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REVIEW OF GENERIC PROBLEMS ASSOCIATED WITH THE IMPLEMENTATION OF HOST COUNTRY CONTRACTS IN THE INDUSTRIAL SECTOR

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
CAIRO MISSION

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LIST OF PROJECTS

Project No.	Project Name
0037	Grain, Tallow, Oils and Fats
0072	Port Said Salines
0165	Safaga Silos Complex
CIP, 0055, 0604	Automatic Bakeries
0052	Quattamia Cement
0117, 075, 054	Telecommunications

INTRODUCTION

The initial review of the civil works in twelve industrial projects financed by USAID/Egypt, suggested that a more detail study of fewer projects but involving the entire Project Process would better identify the problems delaying implementation of such projects.

A detailed historical time line analysis involving all the major participants in six of the ongoing projects has been developed and included in this report and is the basis of the findings and recommendations. (The reduced graphic analyses are included in the report, the full scale graphics are with the IS/PS office in Cairo.) The analysis dramatically shows that project development in every case takes as long, if not longer than, project implementation and therefore deserves as much emphasis on reform of the process as the implementation phase.

Implementation problems are similar in most cases reviewed, with few new or previously unrecognized problems appearing, but the analysis definitely documents the common generic construction problems and offers some possible solutions to them.

The review also shows that after the "six to eight" year undertaking required in each project, that most individuals and institutions involved give lip service to project training, but that effective efforts are seldom undertaken. There is no information as to why post project training efforts are nonexistant, but I suspect that:

1) USAID/E wants to close out the project for administrative reasons;

2) The Government of Egypt operating entity cannot admit that they need help to train a work force and initially operate the facility now that it is physically complete; and

3) The construction contractors and engineering consultants involved in implementation are not normally geared to think in terms of ongoing training and operation.

The review definitely shows that at each level and stage of the development process all of the major participants become so embroiled in the day-to-day battle of details, that they often lose sight of the larger goal--"Successful Implementation and Operation of the Project." In the private sector, any of the projects reviewed would have, at all times, the major objective of completion of the project in the least amount of time at the least cost.

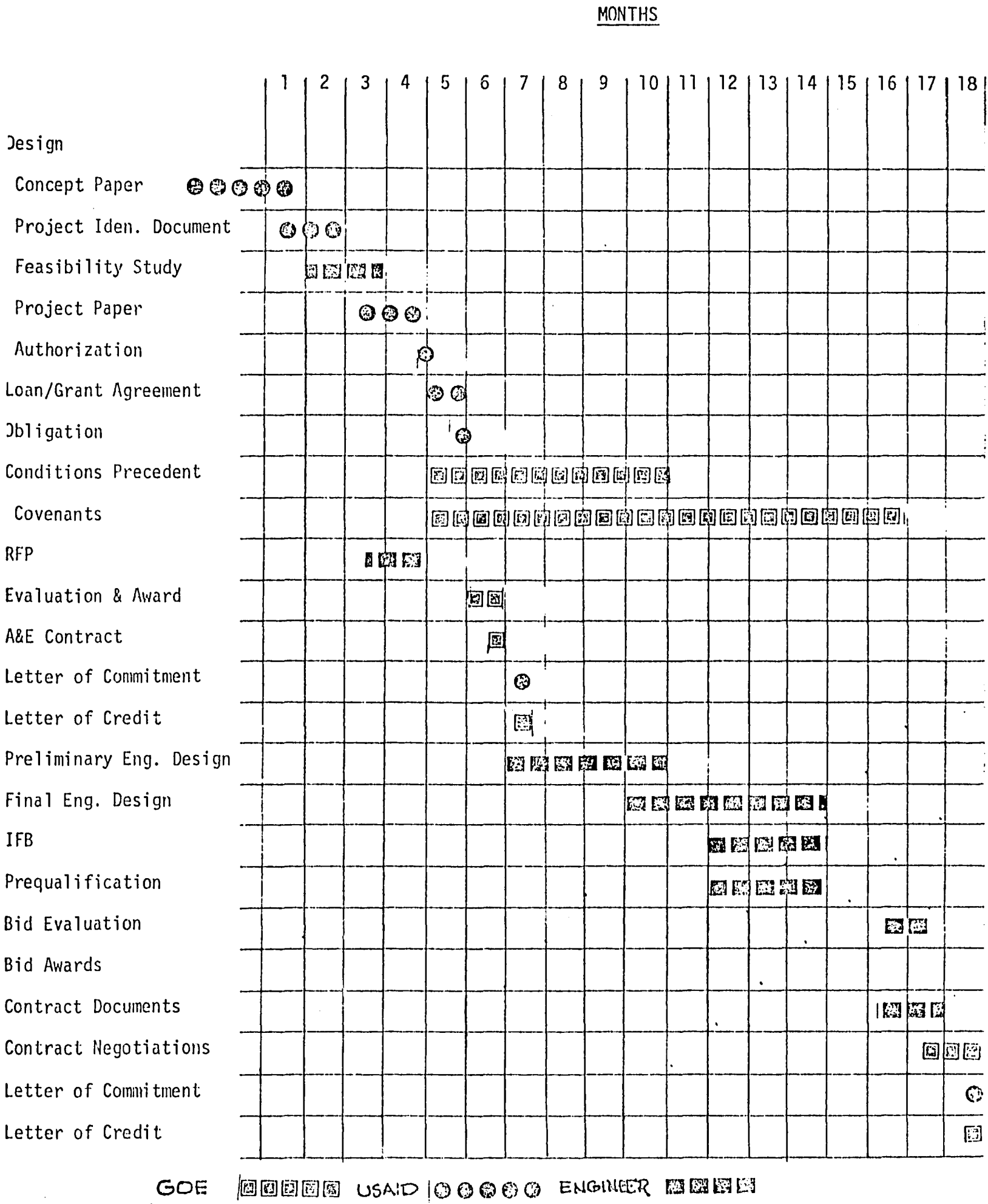
PROJECT DEVELOPMENT

Project development is defined as the time from the initial project concept to the time that an award is made to begin the construction or implementation phase.

In the cases reviewed, project development has taken anywhere from two to six years. There is no reason why this process cannot be completed in six to eighteen months, depending on the engineering complexities, if the parties involved so desire. A CPM for project development should be used by each project officer to evaluate over time the progress necessary to reach the implementation stage.

A suggested CPM is included herein, with the understanding that it is a proto-typical schedule that should be modified according to the individual project requirements. This schedule should be included in the initial design of any project. Even if the time frames are not met (or are modified) it gives a schedule against which to measure progress and identify quickly (at a glance) who and what is holding up the development process. A relatively minor engineering disagreement over the size of the tanks in the tallow, oils, and fats project that delayed the project for over fifteen months is a good example of where the use of a CPM for project development would have pushed for a quicker decision.

The basic rule in the project development process should be to design project implementation structure so as to delegate as much responsibility for the project on the fewest possible individuals


MONTHS
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Design
Concept Paper
Project Iden. Document
Feasibility Study
Project Paper
Authorization
Loan/Grant Agreement
Obligation
Conditions Precedent
Covenants
RFP
Evaluation & Award
A&E Contract
Letter of Commitment
Letter of Credit
Preliminary Eng. Design
Final Eng. Design
IFB
Prequalification
Bid Evaluation
Bid Awards
Contract Documents
Contract Negotiations
Letter of Commitment
Letter of Credit
GOE
USAID
ENGINEER

and/or institutions. The process of "getting approval" is the most time consuming aspect of the development phase, therefore the minimum number of approvals possible should be a goal that translates into time/money savings. This will obviously suggest that both the US/AID mission and the GOE ministry should avoid as much contracting processes as possible, always awarding the most (widest scope) inclusive contracts, resulting in fewer contracts--therefore fewer approvals.

The SAFAGA Grain Silo represents the direction in which major contracts for industrialized/construction projects should go. The clear responsibility for all aspects of the project rest on the construction/contractor. The owner/client interests' are represented by the professional advice and consultations of a qualified engineering consultant. Such a consultant also ends up acting as a mediator in the event of disagreements between client and contractor.

One major factor in this type of contracting is that the client/government of Egypt and USAID/Egypt should realize and plan that the hiring of an engineering consultant firm to begin a feasibility study in the initial design of the project usually results in that engineering firm continuing through the entire project, therefore that contract for the feasibility study should be done with great thought and consideration of a number of engineering firms.

The emphasis on delegating responsibility requires that careful attention be given to the program design and to the contract documents that spell out the program. A number of people believe that it would help to standardize contracts at least to the point of using "FIDIC"

(Federation Internationale Des Ingenieurs-Conseils) documents as the basis of all project contracts. This would help project officers be more familiar with project contract documents.

In the "Study of the Host Country Contract Payment Process" by Arthur Young, April 1984, the following finding and recommendation regarding contracting was put forward:

"Finding: Contracting does not review all solicitations and contracts.

Many problems that arise in the HCC system originate with the contract itself. Although the actual contract is between the GOE and the contractor, AID becomes a 'third party' as a result of the implementing document. In addition, certain AID approved terms and conditions and procurement practices must be followed. In the past, all contractual documents were not approved in advance by the legal office and all HCCs are still not approved by the CO. We were informed that, since AID project officers are not completely familiar with AID procurement requirements, and on occasion AID procurement practices were not adequately followed, solicitations and contracts not approved by legal and/or contracting have been written containing questionable terms and conditions.

As a result of this condition, solicitations may result in offers from prospective contractors which cannot be properly evaluated or a procurement irregularity may take place that requires the entire solicitation to be rebid. This results in embarrassment to AID, delay in project implementation and prospective contractors bearing additional proposal preparation costs.

Recommendation: Continue legal review and require contracting office review and approval of all solicitations and contracts prior to issuance and execution.

We believe it is important that LEG and CO review and approve all solicitation documents as well as contracts. As mentioned earlier, once a poor quality contract has been executed, problems can arise with contract interpretation and execution."

ADDITIONAL RECOMMENDATIONS

I agree with the finding and the recommendation and further propose that greater attention by LEGAL and CO in the design and writing of the initial contract will ultimately reduce their work load by eliminating most procurement irregularities and will reduce the number of problems arising from contract interpretation and execution.

Also with a well written contract, it should help facilitate more project control for the project officer and help USAID management give more authority to the individual project officer for the day-to-day monitoring of the project implementation after the award of the contract.

In many of the projects reviewed, the disjointed and combative nature of the participants makes project control difficult, if a unified structure is not set up as a part of the project development phase. The Government of Egypt Ministry is the legal client and authority, therefore the representative of GOE is obviously the ultimate decision maker.

Yet the management structure suggested by most large scale industrial construction projects is a team approach, which ideally operates on a negotiated but unanimous decision.

The project implementation team consisting of individuals with decision making authority representing their institution/organization are:

Government of Egypt Ministry -- Project Manager

USAID/Egypt -- Project Officer

Consulting Engineering -- Project Engineer

Construction Contractor -- Project Manager

These individuals should have regularly scheduled meetings to review the progress of the project, and agree on any changes necessary for project implementation. This project implementation team approach is being used on the SAFAGA Grain Silos and other projects and seems to greatly enhance a more orderly and quicker solution to problems that arise during the construction period.

Again turning to the Arthur Young, April 1984 study:

"Finding: There is a lack of a unified management approach to the HCC process.

Although it appears individuals involved in the HCC process are aware of their part in the overall process, there is frequently a lack of understanding of the roles of the other individuals involved in the process. Much of this lack of understanding is caused by the fact that the Cairo mission is the largest AID mission in the world in terms of personnel and workload. AID personnel are used to working in considerably smaller missions where it is much easier for mission personnel to be knowledgeable about the entire mission operation and its programs.

The size and complexity of the Cairo mission requires a more structured and standard approach to contract/project management be utilized to provide the same degree of control that can exist in much smaller AID missions. As with any mission, the project officer is the key mission operative who works with the local government and contractors to implement projects. In Cairo, however, the project officer is frequently required to administer a larger number of more complex contracts than his counterpart at a smaller AID mission. The heavy contract administration workload for the Cairo project officer makes it necessary for him to work as a more integral part of a management team with his associates in legal, contracting and financial management (FM). Likewise, it is important that personnel from LEG, CO and FM provide the Cairo project officer with the support needed to administer these contracts effectively. Although the project officer does seek the assistance of LEG, CO and FM, it is often only sought when a problem develops.

Recommendation: Institute a unified and standardized management approach to the HCC process.

The Cairo mission cannot operate like a small mission. The size, complexity and diversity of its operations require that

certain aspects be standardized and routinized. In a situation where the administration of every project and contract is handled differently, it is impossible for each individual in the overall process to know what others involved in the process are doing; or for that matter to understand the entire process itself. The overall system of internal control can be viewed as a series of interrelated activities that, when taken together, provide reasonable assurance that resources are being safeguarded and expended for authorized purposes. It is important for everyone involved in the control process to understand the entire process itself and how other areas of the overall process operate. This allows an individual in one area to compensate for any weaknesses in another area.

In addition to a more standardized approach, USAID/Cairo's control over the HCC process will be greatly enhanced by the implementation of a management team approach to contract and project administration. The four key players in the process are the project officer, the legal advisor (LEG), the Contracting Officer (CO) and FM personnel. These personnel all bring different experience, training and perspectives, to the HCC process. These three individuals, working together, within a well defined set of standard operating procedures can provide a greater degree of control over the HCC process than now exists."

ADDITIONAL RECOMMENDATIONS

Supporting the findings and recommendations, I must again point out that this internal management team is primarily one that should work together in the formation of the project during the project development. The participation of the internal development team in the details of project design, contracts, reporting requirements, and an understanding of AID procurement practices should greatly strengthen the host country contract process.

Once the award has been made to begin implementation the administration of the contract should be the Project Officer alone representing USAID/Egypt as a member of the project implementation team. Should problems arise the project officer then has his/her internal back-up group from which to seek assistance.

PROJECT IMPLEMENTATION

Once a construction award is made for a project, the coordinating team member from the construction contractor should be named and the implementation team should begin its regularly scheduled meetings. One of the first items should be an agreement on the reporting format. It was found that the use of reporting documents was little to non-existant.

Some projects did not even have reporting documents, some had excellent documents, but delivered five months after the period being reported, and others just turned in superficial reports to meet contractual obligations for invoicing. One of the findings was that many USAID/Egypt project officers DO NOT READ their project reports when available, but assume they understand their project by attending regular meetings and visiting the site.

If the project implementation team will use the monthly report as a working document, not a billing requirement, I believe that many project problems can be identified and solved in a timely manner.

Reporting--The form of the report depends on the type of project but the general information should include the following:

1) Progress report on implementation activities including narrative, bar charts and percent completion curve indicating actual and scheduled accomplishments. Presentations should be simple and visual by discreet components.

2) Current Critical Path Method (CPM) diagram relative to implementation of the overall project but focusing on the potential bottleneck areas.

3) Narrative description of major implementation activities during the month and those scheduled for the coming month.

4) Major problems and constraints with regard to implementation progress together with recommended solutions.

5) Budget report on payment activities as a percent of budget as against percent of work completed.

6) Progress report on work directly related to but not a part of the project.

7) Comments on status of equipment procurement arrivals at port and deliveries to the project sites.

8) Identification of manpower needs versus actual supply by trade categories.

Technical problems common to many of the projects are solvable by mostly good management practices by the project implementation team.

Material Control--One commonly cited problem was damaged or missing material. This problem can be lessened by timely commodity shipping schedules. Many contractors ship commodity purchases in the beginning of the contract because payment is made on presentation of invoice, even

though the commodity might not be used until 24 months later at the end of the project. This propensity for early shipping can be addressed in the contract documents or as a more practical matter by the project implementation team to oversee the construction contractor shipping program. Once the commodity has arrived a good inventory control, security and storage system should solve the majority of the problems. The Automatic Bakeries project is probably the best example of what not to do in terms of material control. The first problem was with the USAID/Egypt decision to fund a capital construction project as a Commodity Import Program. The contractor AEG then proceeded to ship equipment for various sites in Egypt, but with no regard for what equipment in what containers, goes to which sites. These two problems, together with little or no inventory control, resulted in equipment arriving at the wrong sites and then ultimately being stripped for parts at a later date. This type of poor management control could easily be prevented by project officers following reports of progress schedules and shipping invoice reports.

Site Control--Similar to the problem of material control is site control. Here a tight organization of all the subcontractors and their on-site workers is mandatory, even if it necessitates some sort of pass system. Inventory control of the project commodities, and equipment is a must to keep track of project owned items. Color code assignments to subcontractors for their own tools and equipment helps to control the supplies they bring to and from the site. The assignment of a high level of priority for cleanliness on the site will also help to lower the loss

and theft of supplies, tools and equipment and increase efficiency due to easier availability when needed and a reduction in canabalism of installed and stored equipment.

Quality of Construction--It is always a very difficult subject, because it is mostly after the fact and often subjective. The basic general considerations should be that if the aspect (quality-wise) of the project in question is critical to the operation of the project the questioned construction should be stopped and corrected immediately. If the questioned part is not critical to operation then some greater latitude can be shown in order to continue the project on schedule for the greater goal of project implementation.

Material Supply--The primary problem in Egypt for material is in the area of government controlled materials, such as structural steel, rebars, cement, etc. This problem has been handled successfully in some host country contracts by including in the contract documents that if the appropriate supplies are not available from the local sources in a timely manner then the construction contractor may purchase the necessary material from other (i.e., imported) sources with the price differential being added to the contract price. This type of fall back contractual agreement assures the contractor of his ability to perform.

Labor--The availability of skilled labor is definitely a bottleneck to many of the industrialized projects. The trades of electrician and pipefitters seem to be the two areas where labor supply falls short consistently. Both GOE and USAID should emphasize vocational training

in these two areas. All consulting engineering firms and construction contractors should also be aware of these shortages so they can plan accordingly for a higher percentage of expatriates on the job in those trades, particularly during the equipment installation phase of the construction.

Most of the technical factors causing construction delays seem to be solvable with knowledge of these potential problems, some contract modification provisions and reasonable management on the part of the project implementation team.

PROJECT OPERATION AND TRAINING

Every project has as its goal the productive operation of plant and equipment, and most of the industrial projects in Egypt require a substantial number of trained/skilled employees.

Every one of the projects reviewed has some mention of a training component, some even have money budgeted for training, but this is almost always for overseas training, usually stateside, for management personnel.

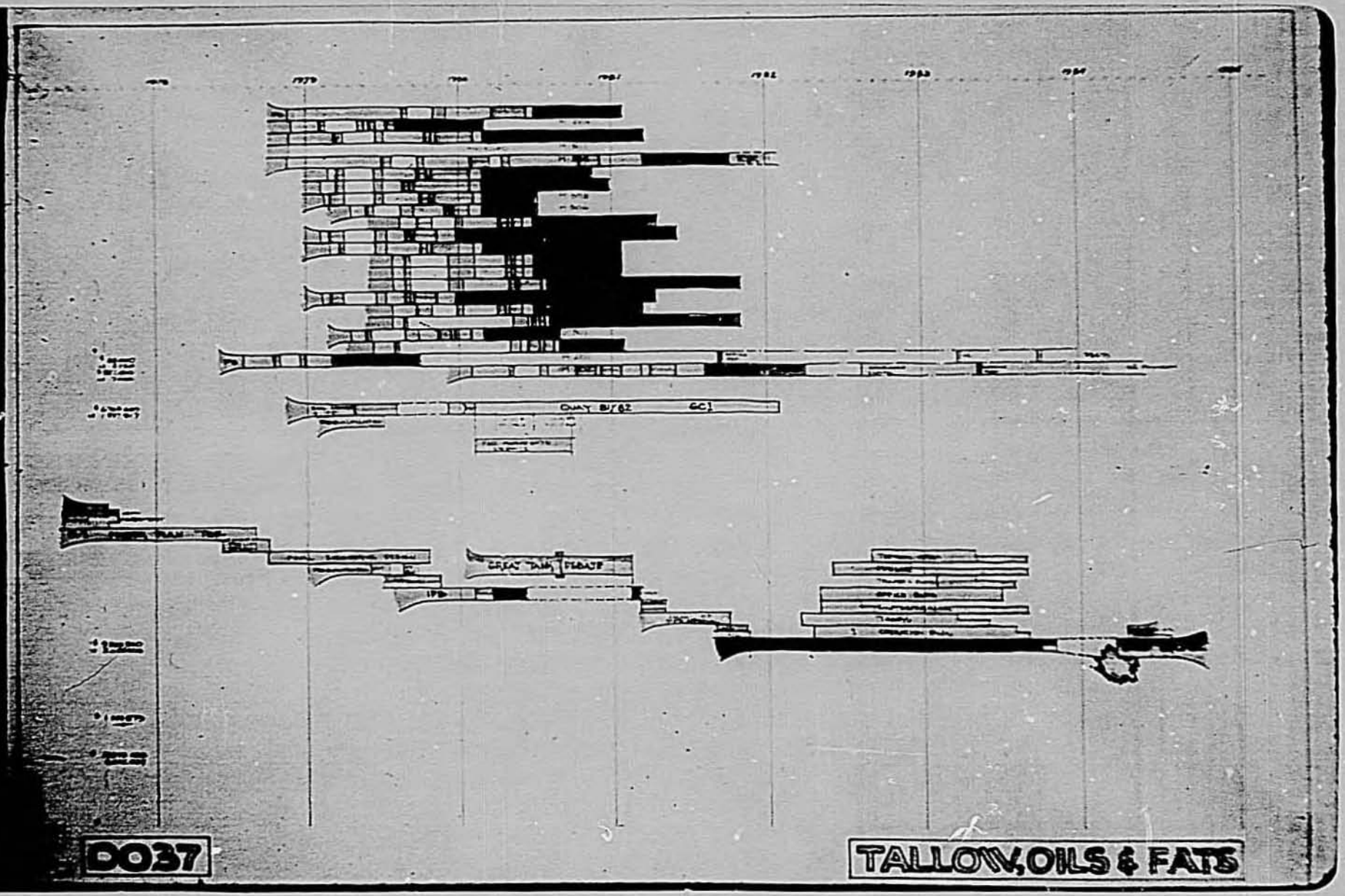
The completion of a number of Egyptian industrial process plants in the recent past and the near future will show the desperate need for technical training programs at all levels of operation, but particularly at the lower operating levels. What should also be obvious is that a high percentage of the training needs will demand training programs that are:

- Hands On
- In Arabic
- On Site
- Long Term
- Detailed

It appears from the review that many major construction contractors and/or consulting engineers will be in situations because of their warranties and/or performance bonds that they will want to participate with USAID/E and GOE in setting up training programs to better protect their economic interest during the warranty periods.

The Quattamia Cement Plant now in the process of starting up is a good case of the need and opportunity to provide the project training that is required. The Sinai Cement Company and Polysius, the equipment contractor, are both interested in an on-going operating/training program, but lack the necessary point of view of an educator/facilitator.

What is missing from this opportunity is the Trainer. The individual that understands how to effect a particular technology transfer. Most projects will require a trainer who is multi-lingual, but not necessarily knowledgeable about the particular plant and equipment. The engineering consultants, construction contractors, and the GOE operating company know the technical information, but don't always understand the importance, or have the methods of transferring the information to the individuals who will maintain and operate the equipment. The most direct approach to the transfer problem would seem to include in the prime construction contract a training provision that requires the contractor to stay with the project operation through the entire warranty period, providing the technical know how and the training expertise for a phased turnover of the plant operation. Such a training period could be economically motivated by three different aspects: 1) protect economic interest during warranty; 2) regular invoicing for technical manpower provided; 3) but, most importantly a percentage payment on production output of locally trained employees. The last economic incentive could be paid out of economic proceeds of the operating company for meeting production levels at or above the designed capacity.



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TALLOW, OILS & FATS

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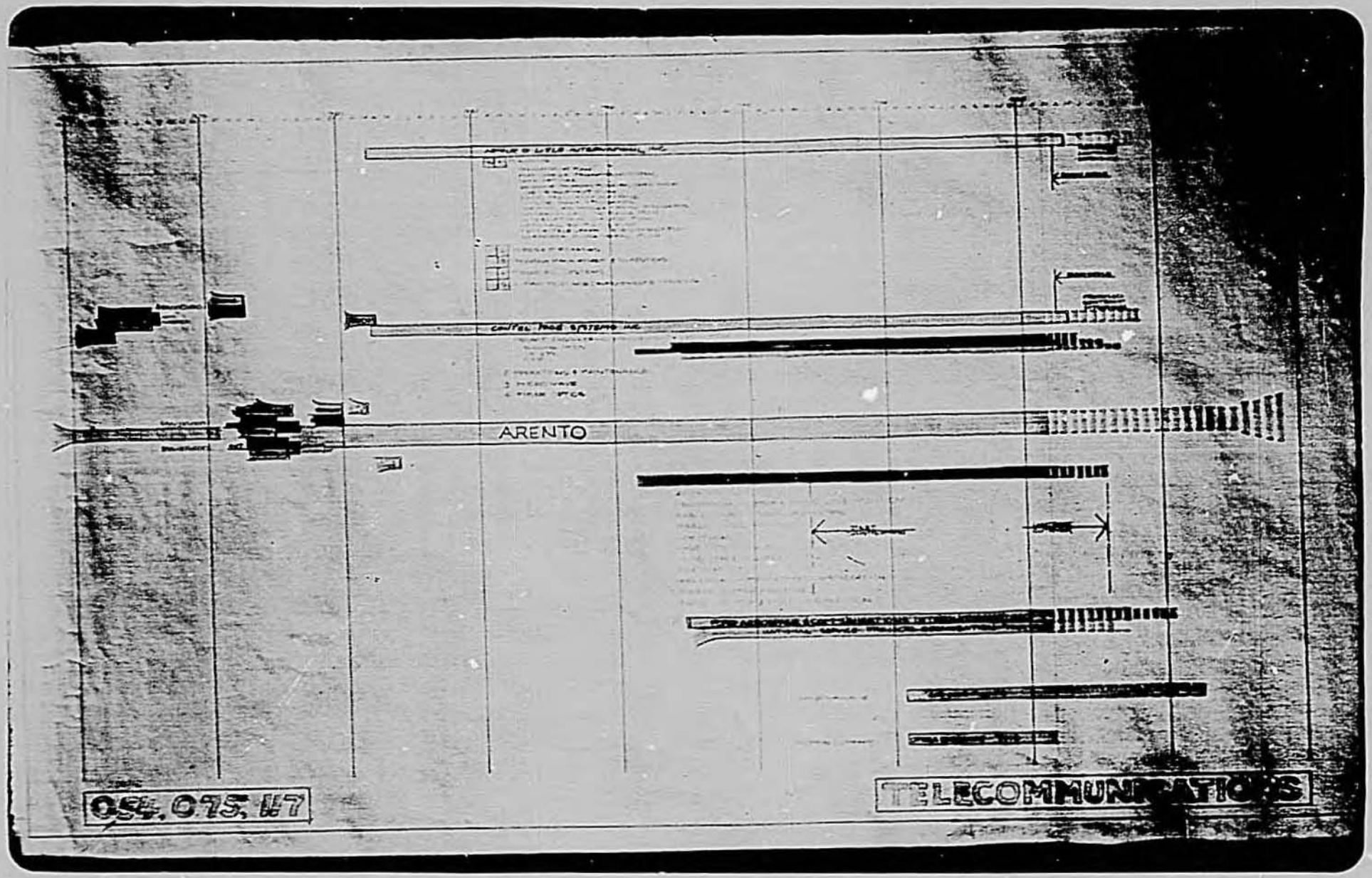

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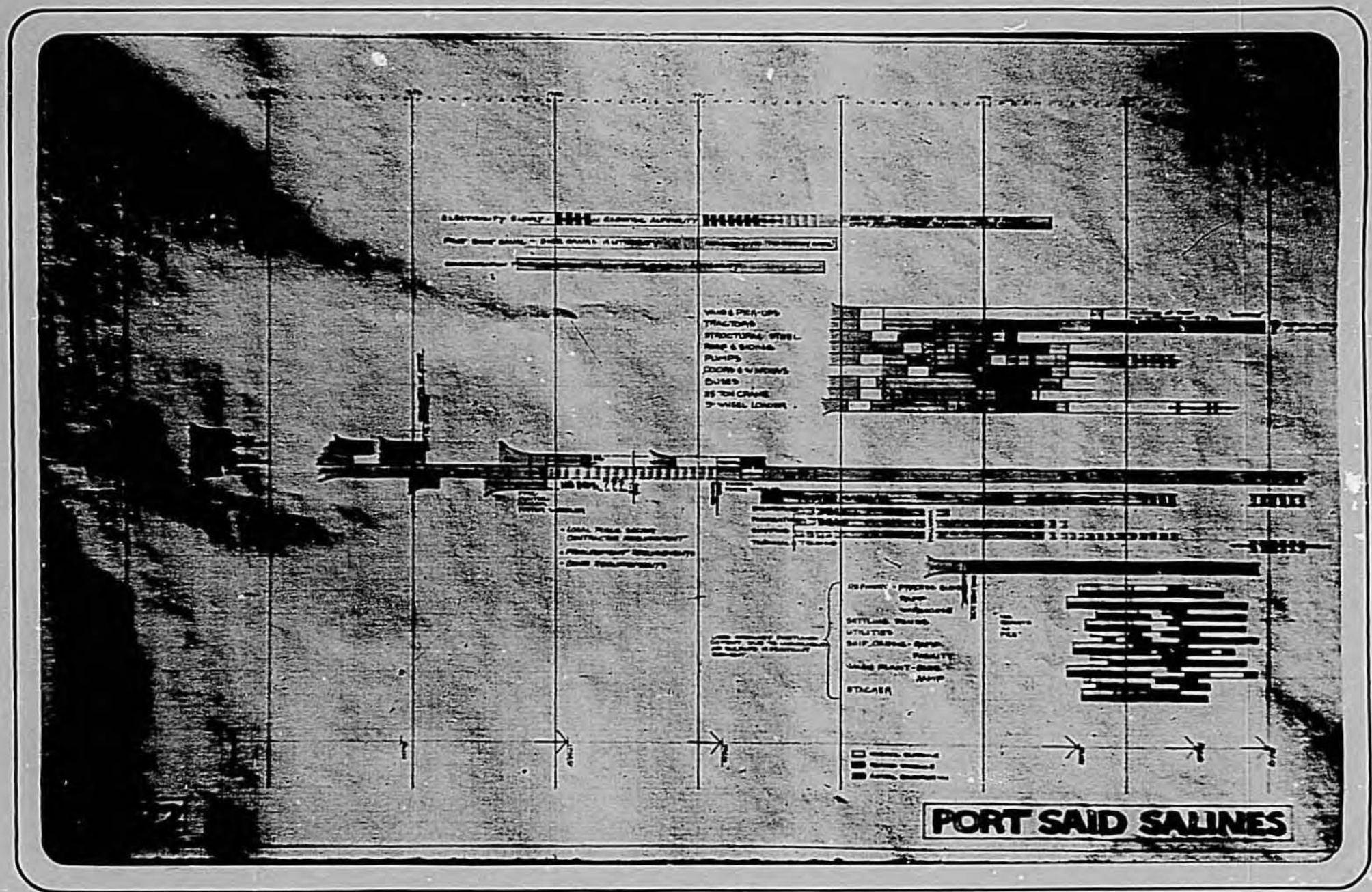
TELECOMMUNICATIONS

PERMANENT POWER SUPPLY
TRANSMISSION LINE
LOCAL POWER SOURCE
SIZE
TYPE
FUNDING
RAIL FACILITIES
NEW QUAY
SAFAGA GRAIN SILO


VANS & PICK-UPS
TRACTORS
STRUCTURAL STEEL
RAMP & SIGNAL
PUMPS
DOORS & WINDOWS
BUSES
25 TON CRANE
3-WHEEL LOADER
SETTLING TANKS
UTILITIES
STACKER
PORT SAID SALINES

CIP
CAPITAL PROJECT
GASC
EABC
JOINT PROJECT IMPLEMENTATION COMMITTEE
055,604
AUTOMATIC BAKERIES

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QUATTAMIA CEMENT