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DEPARTMENT C
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

CAPITAL ASSISTANCE PAPER

Proposal and Recommendations
For the Review of the
Development Loan Committee

BRAZIL - COMBINED HIGHWAY PROJECT

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512-L-015

AID-DLC/P-165/1

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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

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AID-DLC/P-165/1
February 4, 1964

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Brazil - Combined Highway Project

Attached for your review are the recommendations for authorization of a loan in an amount not to exceed \$15,000,000 to the Superintendencia de Desenvolvimento do Nordeste to assist in financing the cost of goods, materials and services to construct or improve 244 miles of state highways of Northeast Brazil.

On June 29, 1963, the A.I.D. Administrator authorized an \$11,000,000 combined highway loan for Northeast Brazil (See AID-DLC/P-165) and the attached amendment will increase the amount of the loan by \$4,000,000.

This loan proposal is scheduled for consideration by the Development Loan Staff Committee at its meeting on February 13, 1964 and a telephone poll of DLC members will be conducted on Monday, February 17th to determine whether the DLC members approve without a DLC meeting or request a DLC meeting for the consideration of this proposal.

Helen E. Nelson
Secretary
Development Loan Committee

Attachments:
Memorandum
Summary and Recommendations
Annexes I-V

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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

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February 4, 1964

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: BRAZIL - Combined Highway Project

Problem: An amendment of the Loan Authorization for the Northeast Brazil Combined Highway Project (AID-DLC/P-165) is recommended. The amendment will increase the amount of the loan by \$4 million, from the presently authorized \$11,000,000 to \$15,000,000. The additional \$4 million will be used to fund the paving of approximately 100 kilometers of highway PE-2 in Pernambuco state.

Discussion: 1. On June 29, 1963, the A.I.D. Administrator authorized an \$11,000,000 combined highway loan for Northeast Brazil as part of the overall U. S.-Brazil agreement to assist in financing the development of Northeast Brazil. The loan provided for the construction and paving of six projects (103 kms) in the states of Maranhao, Paraiba, Rio Grande do Norte, Alagoas and Ceara. The Borrower for the loan is the Superintendencia de Desenvolvimento do Nordeste (SUDENE); the state highway departments of the relevant states, which will be the executing agencies, will receive the loan proceeds on a grant basis from SUDENE. A.I.D. proposes to handle the PE-2 construction project by increasing the amount of the previous authorization. The loan agreement will be signed covering all seven construction projects.

2. The Borrower (SUDENE) has delayed signing a loan agreement financing the costs of the other six roads until such time as the Pernambuco construction project might be included within the loan agreement (see separate confidential memorandum - AID-DLC/P-165/2).

The proposed authorization increase of \$4 million must carry A.I.D.'s new minimum interest rate (i.e. three quarters percent during the grace period and two percent during the

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period of principal repayment), whereas the existing authorization carries the rate of three quarters percent both for the grace period and for the amortization period. The Country Team has recommended strongly that the entire \$15 million be made available to SUDENE at the minimum interest possible. Therefore, the amended authorization will retain the three quarters rate on the first eleven million dollars disbursed both during and after the grace period, while imposing a two percent interest rate on the final \$4 million for the period after the grace period. In response to AID's inquiry as to whether this higher rate on the \$4 million might appear to be discriminatory against Pernambuco, the Country Team advises that a written opinion has been requested from SUDENE on this point. In the event that public comment should become a problem, the Team proposes to request SUDENE to join in responding with the facts on why the interest rate has been increased.

3. The BPR's cost estimates were prepared during October-December 1962 and the dollar amount of the loan was then established by using the exchange rate of CR\$460=US\$1. Since that time inflation has continued at a rapid pace. According to the Vargas Foundation the cost of living (in Guanabara) rose by 80.9% during 1963. The exchange rate was changed in April 1963 to CR\$600 per US\$1. It cannot be forecast at this time whether inflationary cost increases will be compensated by changes in the rate of exchange applicable at the time each disbursement is made and dollars are converted to cruzeiros. Should not enough cruzeiros be guaranteed by such conversions, the Borrower will be required to provide the additional funds. This obligation will be imposed by a new standard provision which will be used on all Brazil loan agreements. 1/

1/ e.g. If total disbursements were made at this time, the project could require in the neighborhood of 5 billion cruzeiros of additional funds, which could cause the borrower either to divert resources from other uses or to have to obtain additional funds. However, disbursements will not start for at least 6 months and will be stretched out for a period of two to three years. It is possible that during that time a different exchange rate system could be put into effect; this combined with price controls, could conceivably result in a situation in which no supplementary funds would be required. However this uncertainty has led AID to adopt the course stated above, namely, that should additional funds be required because of unfavorable exchange conversions, the borrower would be required to provide them.

4. It is AID's judgment that the paving of the segment of PE-2 in Pernambuco state requested to be financed is economically and technically justified, should be given a high priority and should be financed. The reference section of PE-2 consists of approximately 100 kilometers commencing at km. 13 near the town of Catende and terminating at the town of Garanhuns. The cost of paving was estimated by the BPR as follows:

	<u>Cruzeiros</u>	<u>Dollars</u>	<u>Dollar Equivalent (CR\$460=US\$)</u>
Paving & Related costs	CR\$1,592,480,000	-	\$3,461,900
Contingency	159,248,000	-	346,190
Engineering (3-1/2%)		<u>121,135</u>	<u>121,135</u>
TOTAL		\$121,135	
Grand total in dollars & dollar equivalent			\$3,929,225

A detailed technical analysis is attached hereto as Annex I. In summary this Annex shows that (1) PE-2 is a major penetration road which will provide the first all weather access to the nine counties surrounding the city of Garanhuns, the fourth largest city (40,000 people) in Pernambuco (the total population at this area accounts to approximately 480,000 people). As such the road forms a major link in the economic integration of the coastal zone with the economy of the transition (Agreste) and interior (Sertao). Additionally, PE-2 is a significant segment in the chain of roads which are planned to connect the Northeast with Southern Brazil.

5. The discussion in the original loan paper (AID-DLC/P-165) regarding the use of the Special Letter of Credit procedure (p. 12) is equally valid in connection with the proposed amendment, and is incorporated by reference.

The discussion in the original loan paper on the question of cost estimates is however, modified in accordance with the following: Recent data submitted by the USAID indicate that all the construction and paving projects, including the Pernambuco project,

were costed in latter 1962, at which time the 460 rate was reasonably related to the value of the cruzeiro. Under these circumstances, therefore, conversion at the 460 rate yields relatively accurate dollar amounts. Thus, the \$4 million figure for the Pernambuco project, as well as the \$11 million figure for the other six road projects should be considered as reasonably firm estimated costs of the projects, as expressed in dollars.

6. The original paper indicated that the loan proceeds would probably be lent to the state executing agencies (referred to in the paper as "sub-borrowers") but noted that, in the event SUDENE wished to grant the loan proceeds to the executing agencies, AID would have no objection. Negotiations with SUDENE have revealed that SUDENE does, in fact, propose to grant the loan proceeds to the state highway departments.

From the point of view of loan security, this change does not present a problem. Security for the loan now depends totally on SUDENE; however, since the original loan paper was prepared, AID has ascertained that SUDENE has the legal authority, when approval is given by the appropriate Minister, to pledge the credit of the Government of Brazil. AID is prepared to accept the GOB credit as security for this loan.

Furthermore, AID does not object to the provision of loan proceeds to the states on a grant rather than loan basis. The change from loan to grant means in effect that SUDENE has determined to fund loan repayments from its own budget rather than requesting the States to do so. AID is satisfied that the states are making a maximum effort to develop roads and, as noted in the loan paper proposing a Northeast Brazil Highway Maintenance Equipment loan (AID-DLC/P-192, Revised), state highway budgets are already so strained by construction programs that needed maintenance programs are being deferred. With specific reference to highway PE-2, it is noted that the state of Pernambuco is completing all the grading and related work on the 100 km. road segment for which AID will finance paving costs; Pernambuco has also totally completed grading and paving the initial 13 km. of highway PE-2.

7. The amount of the dollar loan is 100% of the cost of "the project", as defined in the application and estimate in October-December 1962. In a narrow sense, therefore, the

recommendation presented diverges from AID's policy of lending not more than fifty percent (the rule-of-thumb estimated ratio of increase in imports to increase in local expenditure) of the value of local currency projects. The 100% calculation can be justified on various bases:

a. As described in paragraph 3 of the Summary and Recommendations, the total road construction program being carried out in Northeastern Brazil over the period 1961-65, exclusive of AID financing may be safely estimated at very considerably over \$100 million. 1/ Neither the \$15 million amount of the loan proposed in this paper, nor the possible maximum level of AID loan financing for road projects (approximately \$37 million-see summary) represent levels of lending even approaching the fifty percent benchmark figure. In other words, if the Brazilian NE road program is taken as a whole, the proposed loan may be considered to fall well within AID policy guidelines.

b. Under the Northeast commitment to Brazil, the U. S. Government agreed to make up to \$131 million in resources available to Brazil over a two year period. As the Agreement has been interpreted by the Brazilians, and tacitly accepted by the U. S., it also provides that an amount approaching \$76.7 million should be provided in dollars. As matters have turned out, the absence of very many projects requiring foreign exchange has resulted in AID's funding a much larger component of the \$131 million than anticipated in cruzeiros. Thus, the total of all dollar projects processed to date, including this one, is only approximately \$40 million. It is desirable, therefore, that this project be funded at 100% of the cost amount in order both to help meet the total called for in the Northeast Agreement, as well as to approach more closely the "commitment" to make a specified number of dollars available. 2/

Summary and Recommendations: A revised Summary and Recommendations of the original loan paper, and a revised draft loan authorization, providing for an increase of the loan to cover the costs of the PE-2 highway project, are attached herewith.

1/ Gross input into NE Brazil roads, including capital and normal overhead, was recently estimated by USAID to be running at a rate of about \$180 million per annum in FY 1964.

2/ As shown in Annex IV, no PL-480 cruzeiro funds are available for this project.

BRAZIL - COMBINED HIGHWAY PROJECT

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NORTHEAST BRAZIL

SUDENE-COMBINED HIGHWAY PROJECT

SUMMARY AND RECOMMENDATIONS

1. BORROWER: The Superintendencia de Desenvolvimento do Nordeste (SUDENE), the Superintendency of Development in Northeast Brazil. The State Highway Departments of the relevant States will be the recipients of the cruzeiros into which the dollar proceeds of the loan will be converted, and will carry out the respective highway projects.
2. AMOUNT OF THE LOAN: A loan of up to \$15 million. Total costs of the seven projects combined in this loan are estimated at CR\$ 6,954 million. 1/

Dollar proceeds will be made available through special letters of credit which can only be used for U. S. procurement. The cruzeiro counter-value of these proceeds will be made available to SUDENE (see Financial Analysis).

Between 95 and 100% of project costs may be paid in local currency. Procurement of U.S. engineering services, up to a maximum of 5% of project costs, may occur.

3. TOTAL COST OF PROJECT: Construction and paving under the seven projects included under this loan will cost \$15 million. Together with the proposed \$9 million highway equipment loan which is currently (January 15, 1964) pending authorization, and an anticipated \$3-3.5 million highway paving project for the state of Bahia, firmly anticipated AID lending for highway projects in NE Brazil during FY 1964 totals some \$27 million. In addition, some \$10 million in applications for grading, paving and equipment are currently being processed in SUDENE and may conceivably be considered by AID this fiscal year.

1/ Exchange rate used is CR\$460-\$1.00. This rate prevailed both at the time the application was filed (April, 1963) and at the time the cost estimates for the project were made (October-December, 1962). Loan amount is rounded to nearest unit million.

Brazilian input into NE roads is, on the other hand, very substantial. SUDENE alone budgets an input of \$58 million in the period 1961-65, as follows:

SUDENE APPROPRIATIONS AND OBLIGATION FOR NORTHEAST HIGHWAY PROGRAM

	Appropriations		Estimated Obligations	
	CR\$ billions	(US\$ millions equiv.) <u>1/</u>	CR\$ billions	(US\$ millions equiv.) <u>2/</u>
1961-62	2.9	(4.8)	2.9 ^{1/}	(4.8) ^{1/}
63	8.8	(14.7)	2.8 ^{1/}	(4.7) ^{1/}
64	11.1	(18.6)	-	
65	12.7	(20.2)	-	
	<u>35.5</u>	<u>58.3</u>		

1/ Through June 1963.

2/ At the current exchange rate Cr\$600=US\$1.

Total anticipated Brazilian input into NE highways for the period 1961-65 is not available, but is most likely a multiple of the SUDENE figure. Projections based on the period 1956-61 indicate that the other entities engaged in road building (DNER-the Brazilian National Highway Department, the National Highway Fund, the various state highway departments, and the municipalities) will themselves enlarge the road network by some 20% in the period 1961-65. Included in this figure are, of course, the first-class DNER system of national highway routes which are linking the NE to the rest of Brazil.

It is clear that Brazil is making a major self-help effort in highway development, and that present and future loan-financed projects constitute a relatively small part of the total highway program.

4. PURPOSE: To cover the combined total costs of goods, materials and services to improve 403 kms (244 miles) of state highways in 6 states of Northeast Brazil which are part of the five year Northeast Highway Development program.
5. BACKGROUND: By agreement dated April 13, 1962, the U. S. agreed to make available to the Government of Brazil during a period of 2 years, \$131, 000,000 in dollars and cruzeiros, toward implementation of the Northeast Five Year Plan of development as formulated by SUDENE, an

agency of the Brazilian Government. The Plan allocated substantial sums to the development of highways and the present loan, if approved by A.I.D., will apply against AID's 2 year commitment.

The specifications, cost and preparatory engineering on these road projects have been reviewed by a team of representative of the U. S. Bureau of Public Roads (BPR) during a special tour of duty on Northeast Brazil recently completed. The BPR group found the projects adequately prepared and technically feasible and recommended approval by AID.

6. PROJECT DESCRIPTION: The project is the construction, surfacing and/or paving of 126 kms of state highway on routes MA-51 and MA-15 in Maranhao (2 projects); 33 kms on route PB-1 in Paraiba; 50 kms on route RN-4 in Rio Grande do Norte; 44 kms on route AL-13 in Alagoas; 50 kms on route CE-35 in Ceara; and 100 kms on route PE-2 in Pernambuco state. All construction contracts will be led by public bidding.
7. AVAILABILITY OF ALTERNATIVE FINANCING: The Inter-American Development Bank is not interested in this project. The Export-Import Bank also is not interested in the project. No other external sources of financing are available.

PL-480 funds are not and will not be available to fund this project. All funds available under existing PL-480 loan agreements have been obligated or programmed for early obligation to other priority projects. It is not anticipated that the GOB will agree to the use of Fifth Sales Agreement proceeds for this purpose (See Annex IV for details).
8. VIEW OF COUNTRY TEAM: The Country Team recommends this combined project.
9. STATUTORY CRITERIA: The statutory criteria have been satisfied. (See Annex II).
10. ISSUES: None
11. RECOMMENDATIONS: Authorization of a loan to SUDEME for an amount not to exceed \$15,000,000.

1. Interest and Terms of Repayment. Borrower shall repay the loan to A.I.D. in United States dollars within forty (40) years from the first disbursement under the loan, including a grace period of not to exceed ten (10) years. Borrower shall pay A.I.D. interest in United States dollars as follows:

- (a) On the disbursed balance of the first eleven million United States dollars (\$11,000,000) disbursed, three quarters of one ($3/4$ of 1) percent per annum ; and
- (b) On the disbursed balance of the remainder of the loan, three quarters of one ($3/4$ of 1) percent per annum for ten (10) years after the first disbursement which causes the sum of all disbursements to exceed eleven million United States dollars (\$11,000,000), and two (2) percent per annum thereafter.

2. Other Terms and Conditions.

- (a) Equipment, materials and services (except shipping which shall be procured from the United States and marine insurance) financed under the loan shall be procured from the United States of America or Brazil.
- (b) United States dollars utilized under the loan to finance local costs shall be made available to the Borrower or its designee through appropriate procedures and shall be used only for procurement in the United States (excepting marine insurance).
- (c) The loan shall be secured in a manner satisfactory to A.I.D.
- (d) As conditions precedent to disbursement, A.I.D. shall require:
 - i. Arrangements satisfactory to A.I.D. to make available the cruzeiros for the project.
 - ii. Employment of qualified U. S. or Brazilian technical consultants, satisfactory to A.I.D., to advise and assist in carrying out of the project.
 - iii. Arrangements satisfactory to A.I.D. for maintenance of the roads to be constructed or improved.
- (e) The loan shall be subject to such other terms and conditions as A.I.D. may deem advisable.

Project Committee:

Loan Officers: JLevinson/RTMurphy
 Counsel : DTrubek
 Engineer : FMcRae
 Desk Officer : WJFeuerling
 Drafting Officers : JLevinson/RTMurphy

STATE OF PERNAMBUCO - HIGHWAY PAVING PROJECT PE-2

DETAILED DESCRIPTION OF THE PROJECT

A. The Project

Highway PE-2 - This highway extends for 113 kms between the towns of Palmares and Garanhuns. Starting from km 117 of highway PE-BR 11 South, PE-2 meets PE-91 at km 13, and crosses BR-10 near Quipapa.

From km 0 to km 13, PE-2 has been graded and surfaced with Portland Cement concrete. No further work will be required on this section. From km 13 to km 113, the end of the route at Garanhuns, grading work is in the final stages of completion. New work on this section will include placing a sub-base and base course and a 7 meter bituminous surface. From km 13 to km 63 the surface will be 4 cm of hot mix, from km 63 to km 113 the surface will be double surface treatment.

The proposed loan will also provide for the procurement of the services of a qualified consulting engineer to be selected by the Pernambuco Department of Highways (DER) and subject to the approval of USAID/AB-B. The consulting engineer will advise and assist the DER in the preparation of final plans, specifications and estimates, in supervising the construction and inspection of the work under the loan. The consultant will certify to USAID as to the quality and quantity of the construction work performed.

B. Engineering Plan

The activity described above, which is to be totally financed by the development loan, is considered to be technically sound in accordance with FAA Section 201(b)(2). The requirements of FAA Section 611 for completion of preliminary engineering plans and a reasonably firm cost estimate have been met.

A detailed preliminary estimate of cost has been prepared which adequately covers the construction work to be done under the loan. (see Annex III Exhibit A for preliminary cost estimates).

1. Design Criteria

Design of the route will be based on DNER design criteria. Exhibit E is a tabulation of the principal features of the DNER standards. Total surfacing depths are based on CBR and Group Index values with six ton wheel loads. The following limiting values will apply to the route:

Design Speed: 60 km/hour - Maximum Grade: 6.0% - Minimum Sight Distance: 130 meters - Minimum Radius Curve: 156 meters. Sub-based width: 14 meters - Shoulder width: 3.10 and 3.50 meters - paved surface: 7 meters. Structure widths: 8.2 meters, curb to curb.

2. Surveys and Preliminary Plans

As this project will be for paving only, no location surveys were necessary for the work included in this loan. Drainage structures have been placed and grading will be completed in the near future. Soil investigations have been made of the existing materials on the roadways and also of materials from possible borrow and surfacing materials sites along the routes. Depths of sub-base, base and surfacing courses are determined by CBR and Group Index procedures in conjunction with in-place materials and materials available along the route.

3. Construction Standards

Construction procedures and quality of materials will be governed by the provisions of the DNER Standard Specifications. The specifications have been reviewed and are complete and adequate to control the proposed work.

4. Availability of Local Resources and Equipment

The work required under this project will be performed by contract on the basis of competitive bids. Experienced contractors with adequate equipment and trained personnel are available for performance of the work.

Plans, specifications and estimates will be prepared by DER assisted by a consultant procured under the terms of the loan. Control of construction operations and quality control of materials will also be accomplished by DER assisted by the consultant.

Selected materials for blending of sub-base and base courses are available at pre-tested sites along the route. Crushed aggregates for base courses and bituminous paving can be produced at quarry sites along each route. Medium curing asphalts for prime, cost and asphalt cement for the hot mix surfacing and the double surface treatment will be shipped from refineries at Rio Grande do Sul or Sao Paulo.

The proposed schedule for performance of the contracts is shown in Exhibit D.

C. ECONOMIC CHARACTERISTICS OF THE AREA TO BE SERVICED

The State of Pernambuco has an area of 98,079 square kilometers, equivalent to 1.15% of all Brazil. As of 1960, the population was estimated to be 4,120,000 of which some 37% was urban and 63% rural; there were some 16,000 automobiles and 20,000 trucks and buses in circulation; there were 1,602 kms of federal roads of which only 346 kms were paved, 2,047 kms of state roads of which 120 kms were paved, and 12,500 kms of municipal roads.

The Pernambuco highway system is basically made up of a system of roads which, starting in Recife, open fanwise to the interior of the country and is designed to do two things:

- (1) Form a connecting link to the south of the country, and
- (2) Foster economic integration between the sugar oriented economy of the "Zona de Mata" (vegetal coastal belt), the "Agreste" (transitional region) and the "Sertao" (Semi-arid, westerly region) where subsistence agriculture and cattle raising have predominated. PE-2 is an important factor in achieving both objectives. Thus, the penetration to the southwest from Recife is accomplished by highway BR-11 between Recife and Palmares and thence by PE-2 to Garanhuns. The Garanhuns PE-2 links up with highway BR-65 which, in turn, leads to Paulo Afonso. BR-65

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ANNEX I

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is still in the process of being constructed. However, when completed the BR-11 - PE-2 and BR-65 route will constitute the shortest route by road from Recife to the south of Brazil. BR-11 is now being paved as is also the first section of PE-2 (between Palmares and Catende). Accordingly, the paving of the Catende-Garanhuns link proposed to be here financed is vital to the completion of this connection to the south of Brazil.

Moreover, it is anticipated that the paving of this segment of road will constitute a significant addition to the economy of the surrounding area. Thus the road will serve the nine counties whose economy is based upon the city of Garanhuns. Garanhuns is the fourth largest city in Pernambuco (40,000 inhabitants); the county of Garanhuns with 15,392 inhabitants is the second largest county in Pernambuco. The total population of the nine counties whose economy gravitates to Garanhuns as the region's major commercial center is approximately 480,000.

At the same time, in anticipation of the improvement in transportation facilities a powdered milk factory (GISA) has been started to take advantage of the natural advantages of the Garanhuns dairy basin. There are no powdered milk producing facilities in the Northeast. When in full production, the GISA factory will produce annually 4300 tons of powdered milk, 300 tons of butter, 100 tons of casein and 350 tons of industrial milk. The factory is expected to employ 240 operatives. Accordingly, it is apparent that the provision of an all weather access to the Garanhuns region is an important factor in realizing the potential of the region for agricultural diversification.

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SUMMARY OF COST ESTIMATE FOR PE-2

	<u>CR\$ MILLIONS</u>	<u>EQUIVALENT (*) \$ THOUSANDS</u>
Construction Highway PE-2	1,593	3,462
10% for Contingencies	159	346
3-1/2% for Consultant Engineering	55	125
Development Loan Total	<u>1,807</u>	<u>\$3,929</u>

(*) Based on CR \$ 460 - \$1.00

TOTAL PROJECT PE-2 - 100 Km or 62 Miles

Average Construction Cost - CR\$ 18,070,000 per Km.

Average Construction Cost - US\$ 63,400 per Mile.

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CHECK LIST OF STATUTORY CRITERIA (ALLIANCE FOR PROGRESS)

- * 1. Foreign Assistance Act of 1961, as amended, (hereinafter FAA), Section 102. The loan will further the policy of the Act, as stated in this Section. Every possible precaution will be taken to assure that loan proceeds are not diverted to short-term emergency purposes (such as budgetary purposes, balance of payments purposes, or military purposes) or any other purpose not essential to the long-range economic development of Brazil.
- * 2. FAA Section 201(d). The interest rate applicable to the loan is $6 \frac{3}{4}$ of 2% per annum. Funds loaned will not be reloaned.
- * 3. FAA Section 202(c). Foreign Aid and Related Agencies Appropriation Act of 1964 (hereinafter "App.") Section 117. Funds have been appropriated by Congress for this loan.
- * 4. FAA Section 204. The terms and conditions of the loan are in accordance with standards and criteria established by the Development Loan Committee. The loan is to be submitted to DLC pursuant to MO 1251.1.
- * 5. FAA Section 251(a). The loan will promote economic development in Brazil and will contribute to the welfare of its people.
- * 6. FAA Section 251(b)(1). Brazil is adhering to the principles of the Act of Bogota and Charter of Punta del Este and is showing a responsiveness to the vital economic, political and social concerns of its people. Brazil has demonstrated a clear determination to take effective self-help measures.

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* Affirmative finding required by law.

7. FAA Section 251(b)(2). The activity to be financed is economically and technically sound.
8. FAA Section 251(b)(3). The activity is consistent with and is related to other development activities being undertaken or planned and will contribute to realizable long-range objectives.
9. FAA Section 251(b)(4). The loan will have no foreseeable adverse affect on the U.S. economy.
10. FAA Section 251(b). Financing from other free world sources (including private sources within the United States) on reasonable terms for the project is not available.
11. FAA Section 251(b). The terms of the loan (3/4 of 2% interest, 40 year amortization) are reasonable under circumstances affecting the loan and the capacity of Borrower to repay the loan.
12. FAA Section 251(b). Brazil is making reasonable efforts to encourage repatriation of capital invested in other countries by its own citizens.
- *13. FAA Section 251(b). There are reasonable prospects that the loan will be repaid.
- *14. FAA Section 251(e). An application has been received for this loan which gives sufficient information and assurances to indicate reasonably that the funds will be used in an economically and technically sound manner.
15. FAA Section 251(g). In view of the nature of the project it is not appropriate to utilize the loan to assist in promoting the cooperative movement in Latin America.

16. FAA Section 601(b)(4). The loan will be administered in such a manner as to encourage and facilitate participation by private enterprise to the maximum extent practicable.
17. FAA Section 601(b)(6). In the implementation of the loan, United States private engineering services, and other services of United States private enterprise shall be employed. American small business shall be assisted to the maximum extent practicable to participate equitably in the furnishing of goods and services for the project, in accordance with the procedures described in this section of the Act.
- *18. FAA Section 604(a). Equipment, materials and services (except Marine Insurance) financed for the project under the loan shall be procured from the United States of Brazil. (Procurement in Brazil is authorized by the Presidential Determination of October 18, 1961, as amended.) Dollars utilized under the loan to finance local costs of the project shall be made available through appropriate procedures, and, except for Marine Insurance, shall be used only for procurement in the United States.
- *19. FAA Section 604(b). Any commodities financed by the loan and purchased in bulk will be purchased at prices no higher than prevailing U.S. market prices.
- *20. FAA Section 604(d). Loan funds shall be available for Marine insurance on commodities shipped when such insurance is placed on a competitive basis, as specified in this section of the Act. In the event that Brazil discriminates against any U.S. marine insurance company, commodities purchased with loan funds shall be insured against marine risk with a U.S. company, as required by this section.
- *21. FAA Section 611(a)(1). Necessary substantive technical and financial planning for the project has been completed, and a reasonably firm estimate of cost of the project to the United States has been obtained.
- *22. FAA Section 611(a)(2). No further legislative action in Brazil is required for implementation of the project.

- * 23. FAA Section 611(b), App. Section 101. The project does not involve a water or related land resource construction.
- * 24. FAA Section 611(c). Construction contracts to be financed by the loan shall be let on a competitive basis.
- * 25. FAA Section 619. Not applicable. Brazil is not a newly independent country.
- * 26. FAA Section 620 (a) App. Sections 109 (a), 109(b). No assistance will be furnished under this loan to the present government of Cuba, nor does furnish assistance to the present government of Cuba. Brazil has taken appropriate steps to prevent ships or aircraft under its registry from engaging in any Cuba trade.
- * 27. FAA Section 620(b). The Secretary of State has determined that Brazil is not controlled by the International Communist Movement.
- * 28. FAA Section 620(c). Brazil is not indebted to any U.S. citizen for goods or services furnished or ordered, where such a citizen has exhausted available legal remedies or where the debt is not denied or contested by or the indebtedness arises under an unconditional guaranty of payment given by Brazil.
- * 29. FAA Section 620(d). Loan funds will not finance construction or operation of any productive enterprise which will compete with United States enterprise.
- * 30. FAA Section 620(e). Neither the government of Brazil nor any governmental agency or subdivision thereof has, on or after

January 1, 1962, nationalized, expropriated or seized ownership or control of property of any U. S. citizen or firm, taken steps to repudiate or nullify existing contracts with such citizens or firms, or imposed or enforced discriminatory taxation or other exactions or restrictive conditions, or taken other actions having the effect of nationalizing, expropriating or otherwise seizing ownership or control of property owned by U. S. citizens or firms, as specified in this section of the Act, without taking appropriate steps to discharge its obligations, as specified in this section of the Act.

- * 31.. FAA Section 620(f), App. Sections 109(a). Assistance provided by this loan will not be furnished to any communist country.
- * 32.. FAA Section 620(g). Assistance provided by this loan will not be used to compensate for expropriated or nationalized property.
- * 33. FAA Section 620(h). Assistance provided by this loan will not be used in a manner which promotes or assists foreign aid projects or activities of the communist bloc countries.
- * 34. FAA Section 620(i). The President has not determined that Brazil is engaging in or preparing for aggressive military efforts directed against the United States, or any country receiving assistance from the United States, or against any country to which sales are made under PL 480, nor is any basis for such determination known to A.I.D.
- * 35. FAA Section 636(h). Brazil will contribute all additional local currency needed to meet the cost of contractual and other services to be rendered in conjunction with the project. Because of inflation and exchange rate variations it is not possible at this time to specify precisely the amount of local currency which will be supplied to the project by Brazil.

- * 36. App. Section 102. Obligations of funds in excess of \$25,000 for engineering fees to any firms or group of firms financed under the loan will be reported to the committees on appropriations of the Senate and House.
- * 37. App. Section 104. Funds obligated by the loan, and local currency generated thereby, will not be used to pay pensions, annuities, etc., as prohibited in this section.
- * 38. App. Section 111. U. S. Personnel to serve under contracts or services financed by the loan shall have security clearance.
- * 39. App. Section 112. Firms which provide engineering, procurement, and construction services financed by the loan, for the Project, and the terms of their contracts, shall be approved by AID.
- * 40. App. Section 114. Loan funds will not be used to make any payment to the U. N.
- * 41. App. Section 118. Construction work financed by the loan shall be performed by qualified persons, in accordance with AID regulations promulgated pursuant to this section.
- * 42. App. Section 601. Loan funds will not be used for publicity or propaganda purposes within the United States.

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February 4, 1964

ANNEX III - EXHIBITS

Exhibit No.	Page
A. BENEFIT COST RATIO.....	1-2
B. MAPS	3-4
C. CROSS SECTION DETAIL	5-6
D. SCHEDULE FOR SURFACING AND PAVING OF HIGHWAYS	7
E. DESIGN CRITERIA.....	8
F. ESTIMATES OF QUANTITIES AND COSTS	9

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 ADDENDUM/P-165/1
 ANNEX III, Page 1 of 9
 Exhibit A, Page 1 of 2

BENEFIT COST RATIO

PE-2

A traffic count on PE-2 for a period of one week during October 1962 showed the following results:

	<u>Av. Daily Traffic</u>	<u>Vehicles</u>	
		<u>Actual</u>	<u>+50%</u>
cars	35%	40	60
buses	2%	2	3
trucks under 6 ton	58%	67	100
trucks over 6 ton	5%	6	9
	<u>100%</u>	<u>115</u>	<u>172</u>

Due to the fact that this count was made while the road was under construction, it is estimated that the actual traffic would have been 50% more if no construction operations were under way. The benefit cost ratio has been computed adding 50% to the actual count. The 1963, 1973 and 1983 traffic have been computed using the 5% estimated annual increase in traffic.

VEHICLES PER DAY

	<u>1963</u>	<u>1973</u>	<u>1983</u>
cars	63	102	170
buses	3	5	8
trucks under 6 ton	105	171	278
trucks over 6 ton	10	16	26
	<u>181</u>	<u>294</u>	<u>482</u>

Assuming 14.05 cents per mile as the cost of operation on earth road and 9.80 cents per mile as the cost of operation on a paved road, both in good condition, the saving is 4.25 cents per mile for cars. Also

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assume that the saving for one truck under 6 tons is equal to double that for one car and the saving for one truck over 6 tons or for one bus, is triple that for one car. The saving for one mile for one day then becomes:

	<u>1963</u>	<u>1973</u>	<u>1983</u>
cars x 1	63 - 63	102 - 102	170 - 170
buses x 3	3 - 9	5 - 15	8 - 24
trucks under 6 tons x 2	105 - 210	171 - 342	278 - 556
trucks over 6 tons x 3	10 - 30	16 - 48	26 - 78
VEHICLES PER DAY	<u>312</u>	<u>507</u>	<u>828</u>
Benefit (Savings at 4-1/4)	\$13.25	\$21.50	\$35.10

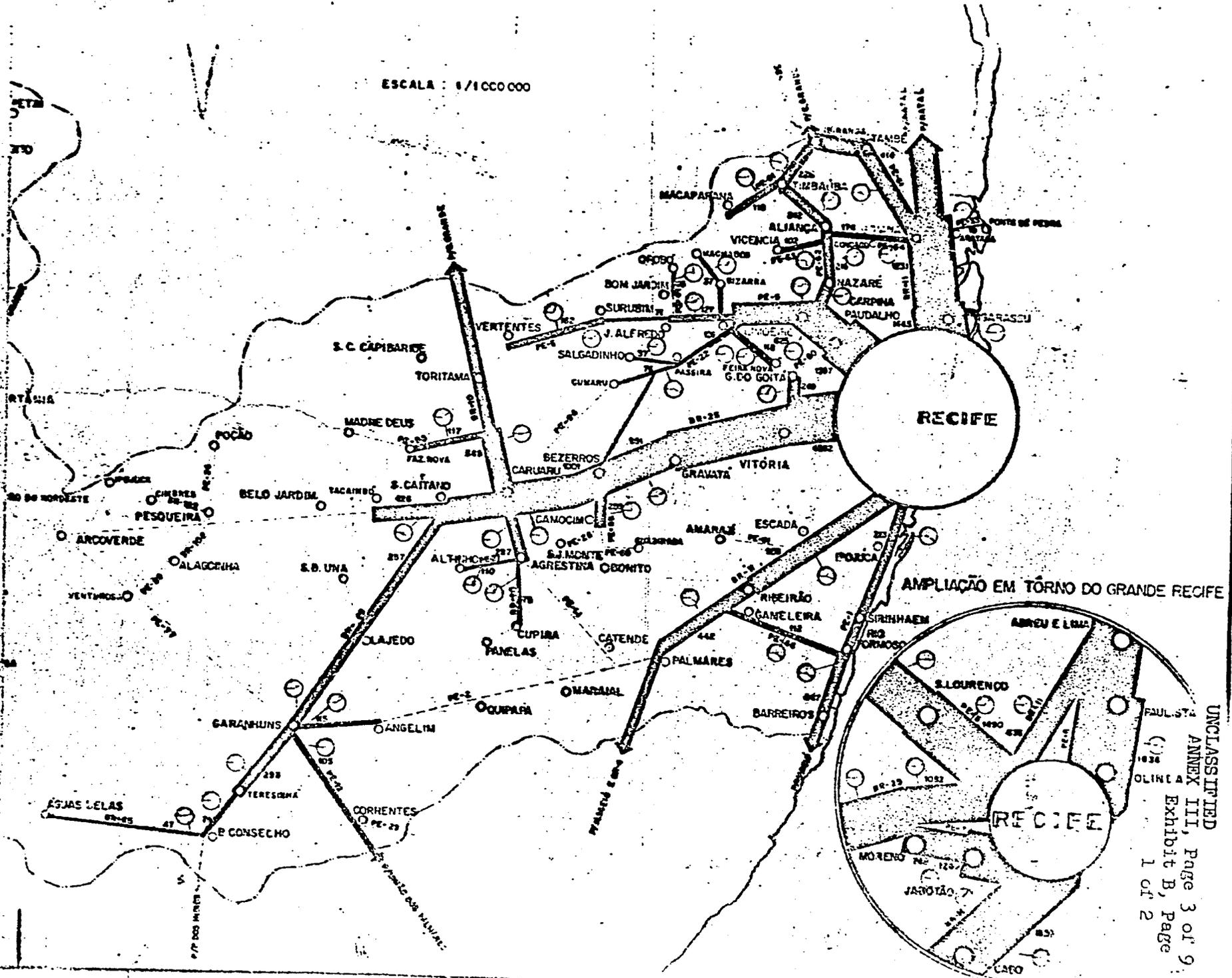
Costs have been computed assuming that the maintenance of the earth and paved road would be the same, then the cost is capital cost only. The total estimated cost from Annex I is \$3,929,000 or \$63,400 per mile.

The annual cost for amortization using an interest rate of 6% and a life of 30 years is $0.0726 \times 63,400 = \$4,600$ per year, or \$12.60 per day.

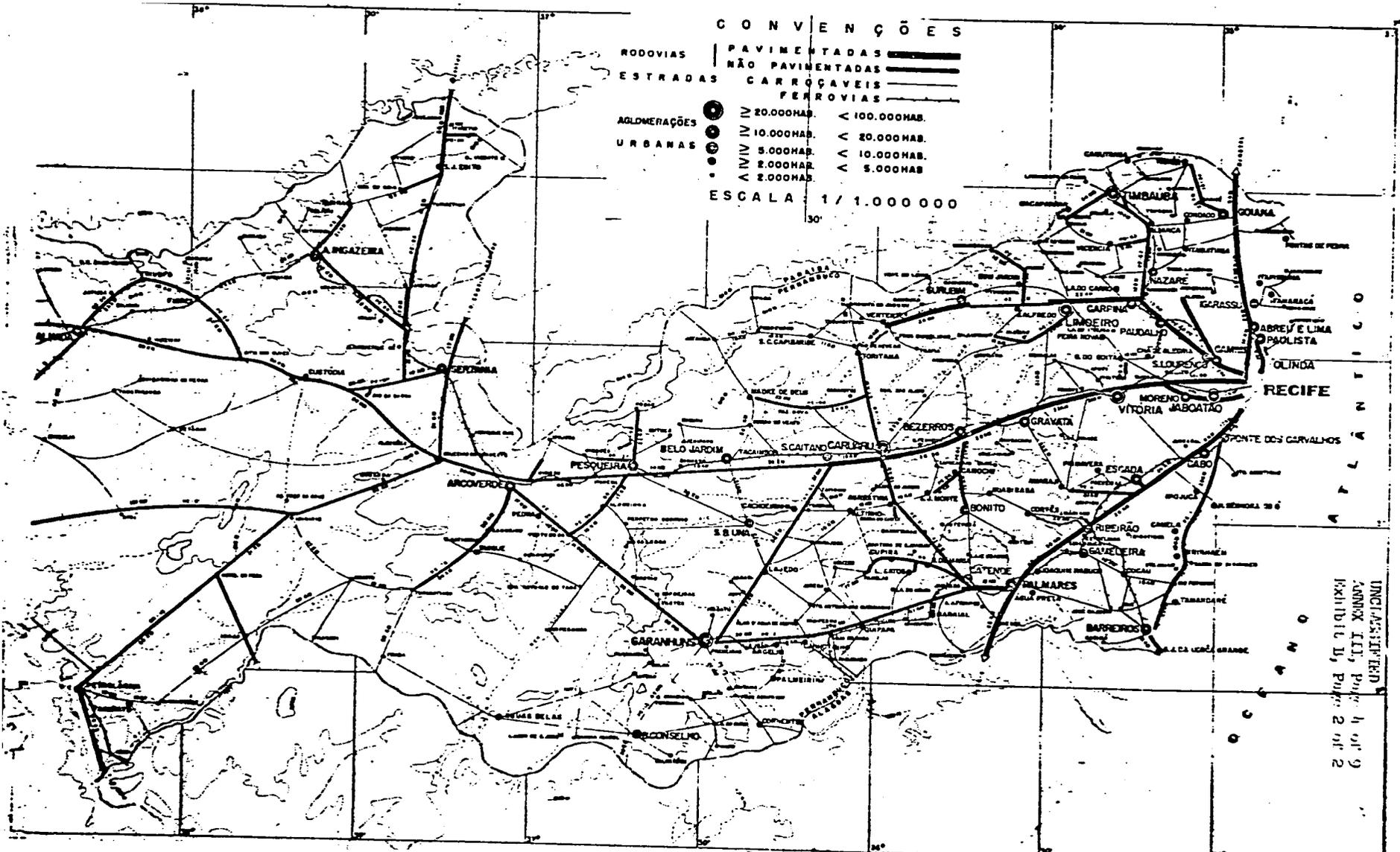
Cost Benefit Ratios:

1963:	$13.25 \div 12.60 = 1.05$
1973:	$21.50 \div 12.60 = 1.71$
1983:	$35.10 \div 12.60 = 2.78$

ESCALA : 1/100000



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 ANNEX III, Page 3 of 9
 Exhibit B, Page
 1 of 2



CONVENÇÕES

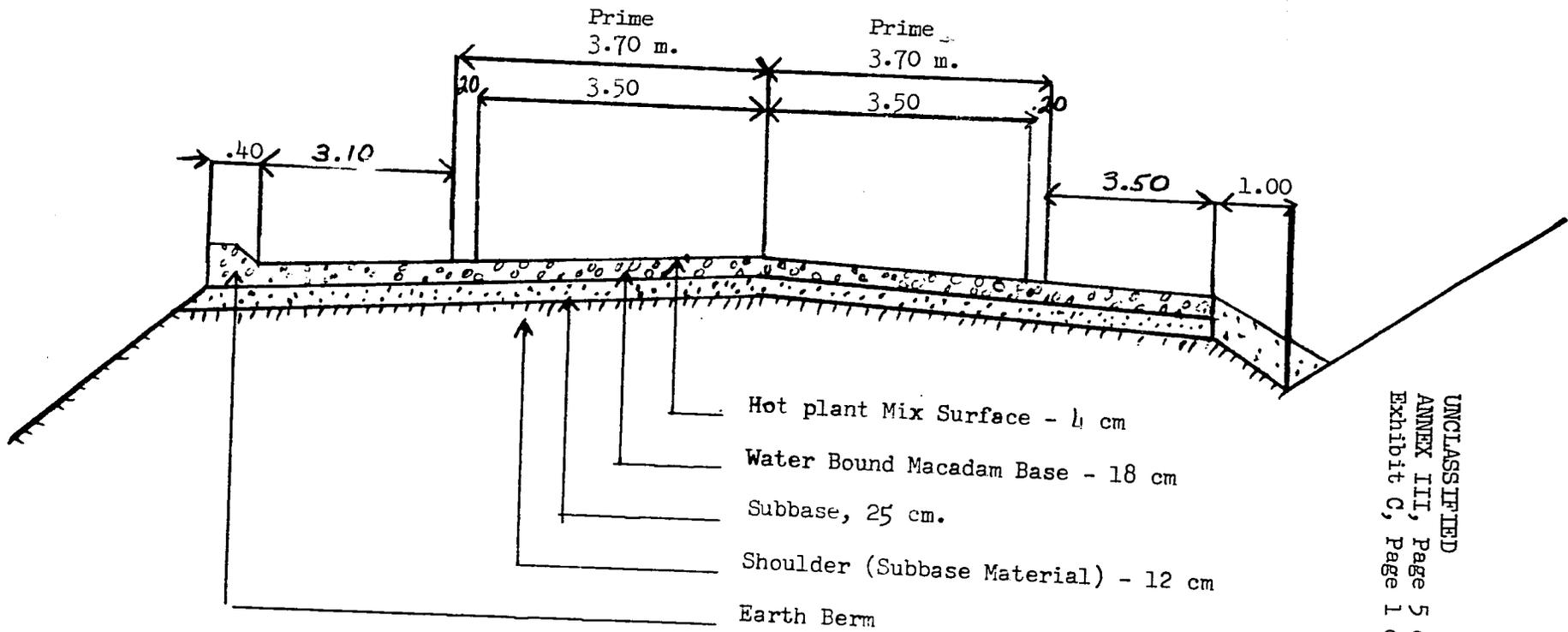
- | | | |
|--------------|------------------|---------------|
| RODOVIAS | PAVIMENTADAS | |
| | NÃO PAVIMENTADAS | |
| ESTRADAS | CARROÇAVEIS | |
| | FERROVIAS | |
| AGLOMERAÇÕES | IV 20.000HAB. | < 100.000HAB. |
| | III 10.000HAB. | < 20.000HAB. |
| URBANAS | II 5.000HAB. | < 10.000HAB. |
| | I 2.000HAB. | < 5.000HAB. |
| | • 2.000HAB. | |

ESCALA 1 / 1.000.000

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 ANEXO III, Parte 4 art 9
 RBR 11, Parte 2 art 2

PERNAMBUCO PE- 2

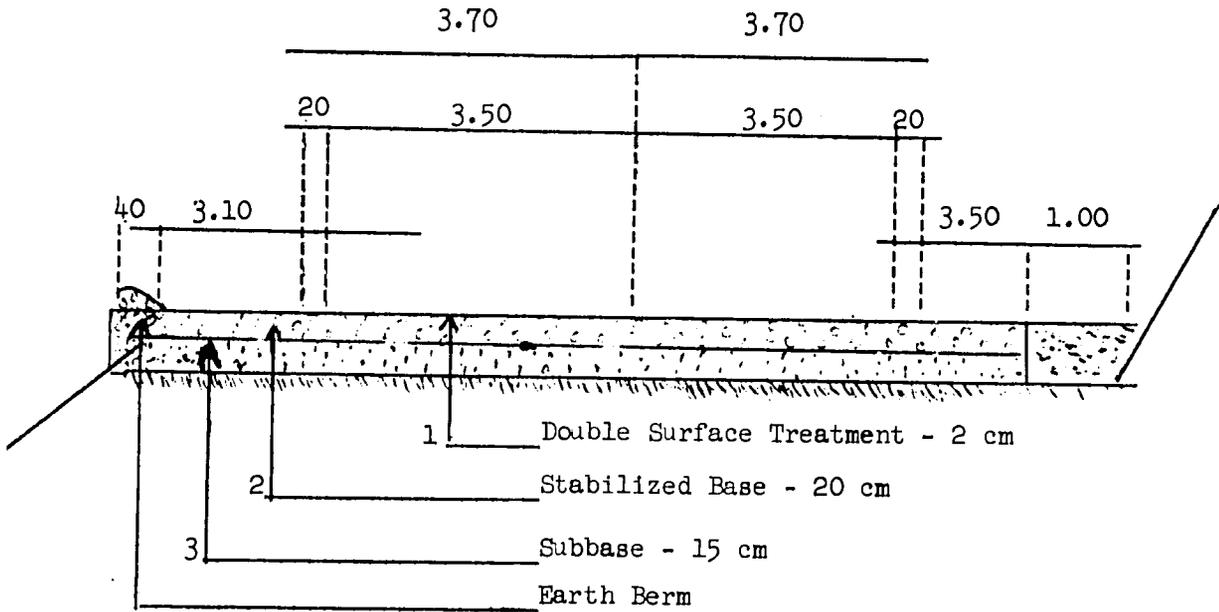
Km. 0 to Km. 63



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Exhibit C, Page 1 of 2

PERNAMBUCO PE-2

Km. 63 to 113



D.E.R. SCHEDULE FOR SURVEILING AND PAVING OF HIGHWAYS

FE-2, FE-62 AND FE-91 (FERNANBUCCO)

YEAR	FE-2	FE-62	FE-91	TOTALS
1963	30 Km, Catende-Quipapá	30 Km, Carpina-Aliança 3 Km, Aliança-Timbaúba	7 Km, Agrestina-Catende	70 Km
1964	11 Km, Catende-Quipapá 25 Km, Quipapá-Garanhuns	11 Km, Aliança-Timbaúba		47 Km
1965	34 Km, Quipapá-Garanhuns		30 Km, Agrestina-Catende	64 Km
1966			5 Km, Agrestina-Catende	5 Km
TOTALS:	100 Km, Catende-Garanhuns	44 Km, Carpina-Timbaúba	42 Km, Agrestina-Catende	186 Km

Project Category	Capacity ADT (1)	Pavement Type	Terrain	Design Speed Km/hr	Super-Elevation %	Min. Radius m (2)	Minimum sight Distance		Maximum Grades % (3)	Pavement Widths m (4)	Minimum Shoulder Widths m	Embank Slopes	
							Stopping	Passing				Less Than 3m	Over 3m
Special	Over 3000		Flat	100	Max 10	430	200	800	3	7.5	3.0	-	-
			Rolling	80	Min 2	280	150	500	4		2.5		
			Mountain	60		160	100	300	5		2.0		
Class I	Over 1000		Flat	100	Max 8	340	150	800	3	7.0	2.5	-	-
			Rolling	80	Min 2	200	100	500	4		2.0		
			Mountain	60		100	65	300	6		1.5		
Class II	500 to 1000		Flat	80	Max 8	200	100		3	6.0 to	2.0	-	4:1
			Rolling	60	Min 2	110	65		4	7.0	1.5		
			Mountain	40		30	35		6		1.2		
Class III	Less Than 500		Flat	60	Max 8	110	65		4	6.0 to	1.0	-	2:1
			Rolling	40	Min 2	50	35		5	7.0	1.0		
			Mountain	30		30	25		7		1.0		

- (1) - Whenever a traffic of over 3000 ADT is anticipated, the roadway design is expected to be drafted to include two independent lanes, after interconnected. The same applies to steep areas where 2000 ADT is anticipated.
- (2) - Special and Class I roads - All curvature of less than 600 meters shall be transitioned with transition curves with radii in direct proportion to the length. Class II & III roads. Transition Curves shall be adopted for curvature radius of less than 440 meters. The transition to be used may be one called circular transition with double radius.
- (3) - Values are maximum for sections up to 1000 meters above sea level. They shall be reduced 5% for altitudes over 1000 meters. They may be increased 1% for lengths of sections up to 900 meters on flat terrain, 3000 meters in rolling terrain and 150 meters in mountainous terrain.
- (4) - On the roads containing two independent roadways with 2 lanes on each roadway, the roadway should be 7 meters wide. Curves will be widened where required by design speed and radius of Curvature.

FE-2 ESTIMATE OF QUANTITIES & COSTS
(Based on CR\$ 460 - \$1.00)

1st SECTION - Km 13-63

	Unit	Quantity	Unit Cost	CR\$ Total Cost	Equivalent Total Cost
(a) Select Borrow for subbase	M3	60,000	270	16,200,000	35,200
(b) Haul of Select borrow (Ave. 4 Km)	Ton	100,000	230	23,000,000	50,000
(c) Blending subgrade with select borrow and processing and compacting subbase	M3	105,000	1,200	126,000,000	274,000
(d) Preparation of subgrade and processing and compacting subbase	M3	55,000	930	51,150,000	111,200
(e) Processing and compacting water-bound macadam base (includ. Furnishing aggregate)	M3	70,000	4,480	313,600,000	661,700
(f) Haul of base aggregate (Ave. 15 Km)	Ton	100,000	670	67,000,000	145,600
(g) Processing and compacting shoulder material	M3	35,000	1,200	42,000,000	91,300
(h) Application of Prime Coat (MC-1)	M2	400,000	30	12,000,000	26,100
(i) Construct bit plant mix surfacing (includ. furnish. aggregate, hauling to road & Compact.)	M3	14,000	9,800	137,200,000	298,200
(j) Haul of aggregate of plant mix (Ave. 15 Km quarry to plant)	Ton	24,000	670	16,080,000	35,000
(k) Asphalt for Prime (MC-1)	Ton	600	59,000	35,400,000	77,000
(l) Asphalt for plant mix (AC 85-100)	Ton	2,300	54,000	124,200,000	270,000
TOTAL 1st SECTION				<u>963,830,000</u>	<u>2,095,300</u>

2nd SECTION - KM 63-113

(a) Select borrow for subbase and base	M3	170,000	230	39,100,000	85,000
(b) Haul of select borrow (Ave. 8 Km)	Ton	290,000	390	113,100,000	245,900
(c) Preparation of subgrade & processing & Compacting subbase	M3	84,000	930	78,120,000	169,800
(d) Blending subgrade with select borrow and processing and compacting for subbase	M3	31,000	1,200	37,200,000	80,900
(e) Processing & compacting of base w/o blending	M3	112,000	930	104,160,000	226,400
(f) Blending existing subbase w/select borrow and processing & compacting for base	M3	31,000	1,200	37,200,000	80,900
(g) Application of prime coat (MC-1)	M2	408,000	30	12,240,000	26,600
(h) Construct double surface treatment (includ. AC application & furnishing aggregate)	M2	360,000	270	97,200,000	211,300
(i) Haul of surface treatment aggregate (Av. 20 Km)	Ton	16,000	900	14,400,000	31,300
(j) Asphalt for prime (MC-1)	Ton	610	59,000	35,990,000	78,200
(k) Asphalt for surface treatment (AC 150-200)	Ton	1,110	54,000	59,940,000	130,300
TOTAL 2nd SECTION				<u>628,650,000</u>	<u>1,366,600</u>
				<u>1,592,480,000</u>	<u>3,461,900</u>

FE-2 is 100 Km Long - TOTAL PROJECT FE-2
Average Cost per Km - CR\$15,925,000

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ANNEX IV, Page 1 of 2
 February 4, 1964

AVAILABILITY OF PL-480 CRUZEIROS FOR PROJECT

PL-480 cruzeiros are not available for any part of the local currency requirements for this project. The rate of commitment of PL-480 loan funds has until recently been slow; however, at present all of the funds still "available" from the Third and Fourth agreements have been programmed for early obligation. A breakdown is provided in the following table:

AVAILABILITY OF PL-480 LOAN FUNDS - January 15, 1963

	<u>Amount Available</u>	<u>Amount Obligated</u>	<u>Amount Programmed</u>	<u>Amount Available for Programming</u>
Third Agreement	11.7	4.4	7.3	0
A) BNDE: Funds reserved for private enterprise			(1.5)	
B) BNDE: Funds for general use (i.e. basic industries and development banks)			(5.8)	
Fourth Agreement	25.3	19.4	5.9	
A) BNDE: Funds reserved for private enterprise			(2.3)	
B) Funds reserved for private enterprise (identity of implementing agency still under discussion)			(2.5)	
C) SUDENE: Funds for river basin development			(1.1)	

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Deposits under the Fifth Sales Agreement of August 1963 are gradually becoming available. The Government of Brazil desires to restrict these loan cruzeiros to use by the Banco Nacional do Desenvolvimento Economico (BNDE). The U. S. Government is making efforts to acquire greater programming control over the use of these PL-480 cruzeiros. The amounts expected to be available for loan purposes under the Fifth Agreement have been programmed in the FY 65 CAP on the assumption that USAID efforts in this respect will be successful. However, in view of (a) the need for PL-480 cruzeiros in support of other priority goals and (b) the fact that approximately \$93 million of PL-480 cruzeiros have already been obligated in the discharge of the U. S. commitment in the Northeast, which is substantially larger portion of local currency than foreseen in the agreement, it would be unrealistic to expect that GOB approval could be obtained for the use of PL-480 cruzeiros for this project. SUDENE has already informed the USAID that it supports the GOB position, which would deny SUDENE the use of PL-480 cruzeiros deposited under the Fifth Agreement.

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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington 25, D. C.

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AID-DLC/P-165/1/A Draft
AID Loan No. 512-L-015
ANNEX V, Page 1 of 2

AMENDED LOAN AUTHORIZATION

Provided from: Alliance for Progress Funds
Brazil: Combined Highway Project

Pursuant to the authority vested in the Administrator of the Agency for International Development, I hereby amend the Loan Authorization dated June 29, 1963, to read as follows:

Pursuant to the authority vested in the Administrator of the Agency for International Development ("A.I.D.") by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder and after consultation with the Development Loan Committee, I hereby authorize the establishment of a loan pursuant to Part I, Chapter 2, Title VI, Alliance for Progress, to the Superintendencia de Desenvolvimento do Nordeste (Borrower) of not to exceed fifteen million United States dollars (\$15,000,000) to assist in financing the cost of goods, materials and services to construct or improve 244 miles of state highways of Northeast Brazil, this loan to be subject to the following terms and conditions:

1. Interest and Terms of Repayment. Borrower shall repay the loan to A.I.D. in United States dollars within forty (40) years from the first disbursement under the loan, including a grace period of not to exceed ten (10) years. Borrower shall pay A.I.D. interest in United States dollars as follows:
 - (a) On the disbursed balance of the first eleven million United States dollars (\$11,000,000) disbursed, three quarters of one (3/4 of 1) percent per annum; and
 - (b) On the disbursed balance of the remainder of the loan, three quarters of one (3/4 of 1) percent per annum for ten (10) years after the first disbursement which causes the sum of all disbursements to exceed eleven million United States dollars (\$11,000,000), and two (2) percent per annum thereafter.

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2. Other Terms and Conditions.

- (a) Equipment, materials and services (except shipping which shall be procured from the United States and marine insurance) financed under the loan shall be procured from the United States of America or Brazil.
- (b) United States dollars utilized under the loan to finance local costs shall be made available to the Borrower or its designee through appropriate procedures and shall be used only for procurement in the United States (excepting marine insurance).
- (c) The loan shall be secured in a manner satisfactory to A.I.D.
- (d) As conditions precedent to disbursement, A.I.D. shall require:
 - i. Arrangements satisfactory to A.I.D. to make available the cruzeiros for the project.
 - ii. Employment of qualified U. S. or Brazilian technical consultants, satisfactory to A.I.D., to advise and assist in carrying out of the project.
 - iii. Arrangements satisfactory to A.I.D. for maintenance of the roads to be constructed or improved.
- (e) The loan shall be subject to such other terms and conditions as A.I.D. may deem advisable.

Administrator

Date