

# THE ARCHITECTS COLLABORATIVE

63 BRATTLE STREET, CAMBRIDGE 38, MASSACHUSETTS

CONTRACT ICA c 1873  
SPECIAL PROGRAM FOR AFRICA  
UNIVERSITY OF LIBYA  
EL-AWELIA VOCATIONAL AGRICULTURAL SCHOOL  
GIRLS BOARDING SCHOOL, SEBHA

OCTOBER 25, 1961

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SECTION A

NARRATIVE OF TRIP TO LIBYA

## NARRATIVE OF TRIP TO LIBYA

Mr. Robert S. McMillan and Mr. John C. Harkness, Partners of The Architects Collaborative, Cambridge, Massachusetts, USA, along with Mr. William Graff, Architectural Engineer, with authorization of the ICA, Washington, D.C., through Task Order No. 2 dated 5 September 1961, visited Libya from 10 September 1961 to 16 September 1961.

The purpose of this trip was to prepare pre-planning data required so that a proposal to furnish Architectural and Engineering services could be developed for the following projects:

- 1) Planning and development of the facilities needed for the proposed new campus of the University of Libya on a site to be selected.
- 2) Rehabilitation and new construction at the El-Awella Vocational Agricultural School near Barce.
- 3) Construction of a new Girls School at Sebha in the Fezzan.

Meetings were held with Dr. Frank Holmes and USOM staff along with members of the Libyan Ministry of Education. Visits were arranged to the sites considered for the University at Benghazi, Beda and Suza, followed by visits to El-Awella and Sebha.

An understanding of the Basic Educational Program for the three projects was reached.

The following is a detailed log of the trip:

### Sunday, September 10, 1961 - Rome, Italy and Tripoli, Libya

The trip started with Mr. McMillan, Mr. Harkness and Mr. Graff meeting at Rome Fiumicino Airport on Sunday, September 10, 1961, at 3:00 p.m. We flew to Tripoli with Alitalia, arriving at Tripoli Idris Airport at 18:35 (local time). We were met by the USOM driver who took us to the Hotel Uaddan.

### Monday, September 11, 1961 - Tripoli and Benghazi, Libya

Monday morning at 8:00, we were contacted by Mr. Clyde E. Burns of USOM and shortly afterwards we went to the USOM office. At the time of our arrival in Tripoli, Dr. E. C. Bryant, the Director, was out of town; therefore, Dr. Frank Holmes, USOM Educational Advisor, arranged our schedule of conferences and site visits with the USOM staff and the representatives of the GOL. Dr. Holmes briefed us about the scope of our work. The task includes three jobs: (1) University, Faculty of Arts and Education, site to be selected; (2) Vocational Agricultural School in El-Awella, Cirenaiqa; (3) Residential School for Girls in Sebha, Fezzan.

At 9:00, we went to the police station to register our passports and visas.

(Monday, September 11, 1961, cont'd)

At 9:30 we had a second meeting. Present were: Dr. Frank Holmes, Mr. Clyde E. Burns, Mr. Wilburt Templeton, Mr. Jake Todd, athletic programs, Mr. McMillan, Mr. Harkness and Mr. Graff.

The Task Order was discussed and with it the preliminary estimate. It was explained that, while TAC used a larger number of classrooms and a \$20/square foot price as a basis, Dr. Holmes of the USOM used a much smaller number of classrooms and a \$6.20/square foot price. This caused the discrepancy. All present agreed that, at first, the program of the University should be developed. TAC to work out this proposal and also work out a fee schedule for the various phases. The fee schedule has been suggested as on the per diem basis rather than our customary percentage of construction cost basis for the reason that it would be out of proportion to use Libyan construction costs and U.S. office production costs.

### 1. University

Curriculum of the University was explained by Dr. Holmes. They teach six days a week, three to four hours a day. Each professor likes to have his own classroom. They are not nearly so flexible as their U.S. counterparts in sharing and combining the facilities for courses taught. See the USOM booklet on this subject.

#### a. Sizes of Classrooms

- 1) Standard classroom - 6 mt. x 9 mt. (20 ft. x 30 ft.). These would house 25 to 35 students.
- 2) Laboratory type classrooms - 6 mt. x 12 mt. (20 ft. x 40 ft.). For accounting, etc.
- 3) Lecture hall for 100 to 150 or even more. To be established.

#### b. The number of students:

- 1) First stage - 1,000
- 2) Ultimate - 3,000

#### c. Dr. Holmes explained the necessary buildings:

- 1) Administration
- 2) Classrooms
- 3) Dormitories - 100% residence
- 4) Library
- 5) Dining Room and Laundry
- 6) Auditorium - for 1,000
- 7) Utilities
- 8) Outdoor athletic facilities
- 9) Mosque

#### d. Discussing the phases, it was generally agreed that we should develop a full design for 3,000 students for many reasons:

- 1) To present complete picture
- 2) To size all engineering for the ultimate load - electrical, water, etc.

- 3) To budget funds for a complete job
- 4) Several facilities, the library, for example, cannot be built in stages very well since curriculum would not change much.

The students would be housed in single rooms, possibly, or three together. Consider, perhaps, larger rooms for freshmen.

Women Students: They had 14 in 1959. It may be a long time before there will be a large enough number to have girls in residence.

The lectures presently are given almost always by the professors and the students make their own notes. In this way a professor can teach large groups -- even 50 to 100, perhaps even larger. They have at present a very high ratio of professors vs. students, approximately 1:10. There are many Egyptian professors in Libya. The school year runs from October through June.

e. Mr. Todd outlined the necessary athletic facilities:

- 1) Soccer
- 2) Basketball
- 3) Tennis
- 4) Football

Showers and storage for equipment are necessary

## 2. Vocational Agricultural School in El-Awēliā, Cirenaica

There is an existing community center which should be enlarged and altered to house and educate 250 boys aged 14 to 24, the average being 16 to 18.

The full program here:

- a. Administration
- b. Dormitories
- c. Classrooms
- d. Library
- e. Dining Hall and Kitchen, Laundry
- f. Assembly Hall
- g. Infirmary - sick room to serve also neighboring houses and village elementary school.
- h. Toilets - outside
- i. Staff - 1 headmaster and 20 teachers.

Some facilities exist already. Site to be visited, then write up program.

## 3. Residential School for Girls in Sebha, Fezzan

For 100 girls, all resident.

Curriculum is of the home economics type -- lectures, cooking, sewing, crafts, work.

Site to be visited Friday, September 15th.

Our program for the week: Fly to Benghazi, meet the rector of the University; drive to El-Awēliā, see the vocational school site; drive to Beda to

see the Minister, Dr. Bishti, to establish the site of the University as well as the program.

After the conference, we had a late lunch then went to the airport and flew to Benghazi with Dr. Holmes. We were met by Mr. Robert Stewart of the USOM.

Tuesday, September 12, 1961 - Benghazi, Libya

Tuesday morning, while Dr. Holmes was trying to schedule an appointment for us with Dr. Bishti, we started to review the program and make some notes on local construction methods, as seen in the Benghazi area. At about 11:00 we visited the secondary school construction in town. After lunch we visited the first proposed site for the University, a flat piece of land with very little vegetation on the road to the Benina Airport. Made notes and photographs.

At 3:00 went to a conference with the Rector of the University, Dr. Bakri Guddura, and the Dean of the Faculty, Dr. Saduwillia. With the help of an interpreter, Mohammed, Dr. Holmes, Mr. McMillan and Mr. Harkness questioned the Rector and the Dean about the University curriculum, the future program and their opinion about facilities to be provided.

At present, they have about 350 arts course students in Benghazi and 340 commerce course students. The expected total enrollment for the next year is 1,000. They also have to count on students graduating from night classes -- this last year 50, and their number will increase, too. They estimated that with the students graduating, the best ones sent abroad with scholarships and then employed as faculty members, within seven years, the University of Libya could completely be staffed by Libyans. To the question of the number of graduates vs. enrolled, the Rector replied they all graduate, even if it takes a year longer for some. At present, most graduates go into government work.

The new University should be 100% resident.

Teaching Methods: No real limitation to class size at present. One professor may teach a subject to 250, split in two groups. The first year and large part of second year courses are general knowledge material, which could be taught to large groups. At present, they have 96 professors, 50 of whom are in commerce. Last year commerce had 21 hours weekly. Dr. Holmes pressed the importance of strong undergraduate courses.

Their doctorate program would almost automatically include scholarships abroad, thus eventually raising the University standards to Western level.

The Rector and the Dean explained that, by 1962-63, a law school would be set up, and by 1963- an agricultural school. Eventually, all technical courses would be available except medicine, due to the small population. They hope

that each school, arts as well as commerce, would have its own facilities, including separate libraries. Dr. Holmes asked for certain specific information, which will be supplied in writing by the Rector within three weeks, before Dr. Holmes' departure.

After the conference, we visited the classrooms of the present University buildings, some amphitheater type, large classrooms. They remarked that the library of the new University should seat 10%, or possibly 15%, of the students (300 out of 3,000). Girls are few now, the Dean said, but will increase in number. Eventually facilities will have to be provided for them.

Athletic facilities: Showers and storage room necessary.

The site should be determined by the Government.

Wednesday, September 13, 1961 - Benghazi, El-Awelia, Beda and Suza, Libya

We had a short meeting at the USOM office with Dr. Holmes, Mr. Stewart, Mr. McMillan, Mr. Harkness and Mr. Graff. Examined the existing drawings of the El-Awelia community center. The program was briefly reviewed as on Monday. Additional notes: Students to have a bed, a locker; studying will be done in the library -- no other study hall to be provided; club-games room required; no heating necessary; kitchen and laundry also to serve the single teachers.

Messrs. Holmes, McMillan, Harkness and Graff were then driven in a USOM Car to El-Awelia; later on to Beda and Suza in the Cyrene area.

In El-Awelia, we visited all the existing buildings and made some measurements and notes. Mr. Gill, the USOM advisor who lives there, and Mr. Giswani, the Headmaster, have told us about the present enrollment; about 100, expected to grow to 250. They told us that water was available from a new well, 150 meters deep. An important point was that the compound should be enclosed by a solid wall so the water cisterns could be controlled and kept clean. At present, two are damaged and the people from nearby bring their animals to water right to the cistern, thus causing a mess and a serious problem. Another reason is to keep the students under control.

In late afternoon we proceeded to and spent the night in Cyrene.

Thursday, September 14, 1961 - Beda and Suza, Libya

Meeting at the Parliament Building in Beda with Dr. Mahmud Bishti, Minister of Education, Dr. Bakri Guddura, Rector of the University, Mr. M. O. Mansur, Secretary of Cultural Relations, Mr. Abdul Ghani Saleb, Governor of Beda, Mr. Misurati Alghumari, Director of Beda-Muni Ciplal Consul, Dr. Holmes, Mr. McMillan, Mr. Harkness and Mr. Graff.

After the introduction, Dr. Bishti welcomed us, expressed the importance of the project and their ambition to proceed as fast as possible. In reply to Mr. McMillan's question on the size and program, Dr. Bishti elaborated: The

number of students has been increasing in both faculties, will reach 1,000 in 1963. They plan to open new faculties, law and technical. As for this University, they need: a) Administration Building; b) Classrooms; c) one large library; d) dormitories; e) dining halls with kitchens run by the University; f) laundry; g) utility buildings; h) auditorium.

Library may be divided into sections.

Dormitories: They prefer small rooms -- perhaps 3 or 4 students per room; however, some large rooms with 8 or 10 students in each. Sounded acceptable for the freshmen. Rooms to have closets or lockers for each student, folding tables if possible. Studying would not be done in dorms; they would like to have study halls. Dr. Bishti did not think supervision necessary during study hours but Dr. Holmes thought it was necessary. Supervisors will live in the dormitories. Professors would live in the nearest city.

Sizes of classrooms were discussed with the same result as with the Rector -- 6 mt. x 9 mt. standard classrooms; 6 mt. x 12 mt. lab type rooms. Larger auditorium types, maybe two sizes.

Administration Building: Will house Rector and staff, though faculty offices are necessary in the various buildings.

Visual Education: Some rooms to be darkened eventually.

Infirmary, Laundry are also needed.

Dining halls - maximum for 500 students. Meals would be served in shifts.

The conference was interrupted and the whole group drove to Suza, a small town of 1,000 at present, situated on the sea not far from Cyrene near the ancient ruins of Apollonia. It is a good half-hour drive, approximately 30 to 35 kms. from Beda. There are several possible sites -- the most attractive visually is about 2 kms. away west of Suza Center. On the seashore, it has several rock knolls, some rocks in the sea and the mountains behind. There is a water source nearby, a spring at about 2 kms. distance which, at present, feeds the city of Suza. The Governor said that in the past there were as many people as 4,000 in that area, all using the same water source. The water is piped to the city in a 6 in. diameter line, plus two other small lines which go to other places. The quantity of the water will have to be measured. Dr. Holmes and one of the USOM agricultural advisers, Mr. Jones, promised they would complete that investigation for us.

After the visit to the site, the whole group was invited for dinner at the hotel in Cyrene. During and after dinner the possibilities of the site were discussed as well as the agenda. Dr. Bishti summarized the conference.

- a) The USOM will investigate the water quantity of the spring
- b) If water quantity seems sufficient, this will be reported to Dr. Bishti
- c) Dr. Bishti will get the Council of Ministers to approve officially the choice of the site and notify USOM (Dr. Holmes) in an official letter.

Dr. Bishti thanked USOM and TAC for their cooperation, expressed once more the ambition of the Libyan Government to proceed as soon as possible. He asked Mr. McMillan when construction could begin. Mr. McMillan replied that this depends on many factors; however, preparation of plans, approvals, etc. may take approximately one year.

After the conference, we drove back to Benghazi, arriving there at 9:00 p.m.

Friday, September 15, 1961 - Benghazi, Tripoli and Sebha, Libya

We left Benghazi at 6:00 a.m., drove to the airport, flew to Tripoli, changed planes and flew on to Sebha, Fezzan. Arrived at Sebha at about 12:00 M. At the airport, we met Mr. Arabi, the Nazir of the Fezzan; also Mr. Hakim, the Head of Public Works Department of Sebha. Both expressed pleasure to see us and hoped that the project would soon go ahead.

Mr. Hakim in Sebha accompanied us to see the site selected for the Girls Residential School. We took notes and photographs of the site, which has a few rock outcroppings but is otherwise fairly level. We investigated some local constructions for quality and methods, foundation problems, water, power, and also received some sq. mt. prices.

We left Sebha by plane at 6:00 p.m. and arrived at Tripoli at 8:30 p.m., reaching the city by approximately 9:15. We had dinner at the home of Dr. Holmes and after dinner Mr. McMillan and Mr. Harkness reviewed the whole program of the University, the proposal in detail and the two school programs. We also reviewed with USOM Geologist, Mr. James R. Jones, the water problem at the Suza site. See Dr. Holmes letter to Mr. R. S. McMillan dated 3 October 1961, pages \_\_\_ and \_\_\_. We ended the conference at midnight.

Saturday, September 16, 1961 - Tripoli, Libya

In the morning, before leaving for the airport, we went to the USOM office and collected more data about the program of the Sebha school; also investigated a large construction for quality in general and cost of labor. A serious problem in Libya seems to be the high cost of skilled labor and transportation of materials, especially to distant sites. This ups the cost sometimes to twice the cost in town, we were warned by the construction superintendent.

We left Tripoli at 11:00 a.m. for Rome.

SECTION B

UNIVERSITY OF LIBYA

CHECK LIST

PROPOSED UNIVERSITY OF LIBYA PROJECT

A. ACADEMIC REQUIREMENTS

School Grades to be accomodated - 4 years - University level  
Anticipated enrollment - Present: 1000  
Five years hence: 2000 students  
Ultimate: 3000 students  
Courses or colleges included: School of Liberal Arts and Commerce  
Facilities contemplated: See attached program  
Number of buildings contemplated: to be designed  
Have priorities been established? Yes, in Proposal

B. ICA FUNDS

Unknown at this time

C. OTHER FUNDS

D. INFORMATION NOW AVAILABLE

Reports: Post  
Preliminary estimates of space requirements: see TAC proposal  
Maps: None  
Soil boring samples and tests: None  
Contract documents for A/E work already authorized: Task Order #2  
PIO/T #670-66-016-2-80433  
Contract documents for construction work already authorized? NO  
Local building regulations - None  
Post report describing local conditions - Yes  
Agency or person to contact for further information:  
Dr. Bryant, Chief, USOM, Libya  
Dr. Holmes, Chief, Educational Advisor, USOM, Libya  
Mr. F. J. O'Brien, Project Engineer, Engineering  
Division, ICA, Washington, D. C.

E. CONTACT WITH A & E

Will be executed by:

ICA/W  
Agency of Cooperating Country: Development Counsel  
Ministry of Education,  
Libya

Limitations or restrictions applying to a U.S. A & E  
Contractor: to be determined

F. SITE - No specific site has been selected, three are being considered:  
Benghazi, Beda and Suza, which is described herein.

Location: -Suza (subject to verification of adequate water supply)  
Selected: tentatively  
Acquired: by Government of Libya  
Surveyed: No Map Available: No  
General description of site available: Yes (see report by Graff)

(F. Site cont'd)

What utilities available:

Power: Quantity not established  
Water: Quantity not established  
Sewers: No  
Gas: No  
Telephone: Yes

Access roads: constructed to property line only  
Status of site planning: None

G. A & E SERVICES TO INCLUDE

Site selection: further consultation, if required ✓  
Site surveys: Yes  
Sub-surface investigations: Yes  
Master plan, including landscaping: Yes  
Layout of electrical, water and sewer lines: Yes  
Layout of common utility facilities, such as water treatment, sewage disposal, electric power, roads: Yes  
Preliminary plans and specifications: Yes  
Preliminary cost estimates for:  
Grounds and utilities: Yes  
Common utility facilities, such as water treatment, sewage disposal, electric power, roads: Yes  
Buildings: Yes  
Built-in equipment: Yes  
Academic equipment: Yes

H. APPROVAL OF A & E PLANS

Master Plan C.C.: Yes USOM: Yes  
Preliminary Plans C.C.: Yes USOM: Yes  
Probable time required for obtaining approvals: 10 day limit  
Name of C.C. representative authorized to approve plans: to be determined ✓

I. TYPE OF CONSTRUCTION CONTEMPLATED

Language to be used in plans and documents: English, Italian and possibly Arabic ✓  
System of measurements to be used: Metric  
Advance schedule of work will be required: Yes  
Progress reporting will be required: Yes to both USOM & ICA/W  
Required date of submission of preliminary plans and estimates: see TAC Proposal  
On-The-Job training of local personnel in A & E work and in construction to be provided for: Not applicable  
Place where A & E work is to be performed: Preliminary plans: U.S. & Italy  
Original drawings and contract documents will become the property of: USOM

K. LOCAL RESOURCES AVAILABLE (as affecting type of design): masonry construction generally (see report)

L. CLIMATE (as affecting design)

Altitude: Suza at sea level  
Temperature range: Between 40° and 110° F.

(L. Climated cont'd)

Humidity range: low  
Annual rainfall: 5 to 15 inches  
Maximum monthly rainfall: 5 inches, months Dec., Jan., Feb., only; other months arid

M. MANPOWER AVAILABLE LOCALLY (as affecting design cost)

No architectural and engineering assistants are available locally

N. LOCAL FIRMS AVAILABLE FOR A & E SUBCONTRACT WORK

Architectural firms: None  
Engineering firms: None  
A & E firms: None  
Soils engineers and laboratories: some USOM personnel may be available

O. LOCAL FACILITIES AVAILABLE TO A & E

<u>NATURE</u>	<u>TO BE FURNISHED BY</u>			<u>TO BE PAID FOR BY</u>		
	<u>C.C.</u>	<u>USOM</u>	<u>A&amp;E</u>	<u>C.C.</u>	<u>USOM</u>	<u>A&amp;E</u>
Quarters for personnel			X			X
Subsistence for personnel			X			X
Office space and utilities		X			X	
Local transportation		X			X	
Local help	X	X				X
Interpreter service		X			X	
Typing service		X			X	
Chauffeurs		X			X	
Caretakers	X	X				X
Soil laboratory services			X			X
Local taxes: corporation and personal						
Permits, licenses & customs						
US Commissary or PX						

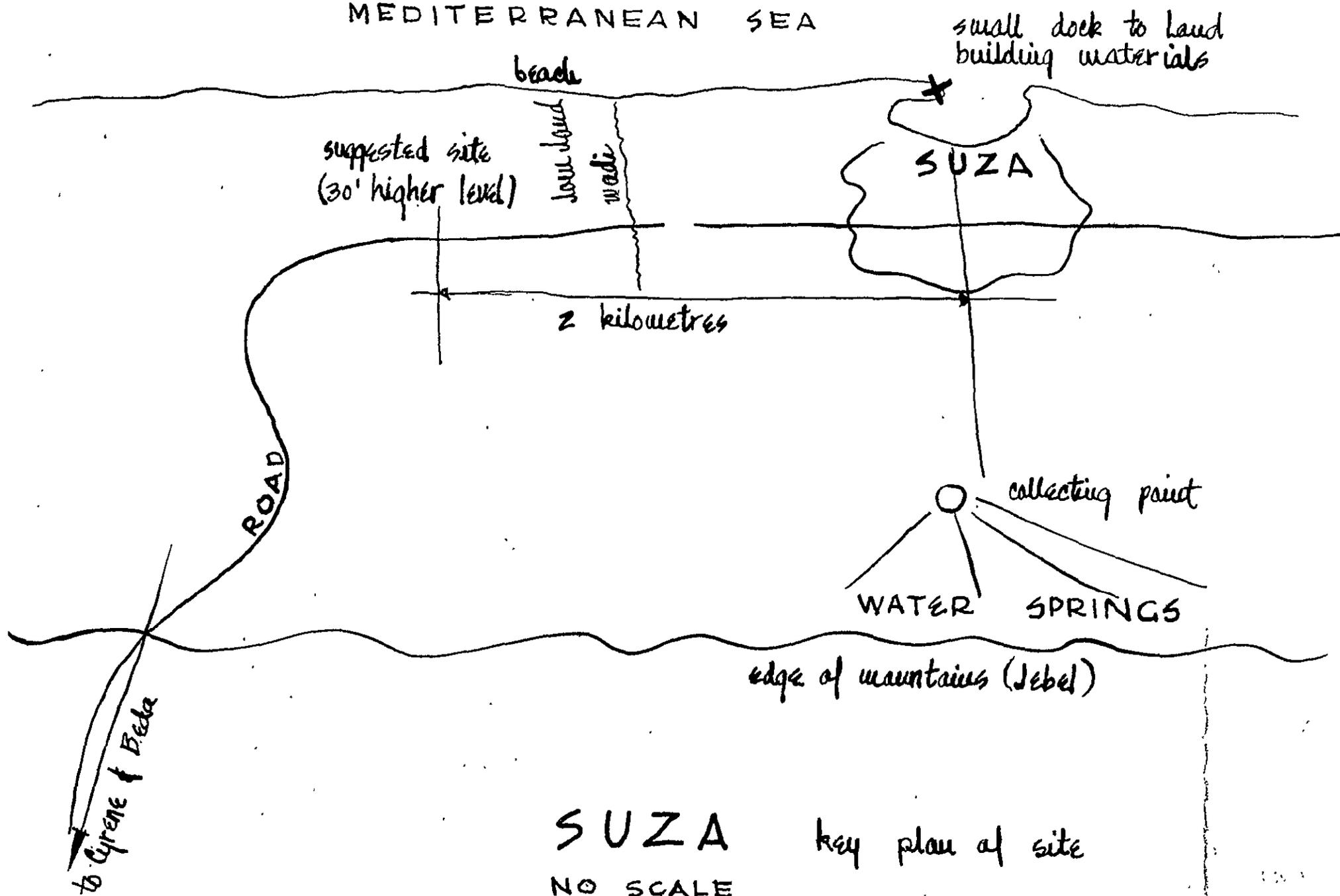
If paid for by A & E, costs for following items are estimated as follows:  
Subsistence for personnel: \$12 to \$16 per day  
Local transportation (auto hire): see Proposal  
LOCAL CURRENCY will be sold to the A & E at the exchange rate of:  
US \$1.00    \$2.80 = One Libyan Pound (possible fluctuation)

P. LOCAL LEGISLATION: None known

Q. ADDITIONAL INFORMATION: None

R. FACTORS AFFECTING CONSTRUCTION COSTS: See report

MEDITERRANEAN SEA



SUZA

key plan of site

NO SCALE

October 3, 1961

is estimated at twice the Sana supply, but the pipeline would have to be 18-19 kilometers long to use this water.

"Our recommendation is that the existing pipeline from Ain Dabbacia to Baida be tapped. The distance is approximately 13 kilometers from Sana. Tribal complications would probably be less than at Wadi Stua."

In addition to the findings of the two engineers, I have discussed the water problem with Mr. Goudarzi, the USCI geologist, and Mr. Tibbitta, another water engineer, whose knowledge of Libya's water resources is extensive and in whose opinion I place considerable confidence. Mr. Tibbitta states that, although the Baida water supply at this time is adequate for the city's needs, it will have to be supplemented eventually to care for the anticipated population growth in the area. It seems reasonable to conclude, therefore, that reliance on the Baida water supply is unwarranted for two reasons: (1) the city's future demands and (2) the cost of piping the water from Baida to Sana.

This morning I reported the results of the survey to Dr. Uchit, Minister of Education. Obviously, he is disappointed that a new site might have to be selected. I did not want to press him for an immediate decision for I felt that the impact of his disappointment should be overdone before asking for his opinion on a new location. I have a feeling that perhaps the Benghazi site might again come up for reconsideration.

In respect to some other problems on which you needed information, I can report the following:

1. Source

Mr. Griffith, the USCI Health and Sanitation Engineer, has been on home leave. He is due in Tripoli sometime this week. Arrangements have been made for him to visit Sana during the period October 9-14.

2. Core Drilling

We are running into difficulty finding a Libyan agency or firm with core drilling equipment capable of doing the core-drilling work we have in mind. It might be necessary for us to ask one of the oil companies operating in Libya to use its equipment to do the job. However, we won't go ahead with this part of the project until a firm conclusion has been reached regarding the adequacy of the present water supply. Mr. Goudarzi, our USCI geologist, has done considerable work in the area, and he is of the opinion that the rock shell is only a few feet below the sand covering on the site.

The ICA/Washington has requested The Architects Collaborative of Cambridge, Massachusetts, USA, to submit a proposed method of operations for furnishing Architectural and Engineering services required for planning the relocation and expansion of the University of Libya to a site to be selected.

The Architects Collaborative agrees to perform such A & E services and proposes, for the purpose of identifying the various steps involved in planning the University, that this work be divided into six (6) Phases, outlined as follows and described in detail herein:

**I. OUTLINE OF SERVICES**

- PHASE I 1. SURVEYS & SITE ANALYSES (FACT FINDING GROUP TO LIBYA)
- PHASE II 1. PRELIMINARY MASTER PLAN FOR A 3000 STUDENT UNIVERSITY INCORPORATING THE BASIC ELEMENTS OF THE EDUCATIONAL SPECIFICATIONS AND TENTATIVE SKETCHES OF ALL REQUIRED BUILDINGS AND SERVICES ...MASTER PLAN TO SHOW GROWTH FROM 1000 TO 3000 STUDENTS.
2. DELIVERY TO USOM IN LIBYA, OF MASTER PLAN BY TAC PARTNER & ASSISTING USOM IN PRESENTATION TO GOL.
- PHASE III 1. PRELIMINARY PLANS, SPECIFICATIONS AND PRELIMINARY COST ESTIMATES FOR BUILDINGS, UTILITIES AND OTHER RELATED SITE WORK FOR A 1000 STUDENT UNIVERSITY AS LISTED BELOW:
- |  |                            |
|--|----------------------------|
| A. School of Liberal Arts                                | G. Library                 |
| B. School of Commerce                                    | H. Faculty Club            |
| C. Auditorium - 500 seats                                | I. Student Center          |
| D. Administration Area                                   | L. Rector & Dean's Housing |
| E. Dormitories for 100% of student body or 1000 students | O. Maintenance Building    |
| F. Dining and kitchen facilities                         |                            |
- Related site work, landscaping, services and utilities
2. DELIVERY TO USOM IN LIBYA OF ABOVE LISTED WORK BY TAC PARTNER & ASSISTING USOM IN PRESENTATION TO GOL.
- PHASE IV 1. FINAL WORKING DRAWINGS, SPECIFICATIONS, AND FINAL COST ESTIMATES FOR BUILDINGS, UTILITIES AND OTHER RELATED SITE WORK FOR A 1000 STUDENT UNIVERSITY FOR ITEMS A TO I INCLUSIVE L & O.
2. DELIVERY TO USOM IN LIBYA OF ABOVE LISTED WORK BY TAC PARTNER & ASSISTING USOM IN PRESENTATION TO GOL.
- PHASE V 1. PRELIMINARY PLANS, SPECIFICATIONS AND PRELIMINARY COST ESTIMATES FOR BUILDINGS, UTILITIES AND RELATED SITE WORK
- (a) 2,000 student growth (from 1000-3000) Items, A to O, inclusive

- |  |   |
|--|---|
| A. School of Liberal Arts                                | G. Library  |
| B. School of Commerce                                    | H. Faculty Club   |
| C. Auditorium - 1000 seats                               | I. Student Center   |
| D. Administration area                                   | J. Infirmary  |
| E. Dormitories for 100% of student body or 2000 students | K. Faculty & Staff Housing                                    |
| F. Dining and kitchen facilities                         | L. Rector's & Dean's Housing                                  |
|  | M. Mosque (by GOL)  |
|  | N. Athletic Facilities  |
|  | O. Maintenance Building including General Storage and Laundry |

2. DELIVERY TO USOM IN LIBYA OF ABOVE LISTED WORK BY TAC PARTNER & ASSISTING USOM IN PRESENTATION TO GOL.

- PHASE VI
1. FINAL WORKING DRAWINGS, SPECIFICATIONS AND FINAL COST ESTIMATES FOR BUILDINGS, UTILITIES AND RELATED SITE WORK FOR
- (a) 2,000 student growth (from 1000-3000) items A to O, inclusive
2. DELIVERY TO USOM IN LIBYA OF ABOVE LISTED WORK BY TAC PARTNER & ASSISTING USOM IN PRESENTATION TO GOL.

2. SUMMARY OF TIMING OF ESTIMATED A & E SERVICES FOR PHASE I THROUGH VI INCLUSIVE, AND FINAL REPORT.
3. ESTIMATED COST ANALYSES ESTABLISHED ON U. S. COSTS COMPARABLE FOR A 3000 STUDENT UNIVERSITY BUILT IN THE USA WITH US DOLLARS AND CONFORMING TO THE GENERAL CONDITIONS CONTAINED HEREIN.
4. GENERAL CONDITIONS
5. LOGISTIC SUPPORT

It is understood by this office that all architectural and engineering services performed in Libya, shall be under the guidance of Dr. E. C. Bryant, Director of the United States Operations Mission (USOM) in Libya and in close coordination with the Chief, Education Division, USOM. The Chief, Education Division shall arrange for all liason between representatives of this office and representatives of the Government of Libya (GOL).

BUILDING PROGRAM

STAGE I FOR 1,000 STUDENTS

	Area S.F.	
A. <u>Faculties of Arts and Commerce</u>		
B.		
1 Geography Lab.                    1500 x 1 = 1500		
2 Accounting Labs.                1500 x 2 = 3000		
1 Bus. Machines Lab.            1500 x 1 = 1500		
1 General Lab.                    2000 x 1 = 2000		
	8,000	
2 Large Lecture Rooms		
@ 250 =            3750 x 2 = 7500		
2 Small Lecture Rooms		
@ 150 =            2250 x 2 = 4500		
	12,000	
25 Regular Classrooms @ 800	20,000	
TOTAL Classroom & Lab.Space	40,000	
+ 50% Circulation, Toilets, Specialties Storage, Visual Aids, etc.	20,000	
		60,000 S.F.
C. <u>Auditorium</u>		
500 Seats	7,500	7,500
D. <u>Administration</u>		
1 Rector's office, Waiting Room		
Secretary's room	1500	
Administrative Space for Registrar, Control, Secretaries' Records	8500	
Room for Board of Governors	1000	
	11,000	
Circulation, Toilets, etc. (20%)	2,200	
	13,200	13,200
In each college area -		
2 Deans' offices (Dean, Student Advisor, 2 Secretaries) 1000 ea.=	2000	
100 Faculty offices & secretaries at 150 ea.	15000	
	17,000	
Circulation, Toilets, etc.	3,400	
	20,400	20,400

Building Program - cont'd

E. <u>Dormitory Facilities</u> 1,000 Students @ 150 sf/student		150,000
F. <u>Dining &amp; Kitchen (operated by Univ.)</u> 2 Dining Rooms (with 2 seatings ea.)	7,500	
Kitchen	4,000	
Toilets, etc.	3,900	
	<u>15,400</u>	15,400
G. <u>Library - area for different faculties</u> 2 Reading rooms (in colleges) @ 1500 s.f. ea.	16,000	
	<u>3,000</u>	
	19,000	19,000
H. <u>Faculty Club</u>		5,000
I. <u>Student Center</u>		8,000
L. Rector's House 2 Deans' Houses @ 2000	2,500 4,000	
	<u>6,500</u>	6,500
O. Maintenance Building inc. Gen. Str.		<u>5,000</u>
	TOTAL SQ. FT.	<u>310,000</u>

BUILDING PROGRAM

STAGE I FOR 3,000 STUDENTS OR 2,000 STUDENT GROWTH

	<u>Area S.F.</u>
A & B. Classrooms, Labs., & Services including Circulation	125,000
C. Auditorium for 1,000 Students	15,000
D. Administration Bldg. 1) 200 Faculty Offices @ 150 2) Exec. & Sec. office space & Circulation	30,000 20,000
E. Dormitory Facilities @ 150 s.f. x 2000 students	300,000
F. Dining & Kitchen Facilities 15 s.f./student x 2000 students	30,000
G. Additional Library Space	32,000
H. Faculty Club	5,000
I. Student Club	10,000
J. Infirmary - 28 beds	24,500
K. Faculty Housing (to be determined) (assume 100 units)	100,000
L. Rector's House - Stage I	-
M. Mosque (by Libyans)	-
N. Athletic Facilities	20,000
O. Maintenance Buildings	10,000
TOTAL SQ. FT.	<u>721,500</u>

PHASE I

1. SURVEYS & SITE ANALYSES (FACT FINDING GROUP TO LIBYA)

Mr. Robert S. McMillan, a Partner of The Architects Collaborative, designated as the person in charge of this project, will leave his office in Rome, Italy, and journey to Tripoli, Libya to the USOM. There, he will be joined by a qualified field survey team of Architects and Engineers from the Rome office.

It is estimated that Mr. McMillan and two (2) Architects will remain in Libya for a period of 5 and 10 working days respectively to schedule the assignment and to refine the data already gathered. Two (2) engineers will remain 20 work days each to perform the survey, sub-surface, and utility analyses of the sites under consideration.

To assist the implementation of the survey work, it is estimated that local civilian assistance will be required. An estimate for this work is stated in the Chart - Cost Breakdown Estimate, page 26.

It is our understanding that the educational program includes the following:

The present University facilities in Libya consist of a School of Science in Tripoli, School of Liberal Arts, and School of Commerce in Benghazi. The various schools in Benghazi, are inconveniently dispersed throughout the city and require consolidation, improved facilities, and the possibility of expansion. It is, therefore, proposed to consolidate these facilities into a new University on a site to be selected.

The ultimate physical development calls for a university of 3,000 students distributed among the College of Arts and the College of Commerce. A total gross area of 310,000 square feet is defined for 1,000 students with an additional 21,500 square feet required for a 2,000 student growth to 3,000 students. See Building Program pages 20 - 22.

The following responsibilities will be assigned to the A & E team:

- 1) To review the educational program with the USOM's team in cooperation with the Libyan Ministry of Education.
- 2) To make site analyses, to prepare a topographic survey with a maximum of 2'-0" contours.

(PHASE I cont'd)

- 3) To analyze the sub-surface conditions of the site with respect to foundations, sanitary, utility and landscape requirements.
- 4) To study the sites in relation to landscape, design, species and types of plant materials appropriate to region and irrigation problems.
- 5) To analyze and appraise the building site with respect to use, location, circulation, and growth.
- 6) To suggest zoning protection in order to secure a dignified future development in the area.
- 7) To verify adequacy of existing utilities -- water, electric, gas and telephone.
- 8) To verify regional and climatic conditions.

2. SITE ANALYSES

The site for the University has not been selected and three (3) areas are being considered by USOM and the GOL:

Benghazi  
Beda  
Suza

The site at Suza at the time of our visit was undergoing exploration of the potential water resources by USOM engineers. See letter from Dr. Holmes to R. S. McMillan dated 3 October 1961, pages 15 to 17.

The USOM has furnished this office with topographic maps of the areas being considered with the exception of Suza. From our visits, it was learned that no topographic surveys or borings have been made of the various sites and USOM does not contemplate providing this service. It is the recommendation of this office that such survey and sub-surface analyses work be included in the scope of work for the A & E under Phase I, and, under this proposal, this work is included herein.

Portable soils laboratory equipment, along with surveying instruments will be rented and shipped from Rome for use at the site.

During the stay of the team in Libya, the following assistance will be required from the GOL.

- a. 1 rod man
- b. 2 laborers
- c. 3 security guards
- d. 2 cars with chauffeurs

(PHASE I cont'd)

TIMING FOR A & E SERVICES

A tentative estimate of time is that Phase I will be completed 20 work days after arrival in Tripoli, Libya, of Mr. Robert S. McMillan, and his team of specialists. This group will then journey to Rome, Italy, to proceed into the development of Phase II. Estimated cost of Phase I is \$18,460.

In the attached chart, a time cost breakdown is estimated for the members of the team to visit Libya for the development of the survey work. Indicated are the per diem rates, the subsistence rates for time spent in Libya, the travel, and other anticipated expenses.

PHASE I - FACT FINDING TRIP

EST. WORK DAYS: 20

PROFESSIONAL CATEGORY	PER DIEM DAYS			PER DIEM TRAVEL			SUBSISTENCE IN LIBYA			SUBSISTENCE TRAVELLING			TRAVEL COSTS	PASSPORTS VISAS INNOCULATIONS	\$. TOTAL
	WRK DAYS	\$ RATE	\$ TOTAL	WORK DAYS	\$ RATE	\$ TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL			
1 Partner	5	200	1000	2	200	400	5	12	60	2	6	12	500	100	2072
1 Sr. Architect	10	110	1100	2	110	220	14	12	168	2	6	12	500	100	2100
1 Int. Architect	10	80	800	2	80	160	14	12	168	2	6	12	500	100	1740
1 Sr. Engineer	20	110	2200	2	110	220	26	12	312	2	6	12	500	100	3344
1 Int. Engineer	20	80	1600	2	80	160	26	12	312	2	6	12	500	100	2684
			\$6700			\$1160			\$1020			\$60	\$2500	\$500	\$11940

COST BREAKDOWN ESTIMATE

(A) DIRECT COSTS

Rental of 2 cars, full time 30 days at 20 = \$ 600  
 Interpreter, full time 20 days at 30 = 600  
 Rod Man 20 days at 10 = 200  
 3 Guards (3 shifts) full time 1120  
 \$2520

(B) EQUIPMENT, MATERIALS & SUPPLIES

4000  
 \$6520

TOTAL ESTIMATE 6520  
 \$18460

PHASE II

1. PRELIMINARY MASTER PLAN

From the surveys and site data resulting from the Phase I Fact Finding Group, this office would then initiate and make available a planning and design team to develop the preliminary designs of the University. This work would be executed in Rome, Italy, in close liason with the USOM group in Libya, and also TAC, home office, USA.

The work of Phase II will consist of the preparation and submission to USOM for approval ten (10) copies of a preliminary Master Plan for a 3,000 student university with the tentative location of all University buildings, the layout of roads, electric sub-stations and/or generating facilities, electric lines, water treatment plant and lines, sewage disposal plant and sewer lines, and all other required facilities.

The Preliminary Master Site Plan will indicate steps in which the incremental growth of the University, from 1,000 to 3,000 students, can be guided.

In developing this plan, the following elements and aspects will be considered along with the General Conditions, pages 75 and 76 as listed herein:

- A. Development of an attractive and harmonious campus design, considering building relationships, landscaping and other values.
- B. Functional relationships and engineering aspects:
  - 1. Roads, Walks, Parking
  - 2. Building Services and projected Utility demand
  - 3. Sub-surface conditions
- C. Zoning protection of site
- D. Analysis of Capitol Improvements, Costs and Priorities
- E. Master Plan Report
- F. Presentation Drawings
- G. Model of Campus\*

\*Recommended by this office and included in our estimated costs, listed below, as three dimensional aid to assist USOM in presenting the Master Plan to the GOL.

(PHASE II cont'd)

2. TIMING OF A & E SERVICES

The tentative estimate of time is that Phase II will be completed 90 work days, or 126 calendar days, after arrival in Rome, Italy of Mr. Robert S. McMillan's team of specialists, from completion of Phase I.

3. DELIVERY OF PLAN TO USOM

Mr. Robert S. McMillan, a Partner of The Architects Collaborative, will personally deliver the Preliminary Master Site Plan and related materials referred to above and shall assist USOM in the presentation of the plan to the GOL. It is expected that within ten (10) calendar days of this submission, approval or request for changes will be given by the USOM and the GOL. If, within ten (10) days after receipt by USOM, USOM neither approves, requests changes or advises this office of contemplated changes, the submitted material shall be considered approved. In the event that changes are requested, the A & E shall make such changes and re-submit to USOM, there being no Rome, Italy facilities or personnel in Libya to make such changes.

4. ESTIMATED COST OF A & E SERVICES

Total Estimated Cost of Phase II for A & E Services is \$123,716.

The Preliminary Master Site Plan shall be accompanied by tentative sketches of all required buildings and utilities, which tentatively are listed as follows and subject to review and change of Phase I:

- A. School of Liberal Arts
- B. School of Commerce
- C. Auditorium
- D. Administration
  - 1200 Faculty offices
  - 2 executive and secretarial
- E. Dormitory facilities for 100% of student body or 3,000 students
- F. Dining and Kitchen facilities
- G. Library
- H. Faculty Club
- I. Student Center
- J. Infirmary
- K. Faculty and Staff Housing
- L. Rector's and Dean's Housing
- M. Mosque - (by Libyan Government)
- N. Athletic facilities
- O. Maintenance Building including General Storage and Laundry
- P. Common utilities such as: water supply and treatment works, sewage treatment plant, electric sub-station and/or generating facilities, maintenance facilities, storm drainage, roads, paving and site improvements.

(PHASE II cont'd)

In the attached chart a time and cost breakdown is estimated for the staff requirements in implementing the Preliminary Master Plan and tentative sketches. During this stage, it is expected that Mr. McMillan will return to Cambridge, Massachusetts, USA, prior to the completion of this Phase to confer with TAC Partners and Mr. Harkness, TAC Partner, to return with him to Libya for presentation.

Included is time for both Mr. McMillan and Mr. Harkness for presentation of the completed work of this Phase to the USOM and the GOL. A period of ten (10) days is allowed herein.

PHASE II - MASTER PLAN

ESTIMATED PERIOD: 90 Work Days  
126 Calendar Days

PROFESSIONAL CATEGORY	WORK DAYS	\$		SUBSISTENCE RATES IN LIBYA			SUBSISTENCE TRAVEL TIME			TRAVEL COSTS	\$ TOTAL
		RATE	TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL		
1 Partner	40	200	8000	10	12	120	4	6	24	1500*	9644
1 Partner	15	200	3000	10	12	120	4	6	24	1500*	4644
1 Sr. Architect	90	110	9900	10	12	120	4	6	24	500	10544
2 Sr. Architects	180	110	19800								19800
2 Int. Architects	180	80	14400								14400
2 Int. Architects	120	80	9600								9600
2 Jr. Architects	120	54	6480								6480
6 Sr. Draftsmen	240	40	9600								9600
1 Sr. Engineer	40	110	4400	10	12	120	4	6	24	500	5044
1 Sr. Engineer	60	110	6600								6600
1 Int. Engineer	60	80	4800								4800
2 Sr. Draftsmen	80	40	3200								3200
2 Jr. Draftsmen	80	27	2160								2160
			<u>\$101,940</u>			<u>\$480</u>			<u>\$96</u>	<u>\$4000</u>	<u>\$106,516</u>

COST BREAKDOWN ESTIMATE

EQUIPMENT, MATERIALS & SUPPLIES	\$1,000
MISC. EXPENSES	1,200
SCALE MODEL OF CAMPUS	15,000
	<u>\$17,200</u>
TOTAL ESTIMATE	<u>17,200</u> <u>\$123,716</u>

\* To cover cost of Partner trip  
Boston-Rome-Boston

**PHASE III - PRELIMINARY PLANS, SPECIFICATIONS & PRELIMINARY COST ESTIMATES FOR BUILDINGS, UTILITIES & OTHER RELATED SITE WORK FOR A 1,000 STUDENT UNIVERSITY AS LISTED BELOW:**

1. Following approval of the Preliminary Master Site Plan and related work, identified as Phase II, the Rome office shall prepare and submit to USOM for approval, ten (10) copies each of preliminary plans, general specs and preliminary cost estimates for buildings listed below, utilities and other work related to these buildings included in the approved Master Site Plan. Delivery of this work shall be made to the USOM forty (40) work days after receipt of written approval of the Master Plan:
  - A. School of Liberal Arts
  - B. School of Commerce
  - C. Auditorium - 500 seats
  - D. Administration area
  - E. Dormitory Facilities for 100% of student body or 1,000 students
  - F. Dining & kitchen facilities
  - G. Library
  - H. Faculty Club
  - I. Student Center
  - L. Rector's & Dean's Housing
  - O. Maintenance Building

The work involved in this Phase will be done in Rome, Italy, under the direction of Mr. Robert S. McMillan, a Partner in The Architects Collaborative.

General Conditions listed herein, Pages 75 and 76 will govern this work. Additional criteria is stated as follows:

- A. Preliminary plans and elevations at 1 to 200 scale will be prepared for each building facility. The metric scale will be used for measurements with both the English and Italian languages used for notes on the plans.
  - B. Perspectives indicating a three dimensional view of each proposed building will be made.
  - C. Outline specifications will be in English and will indicate the type of structure, materials and finishes recommended, type of lighting, plumbing, ventilating and air conditioning.
  - D. Cost estimates of site improvements, buildings, furnishings and equipment recommended will be made by competent quantity surveyors, based on construction costs in Libya in U.S. Dollars.
  - E. Recommendation of specific uses of materials, mechanical systems, sun control for regional and climatic conditions will be analyzed.
2. **TIMING OF A & E SERVICES**

The tentative estimate of time is that Phase III will be completed forty (40) work days or fifty-six (56) calendar days for the work as defined for Phase III.

(PHASE III cont'd)

3 3. DELIVERY OF PLAN TO USOM

Mr. Robert S. McMillan, a Partner of The Architects Collaborative, will personally deliver all work in conjunction with Phase III to USOM and shall personally assist USOM in the presentation of the plan to the GOL. It is expected that within ten (10) calendar days of this submission, approval or request for changes will be given by the USOM and the GOL. If, within ten (10) days after receipt by USOM, USOM neither approves, requests changes or advises this office of contemplated changes, the submitted material shall be considered approved. In the event that changes are requested, the A & E shall make such changes in Rome, Italy and re-submit to USOM, there being no facilities or personnel in Libya to make such changes.

4. ESTIMATED COST OF A & E SERVICES

Total Estimated Cost of Phase III for A & E services is \$71,500.

In the attached chart a time and cost breakdown is estimated for the staff requirements in implementing the development of preliminary plans, general specs, and preliminary cost estimates for the work defined herein. During this stage, it is expected that Mr. McMillan will return to Cambridge, Massachusetts, USA, prior to the completion of this Phase to confer with TAC Partners and Mr. Harkness, TAC Partner, to return with him to Libya for presentation.

Included is time for both Mr. McMillan and Mr. Harkness for presentation of the completed work of this Phase to the USOM and the GOL. A period of ten (10) days is allowed herein.

PHASE III - PRELIMINARY PLANS FOR STAGE I

ESTIMATED PERIOD: 40 Work Days  
56 Calendar Days

PROFESSIONAL CATEGORY	PER DIEM DAYS			SUBSISTENCE RATES IN LIBYA			SUBSISTENCE TRAVELLING			TRAVEL COSTS	TOTAL
	WORK DAYS	\$ RATE	\$ TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL		
1 Partner	30	200	6000	10	12	120	4	6	24	1500*	7,644
1 Partner	15	200	3000	10	12	120	4	6	24	1000*	4,144
1 Sr. Architect	40	110	4400	10	12	120	4	6	24	500	5,044
2 Sr. Architects	80	110	8800								8,800
4 Int. Architects	160	80	12800								12,800
2 Jr. Architects	80	54	4320								4,320
6 Sr. Draftsmen	240	40	9600								9,600
2 Jr. Draftsmen	40	27	1080								1,080
1 Sr. Engineer	40	110	4400	10	12	120	4	6	24	500	5,044
1 Sr. Engineer	40	110	4400								4,400
1 Int. Engineer	40	80	3200								3,200
2 Sr. Draftsmen	80	40	3200								3,200
2 Jr. Draftsmen	80	27	2160								2,160
		\$67360			\$480			\$96		\$3500	\$71,436
TOTAL ESTIMATE ROUND OUT											<u>\$71,500</u>

\* To cover cost of Partner Trip  
Boston-Rome-Boston

**PHASE IV - COMPLETE WORKING DRAWINGS, SPECIFICATIONS & FINAL COST ESTIMATES FOR BUILDINGS, UTILITIES & OTHER RELATED SITE WORK FOR A 1,000 STUDENT UNIVERSITY FOR ITEMS A TO I INCLUSIVE, L & O.**

1. Following approval of Preliminary Plans for 1,000 students and related work, identified as Phase III, the Rome office shall prepare and submit to USOM for approval ten (10) copies each of complete working drawings, final specs and final cost estimates and necessary information for required bids and the letting of a construction contract for buildings listed below, utilities and other work related to these buildings. Delivery of this work shall be made to the USOM 120 work days after receipt of written approval of Phase III:

- |  |                              |
|--|------------------------------|
| A. School of Liberal Arts  | G. Library                   |
| B. School of Commerce  | H. Faculty Club              |
| C. Auditorium - 500 seats  | I. Student Center            |
| D. Administration area   | L. Rector's & Dean's Housing |
| E. Dormitory Facilities for<br>100% of student body or<br>1,000 students | O. Maintenance Building      |
| F. Dining & kitchen facilities   |                              |

The work involved in this Phase will be done in Rome, Italy, under the direction of Mr. Robert S. McMillan, a Partner in The Architects Collaborative.

General Conditions listed herein, Pages 75 and 76 will govern this work. Additional criteria is stated as follows:

- A. Working Drawings and details will be prepared for each building facility. The metric scale will be used for measurements with both the English and Italian languages used for notes on the plans.
- B. Final specifications will be in English.

**2. TIMING OF A & E SERVICES**

The tentative estimate of time is that Phase IV will be completed one hundred twenty (120) work days or one hundred sixty-eight (168) calendar days for the work as defined for Phase IV.

**3. DELIVERY OF PLAN TO USOM**

Mr. Robert S. McMillan, a Partner of The Architects Collaborative, will personally deliver all work in conjunction with Phase IV to USOM and shall personally assist USOM in the presentation of the plan to the GOL. It is expected that within ten (10) calendar days of this submission, approval or request for changes will be given by the USOM and the GOL. If, within ten (10) days after receipt by USOM, USOM neither

(PHASE IV cont'd)

approves, requests changes or advises this office of contemplated changes, the submitted material shall be considered approved. In the event that changes are requested, the A & E shall make such changes in Rome, Italy and re-submit to USOM, there being no facilities or personnel in Libya to make such changes.

4. ESTIMATED COST OF A & E SERVICES

Total Estimated Cost of Phase IV for A & E services is \$182,000.

In the attached chart a time and cost breakdown is estimated for the staff requirements in implementing the development of working drawings, general specs, and final cost estimates for the work defined herein. During this stage, it is expected that Mr. McMillan will return to Cambridge, Massachusetts, USA, prior to the completion of this Phase to confer with TAC Partners and Mr. Harkness, TAC Partner, to return with him to Libya for presentation.

Included is time for both Mr. McMillan and Mr. Harkness for presentation of the completed work of this Phase to the USOM and the GOL. A period of ten (10) days is allowed herein.

PHASE IV - WORKING DRAWINGS FOR STAGE I

ESTIMATED PERIOD: 120 Work Days  
168 Calendar Days

PROFESSIONAL CATEGORY	PER DIEM DAYS			SUBSISTENCE RATES IN LIBYA			SUBSISTENCE TRAVELLING			TRAVEL COSTS	\$ TOTAL
	WORK DAYS	\$ RATE	\$ TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL		
1 Partner	35	200	7000	10	12	120	4	6	24	1500*	8,644
1 Partner	10	200	4000	10	12	120	4	6	24	1000*	5,144
1 Sr. Architect	120	110	13200	10	12	120	4	6	24	500	13,844
1 Sr. Architect	120	110	13200								13,200
1 Sr. Architect	80	110	8800								8,800
2 Int. Architects	240	80	19200								19,200
2 Jr. Architects	240	54	12960								12,960
10 Sr. Draftsmen	1200	40	48000								48,000
2 Jr. Draftsmen	160	27	4320								4,320
1 Sr. Engineer	80	110	8800	10	12	120	4	6	24	500	9,444
2 Sr. Engineers	100	110	11000								11,000
2 Int. Engineers	100	80	8000								8,000
4 Sr. Draftsmen	320	40	12800								12,800
4 Jr. Draftsmen	240	27	6480								6,480
			<u>\$177,760</u>								
						<u>\$480</u>			<u>\$96</u>	<u>\$2500</u>	<u>\$181,836</u>

TOTAL ESTIMATE ROUND OUT \$182,000

\*To cover cost of Partner trip  
Boston-Rome-Boston

**PHASE V - PRELIMINARY PLANS, SPECIFICATIONS & PRELIMINARY COST ESTIMATES FOR BUILDINGS, UTILITIES AND RELATED SITE WORK FOR 2,000 STUDENT GROWTH (FROM 1000-3000) ITEMS A TO O INCLUSIVE**

1. Following approval of final plans for facilities for 1000 students and related work, identified as Phase IV, this office shall prepare and submit to USOM for approval, ten (10) copies each of preliminary plans, general specs and preliminary cost estimates for all buildings listed below, utilities and other work included the approved Master Site Plan for a 3000 Student University. Delivery of this work shall be made sixty (60) work days after receipt of written approval of Phase IV.
  - A. School of Liberal Arts
  - B. School of Commerce
  - C. Auditorium - 1000 seats
  - D. Administration area
  - E. Dormitory Facilities for 100% of student body or 2,000 students
  - F. Dining & Kitchen facilities
  - G. Library
  - H. Faculty Club
  - I. Student Center
  - J. Infirmary
  - K. Faculty & Staff Housing
  - L. Rector's & Dean's Housing
  - M. Mosque (BY GOL)
  - N. Athletic Facilities
  - O. Maintenance Building including General Storage and Laundry

The work involved in this Phase will be done in Rome, Italy, under the direction of Mr. Robert S. McMillan, a Partner in The Architects Collaborative.

General Conditions listed under Phase III and as stated herein, Pages 75 and 76 will apply to the work under this Phase.

**2. TIMING OF A & E SERVICES**

The tentative estimate of time is that Phase V will be completed sixty (60) work days or eighty-four (84) calendar days for the work as defined for Phase V.

**3. DELIVERY OF PLAN TO USOM**

Mr. Robert S. McMillan, a Partner in The Architects Collaborative, will personally deliver all work in conjunction with Phase V to USOM and shall personally assist USOM in the presentation of the work to GOL. It is expected that within ten (10) calendar days of this submission, approval or request for changes will be given by the USOM and the GOL. If, within ten (10) days after receipt by USOM, USOM neither approves, requests changes or advises this office of contemplated changes, the submitted material shall be considered approved. If changes are requested, the A & E shall make such changes in Rome, Italy and re-submit to USOM, their being no facilities or personnel in Libya to make such changes.

(PHASE V cont'd)

4. ESTIMATED COST OF A & E SERVICES

Total Estimated Cost of Phase V for A & E services is \$110,836.

In the attached chart a time and cost breakdown is estimated for the staff requirements in implementing the development of preliminary plans, general specs, and preliminary cost estimates for the work defined herein. During this stage, it is expected that Mr. McMillan will return to Cambridge, Massachusetts, USA, prior to the completion of this Phase to confer with TAC Partners and Mr. Harkness, TAC Partner, to return with him to Libya for presentation.

Included is time for both Mr. McMillan and Mr. Harkness for presentation of the completed work of this Phase to the USOM and the GOL. A period of ten (10) days is allowed herein.

PHASE V - PRELIMINARY PLANS FOR STAGE II

ESTIMATED PERIOD: 60 Work Days  
84 Calendar Days

PROFESSIONAL CATEGORY	PER DIEM DAYS			SUBSISTENCE RATES IN LIBYA			SUBSISTENCE TRAVELLING			TRAVEL COSTS	TOTAL
	WORK DAYS	\$ RATE	\$ TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL		
1 Partner	40	200	8000	10	12	120	4	6	24	1500*	9,644
1 Partner	10	200	2000	10	12	120	4	6	24	1000*	3,144
1 Sr. Architect	60	110	6600	10	12	120	4	6	24	500	7,244
3 Sr. Architects	180	110	19800								19,800
4 Int. Architects	240	80	19200								19,200
2 Jr. Architects	120	54	6480								6,480
6 Sr. Draftsmen	360	40	14400								14,400
2 Sr. Draftsmen	80	40	3200								3,200
2 Jr. Draftsmen	120	27	3240								3,240
1 Sr. Engineer	60	110	6600	10	12	120	4	6	24	500	7,244
1 Sr. Engineer	40	110	4400								4,400
1 Int. Engineer	60	80	4800								4,800
2 Sr. Draftsmen	120	40	4800								4,800
2 Jr. Draftsmen	120	27	3240								3,240
			<u>\$106,760</u>			<u>\$480</u>			<u>\$96</u>	<u>\$3500</u>	<u>\$110,836</u>

\* To cover cost of Partner Trip  
Boston-Rome-Boston

**PHASE VI - WORKING DRAWINGS, SPECIFICATIONS & FINAL COST ESTIMATES FOR BUILDINGS, UTILITIES & RELATED SITE WORK FOR 2,000 STUDENT GROWTH (FROM 1000-3000) ITEMS A TO O INCLUSIVE.**

i. Following approval of Preliminary Plans for facilities for 2,000 student growth and related work, identified as Phase V, this office shall prepare and submit to USOM for approval, ten (10) copies each of final drawings, specifications and final cost estimates and necessary information for required bids and the letting of a construction contract for all buildings listed below, utilities and other work included in the Master Site Plan for a 3,000 student university. Delivery of this work shall be made to the USOM 180 work days after receipt of written approval of Phase V.

- |  |   |
|--|---|
| A. School of Liberal Arts  | I. Student Center   |
| B. School of Commerce  | J. Infirmary  |
| C. Auditorium - 1000 seats   | K. Faculty & Staff Housing  |
| D. Administration area   | L. Rector's & Dean's Housing  |
| E. Dormitory Facilities for<br>100% of student body of<br>2,000 students | M. Mosque (by GOL)  |
| F. Dining & Kitchen Facilities   | N. Athletic Facilities  |
| G. Library   | O. Maintenance Building<br>including General Storage<br>and Laundry |
| H. Faculty Club  |   |

The work involved in this Phase will be done in Rome, Italy, under the direction of Mr. Robert S. McMillan, a Partner in The Architects Collaborative.

General Conditions listed herein, Pages 75 and 76 will govern this work. Additional criteria is stated as follows:

A. Working Drawings and details will be prepared for each building facility. The metric scale will be used for measurements with both the English and Italian languages used for notes on the plans.

B. Final specifications will be in English.

**2. TIMING OF A & E SERVICES**

The tentative estimate of time is that Phase VI will be completed one hundred eighty (180) work days or two hundred fifty-two (252) calendar days for the work as defined for Phase VI.

**3. DELIVERY OF PLAN TO USOM**

Mr. Robert S. McMillan, a Partner in The Architects Collaborative, will personally deliver all work in conjunction with Phase VI to USOM and shall personally assist USOM in the presentation of the work to GOL.

(PHASE VI cont'd)

It is expected that within ten (10) calendar days of this submission, approval or request for changes will be given by the USOM and the GOL. If, within ten (10) days after receipt by USOM, USOM neither approves, requests changes or advises this office of contemplated changes, the submitted material shall be considered approved. If changes are requested, the A & E shall make such changes in Rome, Italy and re-submit to USOM, their being no facilities or personnel in Libya to make such changes.

4. ESTIMATED COST OF A & E SERVICES

Total Estimated Cost of Phase VI for A & E services is \$300,462.

In the attached chart a time and cost breakdown is estimated for the staff requirements in implementing the development of working drawings, general specs, and final cost estimates for the work defined herein. During this stage, it is expected that Mr. McMillan will return to Cambridge, Massachusetts, USA, prior to the completion of this Phase to confer with TAC Partners and Mr. Harkness, TAC Partner, to return with him to Libya for presentation.

Included is time for both Mr. McMillan and Mr. Harkness for presentation of the completed work of this Phase to the USOM and the GOL. A period of ten (10) days is allowed herein.

PHASE VI - WORKING DRAWINGS FOR STAGE II

ESTIMATED PERIOD: 180 Work Days  
252 Calendar Days

PROFESSIONAL CATEGORY	PER DIEM DAYS			SUBSISTENCE RATES IN LIBYA			SUBSISTENCE TRAVELLING			TRAVEL COSTS	\$ TOTAL
	WORK DAYS	\$ RATE	\$ TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL		
1 Partner	50	200	10000	15	12	180	6	6	36	1750*	11,966
1 Partner	10	200	2000	10	12	120	4	6	24	1000*	3,144
1 Sr. Architect	150	110	16500	15	12	180	6	6	36	750	17,466
2 Sr. Architects	360	110	39600								39,600
4 Int. Architects	720	80	57600								57,600
2 Jr. Architects	360	54	19440								19,440
10 Sr. Draftsmen	1800	40	72000								72,000
2 Jr. Draftsmen	360	27	9720								9,720
			<u>226860</u>								
1 Sr. Engineer	80	110	8800	15	12	180	6	6	36	750	9,766
2 Sr. Engineers	120	110	13200								13,200
2 Int. Engineers	180	80	14400								14,400
4 Sr. Draftsmen	480	40	19200								19,200
4 Jr. Draftsmen	480	27	12960								12,960
			<u>68560</u>			<u>660</u>			<u>132</u>	<u>3250</u>	<u>300,462</u>
			<u>295420</u>								

\*To cover cost of Partner trip  
Boston-Rome-Boston

2. SUMMARY OF TIMING OF ESTIMATED A & E SERVICES FOR PHASES I THROUGH VI INCLUSIVE AND FINAL REPORT

Listed below are the tentative estimated Architectural and Engineering costs and time required to produce the work as outlined in Phases I to VI inclusive:

<u>PHASE</u>	<u>EST. AMT.</u>	<u>NO. OF WORK DAYS</u>	<u>NO. OF CALENDAR DAYS</u>
I Fact Finding	\$ 18,000	20	28
II Master Planning	120,000	90	126
III Prelims. for Stage I	70,125	40	56
IV Working Drawings for Stage I	180,250	120	168
V Prelims. for Stage II	109,700	60	84
VI Working Drawings for Stage II	299,400	180	252
Final Report	<u>15,000</u>	<u>30</u>	<u>42</u>
<b>TOTAL ESTIMATED A &amp; E COST</b>	<b>812,500</b>	<b>540</b>	<b>756</b>

3. COST ANALYSES

An extremely tentative cost estimate has been prepared for the purpose of establishing an overall picture of construction costs for all buildings and related site work for both a 1000 Student University and the 2000 Student Growth.

This estimate is based on an average construction costs of \$15 per square foot if built with U.S. Dollars in the USA and \$6.50 if built with U.S. Dollars in Libya.

In the estimate, areas are indicated for each building facility, as are gross areas per student where applicable.

Excluded in the square foot price are the equipment items such as: kitchen, laboratory, classroom furniture and other furnishings. Such items are carried as separate allowances estimated herein.

ANALYSIS OF BUILDING COSTS (Estimated)

For a University for 1,000 Students

<u>Facility</u>	<u>Gross Area in S.F.</u>	<u>Gross Area/Student</u>	<u>Total</u>
<b>A&amp;B <u>School of Liberal Arts &amp; Commerce</u></b>			
Est. 1000 Students total			
Lab areas	8,000		
2 large lecture rooms	7,500		
2 small lecture rooms	4,500		
25 classrooms	20,000		
Circulation, etc.	<u>20,000</u>		
	60,000	60	\$900,000
<b>C. <u>Auditorium</u></b>			
Seating 500 Seats			
7½ sf/seat + 100% for Lobbies & Supporting Rooms	7,500		112,500
<b>D. <u>Administration</u></b>			
Executive & Admin. off.	13,000		
100 Faculty Offices @ 150 s.f.	15,000		
Circulation, toilets	<u>5,600</u>		
	33,600		504,000
<b>E. <u>Dormitory Facilities</u></b>			
Single & Triple Rooms including 20% Corridor's Commons, etc.	150,000	150	2,250,000
<b>F. <u>Dining &amp; Kitchen Facilities</u></b>			
Dining Room	7,500		
Kitchen	4,000		
Toilets, Circulation	<u>3,900</u>		
	15,400	15.4	231,000
<b>G. <u>Library</u></b>			
Area for different facilities	16,000		
	<u>3,000</u>		
	19,000	19	285,000

(Analysis of Building Costs - cont'd)

H. <u>Faculty Club</u>	5,000		75,000
I. <u>Student Center</u>	8,000	8	120,000
L. <u>Rector's Home &amp; Dean's Housing</u>	2,500		
2 @ 2000	<u>4,000</u>		
	6,500		97,500
O. <u>Maintenance Building &amp; General Storage</u>	<u>5,000</u>		<u>75,000</u>
	310,000 S/F	Est. Total Cost	\$4,650,000
		Bldgs. only	
		A-1 inclusive	
		L & O	
Built-in Equipment including library stacks, furnishings, etc. @ 10%			<u>465,000</u>
		Sub Total	\$5,115,000
Related Site Work Lump Sum			<u>750,000</u>
Total Estimated Cost Buildings, Equipment & Site Work if built in USA with U.S. dollars based on \$15/SF for buildings only			<u><u>\$5,865,000</u></u>
Total Estimated Cost Buildings, Equipment & Site Work if built in Libya with U.S. dollars based on <del>\$6.50</del> \$6.50/SF for buildings only			<u><u>\$2,525,000</u></u>

ANALYSIS OF BUILDING COSTS (Estimated)

Facilities A-0 Inclusive  
(2000 Student Growth) From 1000 - 3000 Students

<u>Facility</u>	<u>Area In S.F.</u>	<u>Area/Student</u>	<u>Total</u>
A&B <u>School of Liberal Arts &amp; Commerce</u>	125,000	62.5	\$1,875,000
C. <u>Auditorium-Theatre</u> Seating 1000 7½ sf/seat + 100% for Lobbies & Supporting Rooms	15,000		225,000
D. <u>Administration</u> 200 Faculty Offices Administration, (Secre- tarial, Circulation	30,000 <u>20,000</u> 50,000		750,000
E. <u>Dormitory Facilities</u> Single & Triple Rms. 20% Corridor's, Commons, etc.	300,000		4,500,000
F. <u>Dining &amp; Kitchen Facilities</u> Dining Room Kitchen Toilets, Circulation	15,000 8,000 <u>7,000</u> 30,000		450,000
G. <u>Additional Library Space</u>	32,000		480,000
H. <u>Faculty Club</u>	5,000		75,000
I. <u>Student Club</u>	10,000		150,000
J. <u>Infirmary</u> 28 beds	24,500		367,500
K. <u>Faculty Housing</u> to be determined assume 100 units	100,000		1,500,000
L. <u>Rector's Housing</u> Stage I			
M. <u>Mosque</u> by Libyan Government			

(Analysis of Building Costs - cont'd  
A-0 inclusive - 2000 Student Growth)

N. <u>Athletic Facilities</u>	20,000		300,000
O. Maintenance Buildings	10,000	.	150,000
	<u>\$ 721,500</u>	@ 15 =	<u>\$10,822,500</u>

Built-in Equipment including Library stacks  
Furnishings, etc. @ 10%

1,082,250  
\$11,904,750

Site Work Lump Sum

1,000,000

Total Estimated Cost Buildings for 2,000  
Student Growth, equipment & site work if  
built in USA with U.S. dollars based on \$15/SF  
for buildings only

\$12,904,750

Total Estimated Cost buildings for 2,000  
Student Growth, equipment & site work if  
built in Libya with U.S. Dollars based on  
\$6.50/SF for buildings only

\$ 5,520,000

SUMMARY ESTIMATED COSTS

	<u>Est. Cost Bldgs.</u>	<u>Est. Cost Equip.&amp;Furn.</u>	<u>Est. Cost Related Site Work</u>	
1000 Students	\$4,650,000	\$465,000	\$750,000	\$5,865,000
2000 Student Growth to 3000	<u>9,322,000</u>	<u>932,250</u>	<u>1,000,000</u>	<u>11,254,750</u>
ULTIMATE	13,972,000	1,397,250	1,750,000	17,119,750

**Total Estimated Cost, all buildings for 3000 students, equipment and site work if built in USA with U.S. dollars based on \$15 s/f for buildings only .....\$17,200,000**

**Total Estimated Cost, all buildings for 3000 students, equipment and site work if built in Libya with U.S. dollars based on \$650 s/f for buildings only.....\$ 7,420,000**

SECTION C

EL-AWELIA VOCATIONAL AGRICULTURAL SCHOOL

CHECK LISTPROPOSED SCHOOL AT EL-AWELIAA. ACADEMIC REQUIREMENTS

School grades to be accomodated: Ages 14 to 22

Anticipated enrollment: Present: 125

Five years hence: 250

Courses or colleges included: School of Agriculture

Facilities contemplated:

Classrooms: Present: 4; add: 2; remodel existing space  
from present dorm (4) -- total = 10

Laboratories: already in existence

Library: to be added

Gymnasium: outside games

Auditorium: remodel church auditorium

Housing: existing; needs repairs

Dormitories: new dorm required for 250

Number of buildings contemplated:

Dormitory

Dining Hall

two classrooms added

Library addition

Separate toilet building

Have priorities been established? New work to be done first

B. ICA FUNDS

Unknown at the time

C. OTHER FUNDSD. INFORMATION NOW AVAILABLE

Reports: Post

Preliminary estimates of space requirements: see TAC Proposal

Maps: Yes; Plot Plan; contours not shown

Soil boring samples and tests: rock general one meter below surface

Contract documents for A & E work already authorized: Task Order #2

PI0/T #670-69-018-3-10037

Contract documents for construction work already authorized: No

Local building regulations: None

Post report describing local conditions: Yes

Agency or person to contact for further information:

Dr. Bryant, Chief, USOM, Libya

Dr. Holmes, Chief Educational Advisor, USOM, Libya

Mr. F. J. O'Brien, Project Engineer, Engineering

Division, ICA, Washington, D. C.

Mr. Gill, USOM at El-Awelia (leaving Sept. 30, 1961)

**E. CONTACT WITH A & E**

Will be executed by:

ICA/W

Agency of C.C.: Development Counsel Ministry of  
Education, LibyaLimitations or restrictions applying to a U.S. A&E  
Contractor: to be determined**F. SITE**

Location: N.E. of Benghazi near Barce

Selected: Yes

Acquired: existing facility

Surveyed: see other page      Map available: see other page

General description of site available: Yes

What utilities available:

Power: Yes

Water: Yes

Sewers: septic tanks exist

Gas: No

Telephone: Yes

Access roads: constructed to property line only

Status of site planning: No major site plan problem

**G. A & E SERVICES TO INCLUDE:**

Site selection: No

Site surveys: No

Sub-surface investigations: No

Master Plan, including landscaping: Yes, for new buildings

Layout of common utility facilities, such as water treatment, sewage  
disposal, electric power, roads: Yes, for new buildings

Layout of electrical, water and sewer lines: Yes, for new buildings

Preliminary plans and specifications: Yes

Preliminary cost estimate for:

\* Grounds and utilities: Yes

\* Common utility facilities, such as water treatment,  
sewage disposal, electric power, roads: Yes

\* Buildings: Yes

\* Built-in equipment: Yes

\* Academic Equipment: Yes

\* For new work, remodelling must be \_\_\_\_\_ on site after  
Preliminary plans.**H. APPROVAL OF A & E PLANS**

Master Plan: None

Preliminary plans by: C.C. Yes; USOM: Yes

Probable time required for obtaining approvals: 10 day limit

Name of C.C. representative authorized to approve plans: The Nazir of \_\_\_\_\_

**I. TYPE OF CONSTRUCTION CONTEMPLATED**

Language to be used in plans and documents: English, Italian; Arabic also  
would be ideal

System of measurement to be used: Metric

Advance schedule of work will be required: Yes

Progress reporting will be required: Yes; to both USOM & ICA/W

Required date of submission of preliminary plans and estimates: see TAC  
Proposal

On-The-Job training of local personnel in A & E work and in construction  
to be provided for: Not applicable

Place where A & E work is to be performed: U.S. and Italy

Original drawings and contract documents will become property of USOM

**K. LOCAL RESOURCES AVAILABLE (as affecting type of design)**

Masonry construction generally (see report)

**L. CLIMATE (as affecting design)**

Altitude: \_\_\_\_\_

Temperature range: between 40° and 100° F.

Humidity range: 25%

Annual rainfall: 14 to 18 inches

Maximum monthly rainfall: 6 inches

**M. MANPOWER AVAILABLE LOCALLY (as affecting design cost)**

No architectural and engineering assistants are available locally

**N. LOCAL FIRMS AVAILABLE TO A & E:**

<u>NATURE</u>	<u>To Be Furnished By:</u>			<u>To Be Paid For By:</u>		
	<u>C.C.</u>	<u>USOM</u>	<u>A &amp; E</u>	<u>C.C.</u>	<u>USOM</u>	<u>A &amp; E</u>
Quarters for personnel			X			X
Subsistence for personnel			X			X
Office Space & Utilities		X		X		
Local transportation		X		X		
Local help	X	X				X
Interpreter service						
Typing service		X		X		
Chauffeurs	X	X				X
Caretakers	X	X				X
Soil laboratory service			X			X

Local taxes, corporation and personal: UNKNOWN

Permits, licenses & customs: UNKNOWN

U.S. Commissary or PX: UNKNOWN

If paid for by A & E, costs for following items are estimated as follows:

Subsistence for personnel \_\_\_\_\_ per day

Local transportation (auto hire): see Proposal

LOCAL CURRENCY: will be sold to the A & E at the exchange rate of

U S \$1.00            \$.2.80 = one Libyan pound

- P. LOCAL LEGISLATION: Unknown
- Q. ADDITIONAL INFORMATION: Unknown
- R. FACTORS AFFECTING CONSTRUCTION COST: See report

PROGRAM FOR THE VOCATIONAL AGRICULTURAL SCHOOL IN EL-AWELIA

CIRENAICA, LIBYA

The vocational agricultural school in El-Awelia will be a 100% resident school, for boys aged 14 to 24, average 16 to 18. The curriculum includes theory and practice in the adjacent fields.

The proposal is to utilize the existing buildings of the El-Awelia community central and school with some alteration and rehabilitation, and add Present enrollment approximately 100.

	<u>Square meters</u>	<u>Square feet</u>
<b><u>REQUIRED:</u></b>		
Administration		
Dormitories for 250 boys		
Classrooms		
Library		
Dining hall and kitchen		
Laundry		
Assembly hall		
Infirmary		
Toilets		
Faculty housing		
Outdoor athletic facilities		
<b><u>EXISTING:</u></b>		
Administration - to be remodelled		
5 Dormitories - to be converted into classrooms	253.00	2722.28
6 Classrooms - to be remodelled	308.40	3318.38
(Results thus will be 11 Classrooms)		
Library - small existing library inadequate - Suggest turning into study hall to be remodelled	20.00	215.20
Dining hall and kitchen to be remodelled	221.30	2381.19
Recreation hall and tea room to be remodelled	170.30	1832.43
Laundry & showers to be remodelled	244.40	2629.75
Assembly hall to be remodelled	189.80	2042.25
Infirmary to be remodelled	64.30	691.87
Toilets to be remodelled	52.00	559.52
also take & convert 2 classrooms shown on first floor into teachers arts.		
<b>TOTAL TO BE REMODELLED</b>	<b>1659.80</b>	<b>17859.46</b>

Building Program - cont'd

	<u>Square meters</u>	<u>Square feet</u>
<b><u>TO BE BUILT:</u></b>		
Dormitories and dining facilities for 250. - x 9.5 sq. mt. =	2375.00	25555.00
Toilet building	75.00	807.00
Library building 12.00 x 24.00 =	280.00	3012.80
2 Classrooms @ 100 m <sup>2</sup>	<u>200.00</u>	<u>2152.00</u>
	2930.00	31526.80

IN ADDITION TO THE ABOVE:

- a. Wall or fence around the compound
- b. Rehabilitation of existing pavements
- c. Rehabilitation of cisterns

ALTERATIONS:

Passage of existing stairs -  
break through and finish.

VOCATIONAL AGRICULTURAL SCHOOL, EL-AWELIA, CIRENAICA, LIBYA

A. PHASE I\*

For Fact Finding (site survey,  
 soil borings, etc.)

B. PHASE II

1. New Construction

31,530 s.f. x \$15/s.f. = \$472,950

Estimated A & E Costs \$8,278

2. Remodelling Work

Rough Estimate of A & E Cost 2,500

Total Phase II Estimated A & E Cost \$10,778

C. PHASE III

1. New Construction

Estimated A & E Cost 16,554

2. Remodelling Work

Rough Estimate of A & E Cost 5,000

Total Phase III Estimated A & E Cost 21,554

Total Phase II and III \$32,332

\* Can be done concurrently with Phase II, Preliminary Design

Note: Payment for supervision of work should be negotiated on open ended per diem plus direct cost (travel, etc.) basis as there are too many unknowns in estimating these supervision costs.

PHASE II - PRELIMINARY DESIGN

ESTIMATED PERIOD: 40 Work Days #

PROFESSIONAL CATEGORY	PER DIEM DAYS			SUBSISTENCE RATES IN LIBYA			SUBSISTENCE TRAVELLING			TRAVEL COSTS	TOTAL
	WORK DAYS	\$ RATE	\$ TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL		
1 Partner	5	200	1000	3	12	36	2	6	12	100*	1,148
1 Sr. Architect	20	110	2200	3	12	36	2	6	12	100*	2,348
1 Int. Architect	40	80	3200								3,200
1 Sr. Draftsman	40	40	1600								1,600
1 Sr. Engineer	10	110	1100	3	12	36	2	6	12	100*	1,248
1 Int. Engineer	10	80	800								800
1 Sr. Draftsman	15	40	600								600
			<u>10500</u>			<u>108</u>			<u>36</u>	<u>300</u>	<u>10,944</u>

PHASE III - WORKING DRAWINGS

ESTIMATED PERIOD: 120 Work Days #

1 Partner	10	200	2000	3	12	36	2	6	12	100*	2,148
1 Sr. Architect	30	110	3300	3	12	36	2	6	12	100*	3,448
1 Int. Architect	60	80	4800								4,800
1 Sr. Draftsman	100	40	4000								4,000
1 Sr. Engineer	15	110	1650	3	12	36	2	6	12	100*	1,798
1 Int. Engineer	40	80	3200								3,200
1 Sr. Draftsman	60	40	2400								2,400
			<u>21350</u>			<u>108</u>			<u>36</u>	<u>300</u>	<u>21,794</u>

# Made to correspond with work schedule of University of Libya project.

\* Assumes trip combined with trips re University of Libya project.

COST ANALYSES

An extremely tentative cost estimate has been prepared for the purpose of establishing an overall picture of construction costs for all buildings and related site work.

This estimate is based on an average construction costs of \$15 per square foot if built with U.S. Dollars in the USA and \$6.50 if built with U.S. Dollars in Libya.

Excluded in the square foot price are the equipment items such as: kitchen, laboratory, classroom furniture and other furnishings. Such items are carried as separate allowances estimated herein.

Total New Construction

New Construction 31,526 S.F. @ \$15/sf = \$472,000

Area to be remodelled 17,860 S.F. @  
\$12/SF = 214,000

Estimated Total Cost Buildings \$686,000

Built-in equipment, including furnishings, etc. @ 10% 68,600  
\$754,600

Related site work lump sum allowance 40,000

Total Estimated Cost Buildings, equipment and site work if built in U.S.A. \$794,600

with U.S. dollars based on \$15/SF for new construction, buildings only and \$12/SF for remodelling

Total Estimated Cost Buildings, equipment and site work if built in Libya with U.S. dollars based on \$6.50 for new construction, buildings only \$345,000

SECTION D

PROPOSED SCHOOL AT SEBHA

CHECK LISTPROPOSED SCHOOL AT SEBHA, LIBYAA. ACADEMIC REQUIREMENTS

School Grades to be Accomodated: Up to Sixth Grade; ages 8 or 9 to 14 years

Anticipated Enrollment: Present: 50

Ultimate: 100

Possible Future: 200

Courses or Colleges Included: Basic Arabic

Math

Basic Academic Skills

Sewing, cooking, health-hygiene

Gardening

B. ICA FUNDS: 100% ICAC. OTHER FUNDS: NoneD. INFORMATION NOW AVAILABLE

Reports:

Preliminary estimates of space requirements: Off plans

Maps: Yes, but no contour (rough estimate of rock location from site visit)

Soil boring samples and tests: None; not customary in this area for one story building

Contract documents for A/E work already authorized: Task Order #2

Contract documents for construction work already authorized: None

Local building regulations: Set back regulations

Post report describing local conditions: For Tripoli

Agency or person to contact for further information:

Dr. Bryant, Chief, USOM, Libya

Dr. Holmes, Chief Educational Advisor, USOM, Libya

Mr. F.J. O'Brien, Project Engineer, Engineering Division,  
ICA, Washington, D. C.

The Nazarate of Ed

M. Hochim, Head of Public Works, Libya

E. CONTACT WITH A & E

Will be executed by:

ICA/W: Yes

Agency of Cooperating Country: Development Council  
Ministry of Education

Limitations or restrictions applying to a U.S. A & E

Contractor: To be determined

**F. SITE**

Location: Sebha  
 Selected: Yes  
 Acquired: Yes, City Property  
 Surveyed: No                      Map Available: Yes, no contour  
 General Description of Site Available: Yes, see report  
 What Utilities Available:  
     Power: Yes  
     Water: Yes, 6" Line  
     Sewers: No, use septic tanks  
     Gas: No  
     Telephone: Yes  
 Access Roads: Yes  
 Status of Site planning: This is a small school only

**G. A & E SERVICES TO INCLUDE**

Site Selection: No  
 Site Surveys: Probably not necessary  
 Sub-surface investigations: Test pits before construction  
 Master Plan, including landscaping: Part of building layout  
 Layout of electrical, water and sewer lines: Yes  
 Layout of common utilities: Does not apply  
 Preliminary Plans and specifications: Yes  
 Preliminary cost estimates for:  
     Grounds and utilities: Yes  
     Common utility facilities, such as water treatment,  
         sewage disposal, electric power, roads: \_\_\_\_\_  
     Buildings: Yes  
     Built-in equipment: Yes  
     Academic equipment: Yes

**H. APPROVAL OF A & E PLANS**

Master Plan: None  
 Preliminary Plans              C.C.: Yes              USOM: Yes  
 Probable time required for obtaining approvals: 10 day limit  
 Name of C.C. representative authorized to approve plans: Regional Officer

**I. TYPE OF CONSTRUCTION CONTEMPLATED**

Language to be used in plans and documents: English, Italian and Arabic (?)  
 System of measurements to be used: Metric  
 Advance schedule of work will be required: Yes  
 Progress reporting will be required: Yes  
 Required date of submission of preliminary plans and estimates: see TAC Proposal  
 On-The-Job training of local personnel in A/E work and construction: Not applicable  
 Place where A/E work is to be performed: Preliminary plans: U.S. and Italy  
 Original drawings and contract documents will become the property of: USOM

K. LOCAL RESOURCES AVAILABLE: Masonry construction generally (see report)

L. CLIMATE (as affecting design)

Altitude: \_\_\_\_\_  
 Temperature Range: 40° to 120°  
 Humidity: very dry  
 Annual rainfall: 2" ±  
 Maximum monthly rainfall: 1"

M. MANPOWER AVAILABLE LOCALLY (as affecting design cost): None

N. LOCAL FIRMS AVAILABLE FOR A & E SUBCONTRACT WORK

Architectural firms: None  
 Engineering firms: None  
 A & E Firms: None  
 Soils engineers and laboratories: None

O. LOCAL FACILITIES AVAILABLE TO A & E

Nature	To Be Furnished By			To Be Paid For By:		
	C.C.	USOM	A & E	C.C.	USOM	A&E
Quarters for personnel			X			X
Subsistence for personnel			X			X
Office space & utilities		X			X	
Local transportation		X			X	
Local Help	X	X				X
Interpreter service						
Typing service		X			X	
Chauffeurs	X	X				X
Caretakers	X	X				X
Soil laboratory service			X			X
Local taxes, corporation and personal:	UNKNOWN					
Permits, licenses & customs:	UNKNOWN					
U.S. Commissary or PX:	UNKNOWN					

\* If paid for by A & E, cost for the following items are estimated as follows:

Subsistence for personnel \_\_\_\_\_ per day  
 Local transportation (auto hire): see Proposal

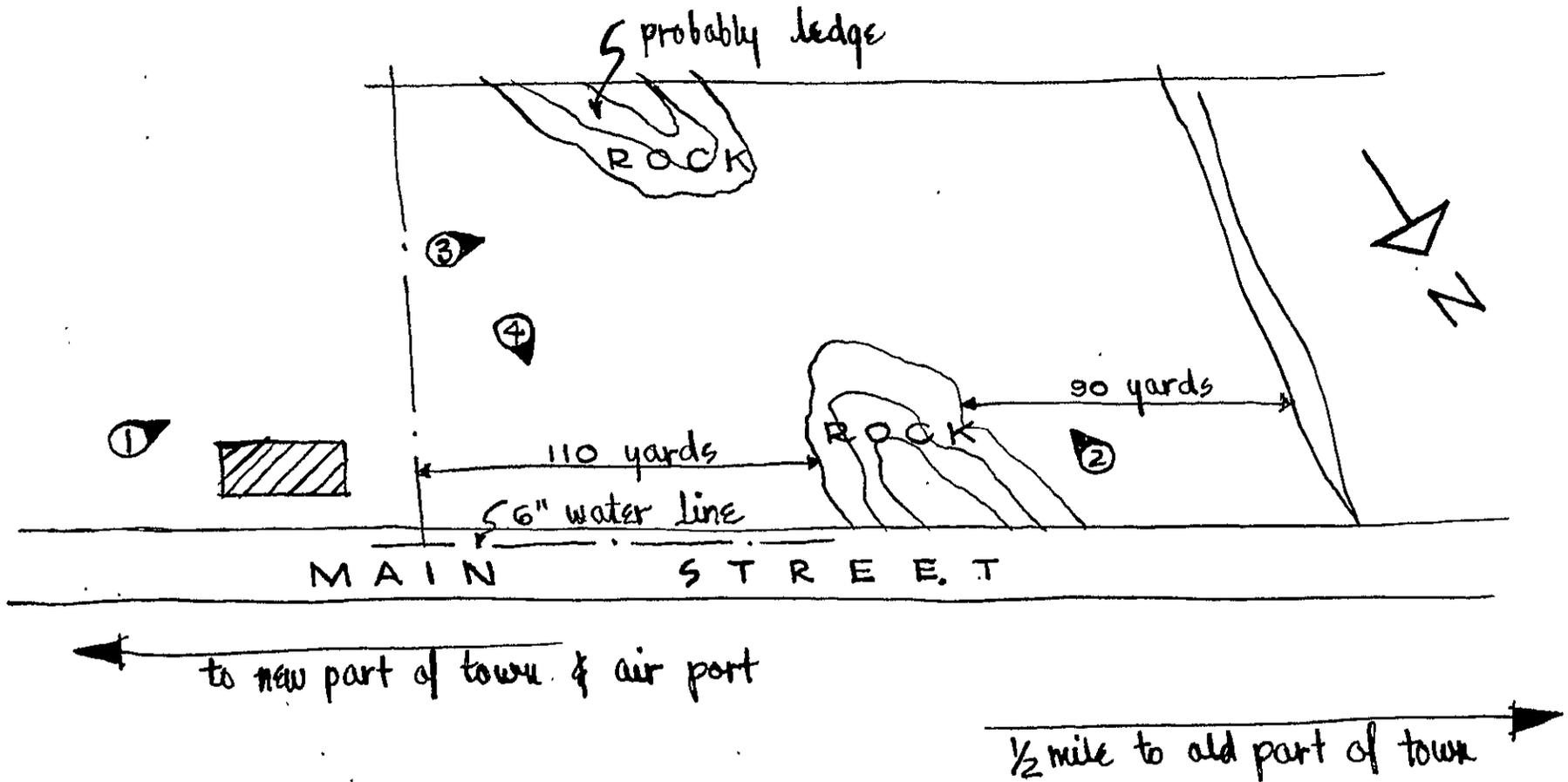
Local currency: will be sold to the A & E at the exchange rate of  
 US \$1.00                      \$2.80 = one Libyan pound

P. LOCAL LEGISLATION: Unknown

Q. ADDITIONAL INFORMATION: none

R. FACTORS AFFECTING CONSTRUCTION COSTS: See report

misc. other buildings



NOTE:

sewage disposed by septic tank, closed system pumped out 1/mo. & deposited in desert.

a central system is being considered in the future.

SEBHA key plan of site

NO SCALE

○ key to photographs

RESIDENTIAL SCHOOL FOR GIRLS, SEBHA, FEZZAN, LIBYA

The Residential School for Sebha in the Fezzan is to be built as a secondary, preparatory type Institution for the girls in the Sebha area, between the ages 10 to 15 approximately. Present enrollment 50; proposed 100. Possible future enrollment 200.

The curriculum will consist mainly of home economics, cooking, sewing, arts and crafts, literature, social studies. This curriculum will eventually gradually expand, therefore plans are to be organized to make future expansion possible.

Summary of Required Spaces

		<u>Square Meters</u>	<u>Square Feet</u>
1. Administration			
Headmaster	15.-		
Secretary	12.-		
Clerks	12.-		
Storage	9.-		
	48.-	48.-	516.48
2. Teachers room		24.-	258.24
3. Faculty toilets		18.-	193.68
4. Library		90.-	968.40
5. Classrooms     6 at 54.-		324.-	3,486.24
6. Storages for classrooms    3 at 9.-		27.-	290.52
7. Cooking laboratory		72.-	774.72
8. Sewing laboratory		72.-	774.72
9. Work room		72.-	774.72
10. Storages       2 at 9 =     18.-			
1 at 24 =    24.-			
	42.-	42.-	451.92
11. Toilets        1 at 36.-			
1 at 48.-		84.-	903.84
12. Assembly room		90.-	970.00
13. Dormitories    4 at 115 =		460.-	4,949.60
14. Dressing and lockers   4 at 36 =		144.-	1,549.40
15. Showers and toilets   4 at 36 =		144.-	1,549.40
16. Supervisors		55.-	591.80
17. Medical room		53.-	570.28
		1,819.-	19,573.96
	To be forwarded . . . .		

Sebha  
 Summary of required spaces (cont'd)

	<u>Square Meters</u>	<u>Square Feet</u>
forwarded	1,819.-	19,573.96
18. Linen storage	24.-	258.24
19. Student lounge	36.-	387.36
20. Study hall	36.-	387.36
21. Games room and storage	54.-	581.04
22. Dining hall	120.-	1,291.20
23. Kitchen	48.-	516.46
24. Kitchen storage	25.-	269.00
25. Laundry	18.-	193.68
26. Heating	12.-	129.12
27. Covered walkway estimated at equivalent of 1/4 of enclosed area $\frac{600 \text{ m}}{4}$	150.-	1,614.00
28. Wall around property estimated at 780 lin. meters, 2 m. high = 1560 m <sup>2</sup> say 1600 m <sup>2</sup>		
TOTAL .....	2,342.-	25,201.42

RESIDENTIAL SCHOOL FOR GIRLS, SEBHA, FEZZAN, LIBYA

- A. For Fact Finding Survey, \*  
Soil Borings, etc.
- B. For New Construction of  
125,200 s.f. x \$15 in USA = \$378,000

Phase II (Design) Estimated A & E Cost	\$6,615
Phase III (Working Drawings) Estimated A & E Cost	<u>13,230</u>
TOTAL ESTIMATED A & E COST	\$19,845

\* Can be done concurrently with Phase II, Preliminary Design

Note: Payment for supervision of work should be negotiated on open ended per diem plus direct cost (travel, etc.) basis as there are too many unknowns in estimating supervision costs.

PHASE II - DESIGN

ESTIMATED PERIOD: 40 Work Days #

PROFESSIONAL CATEGORY	PER DIEM DAYS			SUBSISTENCE RATES IN LIBYA			SUBSISTENCE TRAVELLING			TRAVEL COSTS	\$ TOTAL
	WORK DAYS	\$ RATE	\$ TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL	CAL. DAYS	\$ RATE	\$ TOTAL		
1 Partner	5	200	1000	3	12	36	2	6	12	100*	1,148
1 Sr. Architect	15	110	1650	3	12	36	2	6	12	100*	1,798
1 Int. Architect	20	80	1600								1,600
1 Sr. Draftsman	20	40	800								800
1 Sr. Engineer	5	110	550	3	12	36	2	6	12	100*	698
1 Int. Engineer	5	80	400								400
1 Sr. Draftsman	10	40	400								400
			<u>\$6400</u>			<u>\$108</u>			<u>\$36</u>	<u>\$300</u>	<u>\$6,844</u>

PHASE III - WORKING DRAWINGS

ESTIMATED PERIOD: 120 Work Days #

1 Partner	10	200	2000	3	12	36	2	6	12	100*	2,148
1 Sr. Architect	20	110	2200	3	12	36	2	6	12	100*	2,348
1 Int. Architect	40	80	3200								3,200
1 Sr. Draftsman	70	40	2800								2,800
1 Sr. Engineer	10	110	1100	3	12	36	2	6	12	100*	1,248
1 Int. Engineer	10	80	800								800
1 Sr. Draftsman	30	40	1200								1,200
			<u>\$13300</u>			<u>\$108</u>			<u>\$36</u>	<u>\$300</u>	<u>\$13,744</u>

# Made to correspond with work schedule of University of Libya project

\* Assumes trip combined with trips re University of Libya project

COST ANALYSES

An extremely tentative cost estimate has been prepared for the purpose of establishing an overall picture of construction costs for all buildings and related site work.

This estimate is based on an average construction costs of \$15 per square foot if built with U.S. Dollars in the USA and \$7.80\* if built with U.S. Dollars in Libya.

Excluded in the square foot price are the equipment items such as: kitchen, laboratory, classroom furniture and other furnishings. Such items are carried as separate allowances estimated herein.

Total New Construction 25,201 S.F. @ \$15 =	\$375,000
Built-in equipment including furnishings, etc. @ 10%	<u>37,500</u>
Sub-total	\$412,500
Related Site Work Lump Sum Allowance	<u>50,000</u>
Total estimated cost of buildings, equipment and site work if built in USA with U.S. dollars based on \$15/sf for buildings only.	\$462,500
Total Estimated Cost of buildings, equipment and site work if built in Libya with U.S. dollars based on \$7.80/sf for buildings only.	\$240,000

- \* The Sebha unit price is 20% above the \$6.50/sf unit price carried at El-Awelia and Benghazi due to the remoteness of the Sebha area. We learned during the time of our visit that the range is from 20% to 100% greater, contingent upon the types of material used and the types of labor skills employed. We have used the lower range in this case, envisioning simple material for the construction.

SECTION E

GENERAL CONDITIONS GOVERNING THE WORK

The following general conditions shall apply:

- A. Architectural style shall conform to generally accepted architectural standards for humid, tropical locations, with special emphasis on simplicity of construction, functional operation, minimum ornamentation and moderate cost. All buildings shall be designed for maximum use of natural ventilation and lighting and for minimum maintenance in a tropical climate. Air conditioning shall be considered for only those spaces where moderate temperatures and humidity levels are essential.
- B. All buildings and utilities shall be planned to permit future expansion or extension.
- C. Preliminary building plans, elevations and sections shall be drawn to show architectural appearance, type of framing, principal building materials and equipment, and floor layouts showing space allotted to various functions. The designs shall be illustrated by one or more artist's perspective renderings showing groups of buildings or each one separately, including typical housing units.
- D. Lists shall be prepared to cover the movable furniture and equipment required for each building.
- E. Tentative arrangement of main gate, fencing, landscaping, roads, sidewalks, power lines, water mains and sewers shall be shown on a separate plan.
- F. General specifications shall be prepared to describe character and quality of all parts of the work.
- G. Preliminary cost estimates shall be itemized for grading, roads, sidewalks, parking areas, landscaping, water system, sewer system and electric system, and for each building. The building estimates are to show costs of structural work, built-in equipment and movable equipment. Each item is to be segregated to show labor and materials and equipment, broken down between local costs and foreign costs. Cost estimates shall be prepared in sufficient detail to support and permit evaluation of the estimates.
- H. All cost estimates shall be prepared on the basis of the following assumptions:
  - i) The construction contractor will be a firm incorporated in the United States

- ii) Other than indigenous materials and locally manufactured commodities, the construction contractor will be required to procure all items of equipment, materials and supplies, and sub-contract services, from the United States or other free world sources excepting Australia, Austria, Belgium, Canada, Denmark, France, Germany, Italy, Japan, Luxembourg, Monaco, Netherlands, New Zealand, Norway, South Africa, Switzerland, U.K., and Hong Kong.
  - iii) Except for locally available skilled and unskilled labor, and local subcontractors, the construction contractor will have to import all required personnel into Libya.
- I. All approvals required to be given by USOM hereunder shall be given by the Director, USOM, or his designee for this purpose.
  - J. A & E shall make all changes requested by USOM which, in the judgement of the A & E are not incompatible with sound architectural and engineering principles and practices and shall re-submit for approval.
  - K. Wherever A & E is required to submit material to USOM for approval, USOM shall approve or request changes within ten (10) days of receipt of same. If, within ten (10) days after receipt by USOM, USOM neither approves, requests changes or advises A & E of contemplated changes, the submitted material shall be considered approved.
  - L. All assembled notes, information and data obtained in the course of the work shall become the property of the USOM and shall be delivered to the USOM office unless otherwise directed on completion of work.
  - M. Within fifteen (15) days after arrival in Libya, the A & E shall submit to USOM and ICA/Washington, a revised work schedule if the scope and timing proposed herein is different.
  - N. Monthly Reports - The A & E shall submit to USOM and ICA/Washington, progress reports of the work. Such reports shall be furnished monthly by the Partner in charge of the project.
  - O. Final Report - The A & E shall submit a final report at the completion of all work under this task order to the USOM and ICA/Washington. This report will indicate the development of the University plans and other facilities in the various stages of development.

SECTION F

LOGISTIC SUPPORT

USOM shall provide to the A & E staff while performing services under this Work Order in Libya, furnished office space and utilities, local technicians, interpreters, guards and, to the extent available, secretarial services, equipment and supplies. Libyan Government shall provide local technicians, chauffeurs and guards when unavailable from USOM.

To the extent that the foregoing are not furnished to Contractor by USOM and/or GOL, the A & E will be reimbursed actual cost for such items in local currency pursuant to procedures and documentation prescribed by USOM, or in lieu of reimbursement in local currency, the A & E when authorized by Director USOM will be reimbursed in dollars for the actual cost of items as approved by USOM.