PD-ABA-709

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE: C (A = Add, C = Change, D = Delete) — Amendment Number: 1 — DOCUMENT CODE: 3

2. COUNTRY/ENTITY: Nicaragua

3. PROJECT NUMBER: 524-0115

4. BUREAU/OFFICE: LAC 05

5. PROJECT TITLE (maximum 40 characters): Rural Education Development

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 12 DD 31 YY 85

7. ESTIMATED DATE OF OBLIGATION (Under "B." below, enter 1, 2, 3, or 4): A. Initial FY 79 B. Quarter 4 C. Final FY 82

8. COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY 79 B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(280)	( )	(280)	(890)	( )	(890)
(Loan)	(602)	(6898)	(7500)	(602)	(6898)	(7500)
Other U.S. 1.						
Other U.S. 2.						
Host Country		4655	4655		4655	4655
Other Donor(s)						
TOTALS	882	11,553	12,435	1,492	11,553	13,045

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1) EH	600	660	600	280	7500	610		890	7500
(2)									
(3)									
(4)									
TOTALS				280	7500	610		890	7500

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each): 630 660 633 632 636 635

11. SECONDARY PURPOSE CODE: 620

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code	BR	R/ED					
B. Amount	10363	370					

13. PROJECT PURPOSE (maximum 480 characters)

Extend, improve and integrate Rural Education Services

14. SCHEDULED EVALUATIONS: Interim MM 12 YY 83 — Final MM 12 YY 85

15. SOURCE/ORIGIN OF GOODS AND SERVICES: Grant [X] 000 Loan [X] 941 G/L [X] Local [ ] Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a 54 page PP Amendment)

This PP amendment reformulates the project in line with new priorities of the National Reconstruction Government of Nicaragua. No increase is requested in project funding over the original amount proposed. An extension of the PACD to 12/31/85 is requested.

17. APPROVED BY — Signature: [signature] — Title: Lawrence E. Harrison, Director — Date Signed: MM 11 DD 07 YY 80

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM DD YY

AID 1330-4 (8-79)

PP AMENDMENT

Nicaragua-Rural Education Development
(LOAN 524-V-033, GRANT 524-0115)

TABLE OF CONTENTS

Annexes:

G. MOE Organizational Chart
H. Specifications for the Construction of the IEC's
I. Cost Estimates for In-Country Training
J. List of Communities participating in Aulas Ranchos Program
K. Engineering Specifications and cost estimates for the Aulas Ranchos Program
L. Logical Framework Matrix
M. Draft Loan Authorization Amendment

Bulk Files:

1. Harrison to Brown Memo: "Reprogramming of Rural Education Development Loan" No. 524-V-033 and Grant No. 524-0115. March 2, 1980
2. John F. Helwig, "Proposal and Recommendations for the Reprogramming of USAID Loan 524-V-033. August 1980
3. Albert S. Muller: "Report Covering Agricultural Education Assignments". August 28, 1980
4. Alonso Barrientos: "Diseños Preliminares Complejos Educativos Integrados (CEI) - Normal/Agropecuario"
5. Alonso Barrientos and Susana Liberti: Propuesta de un Sistema de Mantenimiento Permanente con Participación Comunal". October 1980
6. Alonso Barrientos: "Programa Aulas Rancho para el Departamento de Zelaya". October 1980
7. Alonso Barrientos: "Diseños Preliminares para Complejos Educativos Integrados, Diseño Final y Programa de Aulas Rancho, Bases para el Sistema de Mantenimiento con Participación Comunitaria" - Annex to 4, 5 and 6 above. October, 1980
8. Gutiérrez - Lau Asociados: "Necesidades de Procesamiento Automático de Datos en el Ministerio de Educación". September 30, 1980

PP Amendment

Nicaragua-Rural Education Development
(Project No. 524-0115; Loan 524-V-033)

SUMMARY

I. Background

The project was approved during FY78, at a maximum funding level of $7.5 million Loan and $890,000 of Grant funds. A Loan Agreement for $7.5 million and a Grant Agreement for $280,000 were signed on August 30, 1978. Conditions precedent to initial disbursement were met on September 12, 1979, but implementation was prevented by the outbreak of a full scale civil war. The revolutionary forces, led by the National Sandinist Liberation Front (FSLN), assumed power on July 19, 1979, forming the National Reconstruction Government (GRN).

Since taking power, the GRN has been primarily concerned with reestablishing civil order, rebuilding the economy and redirecting the country's resources towards programs to improve living conditions for the masses.

Among the resources that were available to the new government upon assuming power was the entire amount of the assistance available under this project. While at first the GRN's immediate reconstruction needs and the National Literacy Campaign took precedence over the longer range programming task inherent in redirecting this project, the Ministry of Education (MOE) has made a concerted effort over the last six months to assess its needs and carry out the necessary studies to enable reprogramming project funds.

II. Project Status

Since the takeover of the GRN, approximately $295,000 of Loan funds have been committed to attend to immediate reconstruction needs and carry out background studies needed for the reprogramming effort. Approximately $195,000 have now been disbursed. No Grant funds have been committed or disbursed. The present PACD is June 30, 1984. This PP Amendment sets forth a reformulated Project Description which will govern the commitment and disbursement of the remaining Project funds.

III. Project Description

The project Goal and Purpose remain the same as in the original Project Paper. The Goal is to increase the well-being of Nicaragua's rural poor by improving rural education, and the purpose is to extend, improve and integrate rural education services.

The focus of the original project was on directly expanding and improving primary education in two of the country's lowest income rural regions. As ambitious efforts to construct primary schools and to improve the quality of primary education are now underway with World Bank and other donor resources, this project will focus on equally important areas where other donors are currently providing limited resources: pre-service teacher training, secondary level agricultural/technical education, primary education in forgotten Zelaya province, school maintenance and educational planning and administration. The project activities are organized into three Components:

A. Integrated Educational Complexes (IEC's)

To address Nicaragua's extremely serious shortage of qualified primary school teachers and mid-level technicians and managers in agriculture and industry, the Ministry of Education will develop four secondary level Integrated Educational Complexes. When fully operational, these complexes will jointly produce 500 normal school teachers and 290 mid-level technicians a year. The complexes will be situated in small towns - Juigalpa, Chinandega, Siuna and Bluefields- which are located in regions that have had little access to secondary education of this type in the past. The educational programs will be oriented towards the development problems of the regions. At three schools, integrated programs of primary teacher training and agro-technical education will be developed, and in the fourth (Bluefields), industrial training will be combined with a normal school program. The integration of the programs in each complex is expected to offer significant advantages in increasing the relevance of the educational programs to development problems and provide greater opportunities for practical training for all students. The total cost of this Activity, including construction and equipment of physical facilities, training of teachers for the complexes and technical assistance in program development, is estimated at $9.1 million.

B. Low-Cost School Construction and Maintenance

Although the GRN is making significant efforts to greatly increase accessibility to primary education throughout Nicaragua, the country's largest and most remote province - the Department of Zelaya - is receiving little attention. Furthermore, the GRN does not have an organized program to maintain the country's public schools. Component II consists of innovative approaches to meeting these vital needs.

The first activity will be self-help construction of rustic rural classrooms ("Aulas Ranchos"). Starting with a new classroom design which minimizes the need for materials from outside the communities, and capitalizing on the demonstrable desire of Zelayans for schools, the MOE will sponsor self-help construction of approximately 197 classrooms throughout Zelaya province. It is estimated that the materials cost for finished classrooms expected to last 15 years will be about $1,400.

The second activity will be a pilot rehabilitation/maintenance system which is also based on self-help efforts. The MOE will develop a system for routinely surveying elementary schools, assessing rehabilitation and maintenance needs, estimating repairs, and providing materials and technical assistance to those schools most needing attention. An institutional capacity for maintenance will be developed and at least 30 schools rehabilitated and maintained through the project.

The total cost of the Aulas Ranchos and Maintenance activities is estimated at approximately $1.3 million, including needed technical assistance and training.

C. Educational Planning and Administration

Administratively, the Ministry of Education is weak. To date little effort has been given to long range planning and research, and even relatively straight-forward tasks like estimating the number of schools and teachers needed by 1990 become mammoth tasks. Furthermore, all records are kept manually which slows down operations and provides a less than adequate data base for analysis, planning and management.

Under Component III, these problems will be addressed by a combination of training for personnel of the MOE's Office of Planning and Educational Development, and the creation of a Data Processing Service for the Ministry. The total cost of this activity is estimated at $820,000.

IV. Project Implementation

A special Project Implementation Unit will be created to carry out the Project. The Unit will have full responsibility and authority for carrying out construction and maintenance activities and will coordinate the other Project activities. All procurement, commitment and disbursement of AID funds, and project accounting will be handled by the Unit. The cost of the Unit, including the services of a long-term adviser, is estimated at $830,000 during implementation of the project.

V. Financial Plan

A summary of project costs including allowances for inflation contingencies follows:

Component/Activity	Amount in $000 AID Grant	AID Loan	GRN	TOTAL
I. Integrated Educational Complexes	1,085	5,965	2,031	9,081
A. Physical Facilities	85	5,613	1,577	7,275
B. Human Resources Devel.	1,000	352	454	1,806
II. Low-Cost School Construction and Maintenance	115	200	967	1,282
A. Aulas Ranchos	40	40	417	497
B. Maintenance	75	160	550	785
III. Educational Planning and Administration	350	100	370	820
A. Planning and Research	250		120	370
B. Educational Administration	100	100	250	450
Project Implementation Unit	150		680	830
Sub-total	1,700	6,265	4,048	12,013
Contingencies/Inflation (15%)	255	940	607	1,802
Total-Reprogrammed	1,955	7,205	4,655	13,815
Previously Committed	-	295	-	295
Total Project	1,955	7,500	4,655	14,110

Of the total shown as AID/Grant funded, $890,000 will come from Project No. 524-0115 and the remaining $1,065,000 from ESF funds planned for FY81 and FY82 obligation. Of the GRN counterpart, $2,155 million is operating costs and will be financed by GRN budgetary allotments. The remaining $2.5 million is for investment and will be financed from PL 480 Title I generations.

VI. Issue

GRN Ability to Operate and Maintain the Project

The Ministry's ability to operate maintain and replicate the project will depend, in part, on its ability to gain continued increases in its operating expense budget. After an increase of over 90% from 1979 to 1980, there are indications of a retrenchment for 1981. Yet, school construction is proceeding aided by World Bank and other donors, and the laudable GRN intention to provide free public education for all implies the need for as yet undefined but surely large budgetary increases. It is unclear that GRN finances will permit adequate attention

to all the new and expanded education services that the Government is planning to provide.

The Mission is concerned about the adequacy of resources for the education sector over the long run, and will require reasonable assurances that this project will be adequately maintained. The Minister of Finance will be requested to commit the GRN to a specific budget increase for the first few years following implementation, to cover the additional recurrent costs that the Ministry of Education will absorb.

I. BACKGROUND

A. Education in Nicaragua prior to the Revolution

Historically the ability of the Nicaraguan government to meet the educational needs of the country's population has been extremely limited. Primary school enrollments, while increasing somewhat in absolute numbers over the past decade, have barely managed to meet the needs of two thirds of Nicaragua's 7-12 year old population (see Annex A).

Primary school completion rates, especially in rural areas, continue to be extremely low [1/] and repetition remains a problem of serious proportions [2/]. The net effect, in addition to the obvious disservice done to the students themselves, has been a heavy and unnecessary financial burden on the state: 45% of the relatively few students who graduate from rural primary schools and 47% of urban primary school graduates take between 7-9 years to finish the first six grades.

Problems of access are even more severe at the secondary level. In 1978 less than 15% of the country's population between the ages 13-18 were enrolled in secondary schools; nearly half (47% in 1978) of all students enrolled in secondary schools had repeated one or more grades. Of every 1000 students entering secondary school in 1973 only 470 or 47% graduated in 1978.

Compounding and exacerbating the problems of access and the inefficiencies inherent in a system that has many repeaters and few who complete cycles within the system, have been serious deficiencies with regard to the quality and relevance of the education services provided. The curriculum offered at the primary level has by and large not been responsive to Nicaragua's educational development needs; a high percentage of Nicaragua's primary schools (61% in 1978) are incomplete (e.g. offer five grades of education or less); many primary school teachers (1198 in 1978) are required to teach two grades or more; and a good number (2684 teachers or 27% of the primary teacher force in 1978) lack normal school degrees. Problems of quality and relevance are specially acute in rural areas: curricula used in these areas have if anything been oriented toward children living in urban settings; the majority (78% in 1978) of all primary schools are incomplete; and nearly half (44%) of the primary teaching force is made up of untitled teachers most of whom are required to teach two grades or more.

1/ Of every 1000 students entering first grade in 1973 in rural areas only 53 or 5% finished sixth grade in 1978. The comparable figure for students in urban areas is 440 or 44%.

2/ It has been estimated that approximately 80% of all primary school students have repeated one or more grades.

Secondary level education in Nicaragua is characterized by many similar constraints: 28% of all secondary school teachers in 1978 were university graduates; and most secondary programs (accounting for 93% of all students enrolled in secondary schools in 1978) have been oriented either toward preparing graduates for further study at the post-secondary level or for jobs in urban settings. In 1978 of a total high school enrollment of 35,100 only 118 or 0.3% were in agricultural programs.

B. Education in Nicaragua during and after the Revolution

The situation worsened during the 1978-1979 civil war. Primary and secondary school enrollments dropped 3/; a large number of education facilities were seriously damaged 4/; and in a large number of cases students lost one and as many as two-years of schooling.

Since the war great strides have been made in improving education services. A large number of schools damaged by the war have been repaired. The new government (GRN) has initiated an ambitious program designed to make basic education services universally available. Education, along with health and housing, are the highest social priorities of the new government. The education budget has risen from $41 million in 1979 to $88 million in 1980.5/ A total of 900 new primary school teachers have been hired and the MOE expects to hire 1050 more for the 1980-81 school year. The MOE, with its own resources and World Bank Assistance, has launched a massive program to rebuild schools damaged by the war.

Perhaps most impressive in terms of GRN accomplishments to date in the field of education has been the National Literacy Campaign. Between March and August of 1980, 80,000 secondary school students and teachers were dispatched to the farthest reaches of the country to teach 722,000 illiterates to read and write.6/ By August, when the first stage of the campaign reached its completion, 406,000 individuals who were previously illiterate could read and write; and illiteracy, previously estimated at 50.2% of the population ages 10 years and older, had been reduced to less than 13%.

3/ The percentage of the 7-12 year old population enrolled in primary schools dropped from 67.5% in 1977 to 64% in 1978; comparable figures for secondary age students are 17.5% and 14.7% respectively.

4/ MOE estimates place war related damage to physical facilities at $3.5 million.

5/ At official rate of exchange.

6/ AID provided significant assistance to the GRN in carrying out the campaign by donating $2.6 million in PL 480 Title II foodstuffs. These commodities fed the students and teachers for the four months they were out teaching illiterates to read and write.

Planned efforts provide strong evidence that the GRN intends to continue dramatically increasing access to basic education in Nicaragua and improve the relevance of the services provided. Some 2,200 students are just now launching stage two of the literacy campaign oriented toward teaching approximately 66,000 Miskito and English speaking residents of the Atlantic Coast to read and write in their native language. By the time this stage of the campaign is completed it is projected that illiteracy nationwide will have been reduced to 11%.

The MOE has also initiated efforts to improve the quality of education. A major restructuring of in-service teacher training is planned and a major revision of curricula at all levels is underway. The new curricula will stress adapting education to the needs of students living in rural areas. Transitory curricula have just been developed. These curricula will be evaluated during the course of the 1980-81 and 1981-82 school years and it is expected that by 1983 the new official curricula will be in place.

A comprehensive education sector assessment is planned to serve as the basis for a new educational development plan. A massive school construction program is underway in rural areas.

The MOE's planned efforts will go beyond the traditional primary/secondary school age target group. A major expansion and reorientation of pre-school education, improved educational opportunities for out-of-school youth and adults , and expanded and improved agricultural education are also planned. The adult education program will be carried out by a newly created Division of Adult Education. This Division has been charged with continuing the work started by the literacy campaign both in terms of reinforcing the newly acquired literacy skills of previously illiterate adults and providing them with an opportunity to obtain a primary education. Basic skills training will also be provided as a part of the continuing education program.

In agricultural education, the MOE is launching an ambitious program designed to impact on all levels of the education system. New curricula for agricultural education are being developed for grades 1-12, and at the ciclo básico (grades 7-9) level the MOE is launching a small experimental program designed to combine agricultural education and agricultural production. For the second level of secondary education (grades 10-12) the MOE plans to rebuild and equip 4 existing Agricultural Institutes as well as create new agricultural secondary schools in areas of high potential agricultural production.

Complementing the focus on improving formal agricultural education services are plans to increase opportunities for practical agricultural training for out-of-school youth and adults. There are currently 4 Escuelas Agrícolas Campesinas (EAC) 7/ in existence each with the capacity to serve some 70 students. By 1981 the MOE would like to expand this program creating an additional 7 EAC's.

Assuming the programs identified above are carried out as planned and that the GRN generates the revenue needed to permit the MOE operational budget to expand as planned between 1980 and 1990 (see Annex B) to permit these activities to be implemented, the MOE projects that by the end of the decade education at the primary level will be nearly universal; and that enrollment at the secondary level will encompass 76% of the secondary school age population.

C. The Role of the IFIs and Particularly AID in Assisting the GRN to meet its New Educational Development Goals.

In order to accomplish the ambitious goals outlined above the MOE is drawing on a variety of sources of assistance, internal as well as external. The internal organization of the Ministry has been restructured and along with it a number of professionals of high calibre have been hired. Interministerial linkages have been set up through a newly created Advisory Council of Education 8/ Enthusiasm is high and Ministry employees tend to work long hours.

External assistance over the past years has come primarily from the World Bank and from UNESCO with the OAS playing a lesser role. All three are concentrating their activities primarily on basic education (grades 1-9) in rural areas. Together they are playing an important role in helping the MOE to restructure the orientation and focus on this key

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7/ The EAC's alternate periods of study with periods of field work. Training is mainly oriented toward improving agricultural techniques. However, some training focuses on improving practices in health and nutrition.

8/ This Council is made up of representatives from the Ministries of Planning and Education. The Council also includes representatives from the Federation of Catholic Teachers, the Superior Education Council, the National Teachers Association and the Federation of Parents. The Council is responsible for assuring that the feelings of the majority of Nicaragua's populace are reflected in the educational system. It is also charged with guiding national education policies and helping to solve problems that might arise in the educational community.

area. Offers for bilateral assistance and out-of-country training have been pouring in from all over the world. Principal among active bilateral donors in these areas are Mexico, Venezuela, Sweden and Cuba. Most of their assistance has been geared toward the literacy campaign with the exception of Cuba which has also been providing major technical support throughout the education system.

The MOE has requested a large amount of assistance for 1981, primarily for infrastructure, from the World Bank. The MOE is also in the process of negotiating a major loan with the IDB for obligation in 1981. The two requests together amount to over $60,000,000. Both focus primarily on strengthening and expanding basic rural education services 9/.

AID has been asked to contribute to the realization of the MOE's plans by reprogramming the resources available under the Rural Education Project (Loan 524-V-033; Grant 524-0115) in support of planned activities. The project goal and purpose 10/ will remain the same as the original Project Paper, but the focus will be shifted from the delivery of improved education services at the primary level to improving the quality of rural oriented secondary level education. However, as part of the secondary efforts will concentrate on training teachers for primary grades. the effect of the project will also be to improve primary education with a higher multiplier effect than that envisioned in the original project. Specifically, AID will: build and equip four secondary complexes that combine primary teacher training with mid-level agro-technical training; assist in training staff members of the complexes, especially those providing courses in agricultural education 11/; and provide assistance in school maintenance as well as in administrative support. A comparison of these activities with those originally planned is included in Annex D. A summary of the activities and recommendations of reprogramming teams involved in recasting the project is included in Annex E.

9/ A more detailed description of assistance being provided by other donors may be found in Annex C.

10/ The goal of Loan 524-V-033 is to "expand and improve rural education". The purpose is to "extend, improve, and integrate rural education services".

11/ An ongoing UNESCO project, as will be explained in further detail in Part II, is taking a comprehensive approach designed to improve teacher training at all levels.

II. PROJECT DESCRIPTION

A. Project Goal and Purpose

1. Project Goal

The goal is to increase the well-being of Nicaragua's rural poor by improving rural education. Indicators that the goal has been achieved are:

a. Rural primary school enrollments increase from 70% of the rural population of primary age in 1980 to 81% in 1985.

b. Rural primary school drop out rates between 1980 and 1985 decrease from 25% to 14% and repetition drops from 15% to 11%.

2. Project Purpose

The project purpose is to extend, improve, and integrate rural education services. Indicators that the purpose has been achieved are:

a. MOE teacher training capacity increases 40% between 1980 and 1985; 75% of graduates of new normal schools placed in jobs in rural schools.

b. Graduates of MOE secondary agricultural programs increase 50% between 1980 and 1985; 75% of graduates are placed in jobs for which they are trained or are continuing training in their field of study; graduates possess greater skills in areas for which they are trained.

c. Improved shool maintenance: target communities continuing to maintain schools.

d. Administrative efficiency at MOE increased: basic operations (e.g. personnel system, student records and inventory) being run more efficiently.

In order to verify that the goal and purpose have been achieved, a final project evaluation will be needed. This is discussed in Section III. D. Evaluation Plan.

B. Project Beneficiaries

Direct beneficiaries include primarily teachers, MOE staff and members of the communities where project activities are carried out. The number of direct beneficiaries is estimated at 55,023. Indirect project beneficiaries include all MOE staff not included as direct beneficiaries plus all students benefiting from MOE's educational services. Total indirect beneficiaries are estimated at 898,000 (Details in Chapter V).

C. Project Activities

1. COMPONENT I: Improved Teacher and Agrotechnical Training

a. Background

(i) Teacher Training

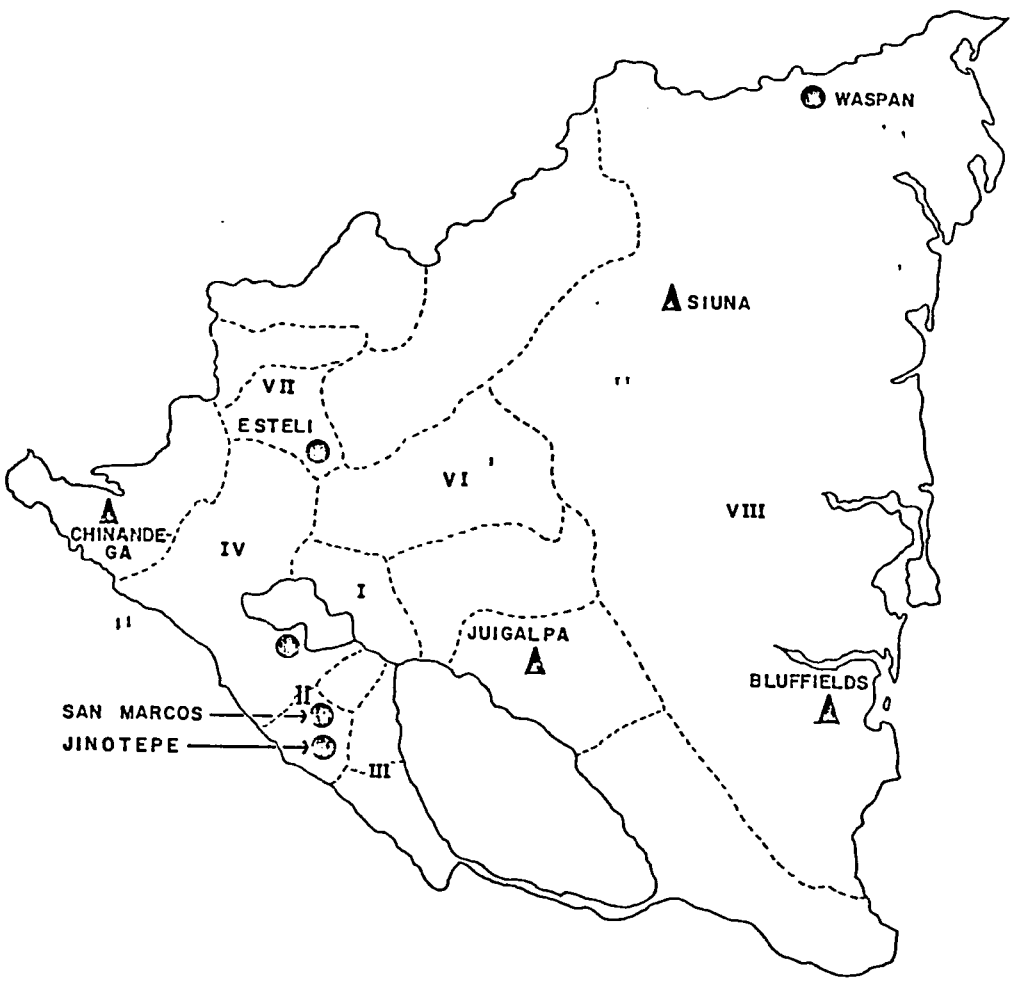
Prior to the revolution, responsibility for primary teacher training in Nicaragua rested with five teacher training institutes. These units were relatively autonomous schools which received little guidance and support from the Ministry of Education. A pre-requisite for enrollment was the completion of nine years of schooling. Grades 10-12 (normal school) were dedicated to producing individuals capable of teaching primary grades one through six.

Three of the institutes - those located at Jinotepe, San Marcos and Managua - are concentrated in the western side of Nicaragua within a 30 mile radius and have a primarily urban focus. The Estelí institute serves the North Central Area of the country. (Estelí, Madríz, Nueva Segovia and part of the Departments of Jinotega and Matagalpa). The Waspan school is located in the inaccesible extreme north east area of Nicaragua, serving a small portion of the Zelaya department. The location of these schools is shown on the map on the following page. Annex F provides information on enrollments for 1980, personnel employed, number of classrooms, and capacity and size of the library of each institute.

The GRN is taking a number of steps to improve the quality of teachers that graduate from these institutes. Teacher training, in-service as well as pre-service, has been consolidated and is now the responsibility of the MOE's central operating structure. The newly created Division of Human Resources 1/ is responsible for all training. The Division of Normal Schools within the Secondary School Department coordinates pre-service training. Both offices coordinate very closely with the Programming Division which is responsible for developing curricula and texts for all MOE programs.

In addition to undergoing an administrative reorganization, the MOE is developing new curricula that emphasize practical skills and relevance to rural areas. This curriculum revision is being carried out in large part with assistance from UNESCO. UNESCO will also play a primary role in helping the MOE upgrade its in-service teacher training program.

1/ Annex G contains a copy of the MOE's organizational chart.



EDUCATIONAL REGIONS

I MANAGUA

II MASAYA AND CARAZO

III GRANADA, RIVAS, AND RIO SAN JUAN

IV CHINANDEGA AND LEON

V BOACO AND CHONTALES

VI MATAGALPA AND JINOTEGA

VII ESTELI, MADRIZ AND NUEVA SEGOVIA

VIII ZELAYA

EXISTING NORMAL SCHOOLS

NORMAL SCHOOLS TO BE BUILT UNDER THE LOAN

(ii) Agro-technical and industrial education

At present there are four government operated secondary agro-technical schools in Nicaragua. They are located in Muy-Muy, Juigalpa, Chinandega and Siuna. The institute in Muy-Muy specializes in agromechanics; the Juigalpa school emphasizes zootechnology and the Chiandega and Siuna schools specialize in agronomy.

These schools are complemented by two private post-secondary agro-technical schools in Estelí and Rivas, both of which offer three year degrees, and the Faculties of Agriculture and Livestock at the National and Catholic Universities. AID, through two OPG's to CARE, is currently assisting the Estelí and Rivas schools. USAID/Nicaragua also plans in the near future to enter into a Title XII project which should strengthen the agricultural faculties of the universities.

The current status of the secondary agro-technical institutes reflects the low priority the former government allocated to vocational education. The teaching staffs of the four schools and the MOE Central Office back-up are small. Preparation of agro-technical staff is limited (a number have little more than secondary school degrees). The physical facilities are entirely inadequate. Equipment and materials, where they exist, are also entirely inadequate.[1/]

The MOE is aware of existing deficiencias in this area and, given the great importance of agricultural training to the accomplishment of the GRN's development goals, plans over the coming years to improve the quality of services provided by the existing institutes and increase the number of graduates. One important first step has been developing the recently completed occupation profiles for graduates of the secondary agro-technical institutes. These profiles have been developed in close coordination with the Ministry of Agricultural Development (MIDA). There are currently three profiles: one for zootechnics, one for agronomy and one for agromechanics. Transitory programs for students enrolled in these institutes have also been developed as have course objectives for the first semester of each of the three years [2/] . Teaching staff from all four institutes are just completing two week seminars designed to orient them in the use of the

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1/ A more detailed description of the current deficiencies of these facilities may be found in a document prepared by Albert Muller, a member of the reprogramming team. A copy of this report may be found in the LAC/DR bulk files.

2/ Copies of the profiles plus the transitory programs may be found in LAC/DR bulk files annexed to John Helwig's report.

transitory programs. Over the next few years, the MOE plans to evaluate the transitory programs, make necessary modifications and prepare official curricula in each of the above areas. Once these offical curricula are developed, a series of texts will also be prepared to be used with the new curricula.

The MOE is aware that much more staff training remains to be done. Technical knowledge of the teaching staff from the complexes needs to be upgraded; and teaching as well as curriculum development staff need to be prepared in the development and utilization of the new curricula and texts.

(iii) Supply and Demand for Trained Teachers and Agricultural Technicians

The GRN has placed a high priority on making the education imparted through normal schools and secondary level agricultural schools consonant with its short and long term rural development goals for the country. According to MOE estimates, it will be necessary to graduate approximately 1,000 new primary teachers yearly between now and 1990 in order to meet the projected demand for new trained teachers in rural areas.

The Ministry of Agriculture (MIDA) has recently calculated that over the next few years it will need approximately 8000 mid-level agricultural technicians to oversee new agrarian reform operations as well as to assist in providing agricultural extension services to small farmers. If the needs of other public sector agencies such as the Institute for Natural Resources (IRENA), the Nicaraguan Commodity Supply Institute (ENABAS), the National Development Bank (BND), as well as the private sector are added in, the projected need for trained mid-level agricultural personnel between now and 1985 could rise to over 10,000.

While the supply of workers having the skills to qualify them for these jobs is unknown, it is clear that those jobs now available are going begging. The reasons for this are many, and include low salaries (for primary teachers), outmigration during the last few years (for agricultural technicians) and the limited number of professionals trained in these areas in prior years.

The apparent high demand could be met in several ways. Workers having skills that qualify them for these positions could be transferred from other jobs, retirements could be deferred, salaries could be raised, workers could be attracted from other countries or sent gratis by other governments, and/or the ap-

parent outmigration could reverse itself. From the limited data available a combination of all of the above measures and fortuitous circumstances would still not make an appreciable dent in meeting the demand. It is clear that a large increase in training will be needed to begin to approach it in the short-medium term (5-10 years).

Neither the existing secondary agro-technical schools nor the five normal schools currently in operation come close to having the ability to meet this demand. In 1980 it is projected that the five existing normal schools together will graduate 343 students (657 less than the number needed for the 1981 school year); the four existing agro-technical institutes plan to produce 110 graduates in 1980 and 92 in 1981 1/. To meet this demand, the required physical facilities must be developed and the necessary human and financial resources must be provided for their operation. This activity addresses both aspects of this equation.

b. Activity Description

(i) Construction of Physical Facilities

The GRN has considered several optiors for developing facilities to meet the demand for trained personnel. The existing five normal schools and four agro-technical secondary schools could be improved and expanded; new schools could be built separately for teachers and for agricultural technicians (agro-técnicos). Alternatively, new units could be built for both teachers and agricultural technicians. After a year of weighing the options, the GRN has come to what the Mission believes is a sensible conclusion: The development of Integrated Educational Complexes (IECs) for training of both teachers and agro-técnicos. The IEC's will be located at sites that make good use of existing facilities and avoid concentration in the areas of existing teacher training facilities.

The conceptual basis for the integrated educational complexes (IECs) is rooted in the need to find a better way to provide normal school teachers and mid-level agricultural technicians with the skills necessary to carry out the important roles envisioned for them. The IEC will be a laboratory, a research center, and a productive enterprise. Instead of a place where teachers "teach" and students "learn", the IECs will be centers where all are teachers, learners and practitioners. All students and teachers will learn to experiment, to investigate and to produce as well as communicate and organize educational situations. In the same manner, the teacher training/industrial technical complex aims at preparing future teachers in an environment of light industrial skills development and the future skilled technician in an atmosphere of communication and com-

1/ This decrease is apparently due to reduced attendance during the recent civil war.

munity education. The programs will be designed for shifts. While one shift is engaged in classroom/laboratory activities, the other may be involved in field practices or workshop labors. Integration of normal and agro-technical students will be maximized in the utilization of library, laboratory, cafeteria and sports facilities, as well as administrative quarters.

Besides the utilization of these new facilities for formal educational programs, it is expected that the complexes will be used evenings and weekends for non-formal community education programs. There is also a great need at present for in-service training and upgrading of teachers at all levels. Plans are being developed by the MOE to undertake a major distance education program for teachers 1/. Weekend seminars and vacation period courses will be held in the new complexes.

Under this project, four integrated complexes will be built and equipped 2/. Three of the four- located in Juigalpa, Chinandega and Siuna- combine normal school training with agro-technical education. The Chinandega complex will serve an area of the country where the bulk of the population relies on plantation agriculture (bananas, sugarcane, cotton) for a living. The Siuna complex,located in the northwestern part of the Department of Zelaya,will basically train agronomists to serve coffee and cacao plantations. The Juigalpa complex, located in the Department of Chontales, will produce mid-level technicians specialized in zootechnics to serve the needs of this important cattle raising area of the country. The fourth complex, located in Bluefields, will combine teacher training with technical training oriented primarily toward preparing trained human resources for the Atlantic Coast fishing industry 2/.

In expanding the three agro-technical schools, the MOE will basically be strengthening schools already in existence. Each complex will have classrooms, laboratories, workshops, administrative space and the agricultural and animal units needed for optimal operation. In addition, some housing for both students and teachers will be built at the three normal/agrotechnical school complexes. At the teacher training/industrial technical complex to be located in Bluefields, workshops will be built adjacent to an existing secondary school complex and a partially completed structure will be finished to provide classrooms, a library and laboratories as well as administrative space. Through the project, the number of teacher training institutions nationwide will be increased from five to nine.

1/ UNESCO will play a key role in assisting the MOE to launch this distance education program.

2/ Further information on the sites (e.g. amount and quality of land, distance from nearest town, teaching staff, equipment and classrooms available) may be found in Albert Muller's report located in the LAC/DR bulk file.

The design, construction, and equipping of the four IECs is estimated to cost $7.275 million. This will be financed by $5.451 million from AID Loan 524-V-033; $85,000 from AID Grant 524-0115; and $1.739 million from GRN. AID Loan funds and GRN counterpart will be used for design, construction and purchase of equipment and furniture for the complexes. The Grant funds will finance the services of two advisers - a school construction expert and an equipment specialist - for a total of 12 persons months. The costs of this Activity are estimated as follows:

	JUIGALPA	CHINANDEGA	SIUNA	BLUEFIELDS	TOTAL
Final Designs	119	106	109	28	362
Construction -IECs	1493	1324	1367	648	4832
Construction-Housing	150	150	483	-0-	783
Construction Supervision	35	35	35	15	120
Equipment	170	156	146	390	862
Furniture	80	71	75	5	231
	2047	1842	2215	1086	7190
Technical Assistance	-0-	-0-	-0-	-0-	85
	2047	1842	2215	1086	7275

Classroom modules for use in the four complexes have already been designed as have prototype modules for the facilities that are to be constructed in the agriculture and animal units.

Annex I contains samples of the architectural drawings of the modules. Specifications for the layout and design of the Juigalpa complex are also given for purposes of illustration. Alonzo Barrientos' report entitled "Preliminary Designs: Integrated Educational Complexes" 1/ (in LAC/DR Bulk Files) contains specifications for the layout and design of the remaining complexes, including illustrative furniture and equipment lists,and detailed cost estimates for building, furnishings and equipping the complexes. Also included in this Report is a discussion of procedures used to prepare the modules and preliminary designs.

Final design and construction will be carried out under contract to private sector construction firms. Standard compe-

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1/ This report, (Spanish title: "Diseños Preliminares: Complejos Educativos Integrados (CEI) - Normal/Agropecuaria") contains approximately 90 blueprints of the preliminary designs.

titive procurement procedures will be followed in obtaining the services of A/E and construction firms as well as in purchasing necessary equipment and furniture for the facilities. Responsibility for carrying out the activity and overseeing the work of contractors will reside with a special Project Implementation Unit (PIU) created within the Ministry for this purpose. The Project Implementation Unit is described in Section III. C.

(ii) Preparing Teaching and Administrative Staff for their Roles in Managing and Operating the Complexes

(a) Staff Training

As indicated previously, the MOE has already prepared transitional curricula for use in both the normal schools and the secondary agro-technical institutes. These curricula will be revised during the course of the 1980-81 school year, with plans to further modify the curricula as needed during the 1981-82 school year. By 1983, when the newly constructed complexes are scheduled to begin operating, it is anticipated that all needed modifications to curricula will have taken place. Primary responsibility for developing and revising the curricula for use in these complexes resides with the Programming Office of the MOE with technical input from the appropriate line offices. The curricula for the Agro-technical schools are also being closely reviewed by representatives from the Ministry of Agriculture. UNESCO, under a grant from the World Bank, is providing special assistance in the development of the curricula to be used by normal school teachers in rural primary schools.

AID assistance under this project will be devoted primarily to providing MOE staff with the basic training needed to operate the facilities once they have been built. Key areas where training is needed are as follows:

-- For agro-technical teaching staff: educational technology; administration of agricultural education; agricultural education methodology; industrial education methodology; use and maintenance of agricultural equipment; brush up courses in agronomy, zootechnics and agricultural mechanization.

-- For normal school staff responsible

for providing basic courses [1] common to students in both programs: educational technology; teaching methodology, laboratory methods; educational research; library administration; community development; mathematics, physics, chemistry, and biology methodology.

-- For central and regional MOE staff in charge of curriculum and textbook development: normal school and agro-technical education; administration of complexes; supervision of agro-technical and teacher training programs; curriculum development for agro-technical subjects; and curriculum evaluation.

The majority of this training will be in-country. It will consist of four to eight week courses to be held during vacations. The total cost of training is estimated at $821,000. Grant funds of $150,000 will finance contracts with trainers from the United States. AID loan funds of $352,000 will finance: salary, transportation, and per-diem costs of course instructors from other countries; materials costs for courses; and transportation and per-diem costs for course participants. GRN counterpart of $319,000 will be in the form of salaries of course participants, facilities for the courses, and secretarial and other support services.

In addition to in-country training, some long term training will be needed. The cost of long term training is estimated at $760,000, of which $625,000 will be financed with Grant funds, and $135,000 by the GRN. During the first year of the project, AID will finance a series of observational tours to the U.S. and nearby countries for MOE central staff as well as staff in charge of establishing the complexes. Through these trips MOE staff will be able to become acquainted with ongoing programs in teacher training and agro-technical education (curricula and equipment in use; libraries, etc.) and obtain ideas from them that can be adapted to specific needs of the complexes. AID Grant funds also will finance transportation, tuition, materials, per-diem and insurance costs for U.S. and third country training. The MOE will be responsible for paying the salaries of the individuals while in training and will assure them a position in the area for which they have been trained upon returning to Nicaragua.

Table 2 below provides an illustrative list of course areas where in-country training is to take place during the project. Each course is accompanied by estimates of number of participants, duration and timing of the courses, and anticipated

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1/ Math, biology, chemistry, physics.

TABLE 2

IN-COUNTRY TRAINING (1)

Course Topic	Number of Participants	Course Duration	Year to Begin	COST TO AID			Total Cost to AID	GRN Counterpart
				Trainer	Trainee	Materials		
Teaching Methodology	30	6 weeks	1981	$3,700 (3)	$25,000	$3,000	$31,700	$27,000
Agriculture Education Methodology	25	6 weeks	1981	$13,500 (2)	$20,000	$2,000	$35,700	$20,700
Industrial Education Methodology	15	6 weeks	1981	$13,500 (2)	$10,400	$1,500	$25,400	$14,600
Supervision of Integrated Educational Complexes	20	8 weeks	1982	$16,300 (2)	$20,000	$2,000	$38,300	$24,000
Educational Technology	12	8 weeks	4 wks ea. 1981, 1982	$17,400 (2)	$11,400	$2,000	$30,800	$15,600
Community Development	20	4 weeks	1982	$ 2,500 (3)	$10,500	$1,500	$14,500	$12,200
Administration of Agricultural Education	25	8 weeks	1981	$16,300 (2)	$26,500	$2,500	$45,300	$30,000
Educational Research	12	6 weeks	1981	$13,500 (2)	$ 7,500	$1,200	$22,200	$11,500
Laboratory Methods	25	6 weeks	1982	$ 8,800 (4)	$ 20,200	$ 5,000	$34,000	$22,200
Agronomy	20	8 weeks	1982	$ 8,800 (4)	$ 20,000	$ 4,000	$32,800	$24,000
Zootechnics	20	8 weeks	1982	$ 8,800 (4)	$ 20,000	$ 4,000	$32,800	$24,000

(1) Bases for arriving at cost estimates are described in Annex F

(2) U.S. or other country - 1 instructor

(3) Nicaraguan - 1 instructor.

(4) Nicaraguan - 2 instructors.

TABLE 2

(Continuation)

Course Topic	Number of Participants	Course Duration	Year to Begin	COST TO AID			Total Cost to AID	GRN Counterpart
				Trainer	Trainee	Materials		
Agricultural Mechanization	15	8 weeks	1982	$8,800 (4)	$13,700	$3,000	$25,500	$19,000
Use and Maintenance of Agricultural Equipment	40	4 weeks	1982	$10,700	$23,900	$4,000	$32,500	$23,400
Curriculum Development for Agro-technical subjects	20	8 weeks	1981	$16,300	$20,000	$2,000	$38,300	$24,000
Library Administration	10	8 weeks	1981	$16,300	$10,100	$1,000	$27,300	$13,400
Administration of Complexes	10	8 weeks	1981	$16,300	$10,100	$1,000	$27,300	$13,400
TOTAL COSTS :				$191,500	$269,500	$ 39,700	$500,700	$319,000

costs to AID and the GRN. Table 3 lists areas identified as key for U.S. or other country training and specifies for each number of people to be trained, timing and estimated duration of training; countries where training might take place and estimated costs. This training will complement a UNESCO supported effort to help the MOE organize a national training system. Steps will be taken to ensure appropriate coordination with UNESCO.

(b) Technical Assistance

The following table describes the basic technical assistance requirements which the MOE and AID believe are needed to assure the efficient implementation of this component.

TECHNICAL ASSISTANCE REQUIREMENTS-COMPONENT I

1980 - 1983: Grant Funds

Technician	Duration	Cost
1. Education Technology Specialist	12 months	$ 60,000
2. Teacher Training Consultants	15 months	" 75,000
3. Agriculture Education Consultants	12 months	" 60,000
4. Industrial Education Consultants	6 months	" 30,000
T O T A L:		$225,000

The specialist in educational technology will advise on the establishment of the departments in each IEC.

It is anticipated that short-term consultants will be required to assist the MOE in various program areas, especially in practice teaching, and practical aspects of teaching gardening, animal raising, occupational skills, etc., to children in formal settings and adults in non-formal programs.

Consultants will be required on a short-term basis to assist the agriculture and industrial education of-

TABLE 3

U.S. AND OTHER COUNTRY TRAINING (1)

Course Topic *	Number of Participants	Course Duration	Year Scheduled for Training	Location of Training	Cost to AID	GRN Counterpart
Agricultural Education Methodology	4	3 months	1981	U.S.A.	$48,000	$6,000
Industrial Education Methodology	2	3 months	1981	Mexico Colombia and Costa Rica	$ 8,000	$6,000
Educational Technology	2	1 year	1981	Mexico	$24,000	$12,000
Statistics and Evaluation	2	1 year	1982	Guatemala	$24,000	$12,000
Mathematics Methodology	12	8 weeks	1981	U.S.A.	$96,000	$12,000
Physics Methodology	12	8 weeks	1981	U.S.A.	$96,000	$12,000
Chemistry Methodology	12	8 weeks	1981	U.S.A.	$96,000	$12,000
Biology Methodology	12	8 weeks	1981	U.S.A	$96,000	$12,000
Administration of Agricultural Education	6	1 year (M.A. level)	2 - 1981 2 - 1982 2 - 1983	U.S.A. Mexico Colombia	$72,000 to $132,000	$42,000
Use and Maintenance of Agricultural Equipment	4	3 months	1981	Mexico, U.S. Honduras Colombia	$16,000 to $48,000	$9,000
				TOTAL COST	$625,000	$135,000

(1) Bases for arriving at cost estimates are described in Annex F.

* Add: curriculum evaluation.

fices of the MOE to plan and implement programs in the new IECs, particularly in the choosing of equipment, establishment of libraries for the complexes and preparation of specialized curricula. A key area where assistance is needed in agricultural education is in the area of administration of agricultural programs.

The costs of these advisers, which are estimated at $225,000 will be Grant financed.

(c) Outputs

By the time this project is completed (1985), it is anticipated that the following will have taken place:

(1) The four complexes will have been built and equipped;

(2) Personnel of the complexes will have received required training and will be capable of carrying out their respective roles in an effective fashion.

(3) The IECs are producing yearly graduates from each institution as follows:

	Primary Teachers	Mid-Level Technicians
JUIGALPA	160	80
CHINANDEGA	200	80
SIUNA	120	70
BLUEFIELDS	120	60
TOTAL.....	500	290

(4) Graduates of these institutions are being placed in jobs corresponding to areas for which they have been trained.

2. COMPONENT II: Low Cost School Construction and Maintenance

This component addresses the urgent need to find low-cost solutions to immediate needs for physical infrastructure in

rural areas. The World Bank, under Loan 1244, and the World Bank and IDB, under projects programmed for 1981, are financing construction of a total of 3,000 primary classrooms in rural areas. While some of these classrooms will be built using community labor and local materials, most will be built under contract to private firms. Urgently needed is a program to address the maintenance needs of these new facilities as well as structural problems associated with facilities as well as structural problems associated with facilities already built but falling into disrepair due to chronic neglect and war-related damages.

Also needed, as expectations are raised through the literary campaign for schools in isolated communities that never had schools and are not scheduled to benefit from ongoing or proposed construction under the World Bank and IDB loans, is a program to assist these communities build their own schools. Key to the success of both activities is keeping costs at a minimum. During the life of the project, two pilot programs designed to experiment with low-cost solutions to these problems will be launched. One is the pilot school maintenance program described in more detail in Section A below. The other is the rural rustic classrooms("Aulas Ranchos") program discussed in Section B.

a. Pilot School Maintenance Program

(i) Background

There has never been any organized system for maintaining public school facilities in Nicaragua. After construction,individual school administrators have been left with the problem of maintaining them. Financing sources for maintenance have been limited to occasional and minimal operating subsidies, local fund-raising affairs and donations from school supporters.

Maintenance, therefore, has been for the most part sporadic. That which does take place often occurs when deterioration has become so acute that only two options remain: (1) making a necessary and expensive repair critical to maintaining the structure of the building intact; or (2) abandoning the facility because it is too dangerous to teach in and doing without a school building or else building a new school from scratch. More often than not, since neither represent viable options from a cost viewpoint, professor and students remain in the building,at times risking their physical safety in doing so.

The need for an ongoing system of school maintenance and rehabilitation has become especially acute since the revolution. The revolution itself wreaked havoc on school facilities due to warfare and vandalism. In addition, since the revolution, the new government, with the assistance of organizations such as the World Bank and the IDB, has major plans to launch a massive program of school construction in rural areas. Under World Bank Education II, 650 are being built, more classrooms are proposed for World Bank III, plus an additional and as yet undefined number to be financed by the IDB. To let these facilities fall into disrepair would represent a major investment gone to waste.

At present, the MOE has neither the human or the financial resources to even maintain existing facilities much less facilities to be built.

(ii) Activity Description

School maintenance need not be a costly effort, nor a heavy cost burden to the central government. Given a community with interest in maintaining its school, with access to basic materials needed for repair, plus a clear knowledge of how to carry out preventive maintenance, much can be accomplished that, in the short as well as long run, will maintain education quality and at the same time reduce the cost burden to the state.

Under this component a pilot maintenance and rehabilitation program will be established. Pilot activities will be carried out in approximately 30 rural communities 1/. Teachers and school directors, after receiving basic training, will organize community groups to maintain and repair facilities. A service center will be built and equipped in the pilot area. This center will provide to the communities basic repair materials such as: cement, reinforcing rods, doors, roofing, hardware items, plumbing and carpentry items.

MOE central staff will assume responsibility for carrying out initial rehabilitation activities. MOE staff will also be responsible for initial community promotion activities; preparing and distributing manuals with basic instructions for school maintenance for use by school directors, teachers, and community groups; providing assistance in estimating materials needs, preparing plans; and inspecting construction for more complicated maintenance operations.

1/ Given the existing conditions of most primary classrooms in Nicaragua, it is anticipated that initial project efforts will be focused on rehabilitation. As the physical condition of the structures are improved, initially expensive rehabilitation activities will be replaced with low cost maintenance activities.

With assistance from an outside consultant, an ongoing evaluation system will be developed to gauge community acceptance/success in adopting the prescribed maintenance measures. The evaluation consultant will also put in place the necessary mechanisms to carry out a detailed cost-effectiveness analysis of this approach to school rehabilitation/maintenance.

An inventory of physical facilities was initiated early this year by the physical planning department of the MOE. Utilizing volunteer university students from the schools of architecture and engineering and seven paid supervisors, all school facilities in Nicaragua are being visited and inventoried. It is estimated that this inventory will cover 2,371 primary and 279 secondary schools. The information to be obtained from this inventory will be to select the pilot site for the program.

The basis for a successful program of this type will be in the ability of the MOE to organize and educate community groups for continued maintenance of local school facilities. The possibilities for generating continued community interest seem very high, given the enthusiasm generated in rural areas by the literacy campaign 1/, and ongoing efforts by the GRN to organize communities into groups 2/.

Grant funds of $75,000 will be used to contract consultants to assist in selecting the pilot area based on the inventory, training MOE maintenance staff, and preparing written materials for use in carrying out courses at the community level. These consultants will also advise MOE personnel in developing the ongoing evaluation system and training MOE staff in its use. GRN resources of $550,000 will finance construction or rental of warehouses; locally made repair materials; costs of transporting materials from warehouses to the communities; production of materials, transportation and per-diem costs to permit the completion of the inventory; and staff salaries, operating and travel costs. Approximately $160,000 of loan funds will finance some repair materials, equipment for the warehouses and training costs. Five vehicles already purchased with loan funds will be assigned to the maintenance staff.

1/ Many of these facilities will be used by adults at night as part of an ongoing adult education program.

2/ The CDSs (Comités de Defensa Sandinista), in addition to performing community safety functions, play a key role in spurring community civic action.

(iii) Outputs

Assuming that the activities carried out under this project take place as planned, by the end of the project the following should be in effect:

(a) 30 communities actively repairing and maintaining schools under MOE guidance.

(b) Ministry of Education has decided to extend the program to other areas of the country, based on an evaluation of the program which includes detailed cost data and recurrent cost projections.

(c) MOE capability to extend the program to other areas of the country developed.

b. Aulas Rancho Program - Department of Zelaya

(i) Background

The Department of Zelaya occupies the entire Atlantic Coast region of Nicaragua, from the Costa Rican border on the south to Honduras on the north. It covers about 45 percent of the nation. The population of this region in 1980 is calculated at 261,000 or 9.5 percent of the total of Nicaragua's population. Outside of a few major population concentrations such as Bluefields, Puerto Cabezas and Siuna, (population 20,000, 7,500 and 5,700 respectively) most inhabitants of this region live highly dispersed in small clusters. Transportation to and from many of these clusters is largely limited to canoe, mule or foot often at a traveling time of 2 to 3 days. Most of the region's population is made up of subsistence farmers and fishermen.

Educational levels tend to be extremely low. Prior to the literacy campaign the Department of Zelaya had the highest illiteracy rate of any Department in the country. Infant and child mortality, due to malnutrition and disease, are very high. The native language of 30 percent of Zelaya's population is Spanish. Another 30 percent have English as their native language and 40 percent speak Misquito. Many Zelayans, especially along the coast, speak more than one language. The region has been neglected by previous Ministries of Education. With the exception of large towns such as Bluefields, Puerto Cabezas and Siuna, no primary school construction has been carried out and no major construction is planned. Rural primary schools in the region are mostly one room huts with earthen floors, straw mats and walls of adobe or bamboo. It is estimated that 95 percent of all one to three room schools in the region are not fit to be used as such. Only a few have any latrine facilities. The average life of classrooms currently available in this region is estimated to be two years.

The literacy campaign carried out in Spanish speaking areas of Zelaya between May and August had a catalytic effect on the population of this region. Grateful for the special attention being given them and anxious to learn to read and write, large numbers attended literacy courses. Many, now that they have learned to read and write, wish to give their children the same opportunities. They have willingly collaborated with literacy campaign workers to build classrooms.

In August of 1980 the regional Director of Zelaya asked Circuit Directors to submit estimates of needs for new classrooms accompanied by lists of key materials needed. The response was an overwhelming desire for new classrooms immediately, most using local materials and labor and relying on outside donations only for the basic materials not available in the communities.

(ii) Activity Description

This Activity represents an initial attempt to meet the immediate educational needs of Zelaya's population. Most classrooms in this region have been built with donated materials and labor (in part for lack of any alternatives). The activity has been planned on the assumption that inhabitants of the region will continue to supply locally available materials and labor. Recent experience under the literacy campaign plus previous experience with a small CARITAS self-help school construction program confirm that there is a valid basis for this assumption.

There are approximately 25 school circuits in the Department of Zelaya. Under this project, school construction will be carried out in the five circuits which have the greatest need 1/. A number of communities in these circuits have already indicated a strong interest in building classrooms. A total of 190 classrooms in 115 communities are projected to be built. Key actors in implementing this project will be three members of the Project Implementation Unit plus the five school circuit directors. Both will participate in an initial one week workshop designed to further develop the objectives of the program and provide specific guidelines for carrying it out. Following the initial workshop, circuit directors will visit the communities where construction is to take place, explain the program to the school director, and set a date for a return trip with a member of the Implementation Unit to discuss the program in detail to community members and set the stage for construction activities.

1/ Annex J contains a list of communities to be attended under the Aulas Ranchos program along with enrollment data for 1980, and estimates of classrooms and latrines to be built in each community.

During the formal visit of the circuit director and implementation unit specialist, a parents' group will be organized to build the school, and a foreman, selected by the school director and/or parents, will be given detailed instructions, including architectural drawings, for classroom construction. Arrangements will be made for delivery to the site of basic materials not available in the community, and the construction will begin. The buildings themselves will be low cost, using from $1100 to $1650 in outside materials per classroom 1/. Construction materials used will depend on such factors as the local availability of raw materials, transportation difficulties and locally available construction skills. Each site will be evaluated by the MOE to determine the lowest total external cost alternative for building classrooms that will last a minimum of 15 years. In extremely inaccessible sites, the Ministry may provide only portable. saws, nails and plans.

It is expected that most of the classrooms will be constructed in accordance with the plans already prepared by a contracted consultant. These plans call for a structure with wooden floors and walls and zinc roofs, mounted on wood or concrete pylons. Roofs are designed to have a large overhang on each side both to supply corridor space and to protect wooden construction materials from rain. Rain water will be channeled to a barrel for storage through canals built into the edges of the roof. Each building will have a latrine. Sketches of the classroom design with detailed specifications of construction materials and costs may be found in Annex K. It is estimated that 43 classrooms will be built during the first year of the project. The remaining 147 will be built during the second and third years.

In the past, the MOE has had difficulty finding qualified teachers to serve in Zelaya province. To ensure that teachers will be available, the MOE through the Siuna and Bluefields educational complexes, will develop and implement a program to train local residents as grade school teachers for the classrooms. In addition, the GRN plans to require a year of social service prior to issuing additional teachers' titles, and will encourage normal school graduates to spend a year in Zelaya. With these two measures, the MOE expects to ensure availability of teachers for the Aulas Ranchos.

Two consultants will be needed during implementation: one to help design and implement the program and plan follow-up activities, and a second to evaluate the program's effectiveness and make recommendations on the feasibility and desirability of expanding it. The first consultant will be financed with Grant funds, and the second from non-project resources. Training courses for circuit directors, MOE

1/ The lower cost is where wood pylons can be used. The higher cost is where concrete pylons must be used.

staff and local primary teachers for all 115 schools will be loan financed. The GRN will finance travel and per diem costs of the Circuit Directors and MOE physical planning staff to and from the sites for site evaluation and review of construction progress; construction materials for the schools; two canoes for use in transporting materials to the construction sites; staff salaries, including a full time secretary and operating costs once the schools are constructed.

The total cost of this activity is estimated at $497,000 of which AID will finance $80,000 ($40,000 from the Grant, $40,000 Loan) and the GRN $417,000.

(iii) Outputs

By the end of the project, the following conditions are expected:

1) 190 classrooms in 115 communities built, in use, and being maintained by the community.

2) MOE has decided to extend the program to other areas of Zelaya, and has developed a plan, which includes alternative designs, lists of communities and a budget, for expansion of the Aulas Ranchos effort.

3) A fully trained staff in place at the MOE, capable of extending the program to other areas of the Zelaya province.

3. COMPONENT III: Improved Educational Planning and Administration

a. Background

The GRN in July of 1979 inherited an MOE administrative support structure that was cumbersome and inefficient. The MOE was organized into a series of Divisions and Offices each with responsibilities that were unclear and with interrelationships that were even less clear. As a result, routine administrative actions got slowed down in the system, often taking months to be carried out.

Another constraint affecting administrative efficiency is that all data processing is done by hand. Student records and inventory (office supplies, vehicles) are kept by hand. The "Escalafón", the MOE office responsible for managing the register of all teachers and support staff employed by the MOE, probably suffers most from its manual record systems. Delays in processing data in this office due to manual procedures not only affect teachers and other users, but also key offices in the MOE, such as accounting, school administration, and the budget office, that depend on timely data inputs from the "Escalafón"

in order to manage their operations efficiently.

Another weak area is information for educational planning. Staff located in the MOE's planning department lack both the necessary support structure (e.g. access to a reliable data base) as well as the skills to undertake basic analyses necessary to prepare projections of staffing and infrastructure needs to support increasing enrollments. Planning capability is especially weak for schools outside of Managua as MOE operations are highly centralized and both data from these areas as well as capability to process the data are limited.

Since assuming power, the new government has made administrative reform one of its highest priorities for the MOE. Cognizant of the weakness built into the system it inherited and aware of the key importance, as enrollments increase markedly throughout the system, of having an administrative support structure that will be capable of responding quickly and efficiently to the new strains imposed by this planned spurt in growth, the MOE has taken and is taking the following steps to improve its administrative support structure:

(1) A complete administrative reorganization - Key in this reorganization has been the creation of Divisions for Adult Education, Planning and Educational Development, Human Resources Development and School Administration. Within the latter Division, each line office has been decentralized to the regional level, with representatives of each assigned to the Ministry's new Regional Offices. Each region has its own administrative autonomy and a petty cash fund to cover requests at the local level for immediate reimbursement for expenses.

(2) A comprehensive assessment of the educational system - Including an inventory of physical facilities and their upgrading needs; an inventory of human resources and their needs for upgrading; the preparation of a detailed educational map pinpointing by locality actual enrollments and enrollment projections.

(3) A program to train MOE support staff in improved planning and administrative procedures - The Human Resources Development Division is responsible for the latter. The Planning and Educational Development Division is responsible for the former.

(4) A program to replace routine data processing requirements currently being carried out by hand with a computerized information processing system.

With regard to (1) and (2) above, the MOE has asked for and is receiving technical assistance from several organizations, including UNESCO, the OAS and FLACSO 1/. UNESCO, through an ongoing program

1/ Facultád Latinoamericana de Ciencias Sociales (MEXICO).

to assist the MOE to develop a comprehensive in-service training system, will be providing ample assistance over the coming years. The MOE has requested of AID, under the reprogramming effort, assistance in the areas of long term training oriented specifically toward upgrading its planning and research capability (number 3 above) and in developing an automated data processing capability (number 4). Proposed MOE-AID actions under the loan to address needs in these two areas are outlined below.

b. Activity Description

(i) Improving MOE Capabilities in the Areas of Educational Planning and Research

The Division of Planning and Educational Development is responsible for preparing the investment budget, carrying out basic background analyses, project development, and educational research and statistics. At present it has a staff of 35 profesionals sub-divided as follows: Investigation - four; Project Evaluation and Follow-up - five; Statistics - nine; Budget and Investment - four; Physical Planning - ten; Project Analysis and Development - three.

Under this activity, a total of $250,000 in Grant funds and $120,000 in GRN funds will be used for upgrading staff currently in this office as well as staff to be hired 1/. These funds will be used for short and long term training in such areas as the following:

Educational Planning	Educational Evaluation
Regional Planning	Educational Statistics
Physical Planning	Psychometrics
Micro Planning	Educational Psychology
Educational Economics	Social Psychology
Educational Research	Systems Analysis

(ii) Improved Educational Administration

Under this project, a data processing unit (DPU) will be created within the MOE. This unit will be staffed initially by a director and a systems analyst. Over time, additional staff including at least two more systems analysts, three programmers and operators, will be added.

Emphasis will be placed during the project on following a phased sequence of activities. A three phase program is

1/ AID will cover transportation, lodging, insurance, and book costs. GRN counterpart will be in the form of salaries of participants while in training.

planned:

Phase I: More detailed analysis of data processing needs and alternative solutions

A local computer firm has just presented a report 1/ which provides a general overview of areas where there are needs for automatic data processing in the MOE. This report recommends creation of a data processing unit and presents alternative schemes for developing the unit within the MOE 2/. Also recommended in this study are areas where training is needed both for DPU staff as well as staff in line offices that collect and prepare data for processing.

The principal task to be carried out by the DPU during the initial phase will be to further define and better evaluate the alternatives and recommendations presented in this report. As part of the activities to be undertaken during this phase, the Unit Director and his/her assistant will analyze in depth the MOE's data management system and identify priorities for conversion to automated data processing routines. Visits will be arranged to nearby countries (e.g. Honduras, Costa Rica, Panama), whose Ministries of Education already have their own automatic data processing units, in order to learn from their experiences in this area and obtain information about software that could be adapted to Nicaragua's needs. At the end of this phase, the director will present a specific plan for a data processing unit specifying size and composition of DPU staff; type and location of computer facilities to be used; software needs and specific training requirements. General advice and supervision during this phase will be provided by an individual/firm contracted to provide this service.

Phase II: Staff development and initiation of service

Necessary core staff for the DPU will be hired and trained; software and, as necessary, hardware will be obtained and operations will be initiated. One line office within the MOE (most probably the "Escalafón") will be selected as the focus of initial operations and activities will be concentrated on automating the data processing of this office.

1/ This Report, entitled "Necesidades de Procesamiento Automático de Datos en el Ministerio de Educación" by Gutierrez and Lao, may be found in LAC/DR bulk files.

2/ An IBM 4331 system or another system with similar capabilities is proposed, given level and type of routine automatic data processing needs. Alternatives, including rental, cost sharing and time sharing are also analyzed.

Phase III: Expanding automatic data processing operations to other MOE line offices

Once the above has been successfully completed and evaluated, DPU staff will be increased in order to meet the data processing needs of other MOE line offices. Staff training and generalized technical assistance will continue.

The DPU will test its routines and initiate its production runs using computers available elsewhere in the GRN or renting time from IBM. When computer usage (on the basis of hours/month) approaches a level sufficient to justify purchase/rental of hardware specifically for the MOE, the needed equipment will be ordered (after consultation with SER/DM).

Development of the Data Processing Unit and conversion of key administrative routines to ADP format is expected to require financing of approximately $450,000. AID funds of $200,000 will be used to finance DPU staff training and observation visits, rental of hardware during start-up, software, consultant services and other start-up costs. These expenses will be loan financed except for consultant services (estimated at $100,000) which will be Grant financed.

MOE will pay for staff salaries, rental or purchase of its own hardware, and operating costs. These costs are estimated at $250,000 during project implementation.

c. Outputs

By the end of the project, the following at a minimum will have been accomplished:

1. A functioning and smoothly operating data processing service will have been developed.

2. Student records, personnel administration data, inventory and other key administrative tasks will have fully automated files and processing routines.

3. A 2-year plan for conversion of additional files and administrative procedures to ADP format will have been prepared.

4. Project Implementation Unit

The project will be implemented by an office specifically created for that purpose. The office is more fully described

under Section III. B. The total cost of the Project Implementation Unit during the planned implementation period is estimated at $830,000. Of this, $150,000, for a General Advisor, will be financed from Grant funds. In addition, at least 5 vehicles already financed with loan funds will be made available to the unit on a full time basis.

III. Implementation Arrangements

A. Financial Plan

1. Project Budget

The project has been fully costed out. A detailed budget follows:

Component	Description	BUDGET ($000) A I D Grant	A I D Loan	GRN	TOTAL
I.	Integrated Educational Complexes				
	A. Phys. Facilities				
	1. Final Designs		362		362
	2. Construction IEC's		4,269	563	4,832
	3. Construction-Housing			783	783
	4. Construction Supervision		120		120
	5. Equipment		862		862
	6. Furniture			231	231
	7. Technical Assistance	85			85
	Sub-Total:	85	5,613	1,577	7,275
	B. Human Res. Develop.				
	1. In-Country Training				
	a. Trainers	150	42		192
	b. Trainees		270		270
	c. Materials		40		40
	d. MOE costs			319	319
	2. Foreign Training				
	a. US	450			450
	b. Third Countries	175			175
	c. MOE Costs			135	135
	3. Technical Assistance	225			225
	Sub-Total	1,000	352	454	1,806
	Total Component I	1,085	5,965	2,031	9,081
II.	Low Cost School Construction and Maintenance				
	A. Aulas Rancho-Dept. Zelaya				

1. Materials, Equipment & Tools			326	326
2. Canoes			43	43
3. Training		40		40
4. Technical Assistance	40			40
5. Regional Supervision			48	48
Sub-Total:	40	40	417	497
B. Maintenance				
1. Construction/rental Warehouses			70	70
2. Warehouse Equipment		25		25
3. Basic Materials		70	155	225
4. Technical Assistance	75			75
5. Training		65		65
6. Regional Supervision			325	325
Sub-Total	75	160	550	785
Total Component II	115	200	967	1,282
III. Educational and Planning Administration				
A. Planning/Research				
1. Training	250			250
2. MOE costs			120	120
Sub-Total	250		120	370
B. Educational Administration				
1. Start-up Costs	100	100		200
2. MOE Operations			250	250
Sub-Total	100	100	250	450
Total Component III	350	100	370	820
Project Implementation Unit:				
MOE Personnel & Operational Costs			680	680
General Adviser	150			150
Sub-Total	150		680	150
Total Activities	1,700	6265	4,048	12,013
Contingencies/Inflation 15%	255	940	607	1, 802
Total Reprogrammed	1,955	7205	4,655	13, 815
Previously Committed:	-	295	--	295
Total Project:	1,955	7500	4,655	14, 110

2. Inputs

a. AID inputs will consist of:

(1) The uncommitted balance of Loan 524-V-033. The original amount of the Loan was $7.5 million, of which $295,000 have now been committed, and $195,000 disbursed. The balance available for the reformulated project is this $7,205,000.

(2) The entire amount of Grant 524-0115. A total of $890,000 was approved, when the project was first presented. Of this, $280,000 has been authorized and obligated. This $710,000 in additional Grant funds are to be authorized when this PP Amendment is approved.

(3) Additional grant funds of $1.015 million. These will be financed from ESF or other grant funds which are expected to become available during FY 1981 and FY 1982. Should these funds not become available for any reason, USAID/Nicaragua will submit a request for additional grant financing at an appropriate time.

b. GRN inputs will consist of:

(1) Operating expense budget of $2.155 million for salaries and other recurring costs.

(2) Investment funds of $2.5 million to be financed from PL 480, Title I local currency generations. These funds will be used mainly for construction and equipment and for start up costs and part of the first and second year salaries for the project implementation unit.

3. Recurrent Cost Analysis.

The additional yearly operation and maintenance costs in years 1, 2, and 3 after the PACD are estimated below:

	Year ($000)		
	1	2	3
I. IEC's			
Additional Personnel	850	935	1,029
Services	40	44	48
Materials and Supplies	130	143	157
Sub-Total	1,020	1,122	1,234

II. Low Cost Const/Maint.			
Construction funds	100	110	121
Repair materials	200	220	242
Construction Warehouses	180		
Additional Teachers	65	72	79
Additional MOE Staff	318	350	385
Operations	50	55	61
Sub-Total	913	807	888
III. Educational Planning/ Administration			
Additional MOE Staff	85	98	112
Computer rental (or depreciation, if purchased)	30	30	30
Operations	50	58	66
Sub-Total	165	186	208
Total	2,098	2,115	2,330

These costs include: additional teachers, administrative, technical and service personnel and operational costs for all activities initiated under the project; adequate maintenance of both building and equipment (excluding housing) of the IEC's, and maintenance of the Aulas Ranchos. The analysis assumes that the Aulas Ranchos program will continue at about the same level of activity as during implementation; and that the primary school maintenance program will be expanded from one to three MOE administrative regions. The analysis further assumes that income from the sale of agricultural products by the IEC's will fully cover the costs of maintaining the housing facilities built under the project, with sufficient surplus remaining to provide board for resident students and teachers.

The recurrent costs represent an increase of 2.4 percent, 2.4 percent, and 2.6 percent in years 1, 2, and 3 respectively over the MOE's budget for 1980. Given the GRN's commitment to education and the relatively small percentage increase involved, recurrent costs are not expected to pose unusual difficulties for the MOE. The Mission intends to require prior to signing the Amendatory Loan Agreement, that the Minister of Finance commit the GRN to provide sufficient budget to finance the project's recurrent costs.

B. Project Implementation Unit

The MOE and AID have agreed that a separate implementation unit must be set up for the project. The unit will have full authority

to carry out all construction and maintenance activities and will play a service/coordination role for other project activities. The offices responsible for other activities are indicated below.

	Responsibility	Office
Training:	Set training priorities Select candidates for U.S. and Third Country Training	Division of Planning and Educational Development
	Design and mplement country training courses	Human Resources Division
	Review proposed training actions Request commitments/disbursements/reimbursements of Loan and Grant funds	Project Implementation Unit
Technical Assistance:	Prepare Scopes of work Select Advisers	Office that will receive assistance
	Review proposed scopes of work Procurement Request Commitment/Disbursement of loan/Grant funds	Project Implementation Unit
Teacher Recruitment:	Prepare announcements Receive applications Process new teachers	Escalafon
MOE Staff Recruitment:	Prepare job descriptions Obtain budget/slots Recruit staff	Office that will receive staff
	Final Selection	Vice Ministry of Educational Development or Minister

Development of Data Processing Capability:	Establish office Hire Director	Minister
	Evaluate Data processing needs Set conversion priorities Arrange for computer use during start-up Evaluate and recommend hardware needed	Data Processing Unit
	Approve hardware purchase/ rental	Minister
	Procurement of hardware Commitment/disbursement of Loan Grant funds	Project Implementation Unit
Maintenance of IEC's:	Visit Schools as needed Provide TA and Materials to Schools	Project Implementation Unit

As is evident from the above, the Project Implementation Unit, as part of its service/coordination role, will carry out all procurement actions, obtain all AID approvals, including commitments of funds, and request loan disbursement/reimbursement for all AID Grant/Loan financed activities. In addition, it will keep the MOE's accounting records for the project and prepare the part of the MOE's yearly budget request for the Project. It will also monitor the implementation of all project activites.

As design and construction will be contracted, the Unit can be kept relatively small and efficient. The following minimum staff will be hired or assigned to the unit when needed during implementation of the project:

1 Director of the Unit
1 Secretary
1 Accountant
1 Procurement/contract officer
2 Engineers
2 Architects
1 Equipment/furniture specialist
1 Community Promotor

1 School Maintenance Specialist
1 Assistant Community Promotor
1 Educational Planner
2 Drivers
2 Office Assistants

The PIU will be advised on the overall implementation of the project by a General Advisor who is an educator with a good background in project management and wide experience in the region. This person will provide continuity over the lifetime of the project as well as coordinate all other technical assistance and training programs. He or she will coordinate closely with UNESCO on all aspects related to training and will serve as liaison with USAID and the MOE on all aspects of project implementation. As one of the key roles of this individual will be to coordinate inputs (TA and training) for the agro-technical activities, it is important that this individual has a working knowledge of ongoing activities/resources in this area. Five vehicles purchased for the Literacy Campaign from Loan funds will be made available on a full time basis to the unit. Other vehicles will be made available as needed form the MOE's motor pool.

The Unit will be located on the Ministry's organization chart as an adjunct to the Special Projects Office (DEPE). This office manages the World Bank Loans and is expected to administer all IDB and other donor support for the MOE's ambitious school construction program. DEPE will provide advice on project implementation to the Unit. However, the Unit Director will be responsible for project implementation and will have sufficient authority to carry out project activities as described above.

The central office staff will be complemented with regional personnel for the Maintenance and Aulas Ranchos programs. This personnel will be as follows:

(a) Maintenance program. The maintenance warehouse will have one or two engineers or engineering students and two or four master builders (maestros de obra) assigned to it. In-house staff will consist of a warehouse supervisor,a workshop supervisor, 10 skilled workmen, five day laborers and a night watchman.

(b) Aulas Ranchos. Three engineers will be needed for the Aulas Rancho program. Their offices will be in the regional warehouse to be located in Bluefields or Siuna.

As the major task of the Unit-construction of the complexes-nears its end, the personnel of the unit will increasingly dedicate its efforts toward the ongoing low cost school construction and maintenance activities.

In addition to the Project Implementation Unit and Regional staffs, a third pricipal MOE office will be involved in project implementation. The Division of Planning and Educational Development, which has collaborated closely with AID in design of the project, will retain monitoring/evaluation responsibility and serve as a general ombudsman for project implementation. In addition, this office has specific responsibilities in the long term training activities described above. The importance of this office's oversight responsibilities is key, as this office will be the principal contact in the planning of any future AID projects which support public sector educational programs in Nicaragua.

C. Implementation Plan

After approval of this Amendment, IAC will prepare an Authorization Amendment for the loan. The draft included in Annex M contains all of the conditions and covenants which USAID/Nicaragua considers necessary. Negotiation and signature of an Amendment to the Agreement should take no more than a few weeks.

If not already created, then shortly after the signature of the Loan Agreement Amendment, the Ministry of Education will create the Project Implementation Unit (PIU) and name its key officers. The PIU will carry out all procurement actions under the project except for technical assistance which will be contracted by USAID/Nicaragua with MOE concurrence. Arrangements for U.S. long term training will be made by USAID/Nicaragua's Training Office pursuant to standard PIO/P procedures. This office is rapidly becoming overloaded and may require an additional local hire in view of the large volume of training action planned under this and other projects.

The project activities, except for long term training, are expected to take approximately three years to complete. This includes a construction period of approximately eighteen months for the IEC's. The long term training activities may take as long as 5 years depending on such factors as MOE speed in selecting candidates and the nature of the training required. Thus a five year implementation period is planned.

D. Evaluation Plan

Project evaluation activities will take three forms: (a) an annual evaluation carried out jointly by the MOE and AID to assess progress in meeting output targets; (b) special evaluations for the low cost school construction and maintenance activities; and (c) a final evaluation designed to assess success in terms of achieving the project purpose. Each is described in more detailed below:

1) Annual Evaluations

These evaluations will be carried out annually during project implementation. They will be geared toward assessing progress in meeting the output targets listed in the Logical Framework Matrix (Annex L). Project records and other MOE reports will serve as the principal data sources. The results of these evaluations will be used by the MOE and AID to assess project progress, analyze problems and, as needed, modify proposed inputs as well as output targets for the subsequent project year.

2) Special Evaluations

As is indicated in the detailed project description for Component II, the Aulas Ranchos and School Maintenance programs are pilot efforts whose success will depend in large measure on community interest and efforts. Evaluation systems will be set up at the time of project initiation, and the activities carefully monitored during implementation. The evaluation systems will be developed with the assistance of outside experts and monitored by a central office staff member of the PIU-the school maintenance specialist for the maintenance program and the community promotor for the Aulas Ranchos Program. When sufficient experience has been gained with these two activities (probably around year three of implementation) a special evaluation, performed by an independent consultant, will be carried out to assess the results and determine the feasibility of expanding these programs. This evaluation will be financed by AID, from PD&S or other funds. Key in this evaluation will be an analysis of cost-effectiveness of the approaches proposed under the pilot program as well as an analysis of the feasibility, both on a cost basis and on the basis of community receptivity/interest, of continuing and expanding both programs.

3) Final Evaluation

The final project evaluation will consist of four studies:

a) A follow-up study of graduates of the complexes. A sample of graduates will be tracked six months and one year subsequent to completion of their studies to assess:

i) Extent to which post-graduate activities (work, continued schooling subsequent to graduation) are in areas for which these individuals were trained.

ii) Student satisfaction with applicability of what they learned at the complexes for their subsequent activities.

iii) Employer/professor satisfaction with the quality of employee's/student's training; their views of the extent to which this training has prepared the individual in question for the tasks he/she is carrying out.

b) A review of the complexes themselves. This review will focus on:

i) Suitability of physical facilities and equipment for the type of training being imparted at the complex.

ii) Extent to which professors and administrators at the complexes are prepared for the roles assigned to them.

c) An end of project assessment of the Aulas Rancho and School Maintenance programs.

d) An evaluation of the effectiveness of the Data Processing Unit in carrying out MOE data processing functions.

A total of $100,000 in EH & R grant funds will be reserved under the Mission's 1985 PD & S budget to carry out the evaluation activities described in Section 3 above. The skills needed in carrying out the evaluation will include: teacher training and agricultural education; anthropology/sociology; economics; manpower/human resources development; and systems analysis.

IV Technical Analysis

This section addresses key technical issues relating to Project activities. After discussing each issue, the Mission's overall conclusions are summarized at the end of this section.

A. Component I - Integrated Educational Complexes

1. Rationale for building four new teacher training facilities.

The project description notes that there are five normal schools now operating that could be expanded. As these schools are now operating at or over capacity and would have to be improved as well as expanded to meet the needs of the GRN, there appears to be little difference in the investment that would be required to provide the needed capacity for additional normal school teachers.

Given that the costs would be comparable in either case, there is a very strong reason which in the Mission's view is sufficient to make the case for building the new facilities: the increased relevance of training to subsequent teaching responsibilities.

Three of the five existing normal schools are located in and around Managua, and the other two serve specific areas of the country. Training provided in the three institutes in and around Managua is most appropriate for teachers who are planning to work in urban areas.

By locating the new normal schools in Juigalpa, Siuna, Chinandega and Bluefields - areas of the country where there currently aren't any normal schools - it will be possible to attract individuals who themselves live in these areas. These students will be educated in an environment similar to the area in which they live and to the environment in which they will eventually teach. It is anticipated that the programs in Siuna and Bluefields, for example, will have a strong bilingual education orientation. Unlike the program in Managua, the Siuna and Bluefields programs will provide teachers with special training to prepare them to operate effectively in multi-grade classrooms in remote rural areas.

2. Combining normal schools and technical schools.

To the Mission's knowledge, the innovation of combining normal and technical schools has not been tried before in Nicaragua or in nearby countries. There are several potential risks (e.g. potential difficulties in achieving needed coordination between the administrative structures of the two programs, possible problems in motivating students to operate under this new orientation) that could cause this to be a less than adequate arragement. However, the Mission and MOE believe that there are advantages that outweigh these risks.

(a) Opportunity afforded to provide a normal school education that is specially adapted to the needs of the new rural primary school teacher.

According to the new MOE philosophy of rural education, primary teachers, in addition to teaching the three "R's", are to be individuals who are capable of serving as catalysts in the communities where they work. One of their new tasks is to guide students in the adoption of improved agricultural practices. They are also to be available as needed to make sure that initiatives launched by MIDA and other agencies at the community level are carried out.

The complexes have been designed precisely with the above in mind. Normal school students, in addition to receiving training in pedagogy and other subjects that meet basic requirements for receiving a teaching degree, will also spend a portion of their class days out in the fields working with agro-technical staff. While their level of technical exposure to basic agro-technical activities will not be nearly as detailed as that received by agro-technical students, upon graduating they will have at least a working knowledge of basic farm operations. They will also know where they can go as the need arises to obtain further advice and guidance regarding methods for teaching improved agricultural practices.

(b) Opportunity afforded to provide agro-technical graduates with basic skills in community education and promotion

A number of the agro-technical graduates will be hired as extension agents to work with small farmers. Some will become mid-level managers of state run agricultural enterprises.

Both jobs require a basic foundation in sound principles of pedagogy and interpersonal communication - elements that up until now have not formed part of the agro-technical curriculum. By taking advantage of specialized resources to be available in the complexes (pedagogy professors, library materials) it will be possible to gear agro-technical training in the complexes to include these important new elements.

(c) Reduced basic infrastructure and operating costs.

As the combined normal/agrotechnical schools will be accomodate the same number of students under one roof that would otherwise require two schools, some economies of scale will be possible. Expensive infrastructure elements, such as biology, physics and chemistry laboratories, will be shared. The official curricula both for normal schools and agro-technical schools include basic courses in these areas, and while normal and agro-technical students may not actually take these courses together, it will be possible with both groups to have the labs in use throughout the school day. Combining the schools into complexes offers opportunities for sharing other physical space as well: administration and reproduction facilities; library facilities; health facilities; cafeteria facilities. In addition construction costs should be less due to lower contractor mobilization requirements.

(d) Improved quality of basic courses.

Specialized courses such as advanced math, biology, chemistry and physics require professors with strong academic backgrounds and qualifications. The agro-technical institutes up until now have tended to hire people for these positions locally, usually on a part-time basis. The result has at best been mixed. By combining the two schools into complexes and creating full-time positions, the recruitment process will be much enriched. It shoudl be possible to entice qualified individuals from outside of the are to move in by offering them full-time jobs, and in some cases, housing.

3. Architectural designs

The mission has carefully reviewed preliminary architectural designs. Key concerns included cost econmies, adapatation to regional and climatic variations, and acceptability of the designs to the users - i.e. the technical staff of the complexes.

The results of the Mission's review are quite possitive. The contractor hired to prepare the designs spent long hours reviewing existing curricula for normal and agro-technical schools as well as consulting with administrative and technical staff at each school. Detailed studies were carried out of modules in use in existing normal schools to see how they could be improved upon. Finally, each site was visited in order to ascertain regional variations in both climate as well as availability of local construction materials.

Key features of the preliminary designs are as follows:

(a) Concern of reducing errors of supervision as well as maintenance cost.

All classrooms are designed around a set module that uses standardized dimensions. All doors are identical in size, windows bear standard dimensions, and distances between structural posts are identical.

(b) Concern for reducing square meter costs.

The classrooms modules have an estimated per square meter cost of $210, reflecting in large part a reliance on locally available materials as well as support structures for the roof that are strong but use a minimum of steel. At least one of the existing normal schools built 5 years ago by the World Bank has a per square meter cost of $350. This school was built using steel support structures that weight 14.55 kilos per square meter as compared to the proposed structures with a square meter weight of 1.45 kilos. Both support the same roof structure.

(c) Concern for adapting the modules for local needs.

While the modules have a series of detailed specifications, they are also designed to permit variations. In Juigalpa for example, the slant of the roof has been increased (from 11 degrees to 13 degrees) to take into account heavy rainfall, and passageways have been widened (from 1.8 m to 2.4 m. in width). To take into account heat and strong winds, the roof has been lifted from the basic module specifications (from 2.70 m. to 3.40 m), and slatted windows have been put in to regulate cross-ventilation.

(d) Use of Current MOE programs plus enrollment projections to arrive at specifications for modules.

The preliminary designs for the complexes (see Annex J) are the result of a detailed analysis of student projections plus classroom flow for a typical school day. The technique used to do this is explained in Alonzo Barrientos' report available in the LAC/DR bulk file.

(e) Concern over designing the modules to suit the needs of the users-i.e. staff and students at the complexes.

The preliminary designs for the complexes are the result of numerous conversations and working sessions held between the consultant contracted to prepare the modules and preliminary designs and MOE agro-technical and teacher training staff. In his concern to make sure the designs really reflect the views of the users, the consultant hired for this task held as many as 3-4 meetings with each staff person involved.

4. Ensuring adequate capability to operate and maintain the complexes.

Operating the complexes effectively will require a staff that has been adequately prepared technically, and trained in the utilization and maintenance of the new equipment to be installed in the complexes.

The project includes financing for a large number of training courses for the staffs of the complexes. These courses have been designed to insure that the staffs will be ready and able to successfully run the complexes. The education planning specialist and the technical specialists to be hired as advisors during the first year of the project will help MOE staff in the detailed planning and implementation as of its training programs and help the MOE to locate specialists that can provide needed training in specific areas that they cannot adequately cover.

5. Justification for dormitory facilities for students/ housing for professors at complexes.

The agro-technical complexes will all be built in small towns (5,000 to 25,000 population). Assuming that 1/3 of the students live in or near each of these towns, a minimum of 450 students from outside may be looking for housing simultaneously in each of them. This would supersaturate the market immediately.

In addition, attracting qualified full time staff to areas of limited housing availability is likely to be quite difficult. Finally, the agro-technical part of the complexes will require that at least some students/professors are on the premises at all times to carry out such tasks as feeding farm animals, milking cows, planting, caring for and harvesting crops, etc.

For all these reasons, construction of some housing at all the agro-technical/normal schools is necessary. This would involve a small dormitory at Juigalpa (population 25,000), a small dormitory at Chinandega, and housing for a higher percentage of students/teachers at Siuna. While the precise mix of students/ teacher housing and final costs are not yet known, a GRN financed budget of $750,000 has been included for boarding facilities. Although students might have to pay a small amount as a boarding fee, it is expected that operation of the facilities would be largely financed from the sale of agricultural produce grown or raised at the school.

6. Mode for preparing final designs/construction.

At first, the MOE gave serious consideration to preparing final designs with its own staff and getting the Ministry of Construction to build the facilities. However, in view of the manifold problems involved in finding competent technicians, providing them with adequate support, and organizing the construction activity, all parties have now agreed that both final design preparation and construction will be contracted. In the unexpected case that adequate sources are not available within Central America, the possibility of implementation via direct GRN action may be considered. However, Mission personnel and Consultants have spoken directly with the Chamber of Architects and Engineers and the Chamber of Construction and there is sufficient evidence that the capability to carry out the work exists within the private sector.

B. Component II - Low Cost School Construction and Maintenance

1. Designs for Aulas Ranchos.

The same process described above for preparing preliminary designs for the complexes was also followed in developing a standard design for the Aulas Ranchos. The consultant and his MOE counterparts met with Circuit Directors and visited potential sites to assess the needs of the communities, the availability of materials, and the prevailing weather, climatic and soil conditions. The standard design is highly sensitive to these factors and is quite economical as well (see Annex K for details).

2. Feasibility of self help construction/maintenance method.

While in part a social soundness question, the Mission has ample evidence that Nicaragua communities are willing to devote the manpower and energy to accomplishing such activities. The Literacy Campaign has made illiterates aware of the importance of learning to read and write and has clearly enhanced their feelings of dignity and self worth. It has also fostered a sense of cooperation and drawn communities closer together.

All this is evidenced by increases in requests for SDA projects and requests for assistance from CARE for community development activities. A large number of activities under the sponsorship of local "Sandinista Defense Committees" are still ongoing, and communities are still responding well to the GRN's constant exhortations to join the country's "revolutionary" development process. In addition, the Ministry of Education is carrying out a strenuous publicity campaign aimed at getting people to care for and maintain their schools so that more Nicaraguans can be educated tomorrow. All of this augurs well for continued high participation in self help activities.

C. Summary Findings

Based on the above, the Mission believes that: the proposed activities represent appropriate solutions to the problems identified; the physical facilities are appropriately designed; adequate maintenance and operation of the physical components will be provided; and consequently, the project is technically feasible.

V. Sociocultural Analysis

This Social Analysis addresses the changes in the structure and numbers of the client population and the cardinal issue of sociocultural feasibility: community participation.

A. Project Beneficiaries

We predict the following direct beneficiary populations under the amended projects:

1. Component I (Improved Teacher and Agrotechnical Training)

a. Construction of Physical Facilities

End-of-activity(1985), 500 primary teachers and 290 mid-level technicians graduating yearly from Integrated Educational Complexes (IECs) = 790 x 10 years = 7,900

b. Preparing Teachers and Administrators

Life-of-project (1981 through 1985), 319 in-country short courses and 68 trainees sent to the U.S. or other countries for medium- and long-term training of IEC teaching staff = 387

2. Component II (Low-Cost School Construction)

a. Pilot School-Maintenance Program

Life-of-project, 130 communities, average population 400 each = 12,000

b. Aulas Rancho Program

Life-of-project, 115 communities, average population 300 each = 34,500

3. Component III (Improving Educational Planning and Administration)

a. Improving Educational Planning and Research

Training of existing staff = 36

b. Improved Educational Administration

Training and development of data-processing unit = 200

TOTAL DIRECT BENEFICARIES = 55,023

To this list of approximately 55,023 direct beneficiaries may be added unknown number of rural residents between ages 15 and 44 in the project sites, plus graduate teachers and agricultural technicians, who will use the IECs at night, over weekends, and during vacations, for non-formal training and refresher courses. At a minimum, one could expect an average of 100 individuals to pass through some sort of short- or medium-term training course per month, a minimum of 12,000 over a ten year period.

The combined 1980 estimated population for Juigalpa (25,000), Chinandega (46,300), Siuna (6,000), and Bluefields (20,300) totals 97,600. The estimated percentage of the 1980 population between the ages of 15 and 44 is about 43 percent. Thus in the combined project sites there are approximately 42,000 potential indirect beneficiaries for training which could be offered in the IECs.

To expand the indirect beneficiary pool to its outer limits, that is, the potential for benefits from the strengthening and expansion of the Ministry of Education, one can postulate: a) the 568,000 primary school children, the 307,000 secondary school children, and the 23,000 teachers and MOE support staff projected for 1985, a total of 898,000 who in some way will benefit from this project, the programs of other international institutions, and those of the GRN itself.

B. Community Participation

Component II--low-cost school construction (Aulas Ranchos) and school maintenance--will be made or broken by the level of community participation, that fragile and elusive factor which depends in its turn on values, social structure and collective experience, and available skills and manpower.

Education has traditionally had a high value in rural Nicaragua. The secondary agrotechnical schools at Juigalpa and Siuna have had continuing community support since their founding. A number of rural communities have demonstrated their commitment by successful involvement in CARF and Caritas self-help schoolbuilding programs. And there has long been a tradition in the Zelaya area, not unknown elsewhere in Latin America, of building rudimentary schools to apply leverage on successive Ministries of Education to produce or pay for a teacher.

In the main, the problem has not been one of community values but of governmental responsiveness to those values. The highest priority placed by the GRN on education represents a real change. The recently-ended literacy campaign reawakened an enthusiasm for education which has acquired its own new momentum. Literacy, having become possible, has made more education suddenly plausible for both parents and children

and therefore even more valued . The brigadistas [1/] encountered considerable success in building schools with community help during the campaign; in the Department of Zelaya, during the six months of the campaign, 20 rudimentary schools were built in the Central Zone and 47 in the Northern Zone. The list of 190 Aulas Ranchos which constitute the core of that project component derives from standing requests for classrooms from communities to the Ministry of Education. The nature of those requests would seem a valid indicator of the strength of community commitment: often communities ask for little more than nails, tools, or zinc roofing, items not available locally and which, as in the case of fancier items such as power saws, they have planned to share among neightboring settlements. Communities are prepared to cut their own lumber, dig their own sand, find their own stone, and transport it; to donate land; and to form work groups (e.g., colectivos de carpinteria/ carpentry collectives). In lieu of such ad hoc work groups or as a base for them, there is a plethora of local-level groups (organizaciones de masas) formed during and since the Revolution which are apt foci for motivation and action: Sandinista Defense Committees (CDS), Rural Workers' Associations (ATC), Neighborhood Committees (Comités de Barrio), youth groups (Juventud Sandinista), Popular Militia (Milicias Populares) and, in the Atlantic Zone, the new group of multi-lingual literacy brigadistas. Siuna, as one example, already has 150 communities organized either by an ATC or CDS, working in some kind of construction activity. It is through such groups that national-level organizations like the Agrarian Reform Institute (INRA), the Ministries of Health and of Housing, and the Ministry of Education itself in its several outreach programs, have been able to function locally, in large measure effectively.

A chronic problem for community development activity everywhere has centered on cultural and linguistic dissonance between client populations on the one hand and service deliverers and social promotors on the other. In the Siuna and Bluefields areas, where teachers have been traditionally of local origins (primarily by central government default and usually with low educational levels), this project component should be

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1/ The term used for the workers in the literacy campaign who were organized into fronts, brigades, columns, and squadrons.

particularly important. The upgrading *in situ* of such teachers and agricultural technicians in the new Integrated Educational Complexes (IECs) will enhance their effectiveness as educators, as social promotors and, overall, their special multi-lingual and multi-cultural worth to the national educational endeavor. The recent adjustment in project design to augment dormitory facilities in the IECs responds directly to a need articulated by the concerned communities[2/] and should enhance possibilities for even greater ethnic diversity in enrollments, and better-qualified teachers and technicians in areas hitherto culturally, geographically, and politically marginated.

C. Potential Constraints and Alternative Strategies

Potential project constraints can be anticipated largely in the school maintenance component and, by extension, in the follow-on to the two school construction components. Such constraints are various in nature: economic, attitudinal, and technical.

Maintenance has been a notoriously tenacious problem in development projects and there are few success stories. Part of the difficulty is economic: people lack the money and education which in combination seem to produce higher maintenance achievement, and exist at socioeconomic levels which customarily command little government response to maintenance and/or do not have budgets for carrying it out. Teachers, who could act to promote school maintenance, are not trained to do so and generally do little to restrain destructive behavior on the part of students. Finally, the problem may be technical, deriving from lack of community skills to do the job themselves or from designs and surfaces of structures and furnishings which lend themselves to breakdown and defacement and require costly or difficult repair.

The GRN is aware of the problem and is undertaking school maintenance publicity campaigns. The forthcoming December field practicum for secondary school students will include school cleanup activities. However, the Ministry of Education, in its own Community Educational Promotion Project (PRODECO) has already discovered problems of attrition even during the construction phase, largely due to the demands of agricultural work; need for local community labor contributions

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2/ It is worth noting that lack of dormitory facilities has been a thorny political and program issue in both Panama and Costa Rica. In Panama, the upshot was construction of such facilities in selected schools in 1979; in Costa Rica, unsatisfied demands for dormitory facilities at the Instituto Tecnologico has recently unleashed virtually unprecedented hositilies between students and government.

cannot possibly complete with the coffee harvest which provides the bulk of the rural family's yearly cash needs and which also represents the bulk of the country's foreign exchange earnings. For peasants in the Atlantic Region, the optimum community work time is the period of agricultural slack in June, July, and August; for builders of infrastructure the best time is the period of greatest road accessibility for materials and technical assistance. i.e., the months of January through April. The results of such discrepancies and variations is continual turnover in the local skills pool which affects technical quality, wastes time, and dampens the disposition to use local labor.

The best overall strategy to deal with such an enduring tangle is the pilot approach contemplated by this PP Amendment. Such an approach would permit trying out different mixes of strategies, continually evaluated against carefully selected baseline data, to determine the most acceptable, durable, and cost-effective maintenance and design combination. Community selection from the current needs inventory should include controls for distance and accessibility and new as well as older projects. Baseline and subsequent evaluation data should comprise, as appropriate, perceptions about requirements and responsibilities for maintenance, seasonal demand patterns for on- and off-farm labor, locally available maintenance materials and skills, and participation as measured by such indicators as numbers of meetings, attendance, quantity of contributions in cash and kind, and so forth.

Construction materials and furnishings would be used and evaluated in the light not only of their durability and local appropriateness and availability, considerations already incorporated into the Aulas Ranchos plans (see Appendix K), but also in terms of community capability to build and maintain them and in terms of their vulnerability to defacement. For example, the indigenously-made brick and unpainted concrete being used in the CFER project at Yali may be more lasting and less seductive for graffiti than the painted cement so often used elsewhere.

The pilot approach would also permit trying out different motivational, training, and organizational mixes for supervisors, promotors, work crews, community groups, teachers and local laborers. Innovative training styles, different reward systems for maintenance such as cash payments into community revolving funds, Ministry/community maintenance contracts, locally synchronized and flexible construction and maintenance sechedules, and watchdog committees, can be tried in varying combinations to be evaluated jointly by the MOE and the communities concerned

VI. ENVIRONMENTAL CONSIDERATIONS

The IEE prepared by the Mission recommended a Negative Determination based on the insignificant expected effects of project activities. The Threshold Decision was signed on March 3, 1977.

Although the project activities in the reformulated project are somewhat different from those on which the Threshold Decision was based, the Mission believes that the Negative Determination is still appropriate. The complexes to be constructed will affect land use over a relatively small area; adequate safeguards have been built into the project design to ensure appropriate treatment of wastes; and the agricultural uses of the land should enhance its protection against erosion or depletion of productive capacity. Similarly the other project activities - training, technical assistance, and development of a data processing capability-have no foreseeable environmental impact.

PRIMARY SCHOOL ENROLIMENTS 1973-1978

	1973	1974	1975	1976	1977	1978
School Age Population	376,887	387,715	399,514	413,084	427,117	471,903
Amount Registered	318,887	324,328	341,533	362,333	378,948	286,335
Percentage Registered	84.8	83.7	85.5	87.7	88.7	60.7

Source of Information: Year 1973-1977 Anuario Estadístico 1978
Year 1978 Statistics from MOE

EDUCATION IN NICARAGUA

PRELIMINARY ENROLLMENTS BY EDUCATIONAL LEVEL : 1973-1978

EDUCATIONAL LEVEL AND MODALITY	1973	1974	1975	1976	1977	1978
TOTAL	401.661	420.617	449.349	483.786	504.181	499.831
ELEMENTARY EDUCATION :	327.064	333.663	350.519	372.711	378.943	378.640
Pre-School	8.177	0.084	8.986	10.608	10.659	9.000
1 to 6th.	318.887	324.579	341.533	362.103	368.284	369.640
URBAN :	220.448	219.095	227.977	247.177	256.612	250.345
Pre-School	6.028	6.815	6.605	8.851	9.007	8.314
1 to 6th.	214.420	212.280	221.372	238.326	247.605	242.031
RURAL :	106.616	114.568	122.542	125.534	122.331	128.295
Pre-School	2.149	2.269	2.381	1.757	1.652	686
1 to 6th.	104.467	112.299	120.161	123.777	120.679	127.609
SECONDARY EDUCATION :	63.177	71.044	80.202	89.823	105.429	98.874
GENERAL :	57.814	64.433	66.958	68.828	85.192	80.254
Junior High (grades 7 to 9th.)	45.056	51.147	* 52.769	55.179	68.382	63.774
Senior High (grades 10 to 12th.)	12.758	13.286	14.189	13.649	16.810	16.917
TECHNICAL :	3.760	5.225	9.557	14.282	12.747	13.917
Business	2.763	3.466	8.037	10.638	8.991	11.426
Agriculture	796	629	668	768	833	118
Industrial	201	1.130	852	2.876	2.923	2.373
Pedagogy (Teacher Training)	1.502	1.024	822	1.285	1.688	2.053
Free Courses	30	280	2.865	5.397	5.802	2.569
Nursing	71	82	D.N.D	31	D.N.D	81
HIGHER EDUCATION	11.420	15.910	18.628	21.252	** 19.809	***22.317

PRIMARY SCHOOL ENROLLMENT PROJECTION: 1980-1980

YEAR	TOTAL ENROLLMENT	OF PRIMARY SCHOOL AGE	AVERAGE AGE		AS PERCENTAGE OF POPULATION OF PRIMARY SCHOOL AGE
			ABSOLUTE	RELATIVE	
1980	443,043	252,218	190,824	43,1%	75.8%
1981	485,034	328,268	156,766	32.3%	78.4%
1982	506,076	396,041	110,035	21.7%	80.9%
1983	524,366	445,182	79,184	15.1%	83.3%
1984	539,582	477,996	61,586	11.4%	85.6%
1985	567,939	513,213	54,726	9.6%	88.0%
1986	593,869	546,765	47,104	7.9%	90.3%
1987	617,912	579,587	38,325	6.2%	92.6%
1988	645,433	621,393	24,040	3.7%	95.0%
1989	652,894	652,894	--	--	95.0%

CEA/nma.-

Statistics Office
Ministry of Education

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SECONDARY SCHOOL ENROLLMENT PROJECTION: 1980 - 1989

YEAR	TOTAL ENROLLMENT	OF SECONDARY SCHOOL AGE	AVERAGE AGE		AS PERCENTAGE OF POPULATION OF SECONDARY SCHOOL AGE
			ABSOLUTE	RELATIVE	
1980	121,637	62,776	55,699	45.8%	25.6%
1981	137,783	68,363	69,420	50.4%	29.0%
1982	174,633	81,822	92,811	53.1%	36.9%
1983	221,088	100,045	121,043	54.7%	46.8%
1984	269,724	129,940	139,784	51.8%	57.3%
1985	306,956	159,307	147,649	48.1%	62.4%
1986	344,593	198,821	145,772	42.3%	65.9%
1987	378,081	240,620	137,461	36.4%	68.1%
1988	404,932	286,298	118,634	29.3%	71.6%
1989	431,375	333,215	98,160	22.8%	75.9%

Statistics Office
Ministry of Education

MOE OPERATIONAL BUDGET (1975-1990)

ACTUAL AND PROJECTED

Years	GNP (C$000,000)	Expenditures (C$000)-% of GNP 4.57%	5%
1975	11,133	258,448	258,448
1976	12,935	320,869	320,669
1977	15,679	337,951	337,951
1978	14,995	341,024	341,024
1979	13,409	409,715	409,715
1980	19,405	888,249	888,249
1981	20,977	958,650	1,048,850
1982	22,676	1,036,293	1,133,800
1983	24,513	1,120,244	1,225,650
1984	26,499	1,211,000	1,324,950
1985	28,645	1,309,076	1,432,250
1986	30,965	1,415,101	1,548,250
1987	33,473	1,529,716	1,673,650
1988	36,184	1,653,608	1,809,200
1989	39,115	1,787,560	1,955,750
1990	42,244	1,930,550	2,112,200

Source: Ministry of Education

ONGOING AND PLANNED ASSISTANCE TO THE MOE

from the World Bank, UNESCO, and IDB

I Ongoing Assistance

A World Bank Second Education Project - Loan 1244

This loan was negotiated and signed with the previous government. Renegotiations, which took place in late 1979, resulted in only minor changes to project components. The total project is for $18,000,000 of which $11,000,000 is World Bank funds and the remaining $7,000,000 GRN counterpart.

The project as currently designed, has three components:

(1) Construction, furnishing and equipping 630 classrooms distributed in 18 rural educational nuclei.

(2) Construction, furnishing and equipping of 18 junior-high schools or CIBAS (Ciclos Básicos de Educación) in semi-rural areas.

(3) In-service training programs for teachers and administrators located in project financed schools.

(4) Refurnishing 22 senior high schools constructed under the first World Bank Education.

Activity (1) above is designed around the nuclear education concept. Each educational nucleus constitutes a "base school", two or more "sub-base schools" and several "associated schools". Included under the loan are 152 four grade primary schools ("associated schools"), 52 six-grade primary schools ("sub-base schools") and 18 rural community learning centers ("base schools").

As of the date of drafting this document approximately half of project funds had been disbursed. The closing date for this loan is December 31, 1981.

B UNESCO

At present UNESCO has three projects with the Ministry of Education. The first - UNESCO- 700/NIC/10-is financed under the World Bank Second Education Project. This Project focuses primarily on providing support to the proposed expansion and reform of the CIBA concept in rural areas.

Through this project technical assistance will be provided to the MOE in the areas of curriculum development; design and development of educational materials for rual areas; nuclearization of rural education non-formal education; and deeentralization of administrative structures. The 18 CIBAS being funded under World Bank

will serve as the focus of project activities. The total project amount is $405,000.00. Responsibility for coordinating project activities resides with the Planning Division of the MOE.

UNESCO-79/NIC/007 is a UNDP funded project designed to provide assistance to the MOE's national training system. This project, which is in the process of getting started, is geared toward assisting the MOE launch a comprehensive in-service distance teaching program for teachers. A small amount of funds will be devoted to equipping a materials production center. The remainder and majority will be used to bring in experts in distance training; materials production; educational technology; educational planning; technical and agricultural education. These advisors will work with the Human Resources Division of the MOE to put the proposed distance program into place. The total project amount in approximately $1,400,000. Estimated project duration is three years.

A third UNESCO project, on a much smaller scale, is being funded by the UNFPA. Lodged in the curriculum development office of the MOE, this project will be devoted to assisting the MOE to include population/family planning information in the basic MOE curriculum.

II. Planned Assistance

A. World Bank Third Education Project

This project is still in discussion stages between the World Bank and the GRN. A pre-appraisal team spent several weeks in Nicaragua in August of 1980 examining aspects of the proposed loan with MOE officials. The MOE hopes to have this loan negotiated with the World Bank and approved by early spring of 1981.

Basically, this loan expands upon World Bank Two. As currently conceived the project will:

(1) Build, furnish and equip 1,220 classrooms distributed in 35 rural education nuclei. Project activities under the second loan are centered in 10 Departments of the country. This loan concentrates on the remaining 8 Departments.

(2) Build, furnish and equip 18 lower secondary schools (CIBA's).

(3) Build, furnish and equip 9 Escuelas Agrícolas Campesinas (EAC's)

(4) Train staff for their roles in operating the facilities listed above.

While a specific loan amount has not yet been agreed upon, it is estimated that the total loan amount will be approximately $40,000,000. As with the second World Bank project, it is estimated that technical assistance and training will be contracted out to UNESCO.

B. Interamerican Development Bank

This project is also proposed for obligation in 1981. The estimated project amount is $20,000,000. Proposed project activities are in four areas:

(1) Building, furnishing, and equipping rural primary schools (number yet to be defined)

(2) Building 18 MOE CIBA's to complement the 18 already being built with World Bank Two funds and the 18 programmed under World Bank Three.

(3) Building and equipping 7-10 rural"production schools" that combine grades 1-9.

(4) Building, equipping, and furnishing an additional and as yet undefined number of secondary agro-technical institutes.

It is anticipated that the construction proposed for Component I will be carried out with the assistance of the communities where they are located. Each community will donate labor and local materials.

An IDB exploratory team spent part of July in Nicaragua discussing this project with the MOE. A follow-on team, which will analyze the project in further depth in expected to arrive shortly.

C. UNESCO

In addition to planned follow-on advisory assistance under World Bank Three, UNESCO assistance to the MOE over coming years is expected to take a vriety of forms. The MOE has just presented a request to UNESCO for assistance amounting to $147,400 over the 1981-83 period. Included are 12 sub-projects involving training and T.A. for different offices of the MOE: The MOE has also requested $600,000 for the Vice-Ministry of Adult Education. These funds will enable the Vice Ministry to purchase the equipment (radios, cassette recorders, mimeograph machines) it needs to organize mobile units that will be responsible for carrying out continuing adult education nationwide.

COMPARISON OF ORIGINAL PROJECT COMPONENTS WITH REVISED PROJECT COMPONENTS PROPOSED UNDER THE REPROGRAMMING EFFORT

ORIGINAL PROJECT				REPROGRAMMED PROJECT			
Component	Original Intent	Proposed AID Assistance		Component	Intent	Proposed AID Assistance	
		Grant	Loan			Grant	Loan
I	Administrative Reform and Management Improvement - extensive TA to strengthen institutional and management capacities of MED in areas of planning, organization, staffing, operations and budgeting.	$ 585	$ 340	III	Educational Planning/Administration - comprehensive assistance to MOE to establish a computerized information system for routine administrative procedures, and train personnel in aspects of Educational Planning	US$402	US$115
II	Integrated Community Development - develop community capacity to take an active part in determining the nature of the educational services that are delivered to their communities.	$ 105	$ 92	--	Included as part of World Bank III and IDB loan scheduled for funding in 1981.	--	--

ORIGINAL PROJECT				REPROGRAMMED PROJECT			
Component	Original Intent	Proposed AID Assistance		Component	Intent	Proposed AID Assistance	
		Grant	Loan			Grant	Loan
III	Curriculum Development and Related Materials Production - develop a radio-supported basic education curriculum to meet the needs of rural primary school age children plus adolescents and adults who lack numeracy and literacy skills.	$ 200	$ 2,945	--	Removed from project in light of ongoing MOE efforts and ongoing UNESCO assistance under World Bank II loan as well as proposed assistance under World Bank III.	--	--
IV	Training for Supervision and Teaching - continuing program of pre-service and in-service orientation and training for supervisors, master teachers, regular teachers and comarca teachers who will work and teach in the rural areas of Region II and V.		$ 262	I	Integrated Educational Complexes - create a functional system for providing teacher training and secondary agricultural and technical education for students living in rural areas. Focuses on area of pre-service teacher training with in-service training to be done by UNESCO. Includes loan funds for designing, building and equipping	$ 1,248	$ 7,155

ORIGINAL PROJECT				REPROGRAMMED PROJECT			
Component	Original Intent	Proposed AID Assistance		Component	Intent	Proposed AID Assistance	
		Grant	Loan			Grant	Loan
					four complexes; grant funds for TA and training to prepare teachers and administrative staff to run the complexes.		
V	Strengthening Rural Education Delivery Systems : address infrastructure, support and service constraints that hinder delivery of rural education services.		3,861	II	Create capacity within MOE to build and maintain rural educational facilities at a low cost through organization and use of Community Groups: includes two sub-activities - School Maintenance program and Aulas-Rancho program.	$ 132	$ 230
					Project Implementation Unit	173	
	TOTAL	890	7,500		TOTAL	1,955	7,500

RECOMMENDATIONS OF REPROGRAMMING TEAMS

In February of 1980 a two person AID team came to Nicaragua for two weeks at the request of the MOE to reprogram the Rural Education loan and its accompanying grant. This visit culminated in the drafting of a memorandum outlining modifications to the project components requested by the GRN. A copy of this memorandum entitled "Reprogramming of Rural Education Development Loan No. 524-V-033 and Grant No. 524-0115 " is available in the LAC/DR bulk files.

Key among the AID team's recommendations for reprogramming the project were the following:

(1) That the Training and Supervision component be expanded to provide for a major increase in normal school capacity. Specifically, based on conversations with MOE officials it was suggested that four new normal schools be designed, built and equipped under the loan and that grant funds be used to assist in curriculum development and implementation as well as to upgrade teacher trainers.

(2) That the Rural Education Delivery System component be modified, reducing new classroom construction and modifying the concept of rural adolescent centers to provide for loan financing of three secondary vocational Agro-technical Institutes.

(3) That the Administrative Reform component be reduced in the light of on-going and anticipated UNESCO, OAS and FLACSO assistance in this area. Since this assistance does not provide needed data processing equipment to assist in planning activities and processing administrative data, the MOE has requested that loan funds be used to finance activities in this important area.

(4) That the Curriculum Development component be eliminated in view of progress already made in this area, as well as UNESCO and FLACSO assistance now being provided.

The AID team in its report recommended that a follow-on team be brought in to proceed with detailed analysis and design of these proposed changes in project components. A series of recommendations were left with the Mission to be used as a basis for developing scopes of work and selecting the members of the follow-on consulting team. AID presented a list of potential consultants to the MOE in May and in mid-June the first member of the follow-on team arrived in Nicaragua. This individual served as team leader and also assumed the role of education planner. The remaining team members: an architect, an agricultural education specialist, an educational technology specialist and a non-formal education specialist arrived in July. All, with the exception of the last, remained in Nicaragua through July and

for the whole month of August. In mid-September the Mission hired a local computer firm to define the data processing activity for the administrative component.

During their stay in Nicaragua the team worked very closely with MOE officials. Rapport in general was excellent and the MOE at the end of the consultants' visit expressed great satisfaction with what the consultants had accomplished.

The principal change to the project resulting from the second team's visit was the idea of combining the normal school and agro-technical institutes into complexes.

As it turned out three of the sites proposed by the MOE for building new normal schools already has secondary-agrotechnical institutes functioning. In the case of two land was already available to construct the proposed complexes. In the case of the fourth normal school proposed for Bluefields there was no secondary-agro-technical institute but the GRN is interested in expanding to include activities in the area of the fisheries and the decision was made to also combine both into a complex.

The narrative description of the revised project components included in Part II reflects the consultants' findings and recommendations. Copies of their reports may be found in the LAC/DR bulk files. The consultants are as follows:

John F. Helwig	Educational Planner and Team Leader
Alonzo Barrientos Rodríguez	Engineer
Albert Muller	Agricultural Education Specialist
Oscar Vigano	Educational Technology Specialist
Robert Arnove	Non-formal Education Specialist
Rene Gutierrez Cortes	Systems Analyst

Background Information regarding existing Normal Schools

I. In 1979-1980, the MOE budgeted C$13,800,000.00 "córdobas" ($1,380,000) for the operation of the five existing normal schools. For 1981, the budget has been increased to C$20,218,588.00 "córdobas" ($2,021,859) to accomodate the four new normal schools which will be established in temporary quarters.

In 1980 the enrollment in the existing normal schools totaled 1,795. The table which follows shows enrollment figures for each institution:

TABLE 1

NORMAL SCHOOLS

1980

Institution	1 st Year	2nd Year	3rd Year	Total
Managua	284	188	124	596
Jinotepe	191	177	116	484
San Marcos	82	58	78	218
Estelí	214	203	---	417
Waspan	30	25	25	80
TOTAL	801	651	343	1795

The number of personnel employed at each of the normal schools is indicated in the following table:

TABLE 2

NORMAL SCHOOLS

1980

INSTITUTION	Full-Time	Part-Time	Total
Managua	47	9	56
Jinotepe	9	18	27
San Marcos	13	3	16

TABLE 2 CONT'd.

Esteli	20	7	27
Waspan	na	na	na
TOTAL	89	37	126

Physical aspects of the schools are summarized in Table 3:

TABLE 3

NUMBER OF CLASSROOMS, CAPACITY AND SIZE OF LIBRARY IN EXISTING NORMAL SCHOOLS

1980

School	#Classrooms	Capacity	#Labs	Library Books
Managua	22	40	4	5000
Jinotepe	11	40	2	3000
San Marcos	14	30	2	5500
Esteli	16	40	1	6400
Waspan	na	na	na	na

II. Transitory Curricula for Teacher Training Programs

The following table contains the transitory teacher training program to be implemented in the four new normal schools and five existing ones through 1983:

TABLE 4

TRANSITORY CURRICULUM FOR
TEACHER TRAINING PROGRAMS (1980 - 1983)

Cycles	Subjects	CLASS HOURS PER WEEK Year 1 S1 1/	Year 1 S2 2/	Year 2 S1	Year 2 S2	Year 3 S1	Year 3 S2	% of total hours	
Political Education	Philosophy	3 3/	3	2	2	3	-	6.26	6.20%
General Education	Spanish Lang	4	4	4	4	-	-	7.62	
	Mathematics	4	4	4	4	-	-	7.62	
	Physics	3	3	3	3	-	-	5.71	
	Chemistry	3	3	3	3	-	-	5.71	
	Biology	-	-	4	4	-	-	3.81	
	Nic.Geography	-	-	3	2	-	-	2.38	49.96%
	Nic. History	3	3	2	-	-	-	3.81	
	Foreign Lang	2	2	2	2	-	-	3.81	
	Physical Ed	2	2	2	2	-	-	3.81	
	Art	2	2	-	-	-	-	1.90	
	Technical Ed	-	-4/	2	2	-	-	1.90	
	Agriculture	2	2	-	-	-	-	1.90	
Pedagogic Education	Spanish Method	-	-	-	-	5	-	2.38	
	Math Method	-	-	-	-	5	-	2.38	
	Science Method	-	-	-	-	5	-	2.38	
	Soc.Studies	-	-	-	-	5	-	2.38	
	Arts & Crafts	-	-	-	-	3	-	1.42	43.82%
	Pedagogy	4	4	2	2	2	-	6.67	
	Psychology	3	3	2	3	2	-	6.20	
	Applied Stat.	-	-	-	2	-	-	0.95	
	Research Tech.	-	-	-	-	3	-	1.43	
	Counseling	-	-	-	-	2	-	0.95	
	Teaching Pract.	-	-	-	-	-	35	16.67	
Totals	24 subjects	35	35	35	35	35	35	100%	100%

1/ S1=1st semester

2/ S2=2nd semester

3/ Class hours per week - number of hours as well as subject matter are open to change as the curriculum is revised

4/ The number of hours in agriculture is subject to increase in the four new normal schools. Agriculture will probably be extended to also form part of the curriculum in the second and third years.

ORGANIGRAMA DEL MINISTERIO DE EDUCACION

MOE ORGANIZATIONAL CHART

Annex G.

ANNEX H

ENGINEERING SPECIFICATIONS FOR INTEGRATED EDUCATIONAL COMPLEXES

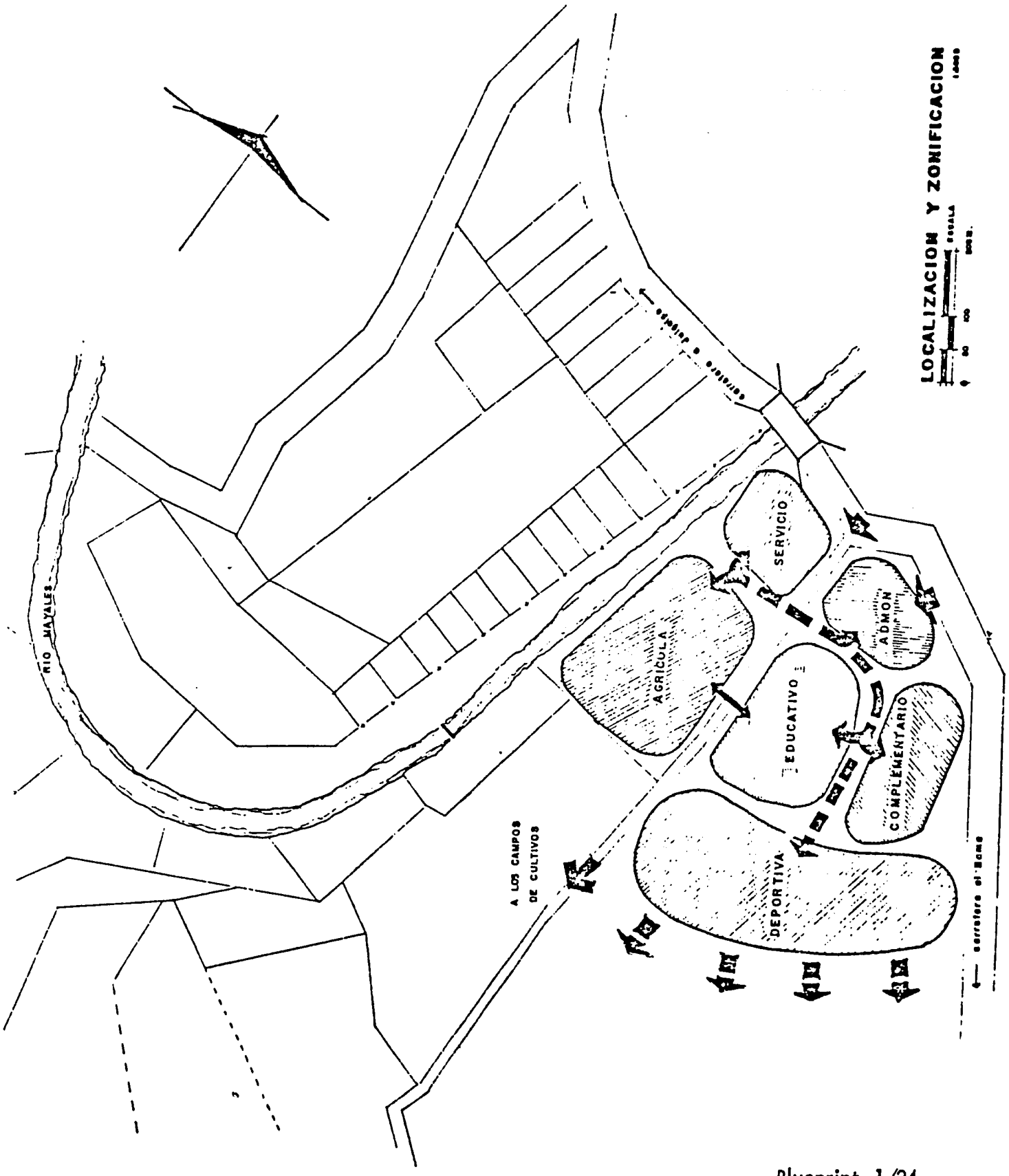
This annex is designed to provide the interested reader with samples of blueprints available detailing engineering specifications for the Integrated Educational Complexes. The blueprints (reduced in order to include them in as annex material) are grouped in two parts : preliminary design for the Juigalpa complex; and sample of standard modules proposed for use in the complexes.

PRELIMINARY DESIGN FOR JUIGALPA COMPLEX :

SAMPLE OF STANDARD MODULES PROPOSED FOR USE IN THE COMPLEXES :

JUIGALPA COMPLEX

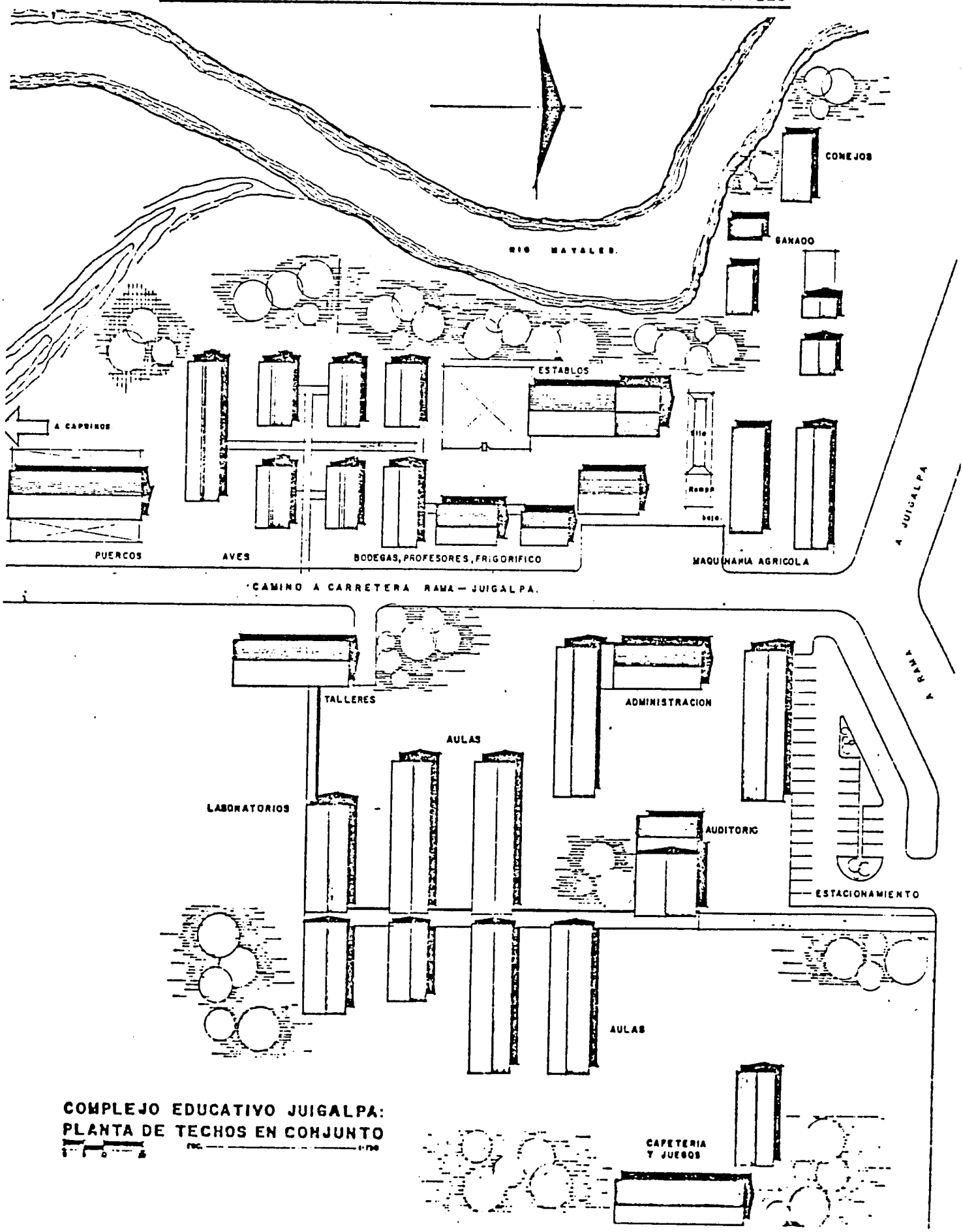
- SITE LAYOUT



Blueprint 1/24

JUIGALPA COMPLEX

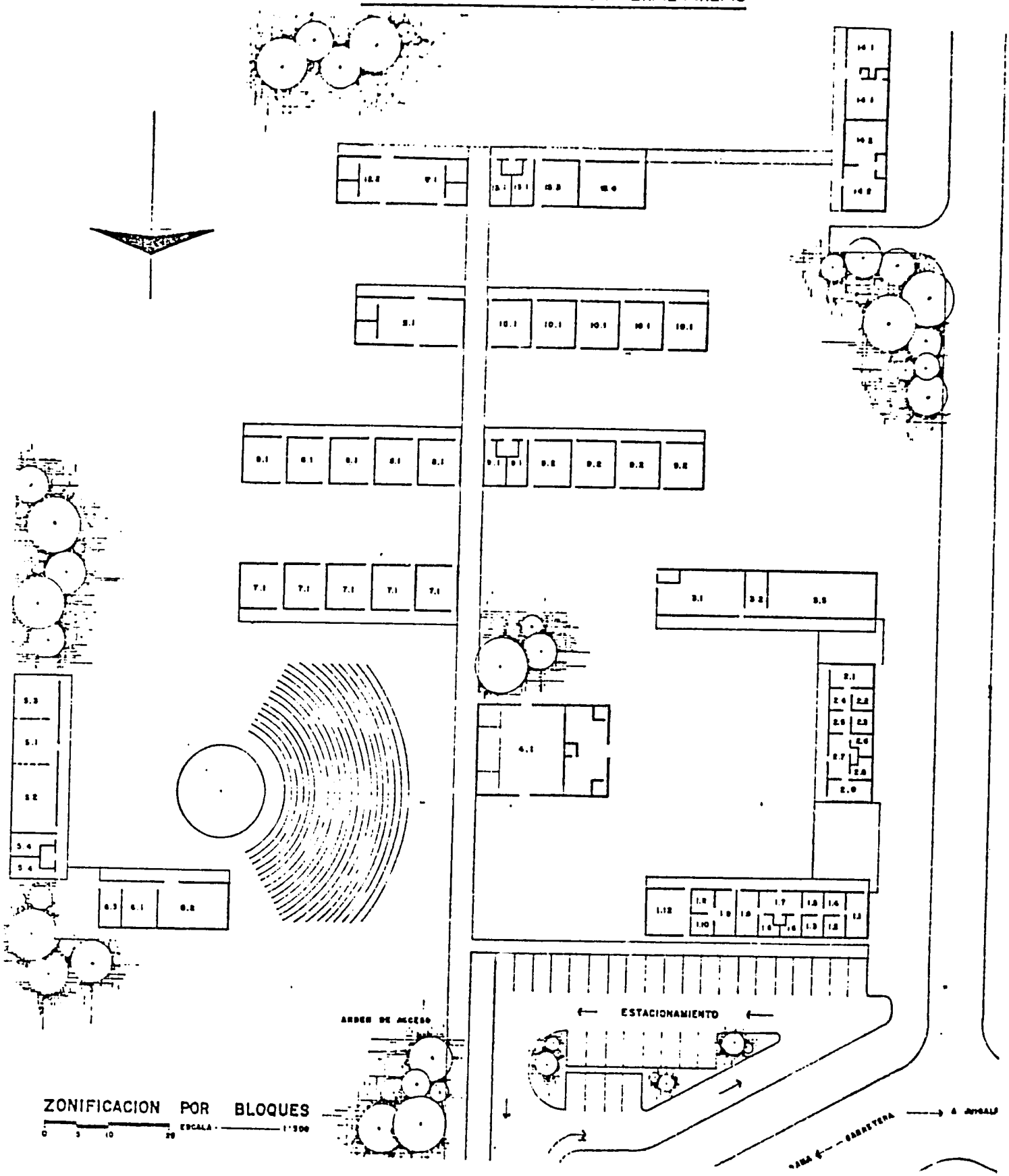
AERIAL VIEW OF GENERAL AREAS AND AGRO-TECHNICAL SPACES



Blueprint 2/24

JUIGALPA COMPLEX

SCHEME LAYOUT FOR GENERAL AREAS

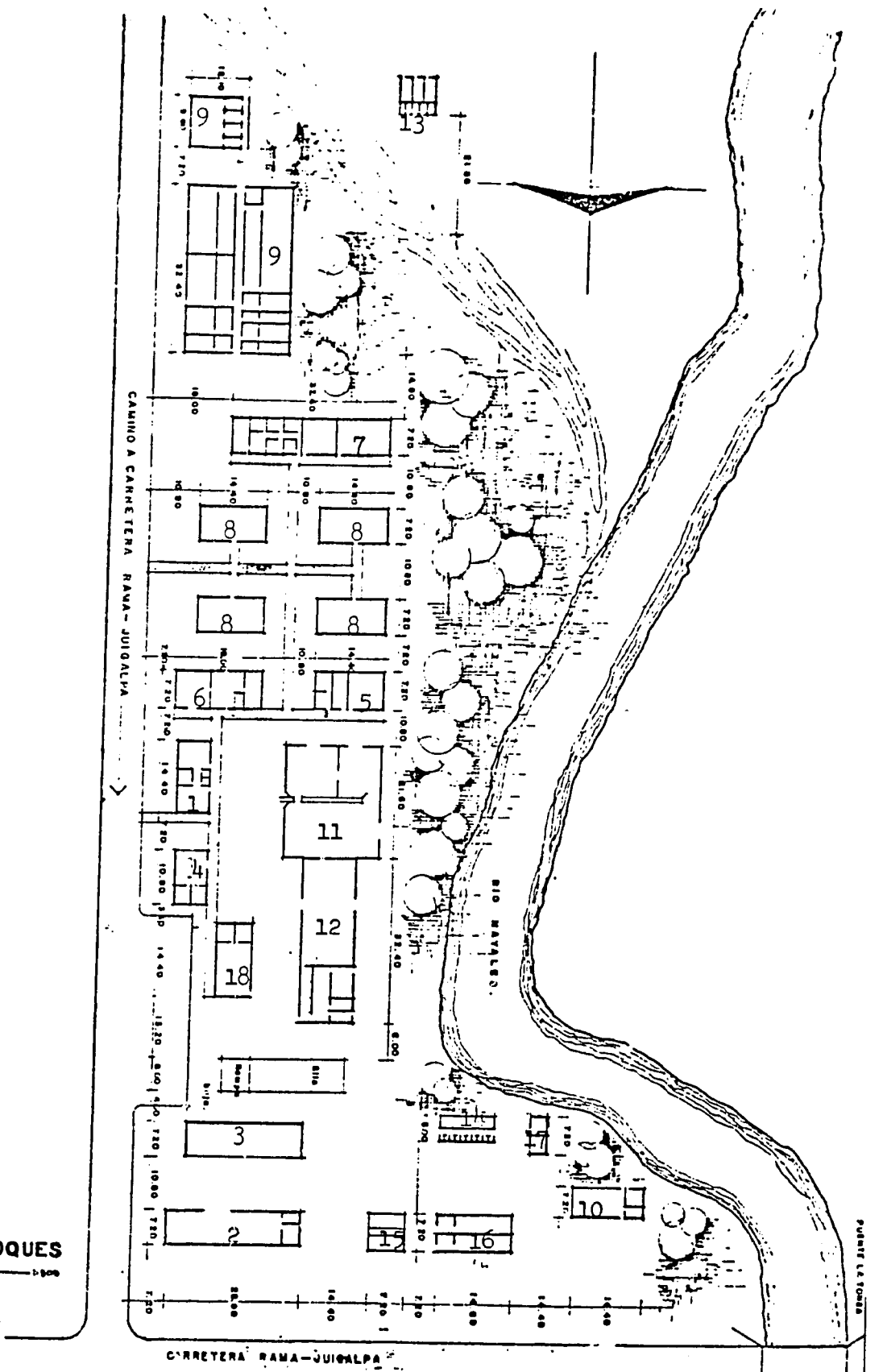


Blueprint 4/24

15

JUIGALPA COMPLEX

SCHEME LAYOUT FOR AGRO-TECHNICAL AREAS



AGROPECUARIO:
ZONIFICACION POR BLOQUES

ESCALA 1:500

Blueprint 7/24

JUIGALPA COMPLEX

GUIDE TO SCHEME LAYOUTS FOR GENERAL AREAS AND AGRO-TECHNICAL SPACES

Designated Use of Area	Number of Modules	Space in Square Meters	Block Number on Scheme Layout
BLUEPRINT 4/24 - GENERAL AREAS			
Normal school administration :	5	331	1
- meeting room			1.1
- director's office			1.2
- deputy director's office			1.3
- secretarial area			1.4
- waiting room			1.5
- bathrooms			1.6
- accounting			1.7
- teacher's lounge			1.8
- waiting room for infirmary			1.9
- infirmary			1.10
- psychologist's office			1.11
- reproduction			1.12
Agro-technical school administration :	3	249	2
- meeting room			2.1
- director's office			2.2
- deputy director's office			2.3
- secretarial area			2.4
- waiting room			2.5
- bathrooms			2.6
- accounting			2.7
- teacher's lounge			2.8
Library :	5	391	3
- bookcases			3.1
- office			3.2
- reading area			3.3
Auditorium (multiple use)	5	391	4
Recreational area :	4	315	5.
- billiards			5.1
- chess			5.2
- ping-pong			5.3
- bathrooms			5.4

JUIGALPA COMPLEX

GUIDE TO SCHEME LAYOUTS FOR GENERAL AREAS AND AGRO-TECHNICAL SPACES

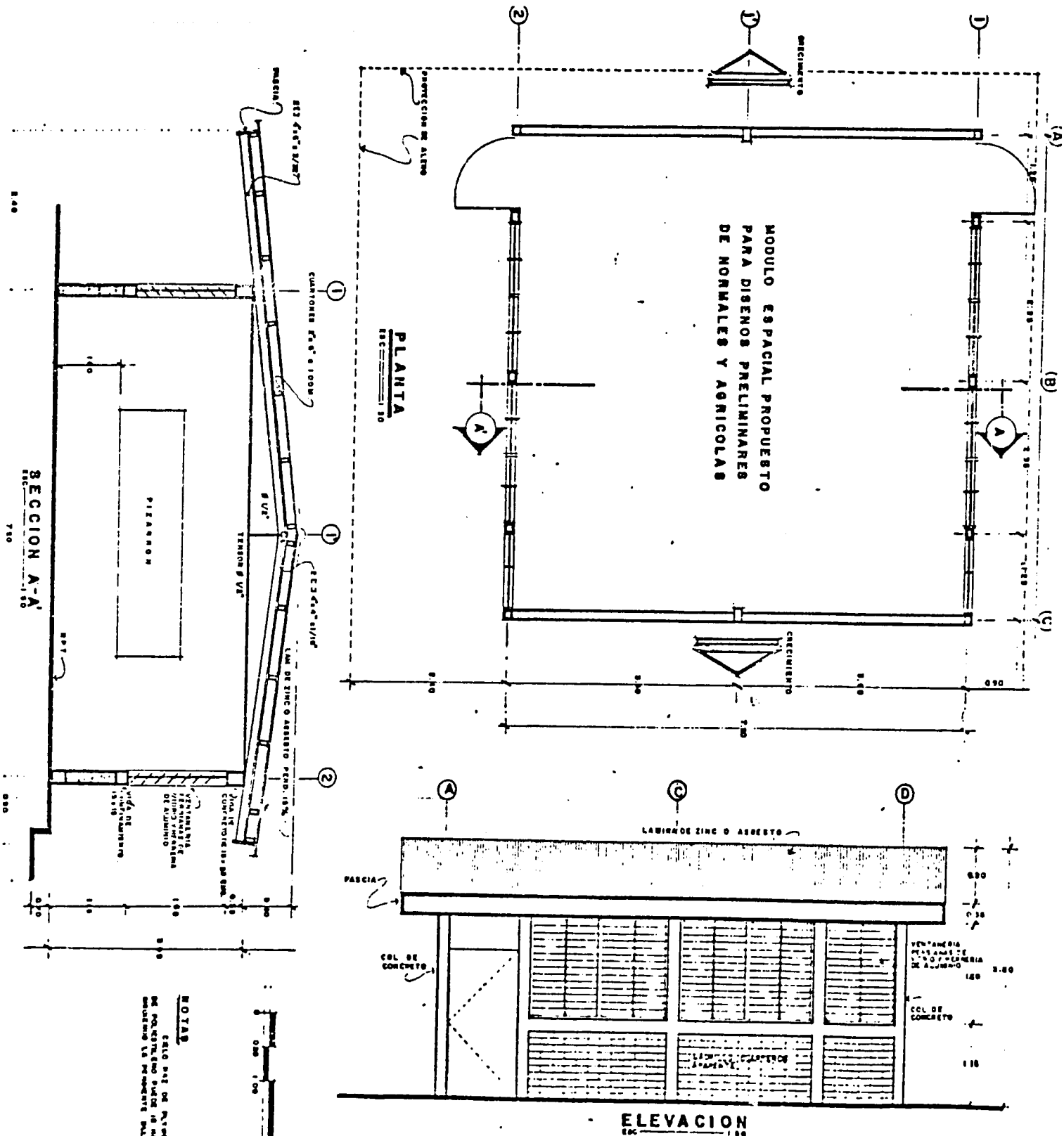
Designated Use of Area	Number of Modules	Space in Square Meters	Block Number on Scheme Layout
Food service area :	4	315	6
- kitchen			6.1
- cafeteria			6.2
- dispensary			6.3
Classrooms	5	391	7
Classrooms	5	391	8
Classrooms and storage area :	5	391	9
- bathrooms			9.1
- classrooms			9.2
- storage area			9.3
Classrooms	5	391	10
Physics laboratory	2.5	202	11
Other laboratories :	3	249	12
- biology and chemistry			12.1
- soils			12.2
Art and music :	3.5	277	13.
- bathrooms			13.1
- art room			13.2
- music room			13.3
Workshops :	4	315	14
- home economics			14.1
- carpentry and mechanics			14.2
TOTAL		9,292	

JUIGALPA COMPLEX

GUIDE TO SCHEME LAYOUTS FOR GENERAL AREAS AND AGRO-TECHNICAL SPACES

Designated Use of Area	Number of Modules	Space in Square Meters	Block Number on Scheme Layout
BLUEPRINT 7/24 - AGRO-TECHNICAL SPACES			
- Teacher's office	1	164	1
- Agricultural machinery workshop	1	261	2
- Storage area for agricultural machinery	1	185	3
- Storage area for agricultural tools	1	104	4
- Storage area for agricultural products	1	136	5
- Animal feed processing unit	1	207	6
- Egg laying area	1	282	7
- Broilers	1	543	8
- Hog and delivery pen	1	719	9
- Rabbit hutch and apiary	1	160	10
- Milking area and stalls	1	681	11
- Milking area(detail)	1	-	12
- Goats	1	81	13
- Calves	1	74	14
- Beef cattle	1	71	15
- Bulls	1	117	16
- Livestock delivery room	1	40	17
- Animal processing and refrigeration	1	164	18
TOTAL :		3,839	

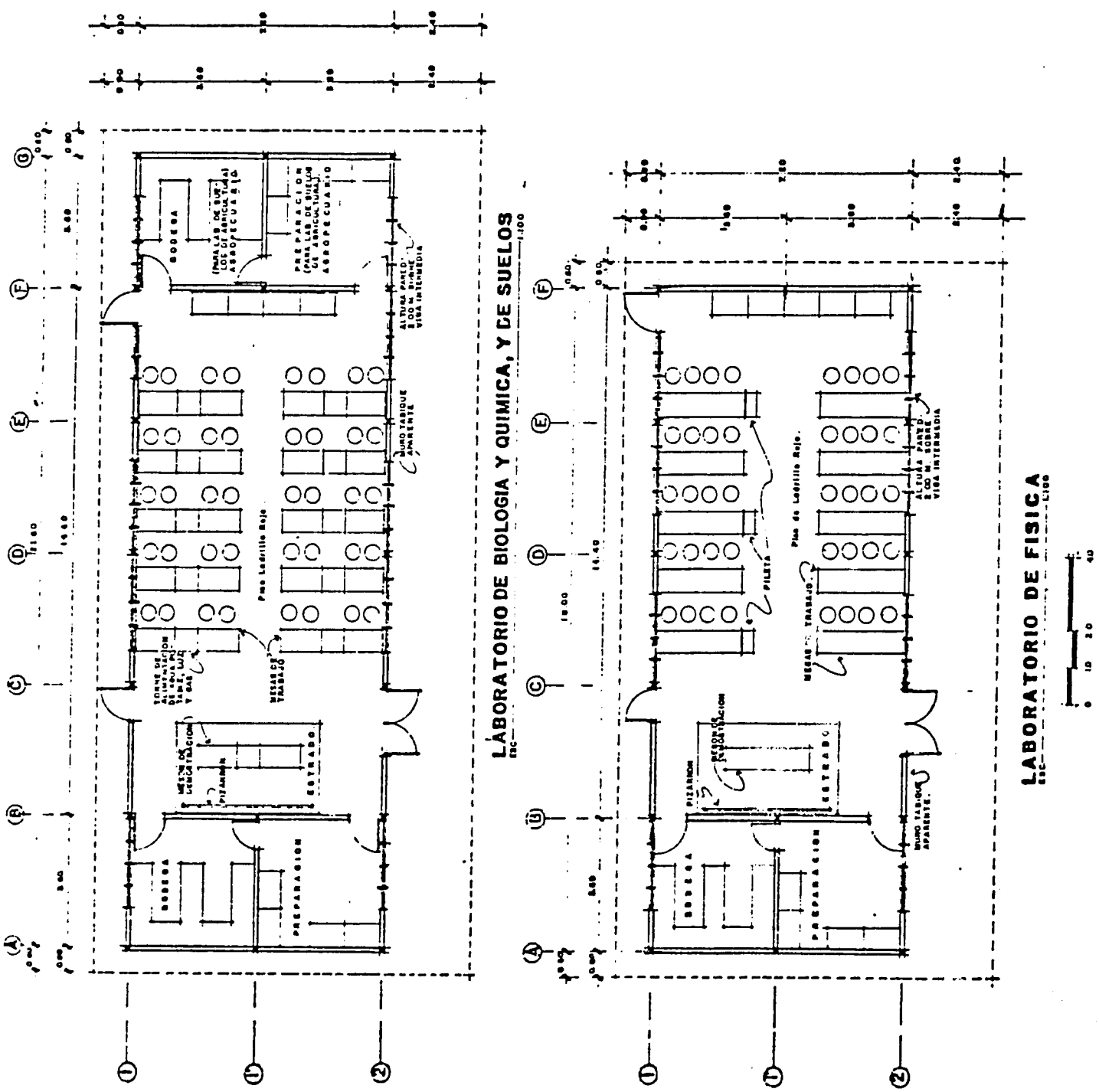
BASIC CLASSROOM MODULE



Blueprint 10/5

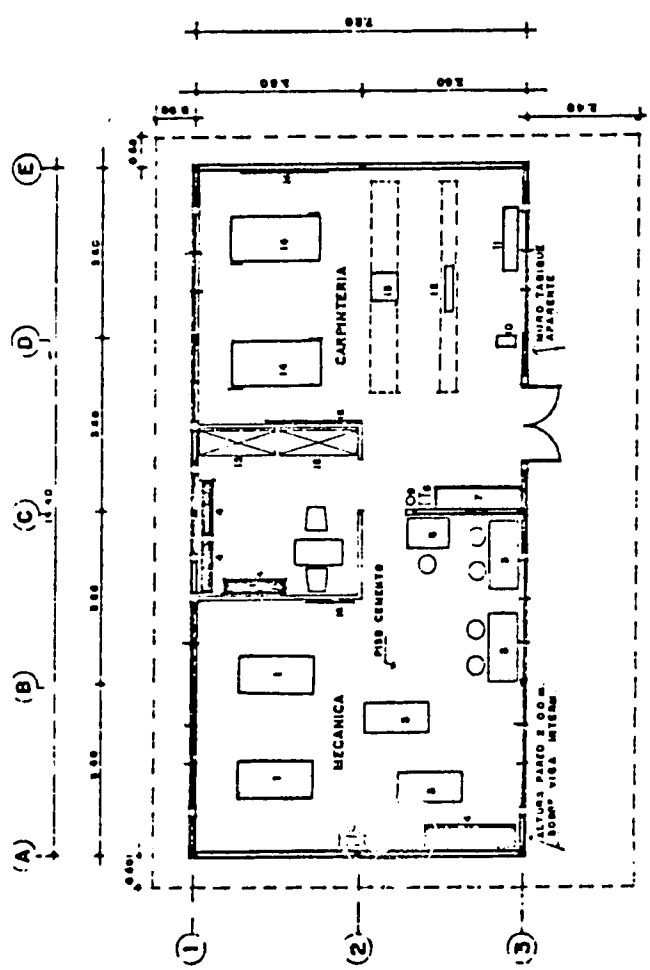
BIOLOGY / CHEMISTRY / SOILS AND PHYSICS LABORATORIES

(ALTERNATIVE 1)



Blueprint 10/12

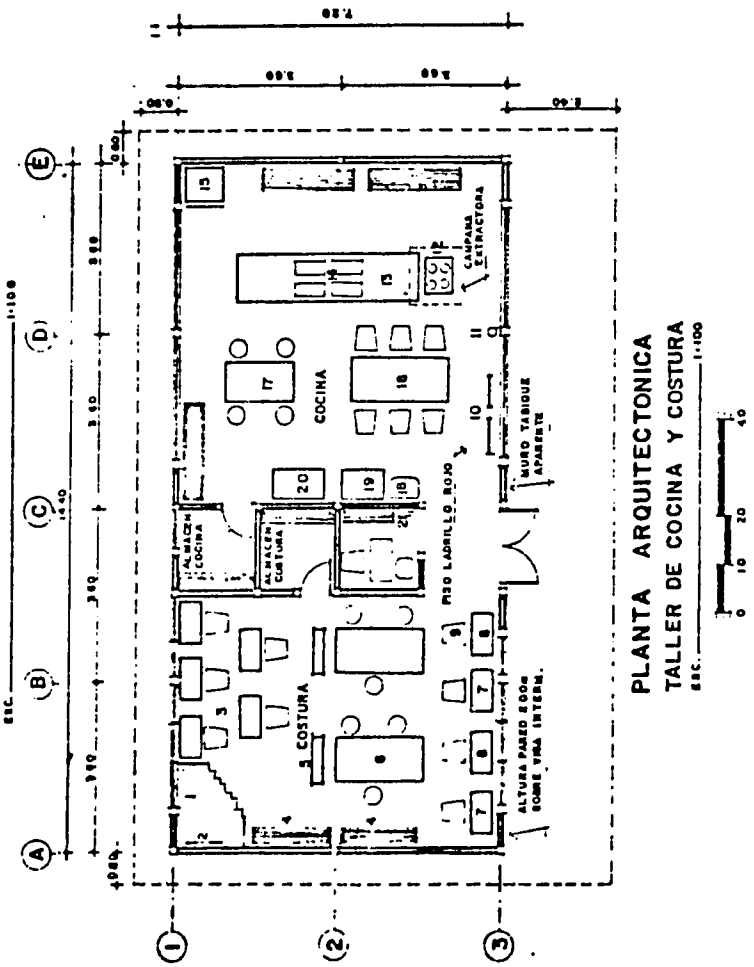
CARPENTRY / MECHANICS AND HOME ECONOMICS WORKSHOPS



PLANTA ARQUITECTONICA
TALLER DE MECANICA Y CARPINTERIA
ESC. 1:100

DENOMINACION

1 BANCO MECANICO
2 ESMERIL
3 TORNO MECANICOS
4 ARMARIOS
5 BANCO ELECTRICO
6 TABLERO DE PRUEBAS
7 LAVAMANOS
8 BOTIQUIN
9 EXTINGUIDOR
10 MULLION
11 TORNO P. MADERA
12 CARTEADORA
13 SIERRA CIRCULAR
14 BANCOS DE CARPINTERIA
15 ESTANTERIA
16 PIZARRON



PLANTA ARQUITECTONICA
TALLER DE COCINA Y COSTURA
ESC. 1:100

DENOMINACION

1 PROBADOR
2 ESPEJO
3 MAQUINAS DE COSER
4 ARMARIOS
5 PLANCHADOR
6 MESA DE CORTE
7 TELAR HORIZONTAL
8 TELAR VERTICAL
9 SILLAS
10 TABLEROS DE AVISOS
11 EXTINGUIDOR
12 COCINA
13 MESON DE CONCRETO
14 TARJAS
15 REFRIGERADORA
16 PREPARACION Y SERVICIOS
17 MESA DE PUERIC.
18 LAVAMANOS
19 TINA
20 CUNA
21 BUTIQUIN

Blueprint 12/12

92

ANIMAL FEED PROCESSING UNIT

PLANTA ARQUITECTONICA

EQUIPOS

1 MOLINO
2 MEZCLADORA HORIZONTAL (Capacidad 10 Quintales 13 a 15 N.I
3 BASCULA 500 Lbs (TOLEDO)
4 TRITURADORA
5 EXTRACTOR DE AIRE
6 INYECTOR DE MELAZA
7 DEPOSITO DE MELAZA
8 COCEDORA DE SACOS
R = REGISTRO EN DEPOSITO DE MELAZA

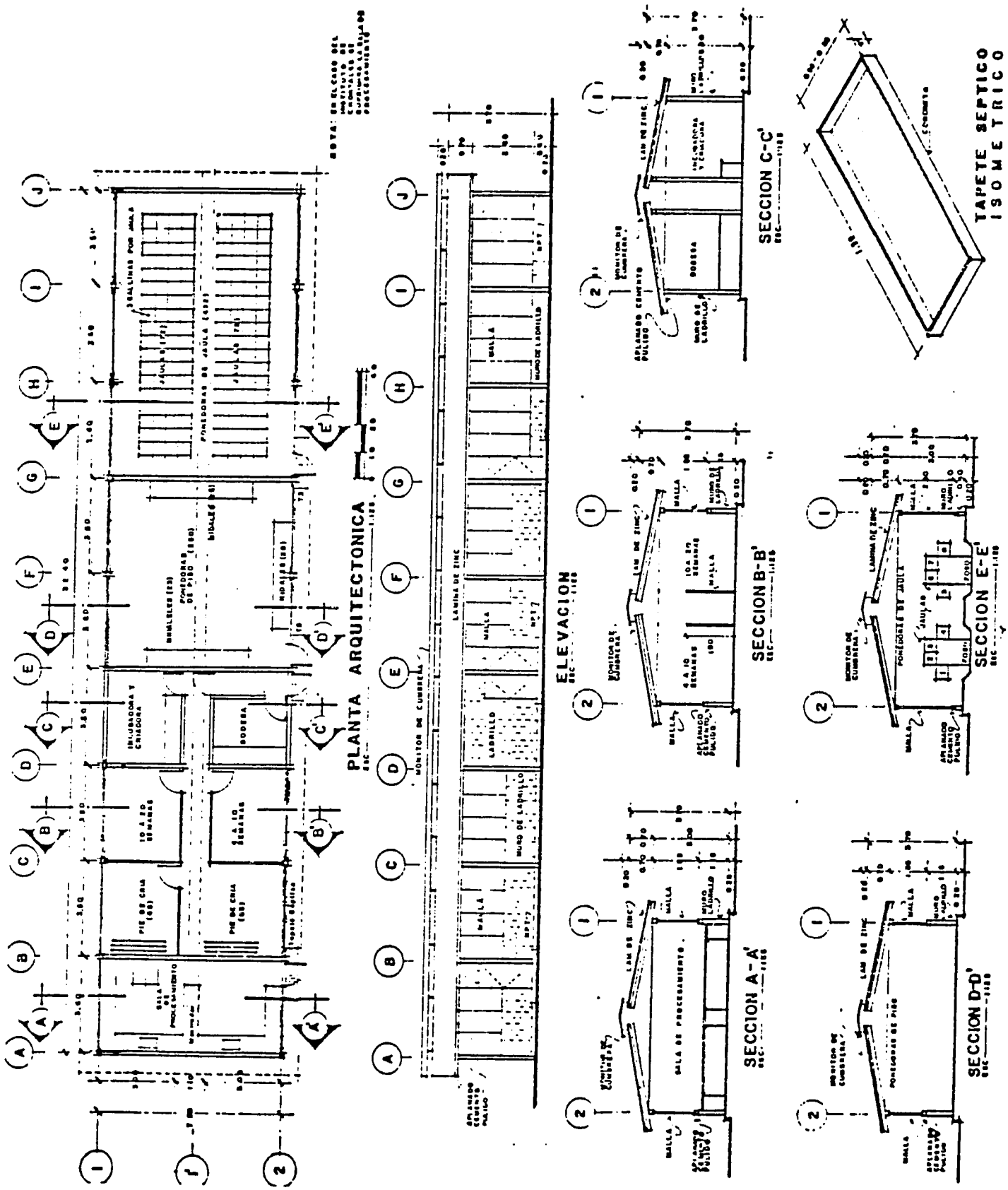
FACHADA

SECCION A-A

SECCION B-B

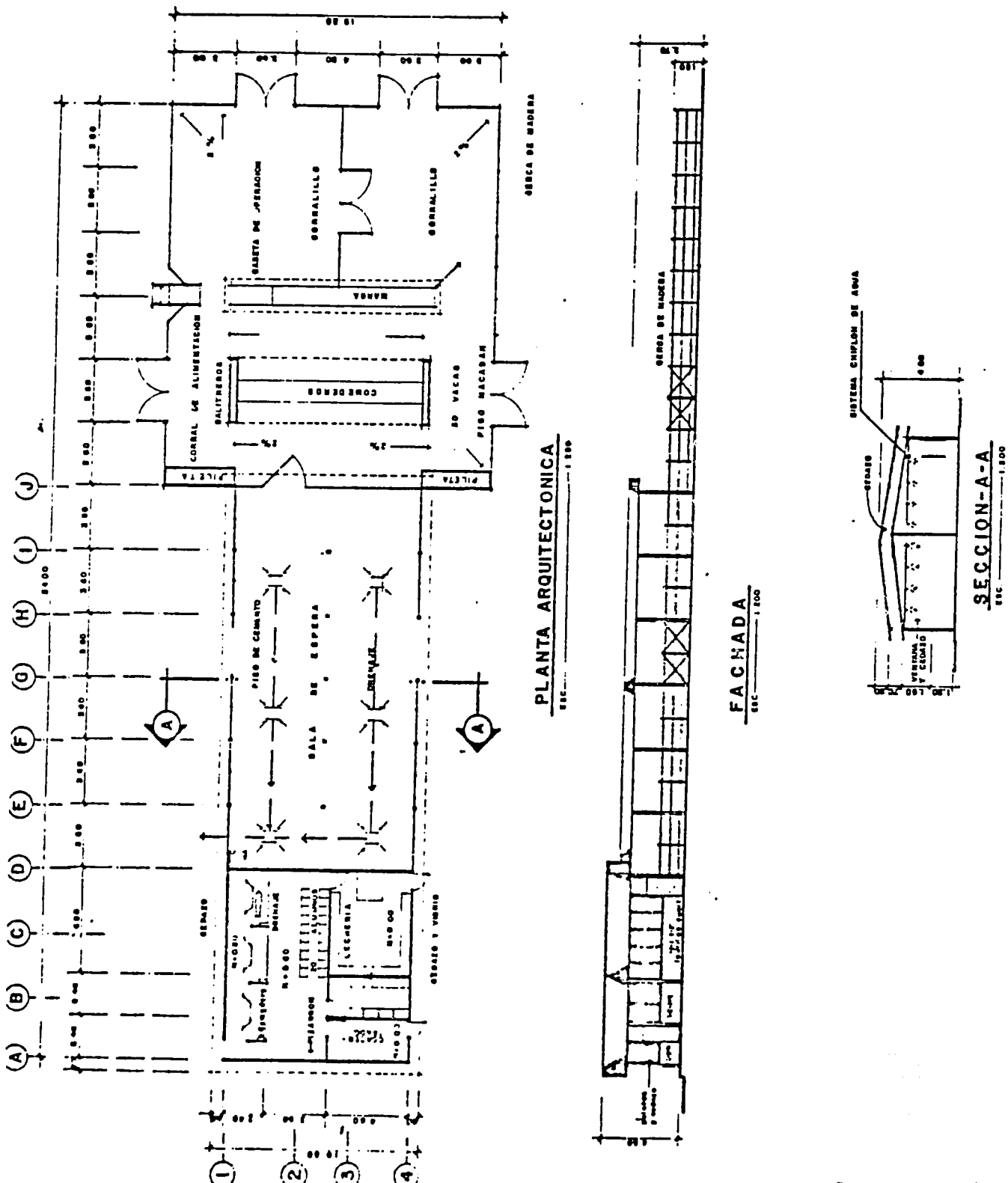
Blueprint 6/18

EGG-LAYING AREA



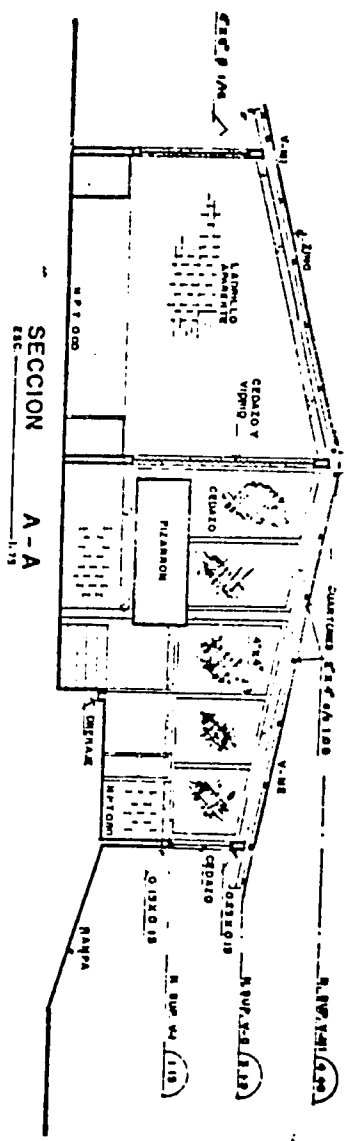
Blueprint 7/18

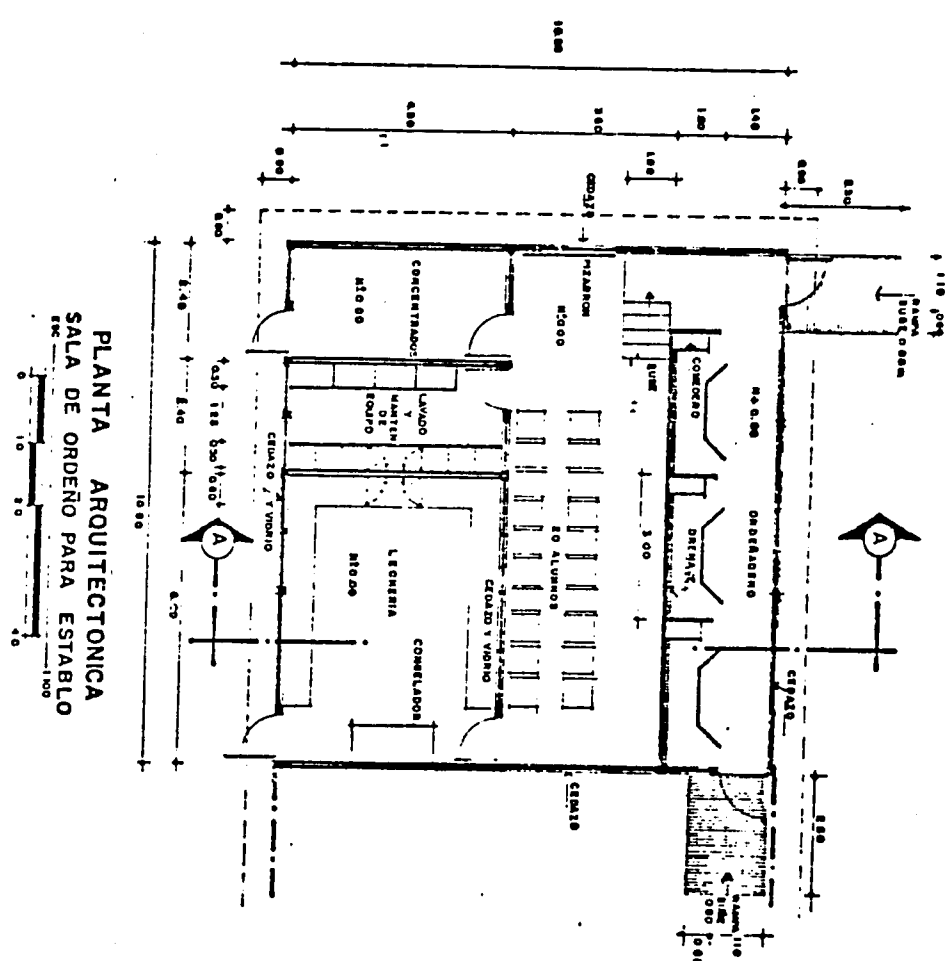
MILKING AREA



Blueprint 11/18

MILKING AREA





Blueprint 12/18

LISTING OF BLUEPRINTS

FOR INTEGRATED EDUCATION COMPLEXES

Blueprint No.	
01/5	Basic classroom module
02/5	Alternatives for usage of classroom modules
03/5	Proposed structural module
04/5	Alternative layouts for rows of modules
05/5	Alternative layouts for rows of modules
	Typology: General Areas
00/12	Index
01/12	Administration Teacher Training School
02/12	Administration Agrotechnical School
03/12	Library
04/12	Multiple Use Building (auditorium)
05/12	Recreation Area
06/12	Cafeteria and Kitchen
07/12	Bathrooms
08/12	Art Room
09/12	Music Room
10/12	Laboratories (Alternative 1)
11/12	Laboratories (Alternative 2)
12/12	Workshops for Teacher Training School
	Typology: Agrotechnical Spaces
00/18	Index
01/18	Teachers' Office
02/18	Agricultural Machinery Workshop
03/18	Storage area for agricultural machinery
04/18	Storage area for agricultural tools
05/18	Storage area for agricultural products
06/18	Animal feed processing unit
07/18	Egg Laying area
08/18	Broilers
09/18	Hog and delivery pen
10/18	Rabbit hutch and apiary
11/18	Milking area and stalls
12/18	Milking area (detail)
13/18	Goats
14/18	Calves
15/18	Beef cattle
16/18	Bulls
17/18	Livestock delivery room
18/18	Animal processing and refrigeration
	Layout - Juigalpa Complex
01/24	Site layout
02/24	Ground plan for complex-aerial view
03/24	Ground plan for teacher training area - aerial view
04/24	Ground plan for teacher training area - scheme layout
06/24	Ground plan for agro-technical area - aerial view
07/24	Ground plan for agro-technical area - scheme layout

Blueprint No.		Blueprint No.	
	Layout - Chinandega Complex		Adapting existing installations at Juigalpa into dormitories for the Agricultural School
09/24	Site layout		
10/24	Ground plan for general area - aerial view	01/2	Scheme layout
11/24	Ground plan for general area - scheme layout	02/2	Remodeling existing buildings
13/24	Ground plan for agro-technical area - aerial view		Prototype Teacher Training School Dormitories
14/24	Ground plan for agro-technical area - scheme layout	01/4	Ground plan
		02/4	Kitchen - Laundry Module
	Layout - Siuna Complex	03/4	Bedrooms and bathrooms module
		04/4	Supervisor lodging
15/24	Site layout		
16/24	Ground plan for general area - aerial view		
17/24	Ground plan for general area - scheme layout		
19/24	Ground plan for agro-technical area - aerial view		
20/24	Ground plan for agro-technical area - scheme layout		
	Workshops Bluefields		
21/24	Workshops sites		
22/24	Equipment needed for carpentry shop		
23/24	General mechanics and welding workshop		
24/24	Electric and refrigerating workshop		

BASES FOR ARRIVING AT COST ESTIMATES FOR IN-COUNTRY TRAINING

COSTS TO AID

1) Trainer

U.S. or other Country [1]

Salary	$125/day x (total days) [2]
Per diem	$ 75/day x (total days)
Transportation	$1,000
Miscellaneous	10% of above

Nicaraguan

Salary	$50/day x (total days) [2]
Per diem (local)	$20/day x (total days)
Local Transportation	$50
Miscellaneous	10% of above

2) Trainee [3]

Per diem [4]	$20/day x (total days)
Transportation [4]	$50
Lunch [5]	$3/day
Miscellaneous	10% of above

3) Materials

Depending on nature and length of courses, estimated materials costs range from $100 to $200 per student

1/ Assumes two trips to Nicaragua, the first for one week to become acquainted with the situation and plan the course with counterparts; the second starting one week before the course is actually to begin in order to set up the course. For both trips the line items above are calculated.
2/ Assumes 6 day work week
3/ Per trainee
4/ Based on 2/3 of total group
5/ Remaining 1/3 of group

4) Total Cost to AID

Sum of (1), (2), and (3)

GRN Counterpart

Salary per participant	$500/month
Secretarial costs	$200/month
Physical facility	$100/month
Transportation - driver	$150/month
gasoline	$10/day
per diem for driver	$20/day

COMMUNITIES TO BE ATTENDED UNDER THE AULAS RANCHOS PROGRAM

1980 Enrollments and Projected Classroom Needs

Department of Zelaya

Townships of : WASPAN and LA ESPERANZA

No.	Name of Community	Enrollments 1980	Classroom Needs	Capacity of Program	Type of School Type 1 1/	Type 2 2/	Type 3 3/	Total Number of Classrooms	Number of Latrines
1	Kaiti	207	6	240	1	1	1	3	3
2	Sixaveri	48	2	80	2			2	2
3	Andrestara	143	4	160	1		1	2	2
4	Carrizal	44	2	80		1		1	1
5	Sta. Isabel	94	3	120	1	1		2	2
6	Asang	207	6	240	1	1	1	3	3
7	Krasa	104	3	120	1	1		2	2
8	Umbra	58	2	80		1		1	1
9	Sn. Carlos	183	5	200	2		1	3	3
10	Bodega	35	1	40	1			1	1
11	Sn. Esquipulas	67	2	80		1		1	1
12	Sang Sang	67	2	80	2			2	2
13	Kita Ky	60	2	80		1		1	1
14	Tulimbila	60	2	80	2			2	2
15	Pilpilia	36	1	40	1			1	1
16	Kriu-Kriu	25	1	40	1			1	1
17	Klisnak	25	1	40	1			1	1
18	La Esperanza	73	2	80		1		1	1
19	Wiwinak	125	4	160	1		1	2	2
20	Sta. Fe	76	2	30	2			2	2
21	San Alberto	65	2	80		1		1	1
22	El Carmen	53	2	80	2			2	2
23	San Jerónimo	114	3	120			1	1	1
24	Bull Sirpi	13	1	40	1			1	1
25	Salaya	61	2	80		1		1	1
26	Leimus	85	3	120			1	1	1
27	Aguntara	85	3	120			1	1	1
	TOTAL	2213	69	2760	23	11	8	42	42

1/ One Classroom

2/ Two Classrooms

3/ Three Classrooms

COMMUNITIES TO BE ATTENDED UNDER THE AULAS RANCHOS PROGRAM

1980 Enrollments and Projected Classroom Needs

Department of Zelaya

Township of : SIUNA

No.	Name of Community	Enrollments 1980	Classroom Needs	Capacity of Program	Type of School			Total Number of Classrooms	Number of Latrines
					Type 1 1/	Type 2 2/	Type 3 3/		
1	Nueva Esperanza	66	2	80	-	1	-	1	1
2	Amparo	30	1	40	1	-	-	1	1
3	Valle San Antonio	27	1	40	1	-	-	1	1
4	Benjamin Zeledon	38	1	40	1	-	-	1	1
5	Lucha y Esperanza	46	2	80	2	-	-	2	2
6	Juan Rivera	58	2	80	-	1	-	1	1
7	Pánfilo Lopez	33	1	40	1	-	-	1	1
8	Juan García	54	2	80	2	-	-	2	2
9	Claudia Chamorro	59	2	80	-	1	-	1	1
10	Los Alpes	50	2	80	-	1	-	1	1
11	Alo Oro Fino	18	1	40	1	-	-	1	1
12	San José	19	1	40	1	-	-	1	1
13	La Libertad	32	1	40	1	-	-	1	1
14	Nueva Victoria	49	12	80	-	1	-	1	1
15	Carlos Fonseca A.	33	1	40	1	-	-	1	1
16	Germán Pomares	40	1	40	1	-	-	1	1
17	Arlen Siu	37	1	40	1	-	-	1	1
18	Orlando Escorcia	32	1	40	1	-	-	1	1
19	La Gasolina	32	1	40	1	-	-	1	1
20	Valle Sto.Domingo	26	1	40	1	-	-	1	1
21	Rosa Grande	33	1	40	1	-	-	1	1
22	La Concepción	31	1	40	1	-	-	1	1
23	Luis Delgadillo	44	2	80	-	1	-	1	1
24	Waspuco	33	1	40	1	-	-	1	1
25	Los Pinares	30	1	40	1	-	-	1	1
26	El Palomar	49	2	80	-	1	-	1	1
27	Silvi Coperna	59	2	80	2	-	-	2	2
28	Ojo de Agua	69	2	80	2	-	-	2	2
29	El Dorado	35	1	40	1	-	-	1	1
30	El Torno	41	2	80	-	1	-	1	1
31	El Consuelo	13	2	80	-	1	-	1	1
32	Wasma	38	1	40	1	-	-	1	1
33	Waspuca Arriba	65	2	80	-	1	-	1	1
34	Wasimo	31	1	40	1	-	-	1	1
	TOTAL	1380	48	1920	28	10	-	38	38

1/ One Classroom
2/ Two Classrooms
3/ Three Classrooms

COMMUNITIES TO BE ATTENDED UNDER THE AULAS RANCHOS PROGRAM

1980 Enrollments and Projected Classroom Needs

Department of Zelaya

Township of : LA CRUZ DE RIO GRANDE

No.	Name of Community	Enrollments 1980	Classroom Needs	Capacity of Program	Type of School Type 1 1/	Type 2 2/	Type 3 3/	Total Number of Classrooms	Number of Latrines
1	Kiwas	32	1	40	1	-	-	1	1
2	Anglo-America	37	1	40	1	-	-	1	1
3	Wantalaya	38	1	40	1	-	-	1	1
4	Kara	48	2	80	-	1	-	1	1
5	Walpa	39	1	40	1	-	-	1	1
6	La Barra	40	1	40	1	-	-	1	1
7	Sandy By Sur	138	4	160	1	-	1	2	2
8	Karawala	50	2	80	-	1	-	1	1
9	La Cruz	66	2	80	2	-	-	2	2
10	El Gallo	35	1	40	1	-	-	1	1
11	Muelle Real	59	2	80	-	1	-	1	1
12	Sixicus	35	1	40	1	-	-	1	1
13	El Canal	38	1	40	1	-	-	1	1
14	Tumaron Indígena	32	1	40	1	-	-	1	1
15	Tumarin Miskito	37	1	40	1	-	-	1	1
16	Mayawas	36	1	40	1	-	-	1	1
17	Makantaka	32	1	40	1	-	-	1	1
18	Betani	46	2	80	2	-	-	2	2
	TOTALES	838	26	680	17	3	1	21	21

1/ One Classroom
2/ Two Classrooms
3/ Three Classrooms

COMMUNITIES TO BE ATTENDED UNDER THE AULAS RANCHOS PROGRAM

1980 Enrollments and Projected Classroom Needs

Department of Zelaya

Township of : RAMA

No.	Name of Community	Enrollments 1980	Classroom Needs	Capacity of Program	Type of School			Total Number of Classrooms	Number of Latrines
					Type 1 1/	Type 2 2/	Type 3 3/		
1	Escalerita Sn Rafael	44	2	80	-	1	-	1	1
2	La Tigra "El Jobo"	26	1	40	1	-	-	1	1
3	Cerro Grande El Jobo	27	1	40	1	-	-	1	1
4	Pancasan Cerro Grande	48	2	80	-	1	-	2	2
5	Cerro Azul Pilan	50	2	80	-	1	-	1	1
6	Sta.Fe Kuriwasito	74	2	80	2	-	-	2	2
7	Nawawas	41	2	80	-	1	-	1	1
8	Bco. de Siquia	60	2	80	2	-	-	2	2
9	San José Kuringuasito	31	1	40	1	-	-	1	1
10	Muelle Real de Siquia	40	1	40	1	-	-	1	1
11	Mataca	36	1	40	1	-	-	1	1
12	Wapi	41	2	80	-	1	-	1	1
13	Cano Ignacia	21	1	40	1	-	-	1	1
14	Monte Rosa "El Carmen"	36	1	40	1	-	-	1	1
15	Monte Rosa "Unión de T."	40	1	40	1	-	-	1	1
16	Cano Valentín	47	2	80	2	-	-	2	2
17	Cabecera Valerio	33	1	40	1	-	-	1	1
18	Salto de la Cruz	56	2	80	-	1	-	1	1
19	La Rita Sn Jacinto	26	1	40	1	-	-	1	1
20	San Jerónimo Rio Siquia	34	1	40	1	-	-	1	1
21	Nuevo Sauce	30	1	40	1	-	-	1	1
22	El Morrón Gral. Sandino	32	1	40	1	-	-	1	1
23	La Pinuela	36	1	40	1	-	-	1	1
24	El Pinol El Edén	41	2	80	-	1	-	1	1
25	Nvo. Chontales	26	1	40	1	-	-	1	1
26	Pijivalle Riolane	32	1	40	1	-	-	1	1
27	Misuwala San Juaquín	39	1	40	1	-	-	1	1
28	Salto Limón Mansol	33	1	40	1	-	-	1	1
29	Marisol Caimito	28	1	40	1	-	-	1	1
	TOTAL	1108	39	1560	27	6	-	33	33

1/ One Classroom
2/ Two Classrooms
3/ Three Classrooms

COMMUNITIES TO BE ATTENDED UNDER THE AULAS RANCHOS PROGRAM

1980 Enrollments and Projected Classroom Needs

Department of Zelaya

Township of : PUNTA GORDA

	Name of Community	Enrollments 1980	Classroom Needs	Capacity of Program	Type of School Type 1 1/	Type 2 2/	Type 3 3/	Total Number of Classrooms	Number of Latrines
1	Barra Punta Gorda	39	1	40	1	-	-	1	1
2	Barra Rio Maíz	25	1	40	1	-	-	1	1
3	Río Indio	25	1	40	1	-	-	1	1
4	El Diamante	32	1	40	1	-	-	1	1
5	La Estrella	35	1	40	1	-	-	1	1
6	Atlanta	35	1	40	1	-	-	1	1
7	Monkey Point	47	2	80	-	1	-	1	1
	TOTALES	238	8	320	6	1	-	7	7

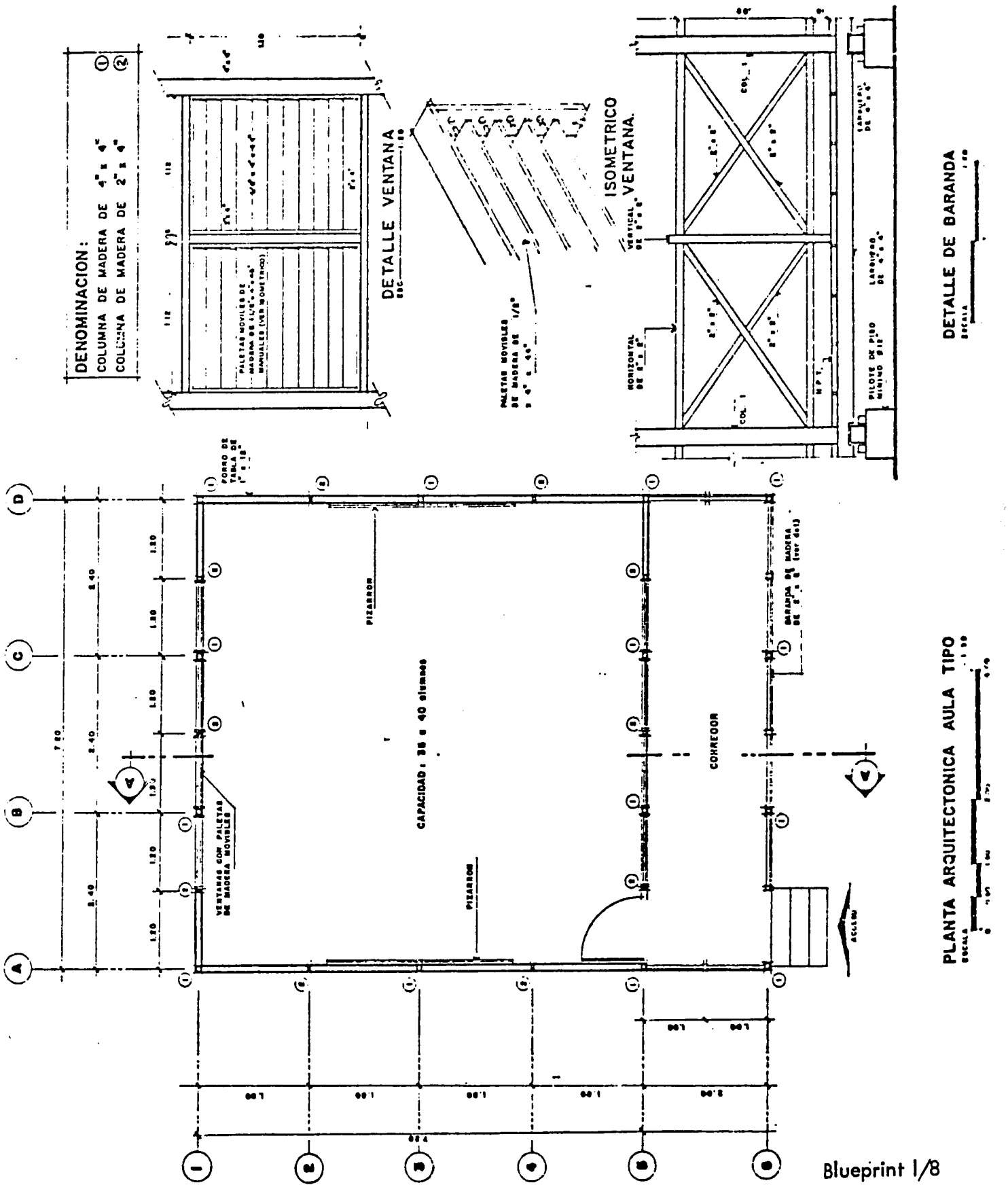
1/ One Classroom
2/ Two Classrooms
3/ Three Classrooms

ENGINEERING SPECIFICATIONS FOR AULAS RANCHO PROGRAM

This annex contains samples of two blueprints prepared for the Aulas Rancho program . Blueprint 1/8 (page 2 of this annex) provides a basic layout for one classroom module along with specifications for windows and railings. Blueprint 8/8 (page 3) illustrates the different configurations possible when modules are combined.

The table on page four provides, in summary form, the cost estimates for this activity. Detailed cost estimates along with a full set of blueprints may be found in Alonso Barrientos' report available in the LAC/DR bulk files.

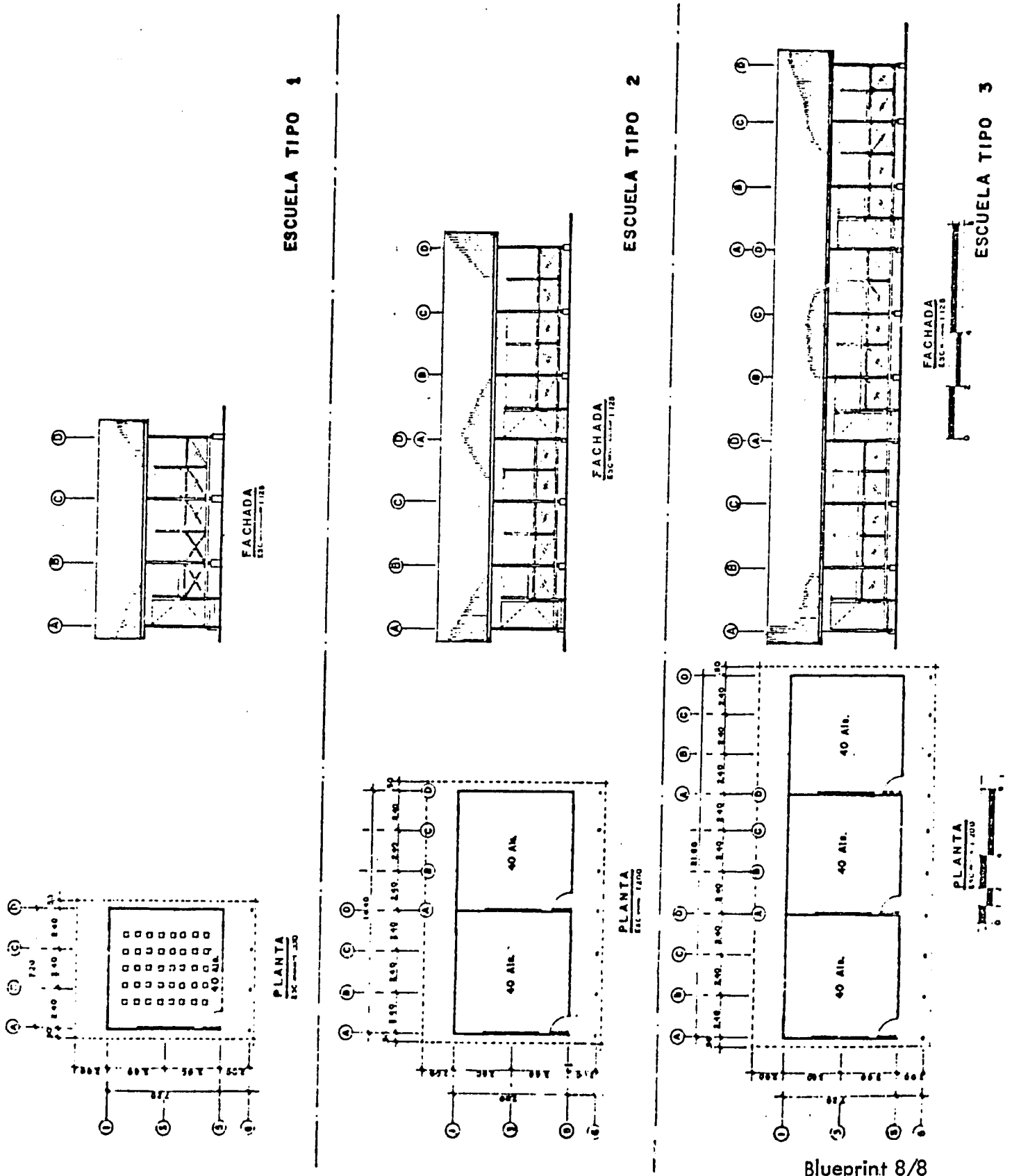
AULAS RANCHO PROGRAM
STANDARD CLASSROOM MODULE



Blueprint 1/8

AULAS RANCHO PROGRAM

EFFECT WHEN STANDARD MODULE IS MULTIPLIED TO FORM TWO AND THREE CLASSROOM SCHOOLS



Blueprint 8/8

ESTIMATED COSTS FOR AULAS RANCHO PROGRAM 1981-1983 1/

SUMMARY

(Thousands of dollars)

	1981	1982	1983
Materials	80.1	87.3	91.0
Equipment:			
a) Tools	8.1	2.0 2/	2.8 5/
b) Motorsaws	5.0	1.5 3/	2.0 6/
Warehouse (construction)	16.5	-	-
Training Course	8.5	-	-
Project Presentation	9.3	9.0	4.5
Motor Boats	24.0	6.0 4/	8.4 5/
Evaluation and Supervision	14.6	14.6	14.6
Technical Assistance	16.5	13.0	6.5
	182.6	133.4	129.8
10% contingency	18.2	13.3	13.0

1/ Detailed lists of materials and equipment needs, with accompanying cost estimates may be found in pgs.22-27 and ppgs. 34-35 of Alonso Barriento's report entitled "Programa Aulas-Rancho para el Departamento de Zelaya". A copy of this report is in the LAC/DR bulk files.

2/ 25% replacement.

3/ 30% repair 4/ 25% repair 5/ 35% replacement 6/ 40% repair

LOGICAL FRAMEWORK MATRIX

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
GOAL :			
Ultimate : Increase well-being of Nicaragua's rural poor. Immediate : Expand and improve rural education.	1. Rural primary school enrollments increase from 70% of the rural population of primary age in 1980 to 81% in 1985.	MOE statistics INEC population projections	MOE receives planned assistance from the BIRF and BID in 1981 in order to build needed primary schools in rural areas.
	2. Rural primary school drop out rates between 1980 and 1985 decrease from 25% to 14% and repetition drops from 15% to 11%.	MOE statistics	
PURPOSE :			
Extend, improve and integrate rural education services.	1. MOE teacher training capacity increases 40% between 1980 and 1983; 75% of graduates of new normal schools placed in jobs in rural schools.	MOE records Final project evaluation	
	2. Graduates of MOE secondary agricultural programs increase by 50% between 1980 and 1985; 75% of graduates are placed in jobs for which they are trained or are continuing training in their field of study; graduates possess greater skills in areas for which they are trained.	MOE and MIDA records Final project Evaluation	

LOGICAL FRAMEWORK MATRIX

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
	3. Improved school maintenance : target communities continuing to maintain schools.	MOE records Final project evaluation	
	4. Administrative efficiency at MOE increased : basic operations (e.g. personnel system, student records and inventory) being run more efficiently.	Final project evaluation	
OUTPUTS			
Component 1 : A functional system of integrated teacher training and secondary agricultural/ technical education.			
1. Integrated educational complexes, built, equipped, and being maintained.	By 12/83 four complexes : Juigalpa Siuna Chinandega Bluefields	MOE records Site inspections	
2. Complex personnel trained and carrying out respective roles in an effective fashion.	By 1985 complex staff have received a minimum of one training course each in their specialty areas.	MOE records Site visits	

101

LOGICAL FRAMEWORK MATRIX

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
3. IEC's at full capacity and producing graduates as planned.	1985 Graduates Teacher Training / Agro-technical Juigalpa 160 / 80 Siuna 200 / 80 Chinandega 120 / 70 Bluefields 120 / 60	MOE records Field staff	
Component II : Capability created within MOE to build and maintain local education facilities in a cost-efficient manner through organization and utilization of local support groups.			
A. School Maintenance Program :			
1. Pilot communities actively repairing and maintaining schools under MOE guidance.	30 communities - 6/84	MOE records Site visits	Community members interested in and willing to provide volunteer assistance on an on-going basis.
2. MOE has decided to extend program to other areas of the country.	1985 MOE operating budget for school rehabilitation and maintenance doubles.	MOE 1985 operating budget	

LOGICAL FRAMEWORK MATRIX

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
B. Aulas Ranchos Program :			
1. Aulas Ranchos built in use and being maintained.	Scheduled for building : 1981 1982 1983 Number of classrooms 58 66 66	MOE records End of project evaluation	Community members interested in and willing to provide volunteer assistance.
2. MOE has decided to extend program to other areas of Zelaya.	100 news classrooms built in Zelaya during 1984 and 1985.	MOE records	
Component III : Improved educational planning and administration.			
1. Staff of MOE Division of Planning and Educational Development trained in specialty areas.	A minimum of 15 staff members by 12/85	MOE records	
2. Data processing service in place and operating smoothly.	1. Student records, personnel administration data, inventory and other key administrative tasks have fully automated filed and processing routines.	Final evaluation	
	2. Two-year plan for conversion of additional files and administrative procedures to ADP format prepared.	Final evaluation	
INPUTS See pages 33 and 34 of text.			

LOAN AUTHORIZATION

(Amendment No.1)

Name of Country:	Nicaragua
Name of Project:	Rural Education Development
Number of Project:	524-0115
Number of Loan:	524-V-033

Pursuant to Section 105 of the Foreign Assistance Act of 1961, as amended, the Rural Education Development Loan for Nicaragua was authorized on August 21, 1978. The Loan Authorization is hereby amended as follows:

1. The first paragraph of the Preamble to the Loan Authorization is hereby amended by deleting the words "furnished to two of the cooperating country's lowest income rural regions" and substituting therefor "in rural areas of Nicaragua".

2. The second paragraph of the Preamble to the Loan Authorization is hereby amended by deleting the words "during the period FY1978 through FY1980" and substituting therefor "in Fiscal Years 1978, 1981 and 1982".

3. The Loan Authorization is further amended by deleting in their entirety paragraphs E to K inclusive and substituting therefor the following:

   E. Condition Precedent to Disbursement in excess of $280,000.

   Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement in excess of $280,000, The Cooperating Country shall furnish, in form and substance satisfactory to AID, evidence that it has legally created a Project Implementation Unit and appointed its Director.

   F. Condition Precedent to Disbursements other than for Consulting Services.

   Prior to any disbursement, or the issuance of any commitment documents under the project Agreement, other than to finance consulting services, the cooperating country shall furnish, in form and substance satisfactory to AID, evidence that it has made arrangements to contract for consulting services for the Project Implementation Unit.

4. Except as expressly amended hereby, the Loan Authorization remains in full force and effect.

_____
Acting Assistant Administrator
Bureau for Latin America and
the Caribbean

_____
Date