasibility Study
For
Pavement Complex Project**

Oct. 1985

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Contents

- o Introduction
- o Main features of study
- o Description of operation phases
- o Batching Plant Capacity and estimate of costs and revenue
- o Remarks and procedures related to study results
- o Initial budget of project
- o Project investment statement
- o Project financial statement
- o Income statement
- o Revenue and cost statement for pavement operations
- o Revenue and cost statement for supply of asphaltic concrete mixture to districts
- o Revenue and cost statement for curbstone manufacture operations
- o Fixed and transferred assets and new estimated cost (PTO)

Introduction

- o Pavement industry depends mainly on availability of basic materials used for pavement works. As known sands, quarry fines and limestone powder utilized in pavings are abundantly available in quarries around Cairo. Also, the bitumen is locally produced in refineries of Egypt. Thus all pavement materials exist in large quantities sufficient for pavement annually increased needs.
- o And whereas those materials are available in Cairo Governorate and that the paving complex machinery in Gamra, possessed by the Cairo Governorate, is not used in full, and that other financial and human resources needed for operation of the complex are also available, it was fairly logical to make use of all those resources and to convert the existing pavement complex to a productive unit managed economically. It's also worth mentioning the paving of Cairo streets is required under a long term plan extending beyond year 2000 and that the total area of streets in Cairo is about 50 million square meters including 18000 "named" streets and other newly "constructed street without names yet"

The preparation of an economic study was essential for establishing the project on a sound basis and achieving success all during the operation period.

Economic Feasibility Study

As formation of committees for sorting and evaluation of assets has not yet been completed and due to the absence of basic information and data, the study will be performed in two phases.

Phase (1) Includes preliminary summary of expected results and main features of the study

Phase (2) Submission of more detailed and analysed summary, followed by issue of the final study supported by documents, data and analytical information pertaining to the items included in the study.

Main Features of Preliminary Study (Phase I)

- Project name: Productive Pavement Complex
- Purpose : Pavement of Cairo streets and supply of asphaltic concrete mix to districts for streets maintenance
- Target - Optimization of use of Governorate facilities
- Participation in achievement of pavement annual plans
 - Reducing pavement costs
 - Obtaining a reasonable review to finance renewal of machinery and extension of complex.

Capacity

Asphalt mix production: Initially, 70000 tons gradually increased to 505000 tons in the tenth year

Street paving : Initially 315000 m2 gradually increased to 2240000 m2 in the tenth year

Curbstone manufacture : Initially 2600 m3 of concrete mix, used for manufacture of curbstones with different sizes, increased to 11200 m3 in the tenth year

Invested Cost : L.E 3 millions, including:
 - L.E 2.6 millions, estimated value of transferred assets
 - L.E 0.4 million materials stock, operation needs & cash

Project Capital L.E 3 millions consisting of
 L.E 2.6 millions (non-monetary share)
 L.E 0.4 millions (monetary share)

Sources of finance for Operation needs and wages L.E 400 000 (Governorate developing and service Fund)
 30%, advance payments of contracts for pavement or selling of productions.

Project Commencement date: End of 1987

Property of Project : Governorate local development and service fund

Description of Operation Stages

Prior to the determination of cost, revenue estimates, profits and indications for results, It's essential to ascertain the producing capacity of plant and machinery, the stages of production of asphalt mixes, materials and procedures of pavement and estimates for every cost item within every stage.

- (1) One ton of asphaltic mix consists of variable percentages of the following materials.
 1. Quarry fines (Basalt and limestone crushing product)
 2. Sand
 3. Limestone powder
 4. Bitumen
- (2) Quantities needs, of above materials, will be supplied to Gamra Complex site by material suppliers, with prices agreed upon before supply
- (3) Mixing and paving operations should be performed according to the follow up procedure:
 - Materials should be transported to batch plant. Mix ingredients percentages shall be automatically controlled; from plant cabin, according to the type of required mix. The finished product will be a hot asphaltic mix ready for use for paving.
 - A large portion of the mix will be used for street paving. The other portion will be delivered to districts for use in streets maintenance.
 - Pavement Stages
 - o Limestone base coarse shall be laid on street surface and compacted, using specific rollers "for base course", to maximum density
 - o Asphaltic mix will be transported from complex site to pavement location, using project trucks, spread by graders and compacted by rollers till attaining the final form of asphaltic road finish.

- Side walks construction, including alignment, curbstone installation, filling with sand and paying of asphaltic mastic for sidewalks.

(4) Batching Plant Capacity

The operable Capacity of the batching plant was estimated according to the following basis:

The plant will run 280 days a year (after deduction of vacations, Fridays, electricity and water cut-off, repairs). Considering 8 working hours per day and the capacity of the plant = 120 ton/hr, 960 tons of asphaltic mix will be produced daily or 269000 tons (rounded to 270000 tons) will be produced annually. Gradual increase, with increasing percentages, has been considered in estimation of plant capacity to allow the project management to overcome problems of work, especially the shortage in labor, out for annual expansion of plant.

(5) Cost and Revenue Estimations

o N.B. A symbolic rental value has been assumed for the complex land noting that the complex was constructed 30 years ago.

- o Costs have been estimated after determination of estimated costs of each machine and piece of equipment including operation cost, labor, depreciation etc. for every stage of work.
- o Administration costs were estimated at 10% of annual operation cost.
- o Revenues have been estimated according to the annual assumed capacity of plant and with guidance of prices of works executed by pavement contractors and market price of mixture as well as the capacity of concrete mixture as well as the capacity of concrete mixtures, the quantity of curbstone and curbstones selling price.

The revenues and costs have been increased with suitable rates conforming to the increase in productivity and expected rises in prices of production items.

Results and Directives of Economical Study

(Page)

- Net operation Surplus
- Average annual income on capital
- Average income per pound/operation cost
- Average income per pound/total cost
- Capital return period
- Financial budget surplus
- Investments
- Remarks and procedures related to study results
- Initial budget of Project

- Methods for spending the final net surplus of operations

The economical study has revealed the following results and

(1) Net Surplus

N.B (Calculated before deduction of any due amounts and formation of self financing shares or making any distributions. Also it does not include revenues of services to other parties estimated at L.E 100000 annually due to their non uniform incidence and casual nature)

Year	L.E (millions)
First	0.366
Second	0.709
Third	0.968
Fourth	1.110
Fifth	1.256
Sixth	1.425
Seventh	1.573
Eighth	2.013
Ninth	2.400
Tenth	2.871

Sum of surplus at the end of study years = L.E 14,691 million

(2) Average annual income on capital

During the first 4.5 years = 33%

During the first 6.5 years = 38%

(3) Average income/pound on operation cost
= 49%

(4) Average income/pounds on total cost through the duration of project = 36%

(5) Capital return period . . 3.5 years from starting operation

(6) Surplus of financial budget

The following indicates the financial surplus indicated by financial budget throughout the duration of study

Year	L.E (Millions)
First	0.633
Second	0.893
Third	1.215
Fourth	1.393
Fifth	1.574
Sixth	1.788
Seventh	1.973
Eighth	2.529
Ninth	3.017
Tenth	3.612

The total of financial budget surplus will be L.E 18.659 millions at the end of the tenth year. This value points out excellent monetary liquidity

(7) Investments

- o Total project investment costs in First year = L.E 3 million
- o Estimated investment costs of extensions and renewal are estimated at L.E 1.06 million (for purchase of batching plant, grader, 3 dump truck and 2 bitumen tanks).

Purchase date: purchase will be self financed by the project surplus on commencement of the fourth year.

(8) Methods for spending final net operation surplus

The study excludes any recommendations for spending are net operation surplus and would refer that to the responsible committee in collaboration within Project Board of Directors.

Initial Project Balance Statement

7/1/1987

Assets		liabilities	
<u>value by L.E</u>			
2470 000	Fixed and transferred assets	3000000	Capital 2600000 (none-monetary share)
130 000	Spare parts		
300 000	Basic materials, fuel		400000 (monetary Share)
100 000	& Cash		
<hr/>		<hr/>	
3000000		3000000	

Remarks and Procedures Related to Study Results

o Administrative Costs & Organization

- The study has developed a view of non-exaggeration or expanding of estimation related to administrative costs and fixed expenses to achieve economic operation understanding. The administrative costs have been estimated at 10% of operation costs.
- It should also be pointed out that a suitable organization, of minimum supervisory and leading staff, would be necessary. Furthermore, extra payments shall be directly related to increase of productivity.

o Priority for Satisfying Cairo Governorate Needs

Project market study and determination of Project volume and revenues were based on the assessment of needs of directorates and authorities directly related to Cairo Governorate without considering expected requests from other bodies.

Such requests would be studied by the project management after restoration of project and satisfaction of all Cairo Governorate needs.

o Provision of Services Before Commencement of Project

Project staffing shall be decided upon and appointed before the assumed date for commencement of project (first of July 1987) to allow for contract for provision of services. Till final approval of project is given we hereby request proceeding with procedures needed for delivery of the L.E. 400000 from the services and developing account.

Investment Project Budget.

(Value by thousands of L.E)

Fixed and transferred assets	2470	
Spare parts	130	
Initial Capital *		2600
(excluding spare parts)		400
Total investment		<u>3000</u>
financed as follows		
Project capital (* *)		3000
Total of finance resources		3000

* Basic materials, fuel, wages, operation needs for 2 months

** Capital analysis

- non-monetary share for fixed and transferred assets and spare parts		2600
- monetary share from developing and services account		400
		<u>3000</u>

Owner of project capital, developing & service account

Project Monetary Budget (operations)

L.E. amount of (Thousand)
(000)

Item/Year	(x) First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ninth	Tenth	Total
Opening Balance	200										200
Sources:											
From paving operations	819	1547	2102	2402	2703	3103	3403	4404	5305	6406	32194
From procured asphalt mix to the district	400	800	1056	1232	1408	1584	1760	2268	2728	3256	16512
From procured curb stone	213	426	516	567	623	685	754	829	912	1003	6528
Sum of (1)	1632	2773	3674	4201	4734	5371	5917	7521	8945	10665	55434
Payament (Uses)											
Basic Materials Procurement	723	1401	1861	2132	2404	2732	3008	3638	4574	5400	28133
Other Materials	120	233	292	329	369	416	457	567	666	787	4236
Salaries	126	244	306	347	387	436	479	587	688	806	4406
Sum of (2)	969	1878	2459	2808	3160	3584	3944	4992	5928	7053	36775
Cash Surplus (1-2)	663	895	1215	1393	1574	1788	1973	2529	3017	3612	18659

(X) about the six months

ne/Monetary

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Table of Income and Operating Expenditures
for the oaving complex

amount in thousand
L.E

Item/Year	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eightn	Nineth	Tenth	Total (Sum)
1. Revenues	1432	2773	3674	4201	4734	5372	5917	7521	8945	10665	55234
2. Expenditures											
- Operating	965	1869	2248	2569	2892	3282	3614	4583	5447	6488	33957
- 10% Contingency	(-)	(-)	225	257	289	329	361	451	545	649	3114
- Operating surplus	467	904	1201	1375	1553	1761	1942	2479	2953	3528	18163
Administration 10%	97	187	225	257	289	328	361	458	545	649	3390
Rent value of the land for the complex	4	8	8	8	8	8	8	8	8	8	76
Net surplus	366	709	968	1110	1256	1425	1573	2013	2400	2871	14691
Fixed assets installment	-	-	245	245	245	245	245	245	245	245	1960
Net	366	709	723	865	1011	1180	1328	1768	2155	2626	13731

Distribute:

1/ Local services and development fund

) ULDC define the ratio between both of them.

2/ Self finance (self help)

na/Paving

Revenues and Expenditures List for Paving Operating

Amount in (000) L.E

Item/Year	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Nineth	Tenth	Total
Revenues	819	1547	2102	2402	2703	3103	3403	4404	5305	6406	32194
Subtract/Expenditures of											
- Operating	553	1045	1291	1476	1660	1906	2090	2705	3259	3935	19920
- Estimator Contingency	-	-	129	148	166	191	209	271	326	394	1834
Direct surplus of operating	266	502	662	778	877	1006	1104	1428	1720	2077	10440
Rent value of the vacant land	1	8	8	8	8	8	8	8	8	8	76
10% for Administration	262	494	674	770	869	998	1096	1420	1712	2069	10364
	56	104	129	148	166	191	209	271	326	394	1994
Net of surplus	206	390	545	622	703	807	887	1150	1366	1675	8371

na/Expendit

The List of Revenues and Expenditures for the Procurement

of Asphalt mix to the District

Amount in (000) L.E

Item/Year	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Nineth	Tenth	Total
Revenues	400	800	1056	1232	1408	1584	1760	2288	2728	3256	16512
Subtract/Expenditures											
- Operating	253	506	607	708	809	911	1012	1315	1568	1872	9561
- Estimates Contingency	-	-	61	70	81	91	101	132	157	187	881
Direct surplus of operating	147	294	388	453	518	562	647	841	1003	1197	6070
(10) % for Administration	25	51	61	71	81	91	101	132	157	187	957
Net of surplus	122	243	327	382	437	491	546	709	846	1010	5113

na/Procurement

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The List of Revenues and Expenditure for Manufacture

of Curbstone

Amount in (000) L.E

Item/Year	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Nineth	Tenth	Total
Revenues	213	426	515	567	623	685	754	829	912	1003	6528
Subtract/Expenditures											
- Operating	159	318	350	385	423	465	512	563	620	681	4476
- Estimates Contingency	-	-	35	38	42	47	51	56	62	68	396
Direct surplus of operating	54	108	131	144	158	173	191	210	230	254	1653
(i0) % for Administration	16	32	35	38	42	46	51	56	62	68	446
Net of surplus	38	76	96	106	116	127	140	154	168	186	1207

na/Manufacture

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List of Fixed and Movable Assets

(Name of Asset)	(No.)	(Mark)	(New)	(Second Hand)	(Quality) %	(Cost Estimate) L.E (000)
- Loader	(2)			X	65	100
- Dump Truck	(2)	Ford		X	70	80
- Mixer Machine (Batching Plant)	(1)			X	80	500
- Bitumen tanks (40 tons for each tank)	(20)			X	60	120
- Boiler (efficiency- 6 tons vapour)	(2)		X	X	100,60	80
- Roller	(3)			X	80	120
- Dump trucks (12 tons loaded)	(10)		X		100	530
- Spreading machine of Asphalt	(2)			X	50	80
- Car spreading bitumen	(1)		X		100	80
- Grader	(2)		X		100	295
- Dozer	(2)			X	90	220
- Workshop car	(2)		X		100	140
- Truck scale (50-80 tons)	(1) (1)			X X	90 90	35 35
- Cold asphalt layer remover machine	(1)		X		100	70
- Concrete mixer (1/2 m3)	(4)			X	60	20
<hr/>						
Total						2,470

List of Workmen Used in the Operations

Operating of:	No. of Workmen	Nature of Work (kind of work)
- Movement of materials from storage place to place of mixing	1 <u>2</u> 3	Loader driver Truck drivers
- Supplying of mixer machine	1 <u>2</u>	Loader driver
- Mixer maching operating	2 1 1 2 2 2 1 <u>1</u> 12	Drivers Bitumen workers Observer Mechanic maintenance workers Electricity maintenance workers Cleaning workers Electricity Engineer Mechanical Engineer
- Services and guard	10	Workmen for guard and services work
- Administration work	2	Administration affairs and workmen affairs
Movement of Asphalt mixing to paving place	<u>10</u>	1st class drivers to drive the dump truck
Compaction work	3 3 <u>3</u> 9	Roller driver Drivers assistant Guarder (workmen)
Operating of spreading the mixing	20 1 1 5 5 1 <u>1</u> 34	Cleaning workmen The machine driver Driver assistant Shoveler workmen Workmen for forklift Observer Engineer

Bitumen spreading operating	1	Driver
	1	Driver assistant
	<hr/>	
	2	

No of workmen for production and movement of mixing and paving operating = 85 workmen
 No of workmen for production of curbstone = 50 workmen
 So the Total = 135 workman
 Their salary in the 1st year 244,000 LE., increase every year in a rate of 10%

**Organization Chart
 for Paving Complex and Road Maintenance**

First Section:

- First item : The project and its purposes
- Second item: Administration Committee
- Third item : General Director (chief director)

Second Section: Administration, Fiscal and Technical System:

A: Administration Affairs:

- Labor affairs department
- Secretary department
- Legal affairs department

B: Administration of Fiscal Affairs:

- Fiscal accounts and expenditures department
- Budget department
- Expenditures department

C: Administration of Commercial Affairs:

- Inventory department
- Purchases department
- Sales department

D: Administration of Technical Operating Affairs:

- Project preparation department
- Project execution department
- Production and Mechanization department

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Third Section: Budget execution:

First class Accounts

Second class Current expenditures

First branch: Imprest fund

Second branch: Cash advance

Third branch : Investment of Buildings, lands, and purchase of book

Fourth branch: Egyptian and Foreign Technical Assistance

Fourth Section: Inventory, Purchase and Sales:

First Class: General Principles

Second Class: Procedures

Fifth Section: General rules:

Regulations
of
Combined Road Paving and
Maintenance Project
Chap: 1
Sec. 1
The Project and its Purposes

Art. 1 - Combined Road Paving and Maintenance project is one of the productive projects of Cairo Governorate Services and Development Fund. It is an income generation project. It is to generate economic and social return for the local environment.
The purposes of the Project are:

1. To construct, pave and maintain roads.
2. Sell asphalt, mixes and concrete products.
3. Hire equipment and conduct laboratory tests.

These functions may be performed without Cairo Governorate, but priority will be given to areas within Cairo boundaries.

Sec. 2

Administration Committee

Art. 2. - The project will be managed by an administration committee formed by a Governor Decree. Its formation should reflect specialized experiences from within or without the governorate personnel. The Governor appoints the chairman of the committee and fixes his salary and allowances.

Functions of the Administration Committee

1. Lays down the policy necessary to achieve the project's purposes and objectives.
2. Take necessary measures to ensure the efficient management of the project financially, technically and administratively. It lays the bases of internal control.
3. Amend the regulations whenever necessary and secure ratification of proposed amendments from the authorities concerned.
4. Discuss the draft budget and submit it to the concerned authorities.
5. Review the accounts and the balance sheet at the end of the fiscal year and submit it to concerned authorities.
6. Lays the bases of production cost for the different activities, the performance standards and fix the prices.

7. Monitors operation and production processes.
8. Lay the manpower program.
9. Approve the appointments of the laborers needed and their training system.
10. Approve the incentives and allowances to be given to the projects personnel in case of realizing profits.
11. The Committee meets once a month at the initiation of its chairman. Invitations, meeting agenda and memoranda on the meeting topics should be sent to the members three days at most before the meeting date. The Chairman, the Governor or half the members of the committee may invite the committee for urgent meetings. In cases of the chairman's absence, the committee selects any of its members to chair the meeting. Committee meetings should be registered to show: the attendants, the absentees and those who apologize/the date and the place of the meeting/the topics discussed/opinions expressed/approval and opposition ... etc.
12. Decisions are taken by simple majority. In cases of equal opposing and approving votes, the chairman uses his second vote. The decisions of the committee are applicable the moment they are taken except those necessary to be approved by other authorities before becoming applicable.
13. The chairman and the committee members get allowances for the meeting's attendance. The Governor fixes the amount of these allowances. The members may get transportation fees when they travel or work for the project.
14. The committee may delegate functions to its chairman or one of the members.
15. Delegation of meetings attendance or voting is illegal.
16. The Committee may invite any of the projects personnel to attend meetings to explain some data or information. Such attendants will have no right to vote.

Section 3

The Project Director

- Art. 3 - The Manager supervises the management of the project and conducts the functions to follow:
1. Representation of the Project in all transactions with other parties.
 2. Implementation of the policy approved by the Committee.
 3. Taking the technical, administrative and financial measures necessary for the best management of the project.
 4. Appointment of the projects employees, issuance of administrative orders, approval of the employees and workers leaves and proposal of allowances and incentives.

5. Preparation of the project draft budget to be submitted to the Management Committee.
6. Preparation of production, trading and profits and losses accounts in a way that illustrates the annual financial status of the project.
7. Project assets and stored commodities and selection of the inventory conduction committees.
8. Authorization of conducting tenders or direct purchasing orders as follows:
 - a. The tender up to L.E. 50,000
 - b. Purchasing by direct orders up to L.E. 2,000 for ordinary purchases and transportation contracting, up to L.E. 4,000 for works contracting and up to L.E. 8,000 for purchase of commodities for foreign countries that have no agents in Egypt.

Chap: 2

The Project Administrative, Financial
and Technical Systems

Sec. 1

The Administrative System

Art. 4 - The administrative, financial and technical body of the project includes:

1. Department of Administrative Affairs.
2. Department of Financial Affairs.
3. Department of Trading Affairs.
4. Department of Technical and Operation Affairs.

Art. 5 - The Department of Administrative Affairs includes the following divisions:

- a. The Personnel Division which will be concerned with:
 1. Assessment of the Project needs from manpower, and appointment of the new workers.
 2. Taking the necessary measures of ending the services of laborers and employees in case of death, resignation, firing or going on pension.
 3. Keeping records for the Project Manpower.
 4. Review of laborers records.
 5. Review of the lists of the laborers' wages and allowances.
 6. Conduct their promotion.

7. Payment of the social security installments and taxes in time
8. Application of the laws, rules and regulations related to manpower.
- b. The Secretarial Division which will be concerned with:
 1. Correspondence affairs.
 2. Record of the administrative decisions and orders.
 3. Archives affairs.
 4. Employees and workers presence control.
- c. Legal Affairs Division that will be concerned with:
 1. Giving legal opinion.
 2. Supervision of the implementation of the contracts in which the Project is a party.
 3. Defending the Project's affairs before the tribunals.
 4. Taking the judicial measures in cases of accidents, or any threat to the project's assets.
 5. Study of the complaints of the workers and employees, and giving the legal opinion.

Art. 6 - The Financial Department includes the following divisions:

- a. The Financial Accounts Division to be concerned with:
 1. Revision of expenditure documents and issuance of the checks
 2. Book keeping.
 3. All the financial affairs of the Project.
 4. Preparation of the financial status of the Project periodically.
 5. Review of the bank accounts.
 6. Preparation of the monthly accounts of the Project and the balance sheet at the end of the fiscal year.
- b. Budget Division that prepares the draft budget.
- c. The Resources Division that collects the different resources of the Project.

Art. 7 - The Trading Affairs Department will include the following divisions:

- a. The stores Division, that:
 1. Keeps the inventory lists.
 2. Keep a register of the Project's assets (lands/buildings and constructions/equipment/means of transportation/tools/furniture/offices ... etc.).
 3. Assess the Project needs from different kinds and satisfy these needs.
 4. Conduct emergent and annual inventories.
- b. Purchasing Division; to purchase the needs of the Project and conduct the tenders, or the direct purchasing orders.
- c. Sale Division to conduct the actions and sell the Project's products.

Art. 8 - The Technical and Operation Affairs Department will include:

a. The division of the Project to:

1. Study the bids the Project decides to offer.
2. Prepare the bids of the works to be contracted.
3. Prepare the contractor's and supplier's registers.
4. Monitor the implementation of the works of the Project.
5. Prepare periodic reports on the work of the Division.

b. The Implementation Division to:

1. Implement the works assigned to the Project.
2. Preparation of periodic reports on work implemented and problems faced.

c. The Mechanical Company Division to:

1. Implement the company operation program.
2. Supervise the activities of the equipment and the cars of the project.
3. Insure the equipment, cars and drivers.
4. Make fuel consumption standards.
5. Operate the Project's equipment and cars efficiently to increase the Project income.
6. Conduct the maintenance and repair works efficiently to keep the equipment and cars in good status.
7. Inspect the equipment and cars and re-new their licenses in time, register the drivers faults and submit them to the administrative division concerned.
8. Prepare periodic reports on the equipment and cars condition and replace the used ones.

Chap. 2

The Financial System

Art. 9 - The Project's fiscal year will be the same as that of the government.

Art. 10 - The Management Committee prepares the annual Project's budget including the Current and Capital resources and expenditures 3 months before the beginning of the fiscal year to be submitted to the Governorate Executive and Popular Councils for discussion and approval.

Art. 11 - The principles for the preparation of the economic units budgets will be applicable to the preparation of the Project Budget.

Art. 12 - Total costs of any sub-projects included in the budget may be increased in case of making equal decrease in the total costs of other sub-projects at an authorization form:

- a. Within 100% of the total allocation if approved by the Committee Chairman, the Popular Council of the Governorate and ratified by the Governor.
 - b. More than 100% of the total allocation when approved by the Governor and the Popular Council.
- Art. 13 - In case of failure to implement the works included in the budget of a given fiscal year, the Committee Chairman may permit the transference of their costs to the budget of the next fiscal year within the total costs allocated in the budget. Overruns may be allowed of approved by the Committee and the Popular Council.
- Art. 14 - Overruns of the total cost of the sub-projects may be permitted by the Committee in case of realizing increases in the resources collected.
- Art. 15 - The Project will not sign any contract that generates extra commitments on the budget of the current year or the budgets of the coming years, except when authorized by the Management Committee on condition that the extra commitments on the coming years budgets should not exceed the allocations included in the budget of the current year. In all cases the contracting duration should not exceed 3 years except when authorized by the Governor or to whom he may delegate such power.
- Art. 16 - The project may, if the committee approves be committed with financial burdens or may sign contracts on the funds of coming fiscal years budgets for new non partitioned works implemented over more than one fiscal year, on condition that the total cost should not exceed the total costs included in the Project's draft budget.
- Art. 17 - In cases of having to deduct expenditures related to former fiscal years, the Project Director may approved such deduction from the current year budget. He should prepare a memorandum explaining the causes of expenditure delay. He may order questioning the employee responsible for such delay in cases of default or carelessness.
- Art. 18 - The financial transactions of the Project may be run through the public sector financial banks.
- Art. 19 - The Cashier of the project should deposit the resources collected in the bank the next day morning. Less than L.E. 500 can be deposited in the bank every Thursday weekly.
- Art. 20 - Safe controllers should not receive funds without a delivery order approved by the Project Manager or his deputy, and they should not deposit any funds in the project safe that does belong to other entities.
- Art. 21 - Safes are subject to regular audit at least two times every month, and sudden audit any time. The result of the audit is entered in the safe book and should be signed by the safe controller.

- Art. 22 - All debt dues are to be collected immediately. But it may be installed on an equal monthly basis, yet not exceeding LE 500 with Project Manager approval, and LE 1500 with the Financial Directorate approval. Above that it require the Ministry of Finance. All collectors are subject to Law 27/1972 for guarantee insurance.

Chapter Three
Budget Implementation
Section One
Accounting

- Art. 23 - All Project communications and finances should be entered in the books so as to allows extraction of accounts and its final, according to the commercial charter of accounts.
- Art. 24 - All donation and subsidy used for the finance of the Project, which are deposited in special project account, are subject to Bab 4 of the bylaws of law 127/1980.
- Art. 25 - The Project Manager should do his best to prepare Budget, Production Account, Profit and Losses statement, so as to exactly express the annual financial standing. He should collect necessary data for budget planning preparation and so as to reflect the polices set forth by the Project Management Committee.
- Art. 26 - A Project Financial Controller is to be appointed, he is to be assisted by deputies of the MOF. The deputies have all financial responsibility to perform needed financial control, in particular:
- a. Approval of invoices.
 - b. Sign checks (second signature).
 - c. Approve all data and accounts.
 - d. Follow up Project debts, and amounts owed by other entities.
- Art. 27 - The Project Manager should be responsible for annual inventory committees.
- Art. 28 - The Financial Controller should establish the appropriation system as related to the approved budget.
- Art. 29 - The Financial Controller should prepare needed documents governing expenditure, and in particular:
- a. Authorized original invoice.
 - b. Storage addition order.
 - c. Screening reports.
 - d. Lab analysis reports.

Chapter Two
Current Expenditure
Division One
Permanent Loan

- Art. 30 - The Project Manager authorize the amount of permanent loan, and each entities should determine the permanent loan amount after six months of spending it. The total spent during this six months should not exceed the average monthly spending plans 50%. If this amount exceed the loan amount, a new authorization must be established.
- Art. 31 - The Project Manager should designate the person responsible for the permanent loan. He is to be chosen from entities other than account and cost control. He is also to be insured according to presidential decree no. 1520/1973.
- Art. 32 - Expenditures from the permanent loan should include all due amounts less than LE 200 except wages. Over L.E 200 amount can be spent for the followings:
- a. Cost of raw material.
 - b. Custom duties for foreign postal packages.
 - c. Postage costs.
- Art. 33 - For expenditure control, the Financial Controller should prepare all needed system of documents and books necessary for control.

Addition to the permanent loan should be directed when it is needed, and final account is to be prepared on the last day of the fiscal year.

The Financial Directorate should review the permanent loan at least two times every month.

Division Two
Temporary Loan

- Art. 34 - The amount of temporary loan is authorized to each entity based on a detailed study showing justification and needed time period. The Financial Controller is to participate in the preparation of this study.
- The time for temporary loan should not exceed two months of the date authorized, and not to be over the last day of the fiscal year.
- Art. 35 - One person cannot be granted more than one temporary loan at one time. Unless his old loan is closed. Under certain work circumstances, a person can be granted a second loan if he is to close old account as soon as the work is completed, or time specified is elapsed.

- Art. 36 - A penalty is to be collected for submission of loan not spent according to the agreed time schedule. The penalize should match current interest rate issued by the Central Bank of Egypt.

The Project Management Committee can waive the penalty under force majeure cases.

Division Three
Land and Building Renting,
and Buying of Books

- Art. 37 - The Project Manager issues the authorization for renting of building or land needed for efficient project performance.
- Art. 38 - All contract drafted in this regard should follow the GOE legislation determining the relationship of owner and renter.
- Art. 39 - The Project Manager can authorize connecting telephone line necessary for work, but he should be careful in following expenditure control.
- Art. 40 - The Project Manager can authorize the purchase of books, and technical material, foreign or Egyptian, for better production.

Division Four
Use of Egyptian and Foreign Experts

- Art. 41 - The project can make use of Egyptian or Foreign Experts. The President of the Management Committee can authorize hiring based on recommendation of the Project Manager. In case the hiring of an expert is due to production slow down, the expert is hired, and the responsibility for inefficiency must be investigated.
- Art. 42 - The Project can use consultants, Egyptian or Foreign, after review and discussion with the administrative entity responsible.
The President of the Management Committee can authorize the appointment based on a memo prepared by the Project Manager.
- Art. 43 - The fees for:
- a. Egyptian experts not working in the administrative staff of the GOE or public authorities.
 - b. Foreign experts are paid according to a prepared Contract Agreement, following guidelines set forth in the tendering law. This should be authorized from the President of the Management Committee and the Governor.

Chapter Four
Procurement, Sales, and Warehouse
Section One
General Rules

- Art. 44 - All procurements, services, contractor, sales are to be conducted according to law 9/1983 and its by laws.
- Art. 45 - The technical department prepares specification and TOR for the tender . They may require the help of technical entities, consultants, and individual experts.
- Art. 46 - A list of contractors not allowed to participate for any legal or administrative reasons is to be prepared.
- Art. 47 - The TOR/Specs should include the reason for rejection of the tender, vis a vis technical or financial reasons.
- Art. 48 - If the work to be completed must be divided into several contracts, law 9 requires that some of the mark must be openly tendered and some may be upon negotiation (auction). All types must draw formal contract.
- Art. 49 - The President of the Committee and the Project Manager have the authority, each in his area of responsibility, for supervision and control of the contracts.
- Art. 50 - To participate in the tender, the tenderer must enclose a copy of his tax registration certificate/number.

Section Two
Procedures

- Art. 51 - The Project Manager prepares procurement and implementation of works to secure needed material, tools, or construction according to the local plan and Budget approved for this purpose.
- Art. 52 - Warehouse should prepare needs estimate based on the average of the past three years.
- Art. 53 - All procurement, sales should be upon an authorization of a detailed study submitted to the Project Manager.

- Art. 54 - Authorization for:
- a. Negotiation (auction)
 - Project Manager up to LE 50,000, if more it has to be authorized by the President of the Committee Board.
 - b. Direct orders, Project Manager:
 - LE 2000 - For regular procurement and transport contracts.
 - LE 4000 - Work contracts
 - LE 8000 - Purchase of patent foreign work who have no local agents.

The lowest bid must not be excluded unless documented with specific reasons for doing so.

- Art. 55 - All invoices due to contractor must be paid in checks, and sale's receipts must be included with the delivery order.

- Art. 56 - The Project Committee may study the need for payment in case of lost and/no documents, but must have enough reasons for doing so. Double payment should be entered in the books, and should not be repeated provided it does not exceed LE 1000, over this amount it is the authority of the Financial Directorate.

- Art. 57 - All advanced payment can be authorized against a letter of guarantee (see item 54 of this by laws).

Chapter Five General Guidelines

- Art. 58 - All Project funds are considered public, particularly as related to penalty laws and collection/expenditure according to items 38 and 54 of law 43/1979, and its amendment by law 50/1987.
All fund residuals are not to be transferred to the general reserve, but to be deposited in the services and development special Governorate fund.

- Art. 59 - The legal side of the Project follows GOE Accounting Law 127/1981, audits bylaws, and Law 9/1983 and its bylaws.

In addition, it follows with relation to Warehouse Cabinet decision of November 6, 1948 and its amendments thereon.

- Art. 60 - Appointed personnel has an individual contract, and follows Civil Servant System no. 47/1978, and its amendment by Law 115/1983.

Per diems, transport follows Presidential Decree no. 41/1958 and its amendments thereon.

Art. 61 - The President of the Management Committee may establish a system for encouraging research for better production. Also research screening individual (s) may receive a payment for their work.

Art. 62 - The Management Committee may establish a Social Welfare System to be applied to individual working on the project. Also it may establish a Social Special Fund, its revenue sources are:

- a. Staff penalties.
- b. Governorate subsidy.
- c. Donations.

The President of the Management Committee will establish expenditure rules and regulations.

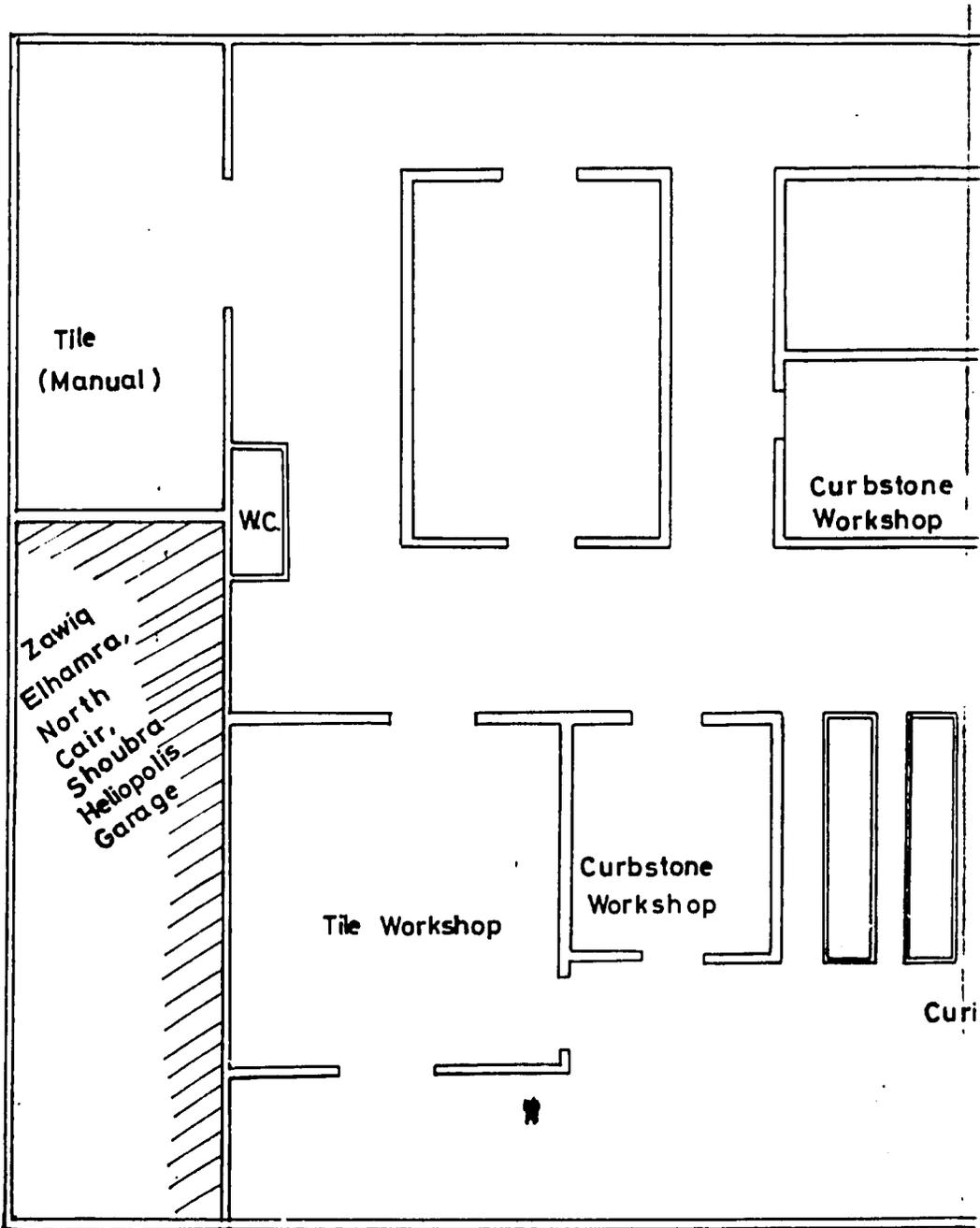
Art. 63 - Without ruling out the General Accounting/Auditing Agency in looking into the books, members of the Financial Directorate in the Governorate has the same right to review accounting books, inventory control, safes, and others and report the result to the President of the Management Committee and the Project Director.

nm/Paving

Appendix B

Facility Plan

SB



Mechanical Workshop

Cement Store

Adm.
Copr. Society

Balance

Fu

Sp

S

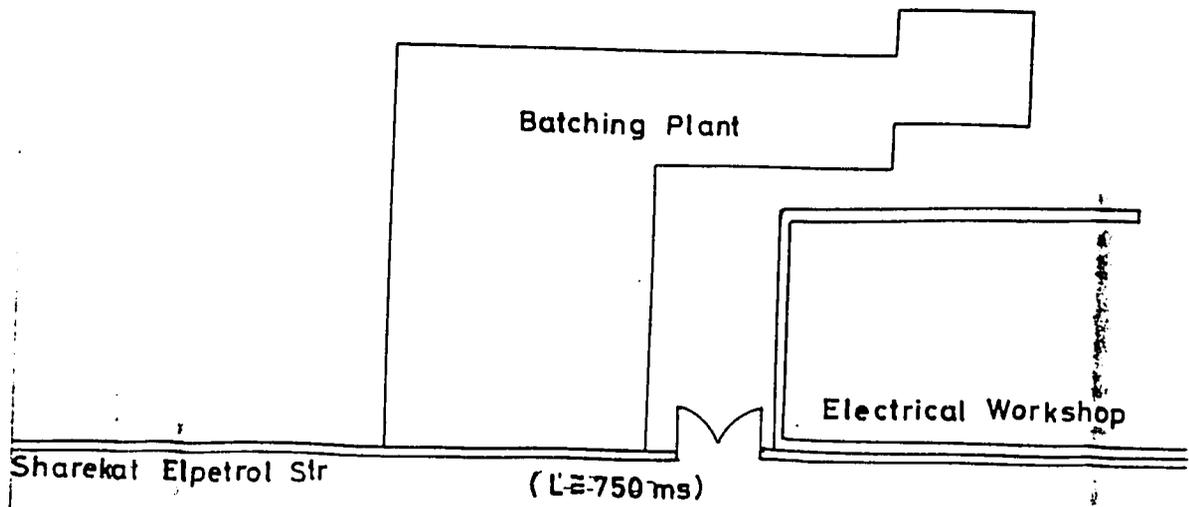
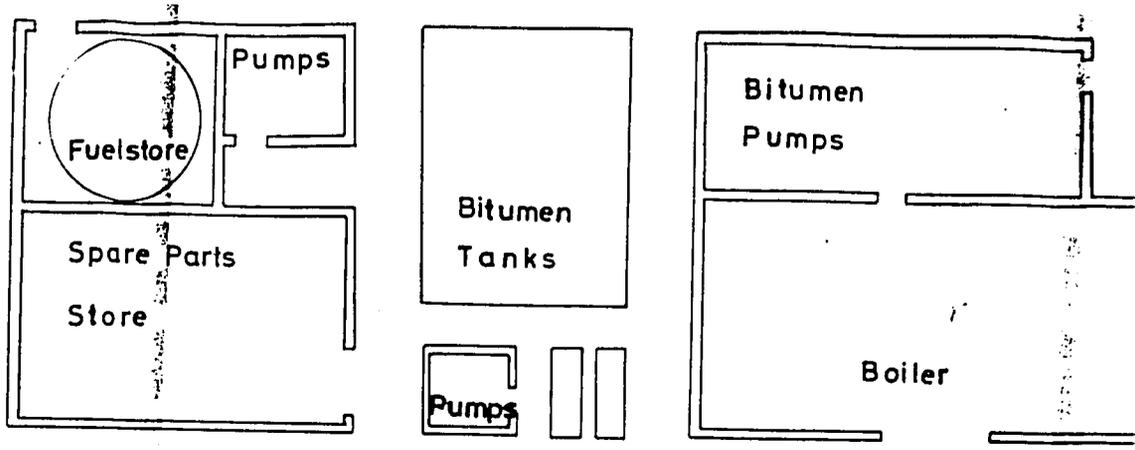
Engineers
Office &
Laboratory

ring Basins

Sharek

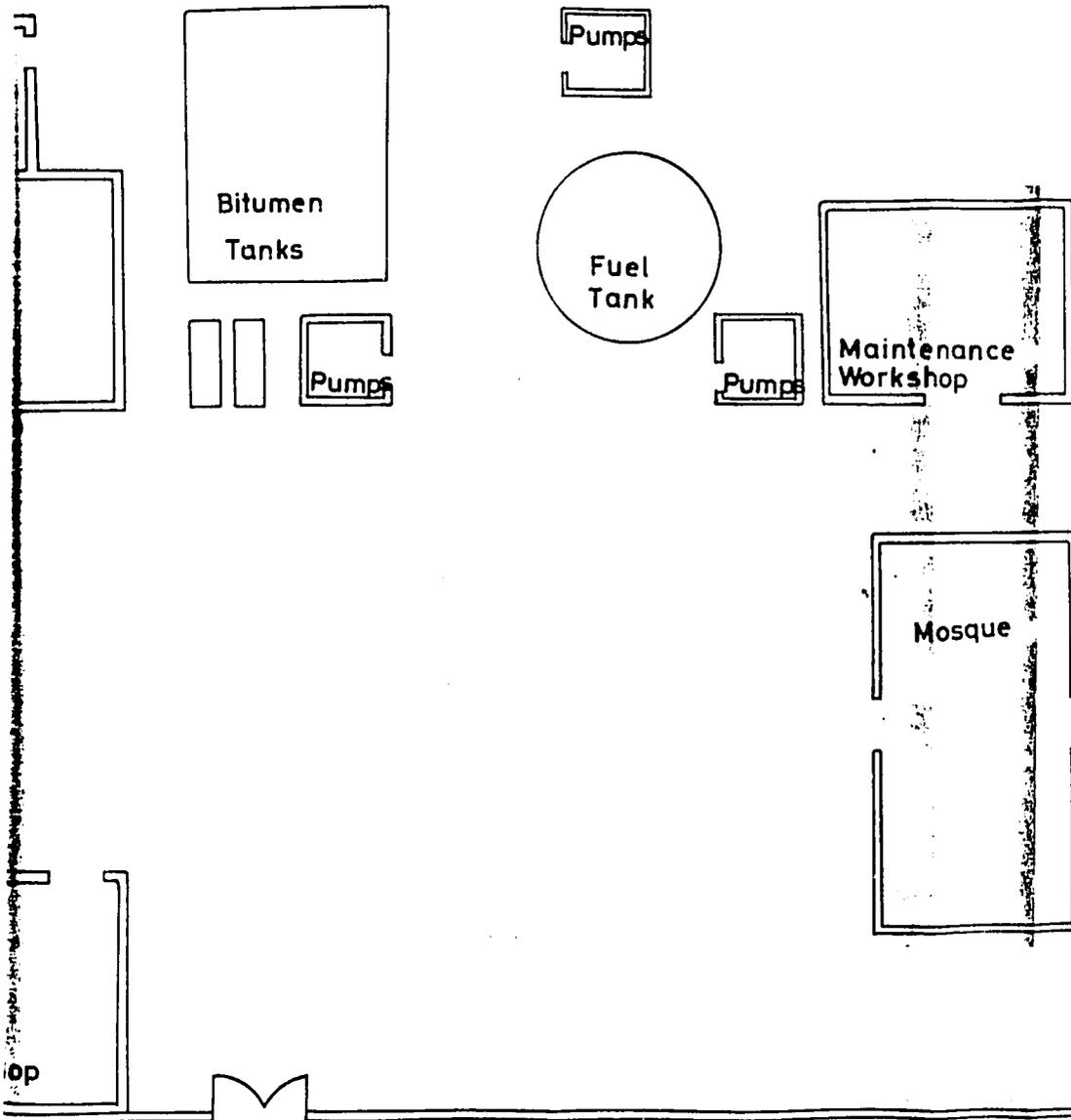
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Amra Paving Complex

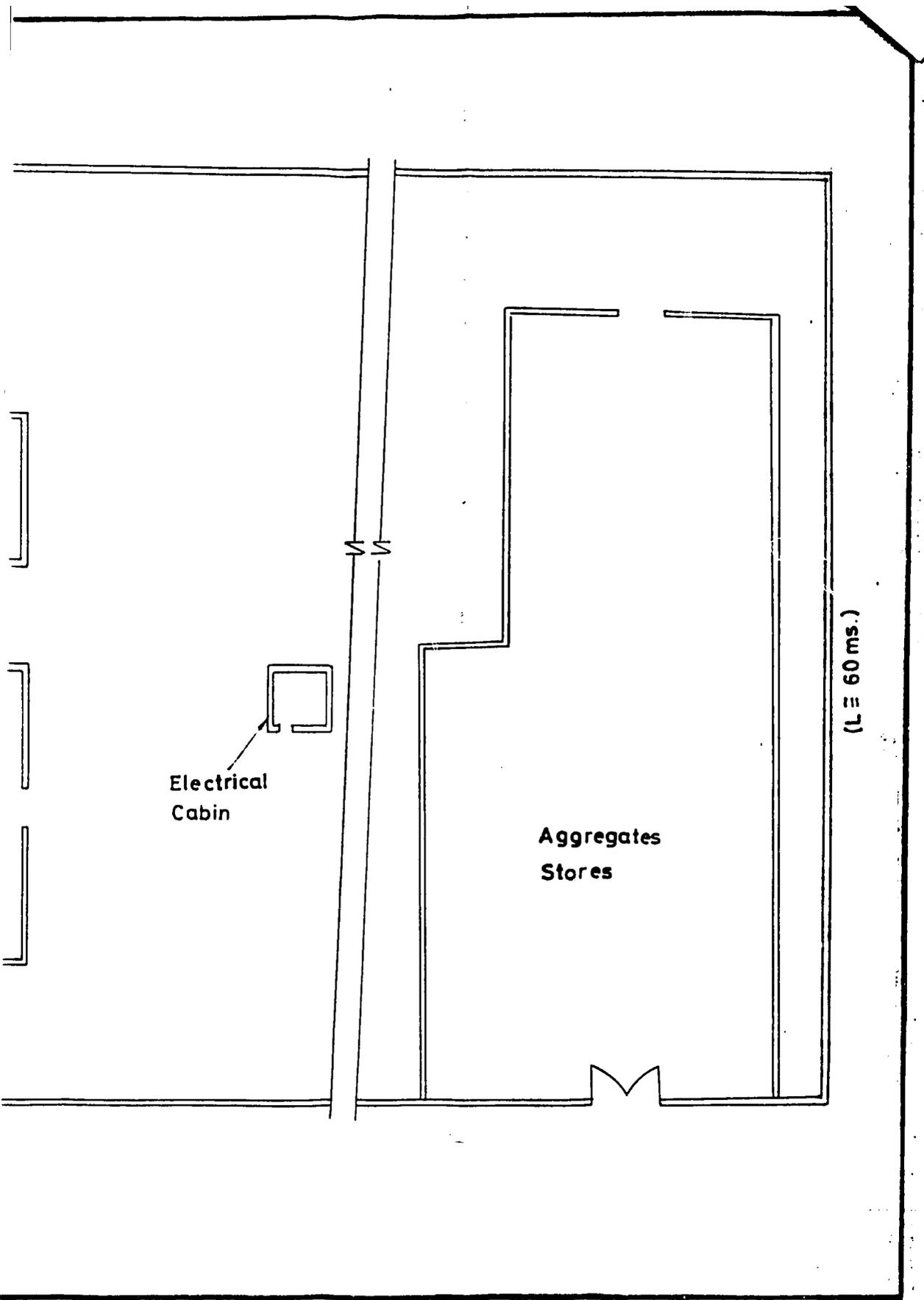
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E
C

533

530



Electrical
Cabin

Aggregates
Stores

(L = 60 ms.)