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15 November 1979
English

LEATHER GARMENT MANUFACTURING .

SI/ETH/77/801 .

ETHIOPIA .

8 FEB 1980

Technical report: Project findings and recommendations .

Prepared for the Government of Ethiopia
by the United Nations Industrial Development Organization,
executing agency for the United Nations Development Programme

Based on the work of Ferenc Schmel,
leather product engineer-technologist

United Nations Industrial Development Organization
Vienna

id.79-9170
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Explanatory notes

The monetary unit in Ethiopia is the birr (B). During the period covered in the report, the value of the birr in relation to the United States dollar was \$US 1 = B 2.07.

NLSC refers to the National Leather and Shoe Corporation.

$$1 \text{ ft}^2 = 0.093 \text{ m}^2$$

The annexes have not been formally edited.

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ABSTRACT

Assistance was requested by the Government of Ethiopia for the preparation of a project suitable for investment, guided by previous studies carried out on the establishment of an integrated leather goods and garment factory in Ethiopia, for both export and domestic markets. The project "Leather Garment Manufacturing" was carried out by an expert from the United Nations Industrial Development Organization (UNIDO) from 2 September to 22 September 1979, in close co-operation with the National Leather and Shoe Corporation (NLSC).

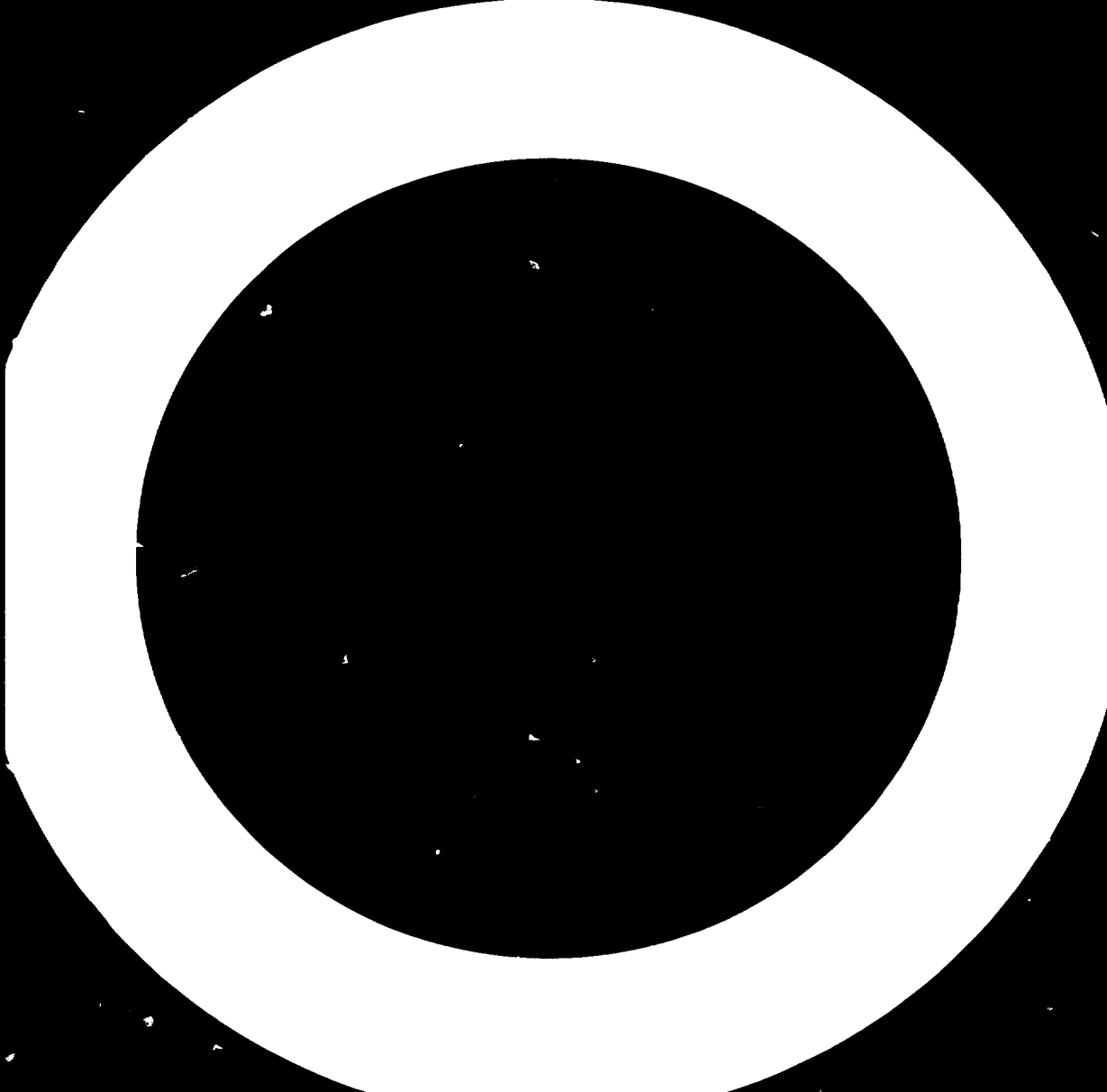
The major objective of the project was to prepare a detailed feasibility study for a factory to manufacture leather garments, products and sports goods (annex 1.0).

The survey of material availability shows that both Ethiopian raw skins and the existing leather processing capacity are promising for the development of leather garment and goods manufacturing. The demand for genuine leather products creates favourable economic conditions in the local and the international markets and at the same time, local requirements exceed the supply. A leather products industry (with the exception of a producing shoes subsector) is practically non-existent in the country and through the material resources, the availability of labour and relative simplicity of these manufacturing processes, favourable conditions exist for industrialization.

Taking into consideration all factors affecting new establishments in Ethiopia the optimum annual output of the factory was determined as 345,000 pieces, including leather garments, different leather goods, gloves and industrial production. This unit will provide employment opportunities for 400 workers. It will start with one shift and should achieve the total capacity in the fourth year of operation. The second shift should be introduced five years after implementation. The total annual output will be 26 million birr, with a 30 per cent export rate, and 750 employees.

According to the feasibility study the payback period will be six and a half years, the annual net profit will be 5 million birrs, which is 18.9 per cent of sales. The investment is supposed to be covered by long-term (seven years) loan.

Recommendations are made on investment preparation, training and further UNIDO activities.



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INTRODUCTION

Assistance was requested by the Government of Ethiopia for the preparation of a project suitable for investment, guided by previous studies carried out on the establishment of an integrated leather goods and garment factory in Ethiopia, for both export and domestic markets. The project "Leather Garment Manufacturing" was carried out by an expert from the United Nations Industrial Development Organization (UNIDO) from 2 September to 22 September 1979, in close co-operation with the National Leather and Shoe Corporation (NLSC).

The major objective of the project was to prepare a detailed feasibility study for a factory to manufacture leather garments, products and sports goods (annex 1.0).

According to the latest statistics, the leathers production of the eight tanneries controlled by the NLSC is 236,000 hides and 3,100,000 skins; in other words, the local industry processes only 28 per cent of the effective supply. On the other hand, the annual capacity of the existing tanneries is 605,000 finished hides and 8,700,000 semi-finished skins (pickled, wet-blue, crust) including 1,800,000 pieces capacity for finished skins (sheep and goat). The two-shift capacity of the Ethiopian shoe factories is about 10,000 pairs per day of leather shoes (that is, 2,800,000 pairs per year) which means 6,160,000 ft² or 246,000 pieces of upper and lining leather. However, the capacities in the shoe factories are only utilized about 50 per cent.

The finished leather is used by the shoe factories and a small quantity is sold directly for customers. Leathers and garment goods industries are practically non-existent in Ethiopia though material resources, availability of labour and significant unemployment offer opportunities for the manufacture of leather garment and goods. By finishing semi-finished leather and using it for marketable products greater benefit could be achieved through added value. The demand for genuine leather articles such as garments, handbags, flat goods and gloves, is increasing in the developed countries. The prices of these goods are high but the market is competitive.

Since hides and skins are one of the main local resources, the Government of Ethiopia is attempting to expand the leather product manufacturing sector. As a part of this activity, a UNIDO technical adviser spent three weeks in March and April 1979 at the NLSC to investigate the possibilities of exploiting the country's potential in the field and to recommend a production programme.

I. FINDINGS

Availability of material

The quality of the corrected grain leathers and especially of the finished sheep and goat skins is not bad. The raw skins and leather processing equipment promise leather of good quality, but the tanneries lack technical management.

The expert visited two leather factories and studied their products. Corrected grain leather, leather for garment and gloves and goat skins (termed "Mocassin leather") can be used for leather product manufacturing. In particular the sheep skins gave a favourable impression. It seems that the Ethiopian Tannery is able to produce leather for garments and high quality goods but the finishing needs improvement. Ethiopian sheep skins have a relatively small surface (the average is 5 ft²), therefore their most effective utilization is for flat goods and glove manufacturing or sport jackets assembled from small pieces and combining this with the manufacture of small leather goods with the aim of utilizing wastes. The leather factories have never produced special leathers such as are used for balls.

A reasonable quantity of splits has accumulated in the tanneries. Some of these are being sold and the remainder used for industrial articles such as aprons for workers and gloves.

The prices for the highest grade (A) finished leather are:

	<u>B/ft²</u>
Garment	3.75
Lining: pigmented	1.19
natural	1.10
Smooth	2.20
Embossed	1.54
Goat/sheep	2.50
Hunting	2.13

These prices do not include 40 per cent excise tax which must be paid to the Government if the leather is sold locally. The price of the fifth grade (E) is usually about half that of the top grade. According to Ethiopian standards, grade "A" skins or hides have 95 per cent of usable surface (without any faults), grade "E" skins have 50 per cent and hides 50 per cent usable surface. It should be emphasized that grading practice differs from European standards; the lots of leathers studied were overgraded by European standards.

Demand for leather products

Research of the domestic market was carried out by NLSC and determined the trend of sales for genuine leather goods. They showed slightly increasing consumption until 1977, then the figures fell in 1978 (probably as a consequence of supply difficulties). According to the data the following sales volumes are expected in 1979:

	<u>Pieces</u>
Handbags	8,000
Flat goods	25,000
Belts	200,000
Industrial gloves	20,000

It is worth mentioning that imports of all kinds of handbags amounted to 780,000 in 1977.

By increasing living standards, which is the major aim of the Government of Ethiopia, demand will increase too. This is proved by the sales of the newly opened leather goods shop on the main street in Addis Ababa, where they are selling different kinds of bags, suitcases and industrial articles. According to the sales figures, the following quantities have been sold in the first five months of operations:

	<u>Number of models</u>	<u>Number of pieces</u>	<u>Average unit price</u>
Lady handbags	40	500	60
Briefcases	9	600	70
Wallets	6	500	15
Small articles	15	2,000	3
Belts	11	1,500	13
Industrial gloves	5	7,900	17
Aprons	2	14,000	1
Aprons for workers	1	130	.45

The shop manager stated that they do not have any difficulties selling even with such high prices. The total turnover of the shop, which is controlled by NLSC, was B 217,700.

The other shop owned by NLSC sold 123,324 ft² of leather for garment in 1978/79 at an average price of B 2.79 per ft², which corresponds to sufficient material for 3,300 leather jackets. (This quantity was produced mainly in the Ethiopian Tannery.) The average price of a leather jacket made by a private tailor is B 350.

The Sports Commission of Ethiopia declared the following annual requirement for balls:

Footballs	41,000
Volleyballs	37,500
Handballs	27,000
Heavy (training) balls	200

The Government officially invited NLSC to prepare to meet this demand.

As far as exports are concerned, it is difficult to determine the demand for Ethiopian made leather products. On the base of local leather prices and the relatively low wages, a good export potential seems to exist, but the lack in manual skills, design and manufacturing experience are handicaps.

The existing leather product industry

Leather garments are supplied by private tailors with very long delivery time. Genuine leather goods are mainly imported or produced by private manufacturers. Just one year ago, a leather goods workshop was established in the Awash tannery in order to utilize the splits and low quality finished leather. The workshop belongs to the tannery management and is controlled by a supervisor, who is also the designer. It now employs 25 workers producing ladies' handbags from embossed hides and belts, suitcases and industrial gloves from crust and split. The working standards and quality performance is very low (e.g. three operators work in one team making 5-7 handbags in eight hours). The supervisor designer tries to follow the fashion (he copies patterns shown in an Italian magazine), but Ethiopian fashion is behind European by 2-4 years.

The workshop is equipped with some old machines (e.g. Singer sewing machines on transmission drive), but they have six new sewing machines (including two Singer 331 K 116, one Adler 1680-363S, and one Singer 20V).

NLSC sees the problems concerned with the technical management of this workshop, therefore their intention is to move it from the tannery and use the workers and the machinery as a starting point for a new leather goods factory.

Production programme for the new factory

The determination of the production programme, namely the product-mix and quantities to be manufactured, has been made on the following basis:

- (a) To increase the added value on products for which basic materials are available locally;
- (b) To cover domestic demand for leather products by local manufacture in order to decrease imports;
- (c) To introduce new working opportunities for the unemployed;
- (d) Local materials, especially sheep and goat skins and the existing leather processing and finishing capacities are suitable to produce mainly leather garments, fancy leather goods and gloves;
- (e) It is important to produce goods for export to earn convertible currency:
- (f) The new factory must be organized on the appropriate level, which means that the production lines have to be established according to economically ~~minimum~~ sizes;
- (g) Workers for a new factory can be trained only to a certain level (that is, to perform only a few operations on one machine), therefore, production process must be broken into general operations and quick changes in the production programme cannot be allowed;
- (h) Establishing procedure is much simpler for one factory than for several smaller, but specialized ones;
- (i) NLSC needs an opportunity to break into the market of developed countries, which involves pilot trials with different products.

Taking into consideration all the above factors, the factory size was chosen intending to cover 40-80 per cent of known domestic demand for leather garments, goods, gloves, industrial articles and sports goods. The targeted export rate is 25-30 per cent in value terms. Since leather product manufacturing does not need any special type of building or utility facilities and most of the machines can be used for different kinds of articles, the capacity will be very flexible.

The production programme covers the whole range of leather products (excluding shoes). The targeted output of 100 per cent capacity utilization in one shift is as follows:

	<u>Pieces</u>
Leather garments	15,000
Gloves	10,000
Leather goods	
Ladies' handbags	40,000
Travelling and sports cases	10,000
Briefcases	20,000
Wallets	25,000
Small articles	30,000

Belts	100,000
Balls	40,000
Industrial articles	<u>55,000</u>
	345,000

The total annual output will be 345,000 pieces to start with, or in value terms B 13,649,000 (these figures will be doubled when the second shift is started and total capacity achieved). It is planned to achieve 21 per cent exports in quantity or 23 per cent in value in the fourth year of operation. If the conditions concerning market demand, manpower, material supply, climate etc. are suitable to establish a second shift, it can be introduced in the fifth year of the project. Of the total production capacity, 26 per cent (or 30 per cent of the produced value) should be exported and 40 per cent of locally marketed production will be sold in the NLSC shop. The rest will be sold through local wholesalers. The estimated sales revenues and the production programme for each year and each product are shown in annex 3.4; annexes 3.1, 3.2 and 3.3 give data of the materials to be used in the production, annex 3.5 presents the sales and distribution costs.

The feasibility study

Market research and product preparation (including the range-building, establishing contacts, preparing pro forma offers etc.) are extremely important. Annex 2.0 gives an idea of the costs of pre-investment studies and preparatory investigation.

The basic materials for the suggested production programme are available locally with the exception of textile linings and leather fibre- or paperboard. Fittings and auxiliary materials will have to be imported. From the annexes 4-4.8 it can be seen that only 28.6 per cent of materials and inputs are from abroad. Comparing the estimated sales revenues and the total material inputs it can be seen that the latter share is 49 per cent which is very promising.

The manufacturing process is supposed to be organized in such a way that each product is produced on specialized lines (tracks). This allows machines and equipment to be used effectively with a high degree of utilization. Furthermore, the labour force can be trained more quickly to the production. Annex 5.1 contains a list of proposed machines, auxiliary servicing, office equipment and the primary stock of spare parts and tools required, with detailed information on their weight, power and compressed air consumption,

origin and price. As the necessary machines cannot be obtained from a single supplier (no company having such wide range of equipment) they are chosen from the most economic sources, taking reliability and maintenance into consideration. It is recommended that the sewing machines be purchased from Adler, because the main products are leather goods and these machines provide the best technological parameters for the necessary kind of manufacturing processes. The machine park is very flexible with the exception of glove sewing and leather garment-pressing machines (their value less than 10 per cent of all machines' costs), most of the machinery can be used for any kind of leather goods manufacturing. In order to help in the decision making the annex 5.2 gives a list of alternative equipment. For almost each production machine one can find alternative types of different origin. The total cost of equipment is birr 1,560,000 and 22.4 per cent of this equipment can be obtained in Ethiopia (annex 5.0).

NLSC does not have a location planned, so it was not possible to select out the best location. Since the land in Ethiopia can be obtained free of charge and appropriate pieces of ground are available throughout Ethiopia and around Addis Ababa the expert and the NLSC management agreed in preparing the project documentation for a nominal land value. For production purposes 2,700 m² building is needed which with servicing and managing facilities will be 3,780 m². The proposed layout is shown in figure 1: fashion goods (e.g. gloves, leather garments and leather goods) manufacturing is separated from that of standard articles (e.g. industrial and balls) production. The cutting and preparation are centralized in both departments. There is a training section to carry out initial training and retraining. The stores are projected approximately twice the amount needed for normal operations.

The social facilities and the offices were calculated according to European standards and the cloakrooms are designed for two shifts working. The total investment need for all civil works is birr 3,200,000 (annex 5.3 and figure 2).

The wages (annex 7.3) were planned on the basis of average work for the product (annex 7.2) to be manufactured; salaries (annex 7.3) were determined according to local norms taking into account the surcharges (annex 7.1). The variable cost of manpower is 630,000 birr/year, i.e. 1.48 birr/hour. A proposed management organization is shown in figure 3 and the estimated overhead costs are detailed by annex 6.0.

After the decision has been made to implement the projects, two more years are needed to build up the factory. This period has to be used for the training of management and labour. Project implementation costs are estimated as birr 340,000 (annex 8.0) and detailed financing analysis has been carried out. The initial fixed investment costs (annex 9.1) and the pre-production capital expenditures (annex 9.2) are birr 5,256,000. The annual production costs are shown in annex 9.3. The working capital has been calculated using the following data:

Account receivable	30 days at production costs minus depreciation and interest
Local material	20 days
Imported material	120 days
Fittings and auxiliaries	270 days
Work in progress	8 days at factory cost
Finished products	30 days at factory cost plus administrative overheads
Cash in hand	30 days of wages and salaries + 25 per cent
Account payable	15 days for raw materials and utilities

The working capital is birr 3,151,000 for one shift and birr 5,835,000 for two shifts (annex 9.4). According to the calculations for investment costs (annexes 9.5, 9.6, 9.7 and 9.8) the start-up of the factory will need birr 12,000,000 and the introduction of the second shift birr 2,000,000. NLSC do not have their own capital for the investments; however, the local banks are ready finance feasible projects, so the money must be borrowed. Taking into account 10 per cent interest in the case of long-term loans and 9.5 per cent interest for loans from the local commercial bank the financial plan is as follows (annex 9.9):

(a) For the start-up period the factory has to borrow birr 12,000,000 in three consecutive years starting from the investment;

(b) The factory will start to produce goods in the second half of the second year and achieve total capacity in the fifth year; in the fourth year it will start to repay the borrowed capital;

(c) From the sixth year, the factory will increase its working capital; to cover this it will need birr 2,000,000 on a short-term loan;

(d) By the tenth year, the factory will have repayed all borrowed capital.

According to the net income statement (annex 9.10) the break-even point comes in the middle of the seventh year. The relatively high gross profits is decreased by the taxes calculated on the basis of the following data:

Turnover tax	2 per cent of sales
Excise	40 per cent on leather sold on the local market
Transaction tax	7 per cent of sales on 40 per cent of the local sales (in the shop of own)
General reserve fund	10 per cent of surplus until the determined amount has been achieved
Annual capital charge	5 per cent of cumulated general reserve fund (only from the fourth year operation)

The total amount of taxes during the first 10 years of operation will be birr 26,000,000. From the eleventh year, the annual net profit will be birr 4,922,000, which will be 18.9 per cent of sales.

Alternatives

Alternatively, the production programme can be reduced as noted below.

Leather garment and leather goods manufacturing

The leather garment manufacturing line in figure 1 represents the minimum economic size, but the leather goods product-mix can be reduced by not specializing or leaving out certain articles. However, an economic balance must be kept between the larger (handbags, sports goods and suitcases) goods and the flat goods (wallets, small articles) in order to utilize wastes. Belt manufacturing should be treated as a specialized line, which has the minimum industrial economic size of 50,000 pieces per year with one shift working.

An economic product mix is proposed as follows:

	<u>Pieces/year</u>	<u>Thousands of birr</u>
Leather garments	15,000	4,800
Larger leather goods	40,000	2,600
Flat goods	40,000	440
Belts	50,000	650

Total output would be 145,000 pieces/year or 8,490,000 birr/year with one shift working.

The investment calculations are derived (annex 5.1 and figures 1 and 2) by not taking into calculation the tracks for suitcases or the workshop for balls and reducing the machines for belt and flat goods manufacturing, as well as the costs for administration. Taking into account all the necessary changes, the fixed capital contents require the following items (annex 10.1)

	<u>Birr</u>
Equipment	900,000
Building (2,520 m ²) (figure 3)	1,000,000
Site preparation and setting	450,000
Pre-production expenditures	<u>300,000</u>
Total	2,650,000

The direct manpower requirement is 140 workers and 35 staff. The total material cost is birr 4,385,000, so the annual production costs will be birr 6,300,000 (annex 10.2) and the working capital birr 2,200,000(annex 10.3). The gross or taxable profit will be:

	<u>Birr</u>
Sales	8,490,000
Production costs	- <u>6,300,000</u>
	2,190,000 (25.8 per cent)

Taking into account 25 per cent exports, the total tax will come to birr 1,470,000. Summing up, the net profit will be birr 720,000 or 8.5 per cent of sales revenues, which is acceptable compared with the profitability of existing NLSC controlled enterprises.

Separation of two production facilities

The two main manufacturing processes are separated in the building suggested originally (figure1), because the industrial articles and ball production need a quite different managerial approach and use different materials compared with the fashion-oriented leather garments and leather goods manufacturing. An alternative would be to separate the two workshops under independent managements. This solution needs more fixed capital and more managerial work during the implementation period, but afterwards the factories would be easier to manage.

Reduced production programme

A reduction of the production programme for leather garment manufacturing would inevitably result in a loss of efficiency (i.e. worse utilization of machines and equipment). On the other hand the quantity of leather goods to be produced may be decreased, but in this case it is necessary either to limit the production to one or two kinds of goods (leaving uncatered for certain components of the domestic demand and not using wastes from leather garment cutting) or to obtain highly skilled labour for the production line (which is impossible in the near future). Nevertheless the following product-mix might be considered:

	<u>Pieces/year</u>
Leather garments	12,000
Leather goods (with the proportion of small- and large-size articles at least 1:1)	60,000
Industrial articles	20,000
Balls	7,000

These manufacturing processes can be placed in the bigger workshop (figure 1) with the stores so the building requirement would be around 1,600 m² including social and managerial facilities. The total number of workers and staff would be approximately 130 and the total fixed investment nearly barr 1,600,000.

Leather goods manufacturing only

One more variant is to be taken in account, that is leather goods production. The minimum economic size would be 80,000 pieces/year, but the most effective would be the leather goods manufacturing programme detailed under the heading Production Programme for the New Factory. The economical evaluation has to be based on data used in annexes 2.0-9.10 and figure 1.

II. CONCLUSIONS AND RECOMMENDATIONS

Investment decisions and preparations

Well prepared market research is necessary prior to the investment decision, which will aim first of all at studying the export possibilities and conditions, paying special attention to the prices, competitive situation and required quality standards. The importance of the sample preparation and building to be offered must be emphasized. As suggested by the previous expert, a third stage of this project seems to be needed, and the product sample preparation needs more time and expertise.

Since local market demand is quite high and probably increasing, the realization of the suggested leather garments, leather goods and glove production programme does not mean a big risk. For ball manufacturing account has to be taken of the lack of experience both in the leather and assembling processes. Industrial articles do not need much direct labour and utilize the waste material directly from the leather manufacturing process, so it is worthwhile to analyse the possibility of keeping the process at the tannery.

For leather garments, the finishing quality has to be improved in order to avoid spots and unevenness of colour on the surface. Due to the small sizes (surfaces) of skins and the quality required for export, it is recommended that skins be selected more carefully after liming in wet blue and in crust. It is also recommended that processing aimed at producing higher quality leather for leather goods be improved. It would be advisable to introduce special colours and printed grains on garment leathers (both skins and hides) in order to give a special character to the "model families" to be designed.

One of the most significant tasks in the pre-investment and pre-implementation period is the range building and design. To start with, the leather garment models should be jackets assembled from smaller components without complicated decoration. The leather goods models should be designed on the basis of certain material types. Special metallic fittings have to be chosen, or designed, for decoration.

The proposed manufacturing processes can be placed in any kind of buildings having as a minimum 4 m inner height. If such a type of building is available the investment costs can be significantly reduced. The location should be chosen to minimize the transportation costs.

The starting-up process of the leather product manufacturing factory with the suggested product-mix involves many problems of design, technical supervision, quality performance and selling on the international market. In order to solve these difficulties outside co-operation may be considered in the form of joint venture or technical know-how contracts.

Training

The pre-implementation period involves the training of technical management and labour. (Experience gained in Ethiopian factories and at NLSC indicates that skilled staff can be recruited locally for general, administrative and economic management.) Special attention should be paid to the training of designers, supervisors and operators.

Designed training

The proposed leather product factory employs three designers and pattern cutters (figure 4). The chief deals with the range building and he (or she) needs the highest skills. It is recommended that young people with artistic talent and foreign (possibly Italian) language knowledge should be selected and sent for training in design to Italy (or France) for 3-6 months, and then that person will be expected to train the other designers. Beside this fellowship an Italian or French designer should be employed for 1-2 months per year in order to refresh the design attitude and advise on up-to-date fashion trends. (Subscription to fashion magazines and samples bought in developed countries should help in the designers' retraining.)

Supervisory training

Productivity and quality mainly depend on supervision, therefore, at least three supervisors (for leather garments, leather goods and ball manufacturing processes) should be given an opportunity to visit appropriate factories in Europe (e.g. in France, Italy, the German Democratic Republic or the United Kingdom of Great Britain and Northern Ireland) for 3-4 weeks each. The candidates should be selected from those who complete the instructors' course.

Operator training

The training of the operators (especially sewing machinists) is usually organized in two stages. In the first stage, the instructors must be trained either abroad or locally. In the second stage, two foreign experts will be needed for 6-12 weeks, they will be able to train 12-15 instructors by the skill analysis method. Later on these instructors, under the supervision

of a foreign expert, will train the workers. Generally one instructor can handle six trainees and the courses last 8-14 weeks including stamina building. The training of labour for similar operations takes 1-3 weeks.

Retraining

Since the initial training covers only a part of operations and is concerned only with standard operations regular retraining is essential. For this reason the factory has an independent instructor, under the technical manager's control, who deals with retraining, with the introduction of effective new working methods and with improving workers' performance.

Management training

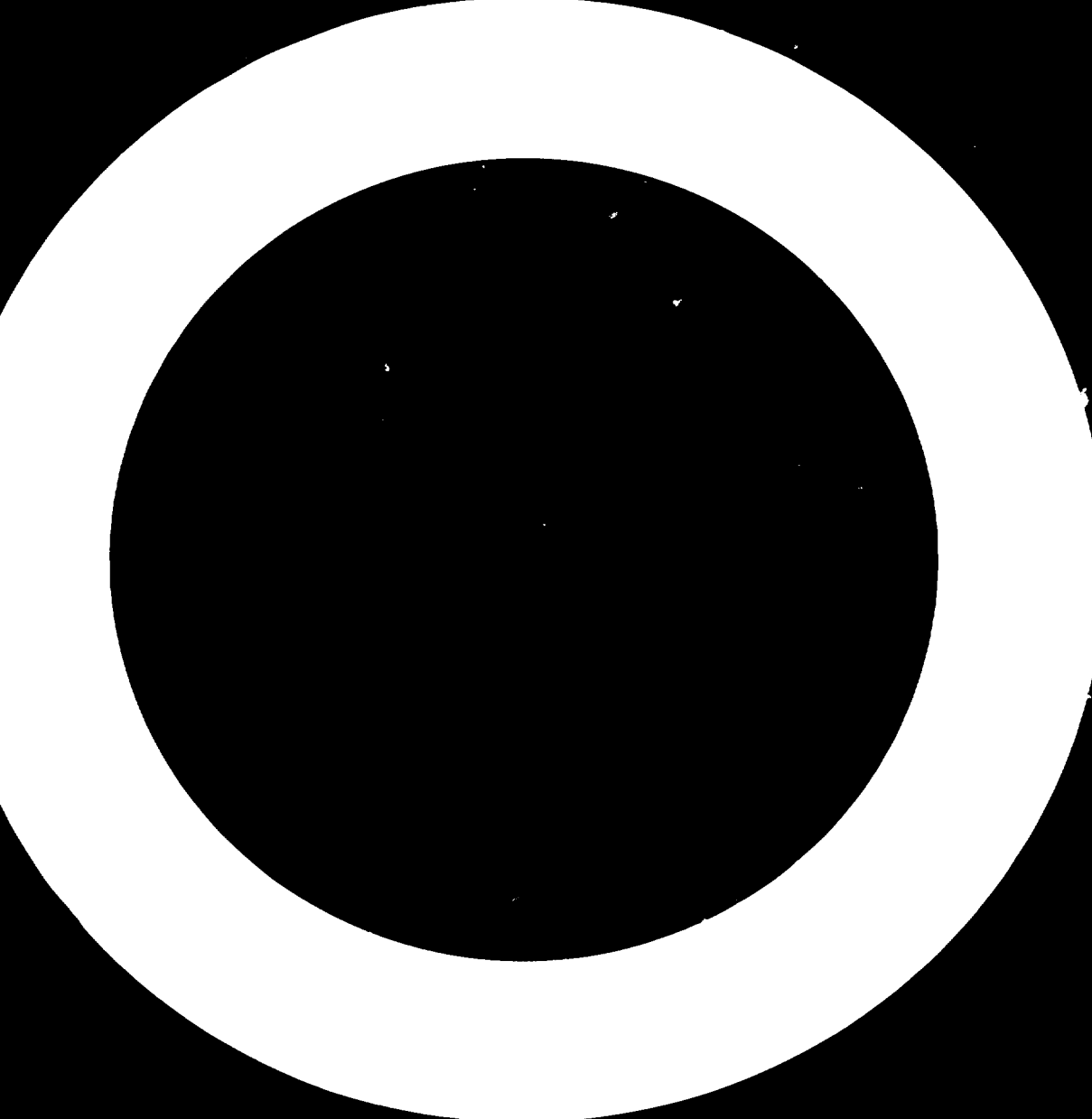
Technical control of the factory operation, namely production, technological and technical development, also needs educated staff. Application to machine suppliers for free material and scholarships is advised.

Follow-up

In September 1979 a large-scale UNIDO project has started, title Leather and Leather Products Development (DP/ETH/78/001/A) to be carried out by an international team of experts, to deal, among other areas, with marketing. It is recommended that the marketing experts' task be extended to cover some market research and to establish contacts for the leather products factory.

The implementation of the leather products factory can be successful only if international experts are involved. NLSO and the Government of Ethiopia should apply for international aid for the following jobs:

- (a) Organization of machine implementation and negotiating with the suppliers - one leather garment leather goods technologist, three times for four weeks with travel in Europe;
- (b) Training of instructors and supervisors as well as the follow-up of operator training - a training expert in the leather garment goods and technology for six months;
- (c) Training of operators for ball manufacturing - one expert in design of leather garments and goods twice for four weeks.



Request from the Provisional Military Government of Socialist
Ethiopia for Special Industrial

Services

20 July 1979

Annex 1.0*

JOB DESCRIPTIONS

Post title: Leather garment and leather goods expert
(Technologist)

Duration: Four weeks

Date required: Beginning June 1979

Duty station: Addis Ababa, with travel within the country

Purpose of project: As a follow up to the mission carried out by the leather products and garment expert between 12 March and 3 April 1979 in preparing a pre-feasibility study to set up a leather garment and leather goods industry, sports goods inclusive, in the country with an annual capacity of 100,000 pieces (units).

The assistance is required to be extended for the preparation of a finalized project suitable for immediate investment decision and guided by previous studies carried out on the establishment of an integrated leather goods and garment unit in the country for both export and domestic markets.

*The annexes have been reproduced without formal editing.

Duties

In close co-operation with the Ministry of Industry, the National Leather and Shoe Corporation and concerned UNIDO advisors, the expert will specifically be expected to:

1. Complete the review of the study carried out by the project SI/UNK/77/801/11-01/31.7.3 undertaken during March/April 1979 in preparing a pre-feasibility study on leather goods and garment industry in the country; recommend supplementary technical aspects so as to enable the unit to produce sports goods.
2. Analyse and recommend best location and suitable site for the plant, in the light of utilities and infrastructural requirements.
3. Prepare a factory lay-out, machinery and equipment lay-out, and recommend the type of building required for the factory.
4. Indicate machinery and equipment requirements, including auxiliaries for the targeted production of various product lines, and indicate and advise on types, prices and origins of the above-mentioned production facilities.
5. Indicate the investment and working capital requirements, with break-down analysis into items and corresponding costs.

6. Analyze the manpower requirements classified by skill and level of capacity utilization, including training requirements and programs.

The expert will be expected to prepare a final report, setting out the findings of his mission and his recommendations to the Government on further action which might be taken.

Qualifications:

Up-to date knowledge of an extensive experience in the designing and manufacturing of leather goods including garments. Consultancy experience in planning and setting up leather goods and garment manufacturing plants would be desirable.

Language:

English.

Background Information:

The livestock population of the country is estimated at 35 million cattle, 24 million sheep and 18 million goats. The annual production figures for hides and skins are estimated at around 2.5 million cattle hides, 9 million sheepskins and 7 million goat skins. Raw hides and skins constitute one of the most important items in the country's export, second only to coffee as a foreign exchange earner. Little is exported, however, in the finished and semi-finished state, although exports to the European market especially is believed to be promising. The existing tanneries mostly satisfy the demand of domestic shoe factories. Shoes and the few other leather products manufactured are not exported.

A new Government-owned tannery was started in 1976. The annual production capacity of this new tannery is 500,000 hides, 1,000,000 sheepskins and 1,000,000 goat skins, which is almost double the previously existing tanning capacity in the country.

Although the possibility of exporting semi-finished leather is fully recognized, the present situation on the world scene suggests examining if greater benefits could be achieved through adding value to semi-finished and finished leather in the country by establishing further leather products manufacturing plants, including a leather goods and leather garments manufacturing plant.

Annex. 2.0

PRE-INVESTMENT STUDIES AND PREPARATORY INVESTIGATION

NO.	ITEM DESCRIPTION	COST, 1000 B		
		FOREIGN	LOCAL	TOTAL
1	Marketing studies	35.0	15.0	50.0
2	Pilot trials of new models	2.0	3.0	5.0
3	Design and range building	25.0	-	25.0
4	Building Project	-	105.0	105.0
5	Other investigations	-	20.0	20.0
	TOTAL	62.0	143.0	205.0

Annex 3.1
**PROPERTIES OF BASIC MATERIALS
 TO BE USED FOR LEATHER & PRODUCT MANUFACTURING**

NO	ORIGIN	MATERIAL FINISH	THICKNESS MM	AVERAGE SURFACE SQ. FT	AVERAGE UTILIZABLE SURFACE* %	UNIT PRICE** MSQ. FT
1.	Goat/Sheep	nappa "Kocassin" hunting lining	0.6...1.0 0.8...1.4 0.6...1.0 0.8...1.2	3.0 4.3 4.0 4.6	76 80 70 75	3.10 2.20 1.95 1.05
2.	Cattle (side)	smooth embossed crust split lining	1.5...2.0 1.5...2.0 1.0...3.5 1.2...2.5 0.3 0.4	12.5 12.5 12.0 4.7 " "	77 80 74 80 97 90	1.95 1.35 1.20 0.95 0.70 0.43
3.	Textile	impregnated natural finished	1.5...3.0 1.5...3.0 1.0...2.5	10.0 10.0 14.0	97 96 99	0.60 0.80 0.40

* The data are calculated for the weighted average grade of leather to be consupted.

** Textile materials have viths 1.2 m and length at leaste 4.0 m.

**ESTIMATED PRODUCT - MIX BY BASIC MATERIALS
AT 100% CAPACITY OF ONE SHIFT**

NO.	PRODUCT/BY - PRODUCT	FROM SHEEP & GOAT	FROM SPLITS	FROM CATTLE		TOTAL
				EMBOSSED	FINISHED	
1.	Leather garment	15,000	-	-	-	15,000
2.	Gloves	10,000	-	-	-	10,000
3.	Leather goods					
3.1.	Handbags	10,000	-	5,000	25,000	40,000
3.2.	Travelling & sport cases	-	-	2,000	8,000	10,000
3.3.	Brief cases & diplomats	8,000	-	2,000	10,000	20,000
3.4.	Wallets	12,000	-	4,000	10,000	25,000
3.5.	Small articles	10,000	-	4,000	16,000	30,000
3.6.	Belts	5,000	-	10,000	85,000	100,000
4.	Balls	-	-	-	40,000	40,000
5.	Industrial articles	-	20,000	-	40,000*	60,000
Grand total						350,000

* FROM CURRY.

**MATERIAL UTILISATION
(ONLY LEATHER COMPONENTS)**

NO.	PRODUCT/ BY - PRODUCT	PATTERN AREA SQ. FT OF PATTERNS	NUMBER OF PIECES / PER PATTERN	CUTTING WASTE %				
				UNAVOIDABLE WASTE AMONG PATTERNS	MATERIAL FAULTS	EDGE WASTE WHEN CUT		
						FROM WHOLE SKINS OF SHEEP & GOAT	HIDES OR LEATHER	FROM WASTES SATTLE
1.	Leather garment	12.0...16.0	30...45	11...13	20...24	18...22	-	-
2.	Gloves	1.4...2.2	20...28	8...10	18...20	16...25	-	-
3.	Leather goods							
3.1	Handbags	2.5...12.0	15.30	8...10	20...24	18...22	14...16	22...28
3.2	Travelling & sport cases	8.0...14.0	20...35	10...12	20...22	-	15...18	-
3.3	Brief cases & diptomats	6.0...14.0	22...40	8...10	18...23	18...20	14...17	-
3.4	Wallets	1.0...2.0	12...25	2...4	20...24	12...15	10...13	22...26
3.5	Small articles	0.2...0.8	2...5	2...8	24...28 ^a	8...10 ^a	-	24...30
3.6	Belts	0.8...1.4	3...6	2...3	18...22	20...25	12...13	25...35
4.	Balls	1.5...2.0	12...32	4...7	18...20	-	30...40	-
5.	Industrial articles	0.1...15.0	1...28	1...10	5...8	-	10...14	14...17

^a REJECT UTILIZATION

ESTIMATED SALES REVENUES

Quantities in 1000 pcs or pairs

Revenues in 1000 B

PRODUCT/BY PRODUCT			1982*									
NO	DESCRIPTION	UNIT PRICE		QUANTITIES			SALES REVENUES			QUANTITIES		
		EXPORT	LOCAL	EXPORT	LOCAL	TOTAL	EXPORT	LOCAL	TOTAL	EXPORT	LOCAL	TOTAL
1.	Leather garment	180.00	290.00	-	3	3	-	870	870	1	7	8
2.	Gloves	18.00	42.00	-	-	-	-	-	-	-	3	3
3.	Leather goods											
3.1	Hand bags	42.00	65.00	-	9	9	-	585	585	4	21	25
3.2	Travelling/sport cases	45.00	70.00	-	-	-	-	-	-	-	3	3
3.3	Brief cases/Diplomats	68.00	90.00	-	5	5	-	450	450	2	10	12
3.4	Wallets	9.50	26.00	-	7	7	-	182	182	3	13	16
3.5	Small articles	4.50	9.00	-	12	12	-	108	108	3	22	25
3.6	Belts	6.50	14.00	-	30	30	-	420	420	1	74	75
4.	Balls	-	66.00	-	8	8	-	528	528	-	25	25
5.	Industrial articles	-	13.00	-	30	30	-	390	390	-	50	50
TOTAL				-	104	104	-	3,533	3,533	14	228	242
Capacity utilisation,%				-		30.1	-			19.4		70.1
Export & rate,%				-			-			5.8		

* Training period

Local: Estimated average price between goods to be sold in own stores and goods supplied to dealers.

Export: C and F Europe.

1983			1984						1985					
SALES REVENUES			QUANTITIES			SALES REVENUES			QUANTITIES			SALES REVENUES		
EXPORT	LOCAL	TOTAL	EXPORT	LOCAL	TOTAL	EXPORT	LOCAL	TOTAL	EXPORT	LOCAL	TOTAL	EXPORT	LOCAL	TOTAL
180	2,030	2,210	5	7	12	900	2,030	2,930	7	8	15	1,260	2,320	3,580
-	126	126	1	5	6	18	210	228	4	6	10	72	252	324
168	1,365	1,533	17	18	35	714	1,170	1,884	22	18	40	924	1,170	2,094
-	210	210	1	7	8	45	490	535	2	8	10	90	560	650
136	900	1,036	7	10	17	476	900	1,376	9	11	20	612	990	1,602
28.5	338	366.5	8	14	22	76	964	1,040	10	15	25	95	390	485
13.5	198	211.5	6	22	28	27	252	279	8	22	30	36	198	234
6.5	1,036	1,042.5	5	85	90	32.5	1,190	1,222.5	10	90	100	65	1,260	1,325
-	1,650	1,650	-	35	35	-	2,310	2,310	-	40	40	-	2,640	2,640
-	650	650	-	55	55	-	530	530	-	55	55	-	715	715
532.5	8,503	9,035.5	50	256	306	2,288.5	9,446	11,734.5	72	273	345	3,154	10,495	13,649
16.9			69.4		88.7	72.6			100.0		100.0	100.0		100.0
5.9			16.3			19.5			20.9			23.1		

ESTIMATED SALES REVENUES

QUANTITIES IN 1,000 pcs or pairs
REVENUES IN 1,000 B

PRODUCT/BI PRODUCT			1986						1987			
No	DESCRIPTION	UNIT	PRICE	QUANTITIES			SALES REVENUES			QUANTITIES		
		EXPORT	LOCAL	EXPORT	LOCAL	TOTAL	EXPORT	LOCAL	TOTAL	EXPORT	LOCAL	TOTAL
1	Leather garment	180.00	290.00	10	9	19	1,800	2610	4,410	14	10	24
2	Gloves	18.00	42.00	6	6	12	108	192	360	8	7	15
3	Leather goods	29.87	27.50	75	200	275	2,240	9500	7,740	110	270	380
4	Balls	36.00	66.00	2	43	45	72	2838	2,910	3	67	70
5	Industrial articles	-	13.00	-	90	90	-	1170	1,170	-	94	94
TOTAL				93	348	441	4,220	12370	16,590	135	448	583
2nd shift share,%						21.8	11.3			40.8		
2nd shift capacity utilization,%						31.6				74.0		
Overall capacity utilization,%						64.9				85.7		
Export rate				21.1				25.4	23.2			

			1988						1989					
SALES REVENUES			QUANTITIES			SALES REVENUES			QUANTITIES			SALES REVENUES		
EXPORT	LOCAL	TOTAL	EXPORT	LOCAL	TOTAL	EXPORT	LOCAL	TOTAL	EXPORT	LOCAL	TOTAL	EXPORT	LOCAL	TOTAL
2,520	2,900	5,440	16	12	28	2,880	3,480	6,360	28	12	30	3,240	3,480	6,360
144	294	438	11	7	18	198	294	492	13	7	20	234	294	528
3,286	7,425	10,711	125	300	425	3,734	8,250	11,984	140	310	450	4,182	8,525	12,707
108	4,422	4,530	4	72	76	144	4,752	4,896	5	75	80	180	4,950	5,130
-	1,222	1,222	-	96	96	-	1,248	1,248	-	100	100	-	1,300	1,300
6,058	16,283	22,341	156	487	643	6,956	18,024	24,980	176	304	480	7,836	18,189	26,025
		33.4		46.3				43.5			49.2			52.4
				91.9							100.0			
				94.6							100.0			
27.1			24.3			27.8			25.9			30.1		

ANNEX 3.5

SALES AND DISTRIBUTION COSTS

NO.	QTY	UNIT	ITEM DESCRIPTION	SALES COST		DISTRIBUTION COST		TOTAL
				DOMESTIC	FOREIGN	DOMESTIC	FOREIGN	
1.			<u>SALES COSTS</u>					
1.1.	2	m.m	Training	-	-	1.0	-	2.0
1.2.	0.2%	%	Advertising	-	-	-	-	24.7
1.3.	0.5	%	Allowances	-	-	-	-	61.0
1.4.			Rent	-	-	-	-	50.0
1.5.	100	types	Packaging materials	-	-	0.2	-	20.0
1.6.	5	m.m	Travel expenses	7.5	19.0	0.5	-	16.5
1.7.			Others	-	-	-	-	30.0
2.			<u>DISTRIBUTION COSTS</u>					
2.1	350	pcs	Containers	-	-	50.0	-	17.5
2.2	35	to	Freight & forwarding	-	-	-	30.0	40.0
2.3	3	%	Commission	-	-	-	95.0	275.0
2.4			Packaging materials	-	-	-	-	175.0
			TOTAL				140.0	667.5
								807.5

* 1000 Mirrs

SUMMARY OF MATERIALS AND LABORS

NO.	PROJECT COMPONENT	PROTECTION COSTS, 1960-7			TOTAL
		FOREIGN	LOCAL		
1.	Leather garment manufacturing	374.9	1,013.4		2,107.9
2.	Olevo manufacturing	42.7	81.6		124.3
3.	Leathergood manufacturing	1,041.3	2,199.4		3,236.9
4.	Ball manufacturing	360.7	302.4		663.1
5.	Industrial articles manufacturing	20.3	120.5		149.0
	SUBTOTAL (DIRECT)	1,039.9	4,581.3		6,561.2
6.	Maintenance and factory supply	87.0	53.0		140.0
7.	Storing and transporting	72.0	39.0		111.0
8.	Management and administration	13.0	159.0		174.0
	SUBTOTAL (INDIRECT)	174.0	251.0		325.0
	TOTAL	2,013.9	4,772.3		6,686.2
	%	20.6	71.4		100.0

ANNEX 401

MATERIALS AND JUTEY

1. Leather garment manufacturing

ID.	NO. OF UNITS	UNIT	ITEM DESCRIPTION	1957-1958		TOTAL	
				UNITS	VALUE	UNITS	VALUE
1.	570		BASIC MATERIALS				
1.1.	570	sq.ft	Leather	3.10	1,767.0		1,767.0
1.2.	21	m ²	Lining (textile)	7.00	147.0		147.0
1.3.	14	m ²	Interlining	4.30	60.3		60.3
2.			ACCESSORIES				
2.1.	90	pcs	Buttons	0.40	36.0		36.0
2.2.	3	pcs	Decorations	4.00	12.0		12.0
3.			AUXILIARY MATERIALS				
3.1.	0.4	ops	Thread	47.00	18.8		18.8
3.2.	43	pcs	Needles	0.13	5.6		5.6
3.3.	6.1	pcs	Packaging materials	0.80	4.9		4.9
3.4.	10	%	Spare parts and tools		22.8	73.6	96.4
3.5.			Others		10.0	30.0	40.0
4.			UTILITIES				
4.1.	90	kwh	Power	0.06	5.4		5.4
4.2.	14	kwh	Lighting	0.06	0.8		0.8
4.3.			Others		2.0		2.0
			TOTALS			574.5	2,107.9
			%			17.1	100.0

ATTNEX 408

MATERIALS AND YIELDS

2. Glove manufacturing

NO.	QTY Kilograms	UNIT	ITEM DESCRIPTION	UNIT COST	COEFA. 1959.2		TOTAL
					DOMESTIC	FOREIGN	
BASIC MATERIALS							
1.			Leather	2.95	-	79.7	79.7
1.1.	27	sq.ft					
1.2.	0.8	m ²	lining (textile or knitted)	0.50	6.8	-	6.8
COMPONENTS							
2.			Buttons	0.65	2.6	-	2.6
2.1.	4	pcs					
AUXILIARY MATERIALS							
3.			Thread	47.00	2.4	-	2.4
3.1.	0.05	pcs					
3.2.	15	pcs	Needles	0.20	3.0	-	3.0
3.3.	0.1	pcs	Calibers (dies)	140.00	14.0	-	14.0
3.4.	10	%	Spare parts		2.4	-	2.4
3.5.			Tools		3.5	-	3.5
3.6.			Others (incl. packaging)		60	1.0	7.0
EXPENSES							
4.			Power	0.06	-	0.4	0.4
4.1.	6	kwh					
4.2.	3.4	kwh	Lighting	0.06	-	0.2	0.2
4.3.			Others		-	0.1	0.1
TOTAL					42.7	81.6	124.3
%					34.4	65.6	100.0

MATERIALS AND INPUTS

3. Leather good manufacturing

NO.	QTY. 1000	UNIT	ITEM DESCRIPTION	UNIT PRICE	COEF. 1000 R		
					FOREIGN	LOCAL	TOTAL
1.			<u>BASIC MATERIALS</u>				
1.1.	330	sq.ft	Skins	220	-	726.0	726.0
1.2.	109	sq.ft	Embossed hide	135	-	141.9	141.9
1.3.	670	sq.ft	Smooth hide	1.95		1,306.5	1,306.5
1.4.	36	m ²	Textile lining	7.00	252.0	-	252.0
1.5.	20	m ²	Reinforcing textile	4.30	86.0	-	86.0
1.6.	10	m ²	Leather/paper board	7.00	70.0	0	70.0
2.			<u>COMPONENTS</u>				
2.1.	55	pcs	Hippers	1.05	57.8	-	57.8
2.2.	30	pcs	Frames, springs	0.80	24.0	-	24.0
2.3.	300	pcs	Rivets, eyelets, buttons etc.	0.02	6.0	-	6.0
2.4.	40	pcs	Locks	2.40	96.0	-	96.0
2.5.	110	pcs	Buckles	2.10	231.0	-	231.0
3.			<u>AUXILIARY MATERIALS</u>				
3.1.	1.5	sys	Thread	47.00	70.5	-	70.5
3.2.	200	pcs	Needles	0.10	20.0	-	20.0
3.3.	0.6	pcs	Clicking dies	12.00	7.2	-	7.2
3.4.	10	%	Spare parts and tools		103.0	6.0	109.0
3.5.			Others		10.0	5.0	25.0
4.			<u>UTILITIES</u>				
4.1.	150	KWh	Power	0.06	-	9.0	9.0
4.2.	18	KWh	Lighting	0.06	-	1.1	1.1
			TOTAL		1,041.5	2,195.4	3,236.9
			%		32.2	67.8	100.0

MATERIALS AND INPUTS

4. Ball manufacturing

NO.	QTY. 1000	UNIT	ITEM DESCRIPTION	UNIT PRICE	COST, 1000 P		
					FOREIGN	LOCAL	TOTAL
1.			<u>BASIC MATERIALS</u>				
1.1.	150	sq.ft	Leather	1.95	-	292.5	292.5
1.2.	10	m ²	Textile	4.00	4.00	-	4.00
2.			<u>COMPONENTS</u>				
2.1.	41	pcs	Bladders	6.50	266.5	-	266.5
3.			<u>AUXILIARY MATERIALS</u>				
3.1.	0.8	pcs	Thread	24.00	19.2	-	19.2
3.2.	60	pcs	Needles	0.10	6.0	-	6.0
3.3.			Clicking dies & tools		0.0	3.0	11.0
3.4.			Chemicals		10.0	3.0	13.0
3.5.			Others		3.0	2.0	5.0
4.			<u>UTILITIES</u>				
4.1.	13	Kwh	Power	0.06	-	0.8	0.8
4.2.	10	Kwh	Lighting	0.06	-	1.1	1.1
TOTAL					360.7	302.4	663.1
%					54.4	45.6	100.0

MATERIALS AND IMPUTS

3. Industrial articles manufacturing

NO.	QTY	UNIT	ITEM DESCRIPTION	UNIT PRICE	COST, 1990.2		TOTAL
					DOMESTIC	FOREIGN	
1. BASIC MATERIALS							
1.1.	6	sq.ft	Shims	1.35	-	0.1	0.1
1.2.	12	sq.ft	Cattle finished	1.30	-	16.6	16.6
1.3.	60	sq.ft	Crust**	1.20	-	72.0	72.0
1.4.	30	sq.ft	Split	0.95	-	28.5	28.5
2. COMPONENTS							
2.1.	4	pcs	Zachles	0.65	0.3	-	0.3
2.2.	10	pcs	Rivets, rings etc.	0.03	0.3	-	0.3
3. AUXILIARY MATERIALS							
3.1.	0.3	ops	Thread	47.00	3.4	-	3.4
3.2.	40	pcs	Needles	0.12	4.0	-	4.0
3.3.	0.02	pcs	Clicking dies & tools	12.00	0.3	-	0.3
3.4.	0.02	pcs	Clicking boards	170.00	3.4	-	3.4
3.5.			Others		2.0	3.0	5.0
4. UTILITIES							
4.1.	16	kwh	Power	0.06	-	1.0	1.0
4.2.	4	kwh	Lighting	0.06	-	0.3	0.3
TOTAL					20.5	128.5	149.0
%					12.8	87.2	100.0

* SUBJECT UTILISATION

** READY TO FINISH LEATHER

ANNEX 4.

MATERIALS AND SERVICES

6. Maintenance and factory supply

No.	Unit	Qty	ITEM DESCRIPTION	UNIT COST	COST, 1955		TOTAL
					FOREIGN	LOCAL	
1. PAINT MATERIALS							
1.1.			Metal		5.0	20.0	25.0
1.2.			Textile (rags etc)		-	2.0	2.0
1.3.	200	m ³	Oil	4.00	120.0	-	120.0
1.4.			Others		6.0	2.0	8.0
2. TOOLS							
2.1.			Maintenance		3.0	2.0	5.0
2.2.			For cleaning		1.0	2.0	3.0
2.3.			Spare parts		10.0	-	10.0
2.4.			Others		5.0	5.0	10.0
3. LUBRICANTS							
3.1.			Lubricant and oil		0.0	-	0.0
3.2.			For cleaning		4.0	8.0	12.0
3.3.			Others		15.0	10.0	25.0
4. ELECTRICITY							
4.1.	11,500	kwh	Electricity (power)	0.06	-	1.0	1.0
4.2.	4000	kwh	Lighting	0.03	-	0.3	0.3
4.3.			Others		-	0.7	0.7
TOTAL					177.0	53.0	230.0
%					77.0	23.0	100.0

ANNEX 4.7

MATERIALS AND SUPPLIES

7. Storing and transporting

No.	No. of stores	No. of stores	Unit	ITEM DESCRIPTION	UNIT COST	COEFF. 1999 R		TOTAL
						FOREIGN	LOCAL	
1.				MATERIALS				
1.1.	345		pcs	Packaging	0.15	31.0	20.0	51.0
1.2.	30		l	Fuel	0.70	21.0	-	21.0
1.3.	10		%	Spare parts and tools		15.0	50	20.0
1.4.				Others (incl. auxiliaries)		5.0	10.0	15.0
2.				EXPENSES				
2.2.	20		KWh	Power and lighting	0.06	-	1.2	1.2
2.3.				Others		-	2.9	2.9
TOTAL						72.0	39.0	111.0
%						64.9	35.1	100.0

ANNEX 4.0

MATERIALS AND SUPPLIES

8. Administration and management (incl. design and training)

NO.	NAME	UNIT	ITEM DESCRIPTION	UNIT COST	COST, 1988 R		
					FOREIGN	LOCAL	TOTAL
1.			MATERIALS				
1.1.			Paper and carbons		-	5.0	5.0
1.2.			Files		-	2.0	2.0
1.3.			Stationery		-	33.0	33.0
1.4.			Others		-	10.0	10.0
2.			REPAIRS				
2.1.		%	Spare parts		15.0	10.0	35.0
3.			UTILITIES				
3.1.		KV	Power and lighting*	0.06	-	1.5	1.5
3.2.			Others		-	2.5	2.5
4.			MANAGEMENT SUPPLY				
4.1.			Drinks etc.		-	00.0	00.0
4.2.			Kaffe, tea etc.		-	5.0	5.0
			TOTAL		15.0	159.0	174.0
		%			8.6	91.4	100.0

* Including lighting in cloak-rooms

ANNEX 3.0

SUMMARY OF EQUIPMENT

No.	DESCRIPTION	TECHNICAL DATA				COST			%
		Kg.	Kv.	M ³ /H	Foreign*	Local	Total		
A	Production equipment	35,764	113.9	45.4	600,360	-	600,360	46.6	
B	Auxiliary equipment	7,340	49.0	-	35,920	220,420	204,340	19.3	
C	Servicing equipment	2,130	14.1	-	243,370	36,280	279,650	19.2	
D	Office equipment	1,160	1.3	-	43,900	67,040	111,340	7.6	
E	Primary stock of spare parts & tools	1,070	-	-	96,490	7,000	103,490	7.1	
	sub total	48,264	170.3	45.4	1,119,640 **	339,340	1,459,180	100.0	
	Freight European Port-Addis Ababa (5%)				89,571	-	89,571		
	Within Ethiopia (2%)				-	10,186	10,186		
	Total Freight				89,571	10,186	99,757		
	Total				1,209,211	349,726	1,558,937		
	%				77.6	22.4	100.0		

EQUIPMENT

No.	Quantity	ITEM DESCRIPTION		TECHNICAL DATA*			Origin	Unit Cost	COST		
		Equipment	Type	Kg.	Kw.	M ³ /h			Foreign	Local	Total
	A	PRODUCTION EQUIPMENT									
1	1	Straight-knife cloth cutting machine	GS 529B-1-K	15	0.5	-	Hungary	720	720	-	720
2	1	Bisc-knife cloth cutting machine	GS 552	1	0.1	-	Hungary	300	300	-	300
3.	1	Band knife cloth cutting machine	KANV B 1935	150	0.8	-	Hungary	3300	3300	-	3300
4	12	Swing-arm cutting machine	KANV C 105	13200	26.4	-	Hungary	5200	74400	-	74400
5	1	Tape cutting machine	ALBERO	240	2.5	-	FRG	1400	1400	-	1400
6	2	Stamping and marking machine	KANV C751	220	0.8	1.2	Hungary	7100	14200	-	14200
7	1	Stitch marking machine	ALBERO	60	-	-	FRG	1500	1600	-	1600
8	2	Band-knife splitting machine	FORTUNA HAF 470	1140	3.2	-	FRG	16000	32000	-	32000
9	6	Skiving machine	FORTUNA 505-AG	660	3.0	-	FRG	4300	25800	-	25800
10	4	Edge folding machine	CONELI 38	720	3.6	-	Italy	4100	16400	-	16400

* Technical data refer to the quantities to be obtained.

COST

QTY

TECHNICAL DATA

ITEM DESCRIPTION

RFI

No	Equipment	Type	TECHNICAL DATA				Origins	Cost	Foreign	Local	Total
			Eg.	Kv.	H ² /H	Weight					
11	Electropneumatic press	GS 171 ERM-4 GS 12-36	1960	81.0	12.0	Hungary	10600	31800	-	31800	
12	Baying/edge reinforcing equipment	ADLER	120	-	0.3	FRG	1200	6000	-	6000	
13	Single needle flat-bed sewing machine	ADLER 396-181	640	3.2	-	FRG	3300	26400	-	26400	
14	Single needle flat-bed sewing machine	ADLER 396-143	2430	10.0	-	FRG	3400	91800	-	91800	
15	Single needle flat bed sewing machine	ADLER 396-176	430	2.0	-	FRG	3430	17250	-	17250	
16	Single needle cylinder bed sewing machine	ADLER 69-362	2230	10.0	-	FRG	3000	95000	-	95000	
17	Single needle cylinder-bed sewing machine	ADLER 103-0	220	0.0	-	FRG	3200	10400	-	10400	
18	Single needle cylinder-bed sewing machine	ADLER 160-373	1000	4.0	-	FRG	4100	49200	-	49200	
19	Twin needle flat-bed sewing machine	ADLER 167-878	430	2.0	-	FRG	3900	19500	-	19500	
20	Twin needle flat-bed sewing machine	ADLER 67-1263	100	0.0	-	FRG	4350	8700	-	8700	
21	Punch-press sewing machine (coding)	ADLER 104-108	50	0.4	-	FRG	3950	3950	-	3950	
22	Bar-tacker	GS 652 A2HT	70	0.4	-	Hungary	3200	3200	-	3200	
23	Bar-tacker	ADLER 304	110	0.4	-	FRG	4850	4850	-	4850	

No.	Quantity	ITEM DESCRIPTION		TECHNICAL DATA*			Origin	Unit cost	COST		
		Equipment	Type	Lg.	Kv.	M ² /H			Foreign	Local	Total
4	1	Button sewing machine	OS MEX-37	110	0.4	-	Hungary	4670	4670	-	4670
5	1	Button-hole making machine	BURKOFF 537-234	210	0.8	-	FRG	7400	7400	-	7400
6	1	Glove decorating (fancy seam sewing machine)	FORKERT 301/162L	90	0.2	-	FRG	3700	3700	-	3700
7	4	Glove pinseam machine	FORKERT 63	280	1.2	-	FRG	2800	11200	-	11200
8	1	Hand-stitch sewing machine	FORKERT 100	90	0.2	-	FRG	8200	8200	-	8200
9	1	Glove pique machine	FORKERT 33L	70	0.1	-	FRG	2900	2900	-	2900
0	1	Holeting machine	HANG 31	140	0.6	-	FRG	12000	12000	-	12000
1	1	Riveting machine	ALBKO 131 HAUR -60	260	-	7.2	FRG	25300	25300	-	25300
2	2	Push-button fixing machine	ALBKO	370	-	6.5	FRG	18500	18500	-	18500
3	2	Pneumatic press	BIMA	70	-	0.5	FRG	2500	5000	-	5000
4	1	Edge dyeing machine	PROTOS	30	0.3	-	FRG	1500	1500	-	1500
5	2	Seam rubbing down machine	ALBKO 120	60	0.3	-	FRG	1500	1500	-	1500
6	2	Universal Pressing machine	OS351 P2-22-20	800	-	12.0	Hungary	5540	11000	-	11000
7	1	Ironing bench with iron	OS 394+								
			OS 392/1	30	1.0	-	Hungary	820	820	-	820
8	3	Ironing bench with electric iron	OS 394+								
			OS 393	150	3.0	-	Hungary	800	4000	-	4000
9	1	Direct delivery conveyor (45 working place)	KANV M157	7000	4.2	-	Hungary	21200	21200	-	21200
0	2	Electric forming and ironing machine	FORKERT F30	40	3.2	-	FRG	1200	2400	-	2400

* Technical data refer to the quantities to be obtained.

NO.	Quantity	ITEM DESCRIPTION	TECHNICAL DATA			ORIGIN	UNIT COST	COST			
			EQUIPMENT	TYPE	TO			IV	M ³ /M	FOREIGN	LOCAL
41	B. 10	AUXILIARY EQUIPMENT Attachments to the sewing machines	ADLER FK3 FK3 FK300 GH107 E 41 UL 125 UL 169 QPS 250 etc.	70	-	-	FRG	370	3,700	-	3,700
42.	6	Ironing forms	FORNERT DF 20/1 DF 20/2 DF 20/3 DF 20/4	80	-	-	FRG	100	1,000	-	1,000
43.	4	Hand iron	GH 392	10	4.0	-	Hungary	210	840	-	840
44.	5	Automatic steam rises	GH 390/12	1000	45.0	-	Hungary	2,000	4,000	-	14,000
45.	1	Store for dies	PSB	300	-	-	FRG	1,300	1,300	-	1,300
46.	220 m	Sliding tables with connectors		19,600	-	-	Local	250	-	61,600	61,600
47.	3	Laying up table		450	-	-	Local	200	-	840	840
48.	30	Horses for leather		720	-	-	Local	120	-	3,600	3,600
49.	130	Sewing seats for ball making (foal)		1,700	-	-	Local	350	-	45,500	45,500
50.	8	Exhausting cabins		800	-	-	Local	270	-	2,160	2,160
51.	1200m	Shelves for stores		12,000	-	-	Local	60	-	72,000	72,000
52.	6	Drying wardrobe		480	-	-	Local	120	-	720	720

* Technical data refer to quantities to be obtained

NO.	ITEM DESCRIPTION	QTY	TECHNICAL DATA				UNIT			COST		TOTAL
			KG	IV	M ² /A	ORIGIN	COST	FOREIGN	LOCAL			
53	Benches (600x1100 mm)	200	4,000	-	-	local	210	-	42,000	-	42,000	
54	Chairs	200	2,000	-	-	Hungary	50	10,000	-	-	10,000	
55	Trolleys	10	800	-	-	Hungary	500	3,000	-	-	3,000	
56	Buses, containers	1000	3,000	-	-	Hungary	20	20,000	-	-	20,000	
57	BEHAGANG KONSTRUKZ	0										
58	Lathe	1	250	1.2	-	Hungary	11,300	11,300	-	-	11,300	
59	Milling machine	1	170	2.6	-	Hungary	6,800	6,800	-	-	6,800	
60	Drilling machine	1	120	1.6	-	Hungary	5,600	5,600	-	-	5,600	
61	Drilling machine	1	10	0.4	-	Hungary	270	270	-	-	270	
62	Die bending machine	1	320	-	-	Austria	1,700	1,700	-	-	1,700	
63	Die shearing machine	1	40	0.2	-	Austria	450	450	-	-	450	
64	Electric Welding Machine	1	70	4.0	-	...	1,900	1,900	-	-	1,900	
65	Grinding machine	2	160	0.8	-	...	750	1,500	-	-	1,500	
66	Compressor (60 m ³ /h, 6 bar)	1	330	2.6	-	...	2,100	2,100	-	-	2,100	
67	Car	1	-	-	-	Japan	16,000	16,000	-	-	16,000	
68	Trucks	2	-	-	-	...	95,000	190,000	-	-	190,000	
69	Refrigerator	3	600	0.6	-	...	1,600	4,600	-	-	4,600	
70	Counter for cafeteria	3	700	-	-	local	1,400	-	1,400	1,400	1,400	
71	Cash counter	1	60	0.1	-	Italy	950	950	-	-	950	
72	Table	4	80	-	-	local	80	-	320	320	320	
73	Chairs	16	40	-	-	local	60	-	960	960	960	
74	Desk for clock-rooms	45	450	-	-	local	90	-	4,050	4,050	4,050	
75	Vardrabe for clock-rooms	350	9,000	-	-	local	85	-	20,900	20,900	20,900	
76	Maintenance bench	1	200	-	-	local	650	-	650	650	650	

* Technical data refer to quantities to be obtained

NO.	ITEM DESCRIPTION	TYPE	TECHNICAL DATA			ORIGIN	UNIT COST	COST		TOTAL
			NO	IV	V/A			FOREIGN	LOCAL	
OFFICE EQUIPMENT										
76	Desk	...	810	-	-	Local	310	-	8,370	8,370
77	Typing desk	...	80	-	-	Local	150	-	750	750
78	Furniture (different wardrobes, glass cases etc.)	...	1,200	-	-	Local	100	-	55,000	55,000
79	Table for negotiations	...	200	-	-	Local	200	-	1,120	1,120
80	Document store	...	1,000	-	-	...	450	9,000	-	9,000
81	Typewriter	OLIVETTI	75	1.0	-	Italy	900	4,500	-	4,500
82	Calculators	SHAYO	50	-	-	Japan	400	4,000	-	4,000
83	Copying machine	BANK - XEROX	40	0.5	-	USA	17,000	17,000	-	17,000
84	Safe	...	700	-	-	...	2,000	4,000	-	4,000
85	Chair	...	100	-	-	Local	160	-	9,600	9,600
86	Others	...	300	-	-	...	-	5,000	15,000	20,000
PRIMARY STOCK OF SPARE PARTS YEAR AND YEAR PARTS TOOLS										
87	Spare parts for production machines	LABY	1,000	-	-	Spain	...	70,000	-	70,000
88	Cutting boards -	...	500	-	-	Hungary	170	4,250	-	4,250
89	Tools for maintenance	...	200	-	-	Local	...	-	2,000	2,000
90	Scissors for glove cutting	...	20	-	-	Sweden	400	8,000	-	8,000
91	Scissors	...	80	-	-	Hungary	10	800	-	800
92	Knives	...	170	-	-	UK	0	280	-	280
93	Other production tools	...	200	-	-	Spain	...	1,200	-	1,200
94	Cleaning tools and materials	-	-	Local	...	2,000	-	2,000
95	Others	-	-	Local	...	10,000	5,000	15,000

* Technical data refer to quantities to be obtained

LIST OF ALTERNATIVE EQUIPMENT

NO. IN ANNEX 5.1	RECOMMENDED TYPE	CORRESPONDING TYPES BY ORIGIN				OTHERS	
		FRG	UK/USA	ITALY	JAPAN	TYPE	ORIGIN
1	GS 529 B-1-K	KURIS KV 140	BOLLNER FRH6			EM 6 EM MOOG S/100	GDR USSR SWITZERLANDS
2	GS B 52	KURIS DOM 30 KURIS NOVITA	BULLMER 602 L				
3	KAV B 1535	KURIS R30 250	BULLMER 772 S	RIMOLDI 850/1			
4	KAV C 105	SANDT 422 SCHON 8L	BUSH NO.1	ATOM SOINEX 6222 TORELL 999 SOINEX		SVIT 6119/P1 ANNEK 109	CHECOSL. FRANCE
5	ALDEKO					ANVER	FRANCE
6	KAV C751	VSK FP-1	BUSH NO. 5A				
7	ALDEKO		BUSH NO. 6	TORELL & 720/A			
8	FORTUNA MAP 470	ALDEKO 83 K MOHNS 11520	BUSH NO. 5	TORELLI 326		SVIT 6122/P1	CHECOSL.
9	FORTUNA 508-AG		USM AVMA 12 TORELLI 105	SOINEX 765	SEIKO DC8-81 SVIT	SVIT ANNEK COMPART15603	CHECOSL. FRANCE GDR
10	COMELC 38	ALDEKO 107	BUSH C	SAGITTA 67 SOMEX 665 TORELLI 1229/C		KAV C747	HUNGARY

NO. IN ANNEX 5.1	RECOMMENDED TYPE	CORRESPONDING TYPES BY ORIGIN				OTHERS	
		FRG	UK/USA	ITALY	JAPAN	TYPE	ORIGIN
11	GS 371 KMR	HOFFMAN AX		MAPO 1 200		GP 25	USSR
12	BINA			TORRELLI 1001/N			
13	ADLER 396 - 121	PFAPP 463-A BURKOPF 211-1	SINGER 331 K SINGER 211 G	NECCHI 660	YUKI DBL 599 SHIKO	TEXTIMA 0332 GS 12150 KANY V1201-71	DDR HUNGARY HUNGARY
14	SEN 13						
15	ADLER 396-176	PFAPP 543 PFAPP 403 PFAPP 441	SINGER 331 K	NECCHI 670	YUKI	KANY V1272	HUNGARY
16	ADLER 69-362	PFAPP 535	SINGER 100K	NECCHI 840	SHIKO LSW SHIKO LSG SHV	MINERVA 72207 MINERVA	CZECHOSL. CZECHOSL.
18	SEN 16			SOINEX 934			
19	ADLER 167-872	PFAPP 546-255	SINGER 17V				
20	ADLER 67-1262	PFAPP 544-720		NECCHI 925		KANY 1213	HUNGARY
21	ADLER 104-102	PFAPP 410-45			SHIKO SHM36		
22	GS 632 AKTY	PFAPP 3337 BURKOPF 560	SINGER 269W	NECCHI 420			
23	ADLER 504	PFAPP 3136	SINGER 269 W				
24	GS MMH - 37	PFAPP 3331	SINGER 270-37	NECCHI 440	YUKI MB 372		
27	FORKERT 65	ENGLER 131	SINGER S 172			DORRIS 071	CZECHOSL.
28	FORKERT 35	SINGER S 91					
30	HANG 31	ALBEXO	BUSH NO. 24	SOINEX S1400 TORRELLI 11/OF72		KANY C	

NO. IN ANNEX	RECOMMENDED TYPES	CORRESPONDING TYPES BY ORIGIN					OTHERS	
		FRG	UK/USA	ITALY	JAPAN	TYP	ORIGIN	
31	ALBICO 131	MANC		SOINEX B 1600				
32	ALBICO			SOINEX B 1650				
33	BIMA	PROTOS		SOINEX 285			ANVER	FRANCE
34	PROTOS			TORELLI 1065			SVIZ	CZECHOSL.
35	ALBICO 120							
36	SUN 11							
37	GS 394	HOFFMAN 37-4		MAFCI 101				
38	SUN 37							
39	KANT N 157	PED		TORELLI 124				
43	GS 392	HOFFMAN EDM STROBEL STROMOBILI	BUSH SATERA	MAFC 102-2			KIMASA	SPAIN
44	GS 398/12							

ANNEX 5.3

CIVIL ENGINEERING WORK

NO.	PROJECT COMPONENT DESCRIPTION	INVESTMENT COST, 1989 R		
		FOREIGN	LOCAL	TOTAL
1.	Site preparation (22,400 m ²)	-	186	186
2.	Production and management building (3700 m ²)	-	1,739	1,739
3.	Reception building (72 m ²)	-	33	33
4.	Store of inflammable materials (40 m ²)	-	36	36
5.	Reservoir (2,000 m ³)	-	60	60
6.	Fence (600 m)	-	104	104
7.	Roads (2400 m ²)	-	414	414
8.	Parking area (650 m ²)	-	113	113
9.	Park setting (13,000 m ²)	-	150	150
10.	Grounds building (1,875 m ²)	-	324	324
11.	Communication	-	-	10
12.	Boiler	23	-	23
	TOTAL	23	3,127	3,150

ANNEX 6.0

OVERHEAD COSTS

UNIT 1,000 B

NO.	COST ITEMS	SERVICE COST CENTRES				ADMINISTRATION COST CENTRES				SUB-TOTAL
		SOCIAL SERVICE	PLANT MAINTENANCE	REPAIR AND MAINTENANCE	POWER & LIGHT	SUB-TOTAL	TRAINING	ACCOUNTING	SUB-TOTAL	
1	Maintenance	20.0	60.0	-	-	80.0	10.0	-	-	90.0
2	Insurance	3.0	22.0	2.0	-	27.0	1.0	-	-	28.0
3	Communication	-	1.0	4.0	-	5.0	7.0	3.0	-	15.0
4	Travel	3.0	-	10.0	-	13.0	-	2.0	-	15.0
5	Land Charges	-	16.0	-	-	16.0	-	10.0	-	26.0
6	MISC Contribution	-	-	-	-	-	30.0	-	-	30.0
	SUBTOTAL	26.0	99.0	16.0	3.0	144.0	68.0	10.0	3.0	231.0
7	Depreciation	-	347.6	-	-	347.6	-	-	-	347.6
	- Building	-	121.8	-	1.0	122.8	-	-	-	122.8
	- Machinery	-	-	-	-	-	11.9	-	-	11.9
	- Office equipment	-	-	-	-	-	-	-	-	-
	SUBTOTAL	-	669.4	-	1.0	670.4	11.9	-	-	682.3
	TOTAL	-	-	-	-	817.4	-	-	-	817.4

ANNEX 7.1

SURCHARGE ON WAGES AND SALARIES

		Days
Number of days per year		365.25
Sundays		- 52.18
Saturdays (4 hours work)		- 26.09
Overtime (3%)		+ 8.61
		<hr/>
Number of paid days per year		295.59
	say	295.
Unproductive working days		
- official and religious holidays		- 12
- leave		- 15
- absentees (11% of working days)		- 29
- others (training etc)		- 3
		<hr/>
		- 59
Surcharges due to:		
- unproductive working days	29%	
- social security (pension)	6%	
- medical expenses	4%	
Allowances:		
- leave	6.3%	15
	<hr/>	
	41.3%	
Number of effective working days per year		<u>236</u>
TOTAL SURCHARGE		<u>41.3%</u>

ANNEX 7.2

**AVERAGE WORK - CONTENTS OF
PROMPT TO BE MANUFACTURED**

NO.	TYPE, NUM/PAIR OR NUM/PAIR PRODUCT/SY - PRODUCT	CUTTING	PREPARATION*	ASSEMBLING**	MANUAL WORK		TOTAL
					MANUAL	MACHINE	
1.	Leather garment	65	45	250	200	160	360
2.	Gloves	35	15	65	55	60	115
3.	Leathergoods						
3.1.	Handbags	7	25	65	45	55	90
3.2.	Travelling & sport cases	0	37	60	45	60	105
3.3.	Brief cases & diplomats	0/14	20/00	55/06	35/140	55/40	90/180
3.4.	Wallets	6	15	49	40	30	70
3.5.	Small articles	1.5	3.5	0	0	5	15
3.6.	Belts	2	3	7	5	7	12
4.	Balls	7	10	555	360	20	500
5.	Industrial articles	3	1	14	3	15	18

* Including all preparation works (e.g. skiving, edge folding, reinforcing) and component prefabrications (e.g. pocket-cutting, lining assembling).

** Including finishing and packaging.

APRIL 7.3

VAGES

NO.	DEPARTMENT	2/MONTH	NUMBER OF WORKERS												TOTAL
			VARIABLE COSTS						FIXED COSTS						
			50	75	100	130	160	200	250	300	350	400	450	500	
FASHION GOODS MANUFACTURING															
1.	Cutting and preparation		2	6	10	4	23								28
2.	Glove manufacturing		1	3	3		12								42
3.	Belt manuf.		1	4			13								15
4.	Flat goods manuf.		2	6			16								16
5.	Brief-case manuf.		4	9	2		18								18
6.	Handbag manuf.		3	12	3		36								36
7.	Leather garment man.		6	8	5	3	30								30
STANDARD PROCESS MANUFACTURING															
8.	Cutting and preparation		1	3	3		10								10
9.	Industrial art man.		3	4	1		8								8
10.	Ball manufact.				20		140								140
PROTECTION SERVICE															
11.	Stores			6	1	2	9								15
12.	Maintenance														3
13.	Factory supply														12
14.	Stores														10
TOTAL WORKERS			25	59	47	2	328	8	14	4	1	4	31	359	
Vages per year, 1000 \$			22.5	70.8	239.3	90.2	21.6	444.4	4.8	12.6	4.8	1.6	33.4	477.8	
Substrate (41.26)							181.2						13.8	197.3	
TOTAL, 1000 \$							627.9						47.2	675.1	

PROJECT IMPLEMENTATION

NO.	ITEM DESCRIPTION	9 0 8 7		
		FOREIGN	LOCAL	TOTAL
1.	Management of project implementation	-	16.0	16.0
2.	Test run and take over of civil works and equipment	28.0	15.0	43.0
3.	Building administration, recruitment and training of staff	22.0	17.0	39.0
4.	<u>TRAINING OF LABOR</u>			
4.1.	Instruction training	0.5	4.0	12.5
4.2.	Training of labor	10.0	35.0	55.0
4.3.	Stomino built-up	4.0	60.6	84.0
4.4.	Starting up the manufacturing	6.0	45.0	51.0
5.	<u>ARRANGEMENTS FOR SUPPLIERS</u>			
5.1.	Domestic arrangement	-	5.0	5.0
5.2.	Travelling abroad	6.7	1.0	7.7
6.	<u>MARKETING ARRANGEMENTS</u>			
6.1.	Marketing survey	6.0	2.0	8.0
6.2.	Building-connections	10.0	10.0	20.0
	TOTAL	109.2	230.6	340.0

INITIAL FUND INVESTMENT COSTS

NO.	INVESTMENT CATEGORY	FOREIGN CURRENCY*	LOCAL CURRENCY*	TOTAL COST*
1.	Site preparation	-	126.0	126.0
2.	Civil works	25.0	3,001.0	3,026.0
3.	Machinery and equipment	1,209.3	349.7	1,559.0
	T O T A L	1,234.3	3,476.7	4,710.9

* 1,000 B

ANNEX 9.2

PREPRODUCTION CAPITAL EXPENDITURE

NO.	CATEGORY	STAFFORDS, 1968 P		
		FOREIGN	LOCAL	TOTAL
1f	Preparatory studies and investigations	62.0	143.0	205.0
2.	Management of project implementation	-	16.8	16.8
3.	Test run and take over of civil works and equipment	28.0	15.0	43.0
4.	Build-up administration, training of staff	22.0	17.0	39.0
5f	Training of labor	36.5	164.0	200.5
6.	Arrangements for supplies	6.7	6.0	12.7
7.	Marketing arrangements	16.0	12.0	28.0
	TOTAL	171.2	373.8	545.0

ANNEX 9.3

ANNUAL PRODUCTION COSTS

UNIT 1,000 B									
PERIOD	ONE SHIFT WORK				TWO SHIFTS WORK				
	1982	1983	1984	1985	1986	1987	1988	1989	1990
CAPACITY, %	39.1	70.1	88.7	100.0	64.2	83.7	94.6	100.0	100.0
Raw materials									
- local	1,435	3,390	4,287	4,833	6,280	8,287	9,150	9,670	9,670
- imported	282	657	831	937	1,216	1,606	1,773	1,874	1,874
- fittings and auxiliary	267	628	787	887	1,151	1,520	1,678	1,774	1,774
Labor (direct)	400	480	570	620	1,000	1,300	1,400	1,500	1,500
Utilities	85	30	32	32	64	66	68	70	70
Maintenance, spare parts	330	330	330	330	330	330	330	330	330
Factory over head costs	160	160	160	160	180	180	180	180	180
Factory cost	2,919	5,669	6,994	7,887	10,221	13,209	14,579	15,398	15,398
Administration overhead costs	521	521	521	521	530	530	530	530	530
Sales and distribution costs	330	658	750	800	1,000	1,100	1,200	1,250	1,250
Operating costs	3,990	6,848	8,265	9,136	11,751	14,919	16,309	17,178	17,178
Financial costs (interests)	710	1,030	1,200	1,100	1,000	999	890	614	298
Depreciation	710	710	710	710	710	710	710	710	710
TOTAL PRODUCTION COSTS	5,410	8,600	10,175	10,946	13,461	16,564	17,909	18,502	18,186

WORKING CAPITAL REQUIREMENTS

ITEM	Minimum days of coverage	Coefficient of coverage	REQUIREMENTS - 1,000 R								
			ONE SHIFT WORK				TWO SHIFTS WORK				
			1982	1983	1984	1985	1986	1987	1988	1989	1990
1. CURRENT ASSETS											
A. Account receivable	30	12	330	666	702	847	1,067	1,314	1,426	1,493	1,493
B. Inventory											
-local raw material	30	10	81	188	230	260	349	460	508	537	537
-imported raw material	100	2	141	329	416	469	600	805	867	937	937
-fittings	270	1.5	205	470	605	688	885	1,169	1,291	1,364	1,364
-spare parts	180	2	165	165	165	165	170	170	170	170	170
-work-in progress	0	45	74	137	167	185	241	306	335	354	354
-finished products	30	12	283	600	632	698	900	1,152	1,261	1,330	1,330
C. Cash in hand	30	2.5	26	102	115	112	168	125	122	222	222
TOTAL			1,365	2,666	3,120	3,455	4,396	5,399	6,076	6,395	6,395
2. CURRENT LIABILITIES											
Account payable	15	24	-86	-196	-247	-277	-363	-470	-528	-558	-558
3. WORKING CAPITAL											
A. Net working capital			1,279	2,470	2,873	3,154	4,033	5,201	5,548	5,835	5,835
B. Increase in working capital			-	1,191	403	281	879	1,048	467	287	-

ANNEX 9.5.

TWO SHIFTS WORK																	
1986			1987			1988			1989			1990			TOTAL		
FOREIGN	LOCAL	TOTAL	FOREIGN	LOCAL	TOTAL	FOREIGN	LOCAL	TOTAL	FOREIGN	LOCAL	TOTAL	FOREIGN	LOCAL	TOTAL	FOREIGN	LOCAL	TOTAL
300.0	-	300.0	350.0	20.0	370.0	250.0	15.0	265.0	250.0	15.0	265.0	250.0	15.0	265.0	2734.2	3541.7	6275.9
20.0	100.0	120.0	20	-	20.0	-	-	-	-	-	-	-	-	-	211.2	513.8	725.0
-	897.0	897.0	-	1048.0	1048.0	-	467.0	467.0	-	287.0	287.0	-	-	-	-	9855.0	9855.0
320.0	897.0	1317.0	370.0	1068.0	1438.0	250.0	482.0	732.0	250.0	302.0	552.0	250.0	15.0	265.0	2945.2	9808.5	12852.9
272.4	687.6	960.0	332.6	830.4	1163.0	147.2	369.1	517.0	90.7	226.3	317.0	-	-	-	1828.7	4564.3	6393.0
595.4	787.6	1383.0	802.6	850.4	1553.0	397.9	384.1	782.0	340.7	241.3	582.0	250.0	15.0	265.0	4774.0	9619.9	14393.9

TOTAL INVESTMENT COSTS AND ASSETS

PERIOD	INVESTMENT										ONE SHIFT WORK					
	1961		1962		1963		1964		1965		1965					
	FOREIGN	LOCAL	FOREIGN	LOCAL	FOREIGN	LOCAL	FOREIGN	LOCAL	FOREIGN	LOCAL	FOREIGN	LOCAL	TOTAL			
1. Fixed Investment Costs	824.2	2856.9	410.9	620.7	-	1030.7	-	-	-	-	-	-	-	100.0	-	100.0
2. Production Capital expenditure	51.0	170.0	120.0	203.0	-	324.0	-	-	-	-	-	-	-	40.0	-	40.0
3. Working Capital Increase	-	-	-	1279.0	-	1279.0	-	1191.0	1191.0	-	403.0	403.0	403.0	-	281.0	281.0
TOTAL INVESTMENT COSTS	875.2	4026.9	530.9	2892.7	-	2632.9	-	1191.0	1191.0	-	403.0	403.0	403.0	100.0	321.0	421.0
4. Current Assets Increase	-	-	390.0	574.0	372.1	1365.0	372.1	928.9	1301.0	130.0	324.0	454.0	454.0	89.6	223.4	313.0
TOTAL ASSETS (1+2+4)	875.2	4026.9	920.9	1798.7	372.1	2718.9	372.1	928.9	1301.0	130.0	324.0	454.0	454.0	189.6	263.4	453.0

ANNEX 9.6

TOTAL INITIAL INVESTMENT COSTS

NO.	INVESTMENT CATEGORY	CURRENCY 1,000 R		TOTAL
		DOMESTIC	FOREIGN	
16	Initial investment costs	1,234.2	3,476.7	4,710.9
20	Preproduction capital expenditures	171.2	373.0	544.2
30	Working capital (at 100% capacity)	-	3,154.0	3,154.0
	- one shift work (1905)	-	3,035.0	3,035.0
	- two shift work (1909)	-	-	-
	T O T A L	1,405.4	7,007.5	8,409.9
		1,405.4	9,685.5	11,090.9

ANNEX 9.7

TOTAL INITIAL ASSETS

NO.	INVESTMENT CATEGORY	CURRENTLY 1,000 R	
		FOREIGN	TOTAL
1.	Initial investment costs	1,234.2	3,476.7
2.	Proposed capital expenditure	171.2	373.0
3.	Current assets (at full capacity)		
	- one shift work (1985)	981.0	2,451.2
	- two shifts work (1989)	1,028.4	4,564.6
	TOTAL 1985	2,307.8	6,501.7
	1989	3,833.0	8,415.1
			11,640.9

ANNEX 9.6

SOURCES OF INITIAL FUND

PERIOD	ONE SHIFT WORK					TWO SHIFTS WORK					TOTAL	
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990		
Loan from the Investment Bank	4,600	4,400	3,000	-	-	-	-	-	-	-	-	12,000
Borrowing from the Commercial Bank	-	-	-	-	-	1,000	1,000	-	-	-	-	2,000
Current liabilities*	-	90	110	50	30	90	115	50	-	-	-	535
TOTAL	4,600	4,490	3,110	50	30	1,090	1,115	50	-	-	-	22,535

*The figures rounded off

FINANCIAL PLAN

UNIT 1,000 B

PERIOD	ONE SHIFT WORK					TWO SHIFT WORK					
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
CAPACITY, K	0	32.1	72.1	88.7	100.0	64.8	83.7	84.6	102.9	102.9	102.9
A. CASH INFLOW											
1. Financial resources	4,600	4,400	3,110	30	30	1,090	1,115	30	-	-	-
2. Sales revenues	-	3,333	9,036	11,733	13,649	16,590	22,341	24,900	26,025	26,025	26,025
Subtotal	4,600	7,933	12,146	11,763	13,679	17,680	23,030	24,930	26,025	26,025	26,025
B. CASH OUTFLOW											
1. Total assets	3,900	2,719	1,301	454	433	1,303	1,533	782	502	265	265
2. Operating costs	-	3,990	6,040	8,263	9,136	11,731	14,919	16,309	17,170	17,170	17,170
3. Dept. services											
-interests of											
-Investm, Bank	300	710	1,050	1,200	1,100	1,000	900	700	500	250	-
-Commcr, Bank	-	-	-	-	-	-	95	190	114	48	-
-repayment for											
-Investm, Bank	-	-	-	1,000	1,000	1,000	2,000	2,000	2,500	2,500	-
-Commcr, Bank	-	-	-	-	-	-	-	800	700	500	-
4. Taxes	-	281	1,376	1,951	2,310	2,811	3,770	3,569	3,215	3,215	3,215
Subtotal	4,200	8,000	10,367	12,670	13,839	17,843	23,237	24,350	24,782	23,256	20,628
C. Surplus/deficit	400	-67	1,579	-1,003	-320	-263	219	600	1,236	2,069	5,367
D. Cumulative cash balance	400	333	1,912	827	507	248	461	1,141	2,377	4,446	9,813

NET INCOME STATEMENT

UNIT 1,000 B

PERIOD	ONE SHIFT WORK				TWO SHIFTS WORK					
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
CAPACITY,%	30.1	79.1	82.7	100.0	64.9	85.7	94.6	100.0	100.0	100.0
1. Sales	3,533	9,036	11,733	13,649	16,590	22,341	24,980	20,025	26,025	26,025
2. Production costs	3,372	8,642	10,243	10,993	13,461	16,364	17,909	18,502	18,186	17,888
3. Gross (taxable) profit	-1,039	394	1,490	2,656	3,129	5,977	7,071	7,523	7,839	8,137
4. TAXES										
- turnover	71	181	235	273	332	447	500	521	521	521
- excise	411	957	1,211	1,363	1,707	2,234	2,489	2,671	2,631	2,631
- transaction	99	230	264	294	346	456	505	509	509	509
- general reserve fund	-	-	-	235	349	378	330	-	-	-
- annual capital charge	-	-	-	6	29	48	75	75	75	75
TOTAL TAXES	581	1,376	1,951	2,310	2,811	3,770	3,569	3,215	3,215	3,215
5. Net profit	-2,420	-980	-461	346	318	2,007	3,502	4,308	4,624	4,922
6. Accumulated net profit	-2,420	-3,400	-3,861	-3,515	-3,197	-1,190	2,312	6,620	11,244	16,166
Gross profit/sales,%	-52.1	4.4	12.7	19.5	18.9	25.8	28.5	28.9	30.1	31.3
Net profit/sales,%	-68.5	-10.9	-3.9	2.5	1.9	9.0	14.0	16.5	17.8	18.9

FOURTH
FOR THE REDUCED PRODUCTION PROGRAM

			B
(1)	1	CS 525B-1-K	720
(2)	1	CS 8 52	300
(3)	1	R 1535	3,300
(4)	6	KARY C 105	37,200
(5)	1	ALPHED	1,400
(6)	1	KARY C 731	7,100
(8)	1	FORTEMA HAF 470	16,800
(9)	4	FORTEMA 300-AG	17,200
(10)	3	CONKLE 30	12,300
(11)	2	CS 371 HNE+CS 12-36	21,200
(12)	4	KIMA	4,800
(13)	7	ANLER 396-121	21,700
(14)	16	ANLER 396-143	54,400
(15)	3	ANLER 396-176	10,350
(16)	15	ANLER 69-362	57,800
(18)	4	ANLER 169-373	16,400
(19)	2	ANLER 167-372	11,700
(20)	2	ANLER 67-1262	8,700
(22)	1	CS 652 ARY	3,200
(23)	1	ANLER 304	4,850
(24)	1	CS HNE-37	4,670
(25)	1	BURKIPP 557-234	7,400
(30)	1	HANE 31	12,000
(31)	1	ALPHED HNE-60	23,300
(32)	1	A LINED	18,500
(33)	1	KIMA	2,500
(34)	1	PHOTOS	1,600
(35)	2	ALPHED 120	1,500
(36)	2	CS 351 P2-22-201	11,800
(37)	1	CS 394+CS 392/1	820
(38)	5	CS 394 + CS 395	4,000

ANNUAL PRODUCTION COSTS
FOR THE REDUCED PRODUCTION PROGRAMME

	1,000 B
Raw Materials	
- Local	3,500
- Imported	335
- Auxiliaries and fittings	550
Labour (direct)	255
Utilities	22
Maintenance and Spare parts	220
Factory Overheads (75% on Wages and Sales)	<u>190</u>
Factory Costs	5,072
Administrative Overhead Costs (7% factory costs)	355
Sales and Distribution costs	<u>500</u>
Operating costs	5,927
Financial Costs	150
Depreciation	<u>220</u>
TOTAL PRODUCTION COSTS	<u>6,297</u>

ANNEX 10.3

WORKING CAPITAL *

	1,000 B
1. <u>CURRENT ASSETS</u>	
A. Account receivable	495
B. Inventory	
- Local raw material	195
- Imported raw material	170
- Fittings and auxiliaries	425
- Spare parts	110
- Work in Progress	115
- Finished Products	450
C. Cash in hand	<u>45</u>
TOTAL CURRENT ASSETS	2,005
2. <u>CURRENT LIABILITIES</u>	
Account payable	<u>185</u>
3. <u>NET WORKING CAPITAL</u>	2,190

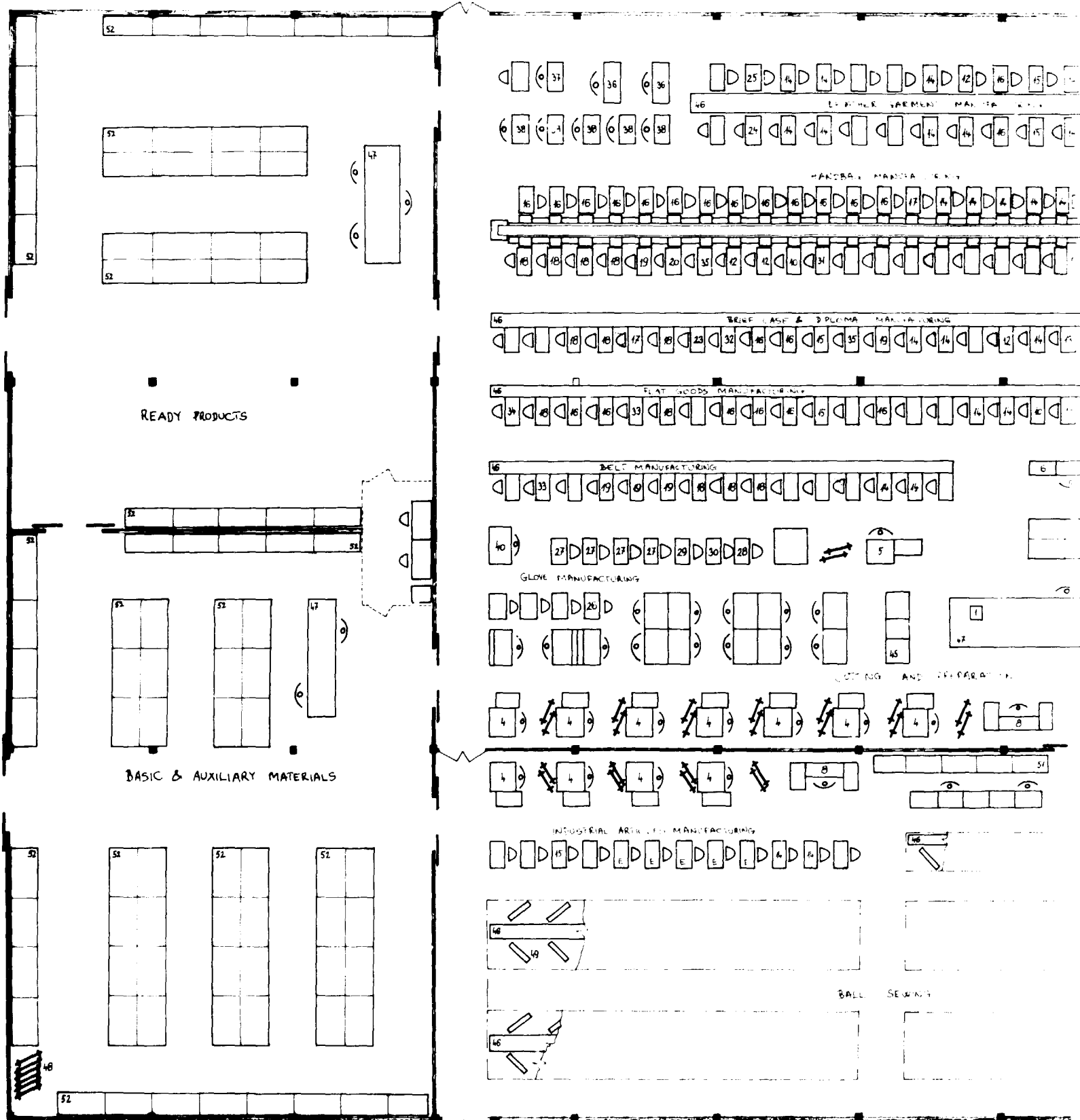
* The calculation is based on the condition taken into account in the Annex 9.4.

(39)	1	KAY H 157	24,000
(41)	10	ANLHR	3,700
(43)	4	CS 392	840
(44)	5	CS 398/12	14,000
(45)	1	PKR	1,300
(47)	2		560
(48)	15		1,800
(52)	800		48,000
(53)	50		10,500
(54)	100	KAY OPERA	5,000
(55)	7	KAY H	3,500
(56)	600	KAY H	12,000
(C)			210,000
(D)			70,000
(E)			75,000

TOTAL

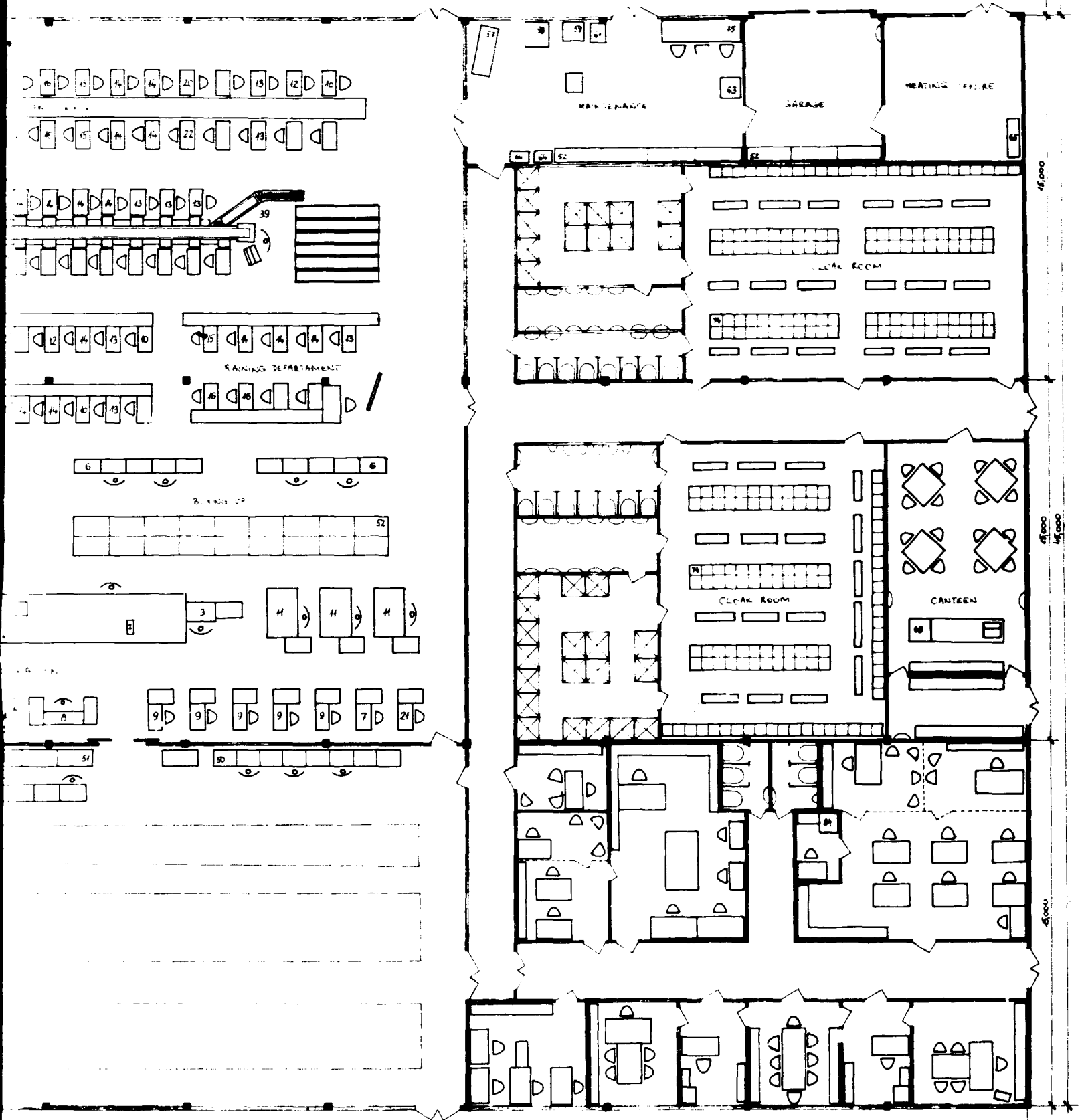
897,110

Figure 1. Plant layout



SECTION 1

Plant layout



8,000

- 53
- 54 52 31

SECTION 2

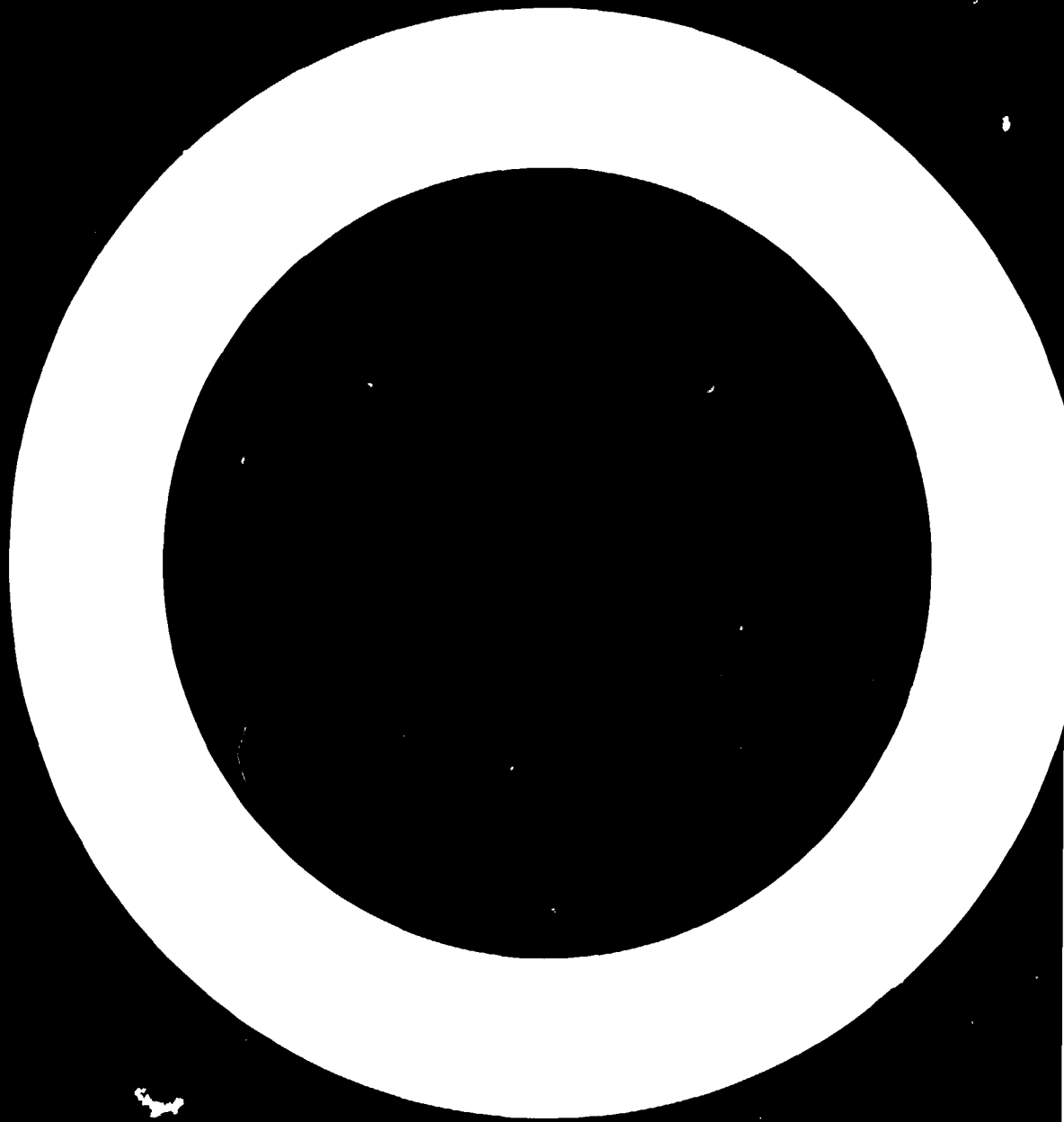
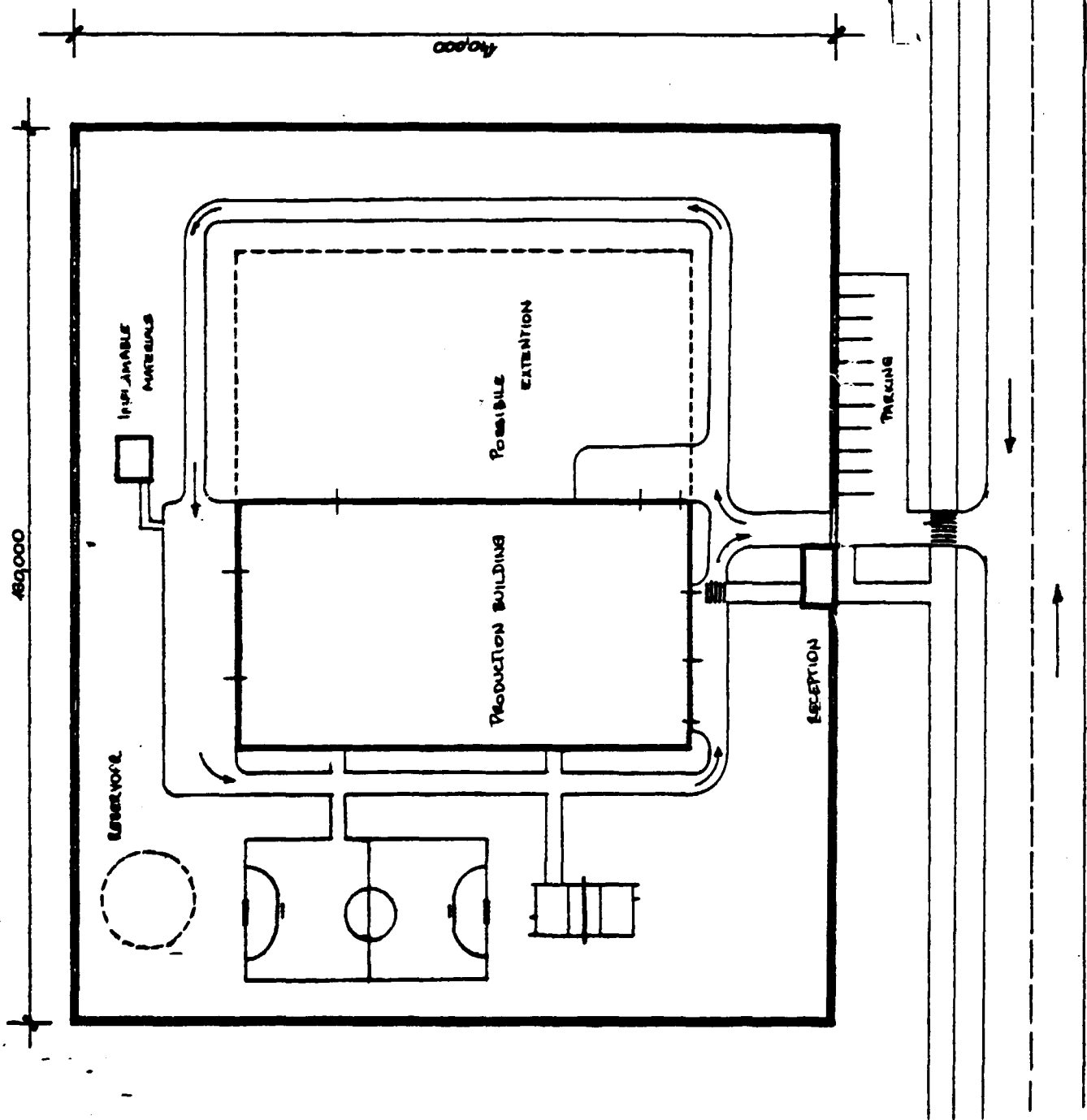
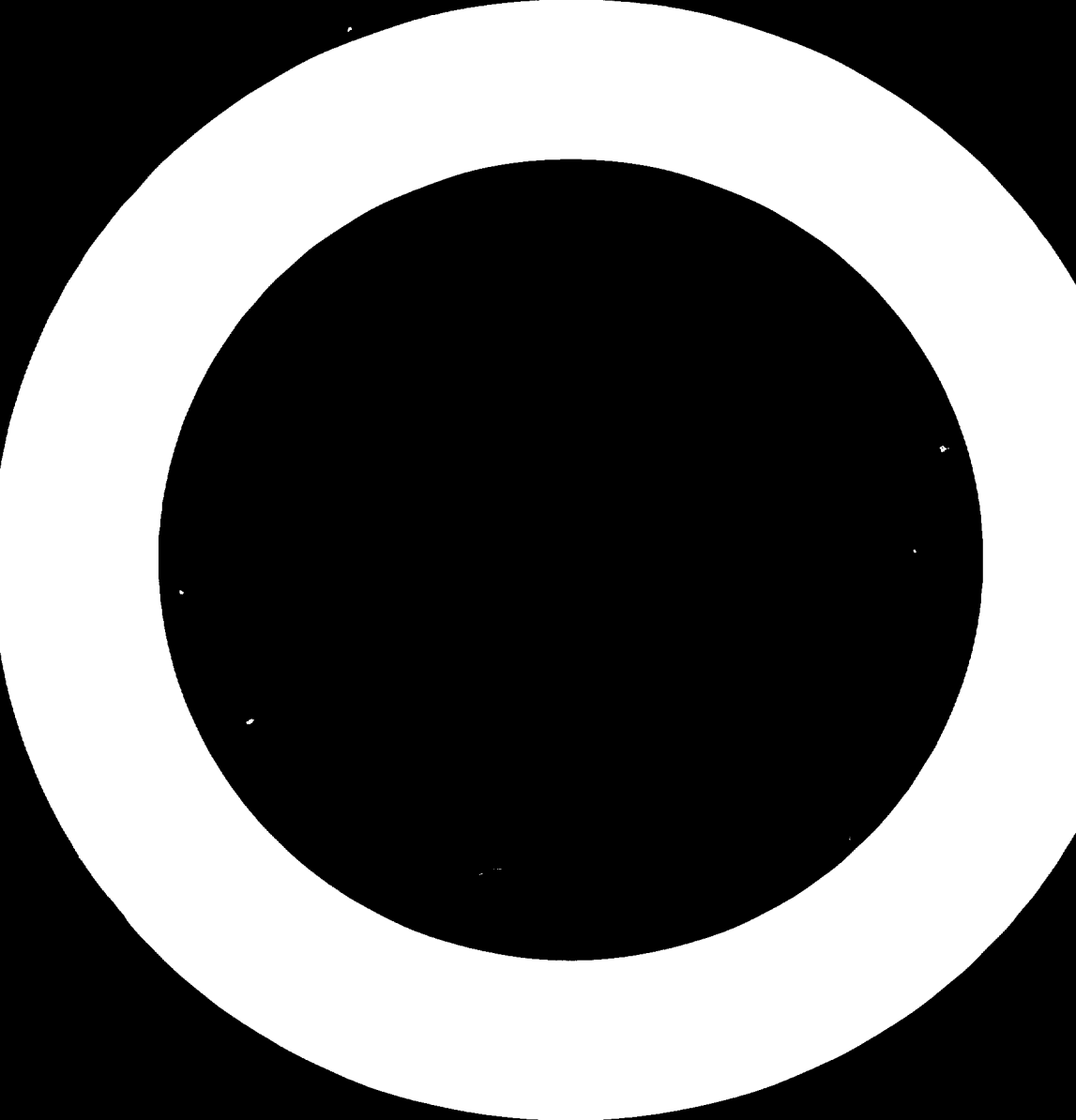
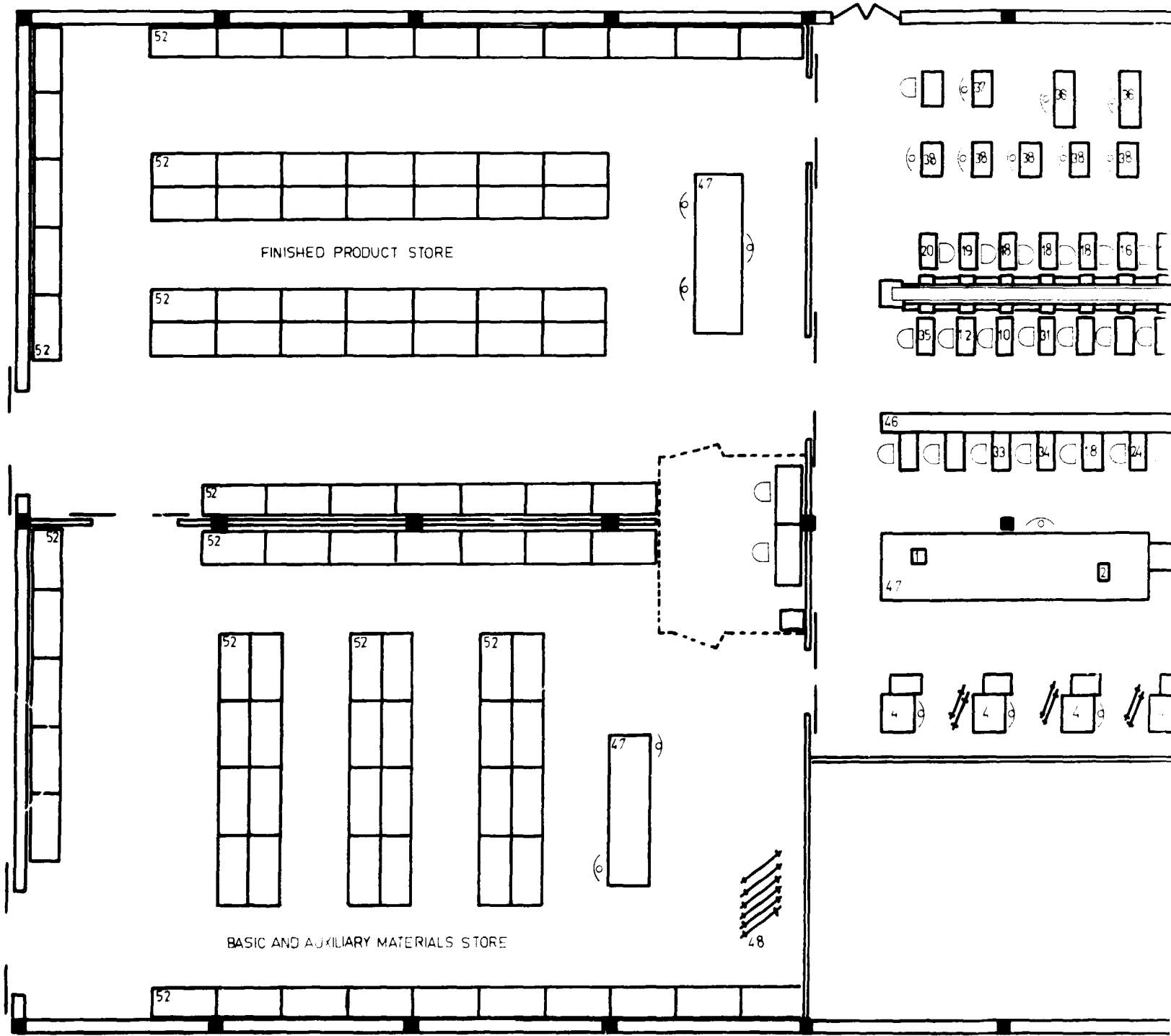


Figure 2. Factory area

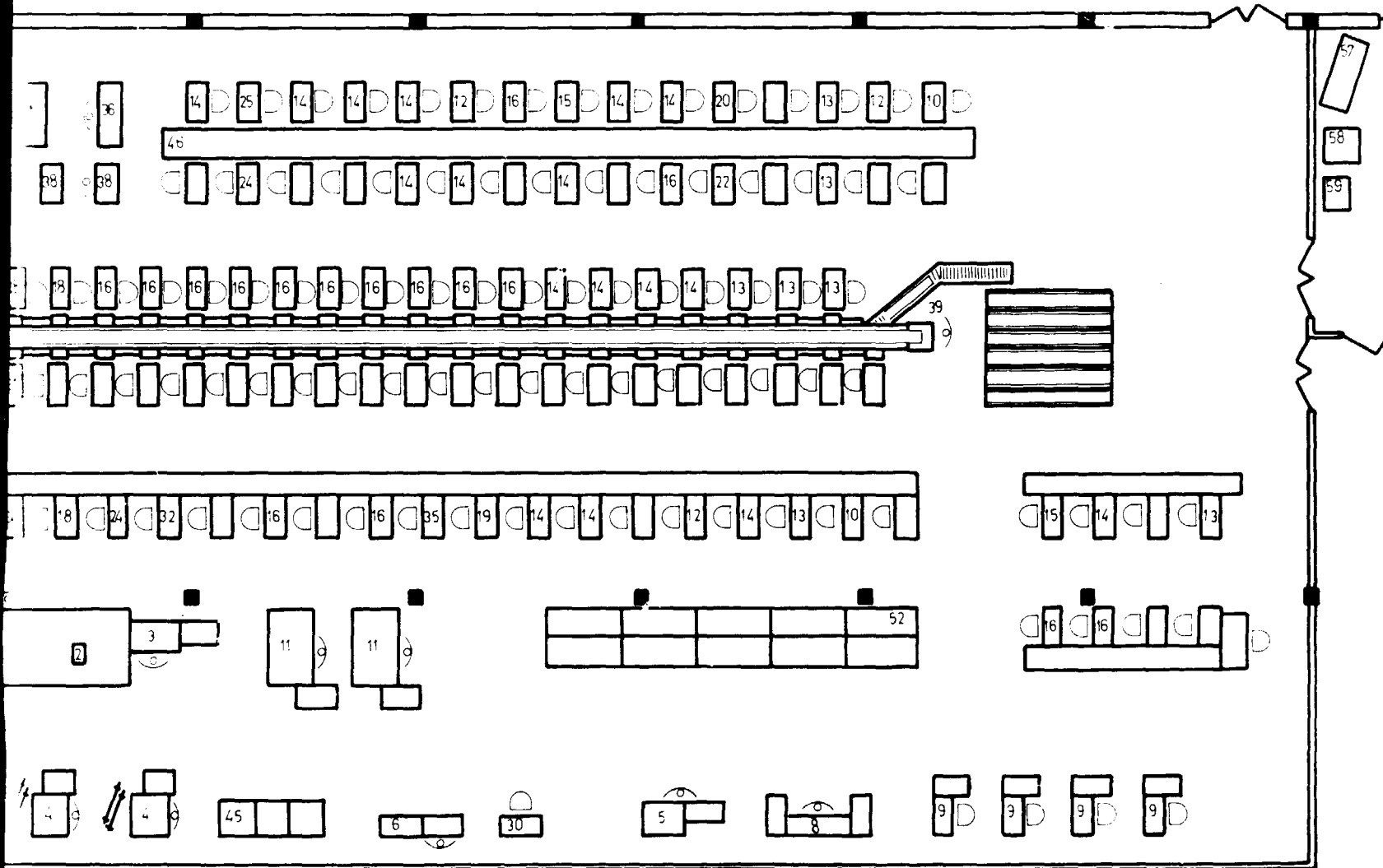






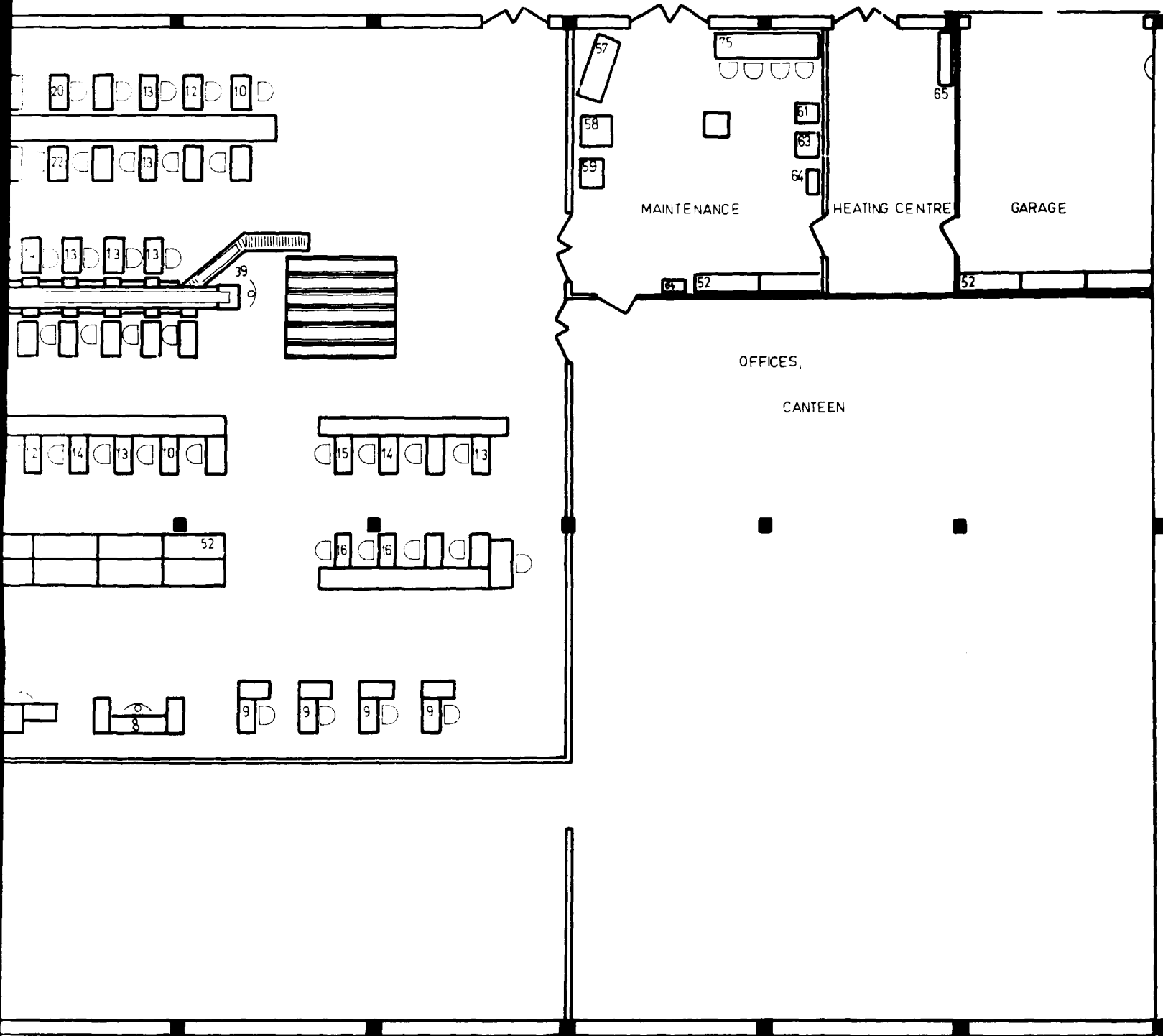
SECTION 1

Figure 3. Alternative plant layout

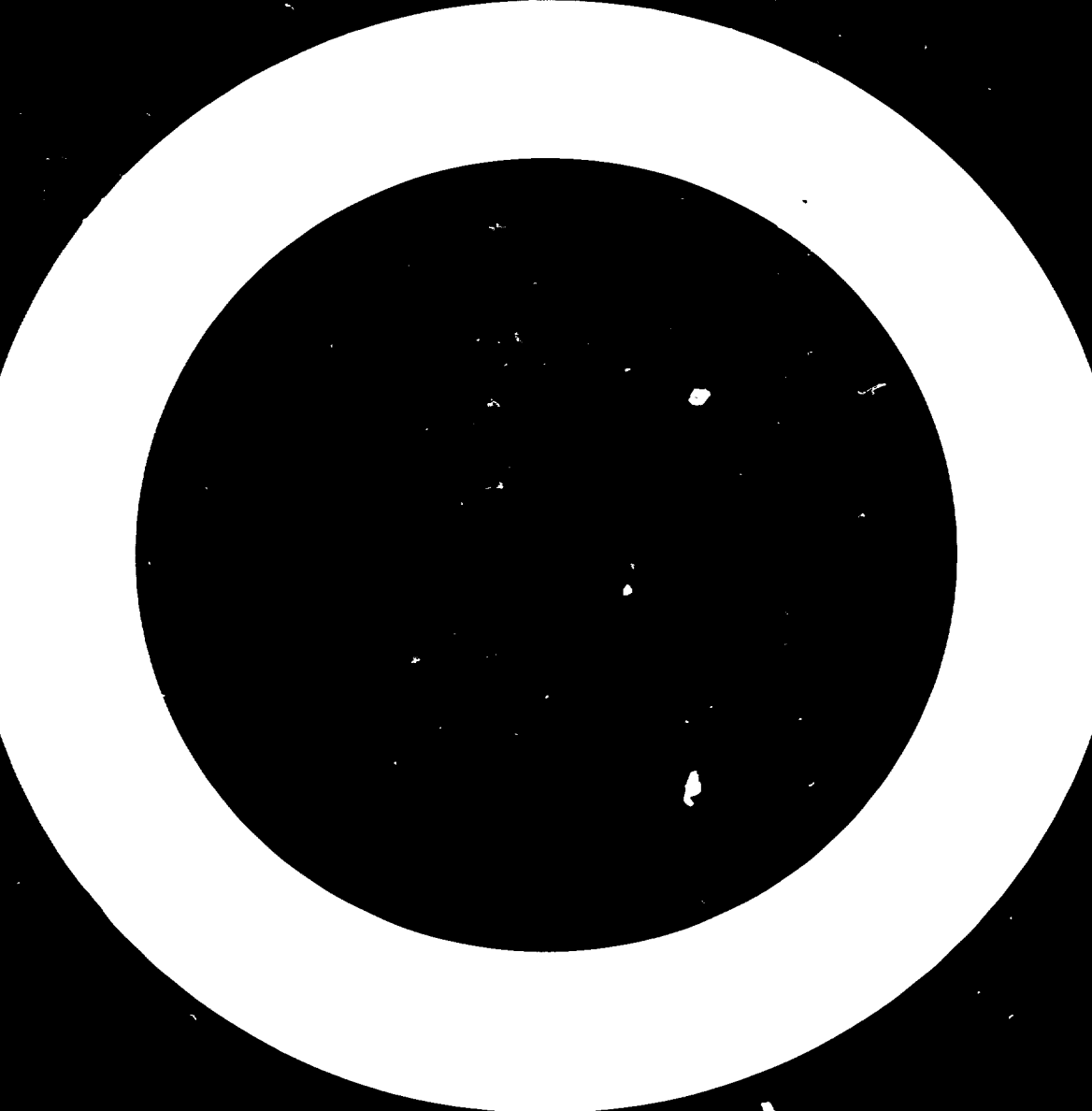


SOCIAL ESTABLISHMENTS

SECTION 2



SECTION 3



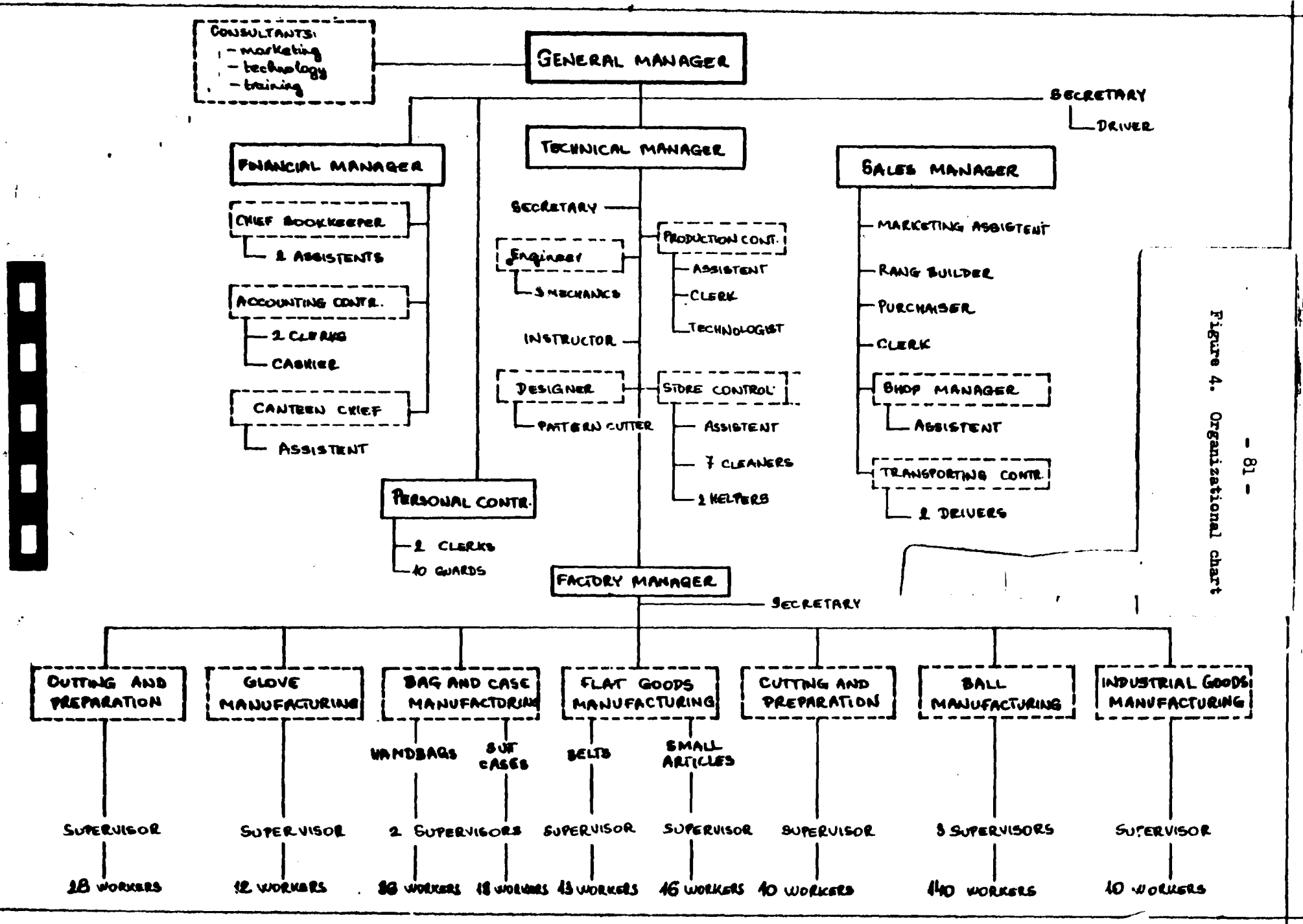


Figure 4. Organizational chart

