

CHAPTER 3
IMPLEMENTATION PLAN

Chapter 3. Implementation Plan

3.1 Implementation Plan

3.1.1 Implementation Policy

(1) Project Implementation Agency

In case the Project is implemented on the basis of Japan's Grant Aid, the overall structure of the Project will be as shown in Fig. 3.1.

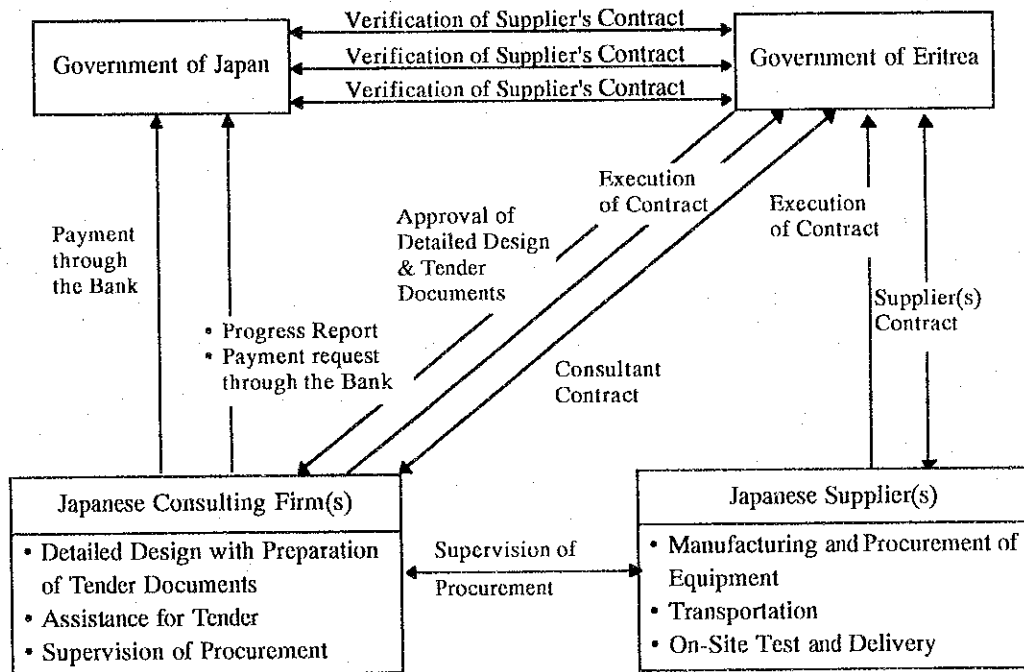


Fig. 3.1 Overall Structure of the Project

Implementation agency of the Project is the Ministry of Construction (MOC) of Eritrea.

In accordance with Japan's Grant Aid system, Japanese consulting firm(s) will undertake the detailed design and supervision of the Project based on a contract between the Government of Eritrea and the said firm(s), and Japanese general trading company(ies) will undertake the equipment supply based on the contract(s) between the Government of Eritrea and the said company(ies).

(2) Consultant(s)

In accordance with Japan's Grant Aid system, Japanese consulting firm(s) will be employed for engineering services for the Project.

Soon after Exchange Notes (E/N) between the Government of Japan and the Government of Eritrea, the Ministry of Construction (MOC) will conclude the contract between the Japanese consulting firm(s).

The said firm(s) will provide engineering services for the procurement of equipment which includes detailed design, preparation of contract documents, assistance for tender(s) and contract(s) and supervision of procurement, in accordance with the contract until delivery completion of equipment under the Project.

(3) Supplier(s)

The Ministry of Construction will conclude the contract(s) between the Japanese general trading company(ies) who is(are) awarded the tender(s) in open competitive tender(s) from the view-point of technical capability and cost competitiveness.

The said company(ies) will execute the procurement, transport, installation, initial operation in accordance with the contract(s).

3.1.2 Special Notes for Implementation

The port of disembarkation for the equipment procured from Japan and the third country(ies) will be Massawa. The place of hand-over of the equipment will be Road Department of MOC, Asmara.

Any trouble due to inland transport of the equipment by roads from Massawa to Asmara (approximately 120 km) shall be avoided.

3.1.3 Scope of Work

Procurement of construction equipment for the Construction/Rehabilitation project of the Mendefera and Barentu road. Any costs which relate to the implementation of the said project, such as provision of facilities, procurement of construction material, labour, and administrative expenses shall be the responsibility of the Government of Eritrea.

However, Eritrea side has sufficient capability to accept this responsibility.

3.1.4 Consultant's Supervision Plan

(1) Principles

In case the Project is implemented by Japan's Grant Aid, the consultant must thoroughly understand the background of the Project, contents of the Basic Design Study Report, Japan's Grant Aid system and the contents of the Exchange of Notes (E/N) between the Government of Japan and the Government of Eritrea.

1) Scope of the Consulting Services

Scope of the consulting services is as follows:

1. Detailed Design

- Consultancy agreement and verification
- Detailed design and preparation and discussion of tender documents
- Explanation of the specifications and tender and contract documents to the Government of Eritrea
- Tender announcement on newspapers
- Assistance for tender(s), evaluation for tender(s) and witness of contract(s) for equipment supply
- Confirmation of the obligations of the Eritrean side

2. Supervision of Equipment procurement

- Confirmation of order of equipment
- Follow-up of procurement
- Ex-factory inspection
- Report of progress
- Witness of final hand over
- Preparation of final report

3. Initial Operation of the Equipment

Initial instruction and training for operation, preventive maintenance, routine maintenance by the Supplier(iers) under the control of the Consultant are required.

Initial training covers:

- Lecture by operation manual and practice
- Lecture on basic concept of cooling system, hydraulic system, engine, power train system and practice of daily examination.

2) Basic Points to Note

- Conformity with the Basic Design

Design conditions set out in the Basic Design Study shall be confirmed. It is important to check whether the specifications of equipment in the Basic Design Study comply with the conditions.

- Tender and contract documents shall be in accordance with the Japanese Grant Aid system. During the field survey of the Detailed Design the documents shall be thoroughly examined and explained to the Eritrea side for its approval.

3.1.5 Procurement Plan

Procurement plan for the equipment from Japan and third countries is as follow:

Equipment procured from Japan

As for major construction equipment and vehicles, the products of Japanese makers have sufficient share in the Eritrea market. Thus, operators and mechanics are familiar with these products. Capabilities of local agents of the Japanese makers can be expected to be adequate from the view-point of maintenance technique and spare parts supply.

Equipment procured from Japan or third countries

Several types of construction equipment of European and US origin are generally used in Eritrea, some of which can be procured only from European countries and US. The service system of the local agents of these makers is considered adequate. Thus, in addition to Japan, the following equipment may be also procured from third countries which are restricted to US, UK, Germany and Sweden.

- Wheel type Hydraulic Excavator
- Vibration Roller
- Asphalt Boiler

- Chip Spreader
- Generator
- Air Compressor (7.5 m³)

3.1.6 Implementation Schedule

Implementation programme of the Project is shown in Fig. 3.2.

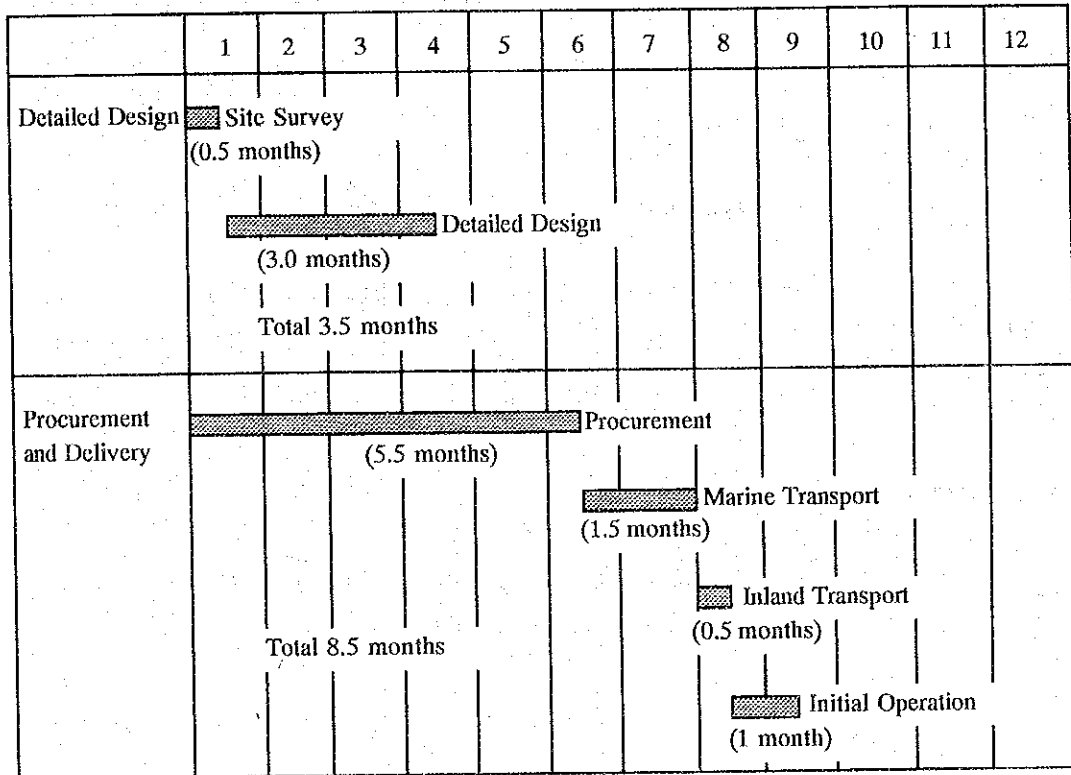


Fig. 3.2 Implementation Schedule

3.1.7 Obligation of Recipient Country

Eritrean obligation are as follows:

- (1) Tax exemption and preparation for documents needed for customs clearance at Eritrea port(s).
- (2) Payment to Japanese foreign exchange bank for the following bank charges based on the banking arrangement:
 - 1) Admising commission of authorization to pay
 - 2) Payment commission

- 3) Exemption from customs duties and Eritrean taxes for Japanese firm and personnel engaged in services of the project.
- 4) To assist Japanese personnel related to the project to enable them to enter and stay at Eritrea for implementation services.
- 5) Appropriate use and maintenance of the equipment procured under the project.
- 6) To bear all the expenses other than those covered by the grant aid.

3.2 Project Cost Estimation

3.2.1 Project Cost Estimation

Project cost to be borne by the Government of Eritrea is supposed to be negligible. Regarding construction costs for Mendefera - Barentu road project the estimate by this basic design study is attached in Appendix 5.

3.2.2 Management and Maintenance Plan

The management and maintenance of the equipment will be sufficiently performed by strengthening the present management and maintenance activities.

(1) Daily check

Daily check of the equipment is carried out by operators using standardized check list. Operating hours, refilled amount of fuel, coolant and oil are also recorded on the daily check list and the result is reported to the foremen or supervisors.

(2) Periodical maintenance

Operators request the site mechanics periodical maintenance based on the daily check list, and the mechanics perform the periodical maintenance for every equipment at appropriate interval.

(3) Repair work procedure

— Request of repair

When operators have found abnormal conditions such as leakage or rapid consumption of water, fuel, oil etc., they will request site mechanics for investigation/repair by issuing a request for inspection using a standardized form.

— Repair sheet

Site mechanics identify cause of trouble, perform repair, then record the details of trouble, repairing process, man-hours and parts/materials used, date etc. on the standardized recording form, then report to the head of Road Department in Asmara. The parts number, name and quantity required will be filled in the form.

When the cause of trouble can-not be identified on site, the foreman/supervisors request the head of Road Department in Asmara for investigation/repair.

The Chief of the Workshop dispatches engineers to the site for inspection. If the repair on site is judged impossible, the equipment will be transported to the Central Workshop in Asmara for repair.

(4) Spare parts control

The spareparts inventory control is carried out manually using Cardex system detailing part number, part name, stock quantity, used quantity, stock address etc.

Computerized control system will be introduced in near future together with technical assistance attached to the Road Department.

3.3 Operation and Maintenance Costs

Estimates of operation and maintenance costs of the supplied equipment under the Project is shown in Table 3.1 and Table 3.2, respectively.

Total estimates of fuel/oil and maintenance cost (primarily parts) will be approximately 0.7 million US\$. These cost seems not so much comparing with the annual budget of the Road Department (ex. 47 million US\$ in 1975). Therefore, this cost will be sufficiently provided by the budget.

Table 3.1 Fuel/Oil Cost Estimation

No.	Equipment	Main Spec.	Unit	Fuel Consumption Rate ℓ/unit•day	Fuel Consumption Amount ℓ/day
1	Motor Grader	200-220HP	5	240	1,200
2	Bulldozer	220-235HP	4	270	1,080
3	Wheel Loader	200-220HP	6	160	960
4	Wheel type Hyd. Excavator	150HP	1	180	180
5	Vibration Roller	10t	3	150	450
6	Vibration Roller	9.5t	4	150	600
7	Dump Truck	9m ³ , 6x4	16	90	1,440
8	Water Tanker Truck	12,000 Ltr	6	60	360
9	Fuel Tanker Truck	16,000 Ltr	1	60	60
10	Fuel Tanker Truck	8,000 Ltr	2	30	60
11	Asphalt Distributor	6,000 Ltr	2	60	120
12	Asphalt Boiler	6,000 Ltr/h	1	60	60
13	Chip Spreader	4m	2	120	240
14	Low Bed Trailer Tractor	4 0t, 8m	1	90	90
15	Pick-up Truck	4x4	4	20	80
16	Mobile Rock Crusher	120 t/h	1	290	290
17	Crawler type Hyd. Excavator	150HP	1	240	240
18	Air Compressor	7.5m ³ /min	2	60	120
19	Wagon Drill	5t	1	0	0
20	Air Compressor	20m ³ /min	1	180	180
21	Repair Tool Kit		1	0	0
22	Truck Crane	25t	1	120	120
23	Lubrication Truck	4 x 4	2	60	120
24	Generator	100kVA	1	150	150
25	Generator	30kVA	1	60	60
		Total	70		8,260

Fuel Cost = 8,260 × 200 × 1.8 = 2,973,600 Birr

Oil Cost = 2,973,600 × 1% = 29,736 Birr

Total Fuel & Oil Cost : 3,003,336 Birr (approx. US\$417,130; 1\$=7.2 Birr)

Condition of Estimation

1. Fuel price/ℓ 1.8 Birr
2. Working hour/year 200 days
3. Fuel consumption rate ℓ/unit•day 1) Const. Equip.; 60% of Fuel tank capacity
2) Vehicle Equip.; 30% of Fuel tank capacity
4. Oil 1% of Fuel costs

Table 3.2 Maintenance Cost Estimation

No.	Equipment	Main Spec.	Unit	Maint. Cost Yen/Unit Year	Maint. Cost Million Yen
1	Motor Grader	200-220HP	5	0.051	5.10
2	Bulldozer	220-235HP	4	0.077	9.12
3	Wheel Loader	200-220HP	6	0.066	9.03
4	Wheel type Hyd. Excavator	150HP	1	0.057	1.14
5	Vibration Roller	10t	3	0.056	2.28
6	Vibration Roller	9.5t	4	0.056	3.56
7	Dump Truck	9m3, 6x4	16	0.083	0.56
8	Water Tanker Truck	12,000 Ltr	6	0.067	3.54
9	Fuel Tanker Truck	16,000 Ltr	1	0.067	0.59
10	Fuel Tanker Truck	8,000 Ltr	2	0.067	0.75
11	Asphalt Distributor	6,000 Ltr	2	0.057	1.55
12	Asphalt Boiler	6,000 Ltr/h	1	0.037	0.36
13	Chip Spreader	4m	2	0.057	1.37
14	Low Bed Trailer Tractor	4 0t, 8m	1	0.080	1.28
15	Pick-up Truck	4x4	4	0.080	0.56
16	Mobile Rock Crusher	120 t/h	1	0.250	18.00
17	Crawler type Hyd. Excavator	150HP	1	0.057	1.30
18	Air Compressor	7.5m ³ /min	2	0.057	0.27
19	Wagon Drill	5t	1	0.070	0.70
20	Air Compressor	20m ³ /min	1	0.057	0.32
21	Repair Tool Kit		1	0	0
22	Truck Crane	25t	1	0.030	0.48
23	Lubrication Truck	4 x 4	2	0.067	1.93
24	Generator	100kVA	1	0.057	0.18
25	Generator	30kVA	1	0.057	0.09
		Total	70		73.15

The maintenance cost for the equipment to be supplied under the Project is estimated at approximately 73.0 million yen/year including all kinds of expense, in accordance with the standard Japanese maintenance cost estimation.

The spare parts cost is assumed about 30%, i.e. 32.8 million yen/year (approx. 0.283 million US\$), of which spare parts needed for the first few years will be supplied under the Project (around 8% of equipment cost), so that spare parts except special parts will not be required. On the other hand, operating costs will be financed by recurrent budget of the Central Workshop/Road Department. In conclusion, the increased maintenance cost borne by the supplied equipment can be sufficiently covered by the Central Workshop recurrent budget.

CHAPTER 4
PROJECT EVALUATION AND
RECOMMENDATION

Chapter 4. Project Evaluation and Recommendation

4.1 Project Effect

The road network in Eritrea has seriously deteriorated during the war due to destruction and lack of appropriate maintenance. Soon after independence, the Government has implemented an infrastructure recovery program and placed the highest priority on the rehabilitation of the existing road network. Now, the Massawa - Asmara road and some limited sections of important trunk roads were rehabilitated and restored to a stable condition.

The targetted Mendefera - Barentu road 200 km long, forms a principal section of the east-west corridor (southern route). The road traverses Seraye, Gash - Setit regions, which produce 60% and 30% of cereal and livestock products of the country, respectively, and have the high potentiality for agricultural development. For this reason, the Government is proceeding with a settlement program for 500,000 returned refugees along this road. On the other hand there is no reliable access to Sudan at present.

The rehabilitation project of this road was implemented in 1994 financed by the Government's own fund on force account basis. Of a total of 200 km, approximately 100 km of base course has been completed to date. The Government has allocated considerable resources to this project, e.g. intensive labor from National Service, intending to complete the project by the year 2000. However, due to lack of appropriate construction equipment, progress is seriously hindered.

The remaining works which will be covered by the equipment to be supplied under the Project are summarized as follows:

Phase 1 works from Lay-lam to Barentu (100 km):	Earthwork, bridge/structure works
Phase 2 works from Mendefera to Barentu (200 km):	Base course, DBST surface course works

Necessary construction equipment for the above is: bulldozer, wheel loader, motor grader for earthwork; crawler drill, rock crusher for aggregates production; asphalt distributor, chip spreader for DBST surface. The equipment enable the Road Department, Ministry of Construction to accelerate the works, thus complete the project by 2002.

Regarding the indirect effects of the Project, the following are expected.

- To stimulate economic activities by providing reliable road facilities, thus saving transport cost.
- To realize price stability by saving distribution cost.

- To facilitate the access of the rural population to social services such as medical, education, etc. services.
- To promote settlement in rural areas.

The present situation and problems of the road sub-sector, the measures to be taken under the Project and the positive impacts and extent of the Project are summarised in the following Table.

Table 4.1 Project Evaluation

Present Situation	Measures to be taken under the Project	Positive impacts and extent of the Project
<ol style="list-style-type: none"> 1) A total of 6,000 km of the classified road network has seriously deteriorated during the war due to destruction and lack of an appropriate maintenance, now hinder even transport for basic goods and passenger. 2) A half of the targetted Mendefera-Barentu road (approximately 100 km) is only passageway for vehicles during dry period, which is cut off in every rainy seasons. 3) The Project was implemented in 1994 financed by the Government own fund on force account basis. The Government has allocated considerable resources to this project intending to complete it by the year of 2000. However, due to lack of appropriate equipment progress is seriously hindered. 4) The area possesses high potentiality of agricultural development is envisaged for settlement of returned refugees from neighbouring countries. The rehabilitation of this road as all-weathered road is indispensable to succeed the settlement program. 5) There is no reliable access from Massawa sea port to Sudan via Asmara. 6) The rehabilitated roads are not properly maintained due to lack of maintenance equipment. 	<ol style="list-style-type: none"> 1) Provide necessary construction equipment to accelerate the progress and to complete the on-going Mendefera-Barentu road rehabilitation project (200 km) by the year of 2002, which is given the highest priority by the Government. 	<ol style="list-style-type: none"> 1) To enable the Government to complete the Mendefera-Barentu road rehabilitation project, i.e. to complete the whole section with DBST surface by the year 2002. 2) To improve the present driving speed at 20-30 km/h to 50-60 km/h, which induces operation cost savings and time savings, consequently transportation costs. Also, enable stable traffic flow through out the year. 3) To accelerate the settlement program for 500,000 refugees by reclaiming fertile lands along the project road. 4) To provide reliable access for agricultural products from farm to the domestic and international markets, which stimulates cultivation of cash crops. 5) To provide reliable access to the social services and to resolve regional disparities, consequently to contribute social stability. 6) To secure continuous maintenance of the whole roads using the supplied equipment after completion of rehabilitation.

4.2 Recommendation

As described above, significant positive effect is expected from the Project. The Project also contributes to the upgrading of the basic human needs of the residents. Regarding management of the Project, the Eritrea side has sufficient capabilities for its execution. Accordingly, it will be justified to implement the Project by Japan's Grant Aid Assistance.

However, if the following recommendation points are carried out or improved, the Project will be implemented more smoothly and effectively.

- (1) To execute the works based on detailed design for effective work.
- (2) To provide training for technicians, foremen, mechanics for effective execution and supervision of work.
- (3) To establish computerized inventory control system at the Central Workshop for effective operation and maintenance of equipment.
- (4) To secure 100% operation of the equipment by providing sufficient budget to carry out proper equipment maintenance.
- (5) To upgrade capability on equipment maintenance/repair of Central and Regional Workshop and also private garage/workshops.

APPENDICES

Appendices

- Appendix 1 Member List of the Survey Team**
- Appendix 2 Survey Schedule**
- Appendix 3 List of Party Concerned in Eritrea**
- Appendix 4 Minutes of Discussions**
- Appendix 5 Cost Estimation Borne by the Eritrean Side**

Appendix 1 : Member List of the Survey Team**Basic Design Study**

Mr. MATSUDA Norio	Team Leader	Director of Coordination and Appraisal Division, Grant Aid Project Study Department, JICA
Mr. TERASHIMA Fumio	Coordinator	Second Project Study Division, Grant Aid Project Study Department, JICA
Mr. NAKAMURA Kenzo	Chief Consultant / Road Construction Planner	Construction Project Consultants, Inc.
Mr. YOSHINO Tsuneo	Equipment Planner	Construction Project Consultants, Inc.
Mr. SHINADA Tamio	Cost Estimator / Procurement Surveyor	Construction Project Consultants, Inc.

Basic Design Study Draft Final Report Explanatory Survey

Mr. UEGAKI Motoyuki	Team Leader	Third Contract Division, Procurement Department, JICA
Mr. NAKAMURA Kenzo	Chief Consultant / Road Construction Planner	Construction Project Consultants, Inc.

Appendix 2 : Survey Schedule

Basic Design Study

No.	Date		Activities
1	April 8	Tue.	Arrival
2	9	Wed.	AM:Kickoff meeting with Road Dept. (RD) of Ministry of Construction PM:Survey of the central workshop in Asmara Site survey of the target road between Mendefera and Barentu
3	10	Thu.	AM:Meeting with RD
4	11	Fri.	PM:Survey of the quarry plant, and Visit to other donors' office
5	12	Sat.	Inter team meeting
6	13	Sun.	Inter team meeting
7	14	Mon.	AM:Discussion on Minutes of Discussions PM:Signing of Minutes of Discussions
8	15	Tue.	Site survey
9	16	Wed.	Government members (Mr.Matsuda and Mr.Terashima) departure for Ethiopia [Report to EOJ and JICA in Addis Ababa] Consultants continue site survey
10	17	Thu.	Site survey
11	18	Fri.	Ditto
12	19	Sat.	Ditto
13	20	Sun.	Ditto
14	21	Mon.	Ditto
15	22	Tue.	Ditto
16	23	Wed.	Ditto
17	24	Thu.	Ditto
18	25	Fri.	Ditto
19	26	Sat.	Ditto
20	27	Sun.	Ditto
21	28	Mon.	Mr.Yoshino & Mr.Shinada departure for Italy [Procurement survey] Mr.Nakamura continues site survey
22	29	Tue.	Site survey
23	30	Wed.	Ditto
24	May 1	Thu.	Mr.Nakamura departure for Ethiopia [Report to EOJ and JICA in Addis Ababa]

Basic Design Study Draft Final Report Explanatory Survey

No.	Date		Activities
1	June 3	Tue.	Arrival
2	4	Wed.	Explanation of Draft Final Report to Road Dept. (RD) of Ministry of Construction
3	5	Thu.	Explanation of Draft Final Report to RD
4	6	Fri.	Explanation of Draft Final Report to RD
5	7	Sat.	Site survey
6	8	Sun.	Site survey
7	9	Mon.	Explanation of Draft Final Report to RD
8	10	Tue.	Discussion on Minutes of Discussions with RD
9	11	Wed.	Discussion on Minutes of Discussions with Rd & Macro-Policy
10	12	Thu.	Signing of Minutes of Discussions
11	13	Fri.	Departure for Ethiopia [Report to EOJ and JICA in Addis Ababa]

Appendix 3 : List of Party Concerned in Eritrea

1. Government

BERHANE ABREHE	Head, Macro-Policy & International Economic Cooperation
EPHREM TESFAI	In Charge of Asia, Macro-Policy & International Economic Cooperation
ABRAHA ASFAHA	Minister, Ministry of Construction
EYOB GHIRME	Head of Road Department (RD)
TECLEBERHAN G. YESUS	Head of Operations, RD
TESFAI SEYOUM	Head of Technical & Training, RD
SOLOMON ASFAHA	Head of Inspection & Supervision, RD
KIDANE BERHANE	Head of Engineering Division, RD

2. JICA Expert

INOUE Tsuyoshi	Equipment Expert for Road Department
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3. Others

GUY JONIAUX	EU Adviser for Ministry of Construction
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**MINUTES OF DISCUSSIONS
BASIC DESIGN STUDY ON
THE EQUIPMENT SUPPLY PROGRAM FOR
ROAD IMPROVEMENT PROJECT
IN THE STATE OF ERITREA**

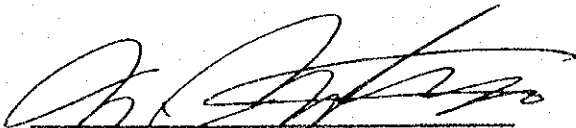
In response to the request from the Government of the State of Eritrea, the Government of Japan decided to conduct a basic design study on the Equipment Supply Program for Road Improvement Project in the State of Eritrea and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Eritrea a basic design study team (hereinafter referred to as "the Study Team"), headed by Mr. MATSUDA Norio, Director of Coordination and Appraisal Division, Grant Aid Project Study Department, JICA, and scheduled to stay in Eritrea from April 8 to May 1, 1997.

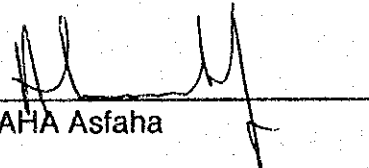
The Study Team held a series of discussions with the officials concerned of the Government of Eritrea and conducted field surveys at the study areas.

Through the discussions and field surveys, both parties have confirmed several important points described in the attached sheets. The Study Team will proceed to further works in Eritrea and Japan and prepare the Basic Design Study Report.

Asmara, April 14, 1997



Mr. MATSUDA Norio
Leader,
Basic Design Study Team,
JICA



Mr. ABRAHA Asfaha
Minister,
Ministry of Construction,
The State of Eritrea

ATTACHMENT

1. Objective

The objective of the program is to provide appropriate road construction and maintenance equipment which is necessary for improving the road between Mendefera and Barentu.

2. Responsible Organization and Implementing Agency

Responsible Organization : Ministry of Construction

Implementing Agency : Road Department

3. Project Site

The project site is shown in ANNEX-1.

4. Major Items Requested by the Government of Eritrea

After a series of discussions, the items listed in ANNEX-2 are finally requested by the Government of Eritrea.

However, the final items, quantity and specifications covered under the program will be subject to further studies.

5. Management and Maintenance

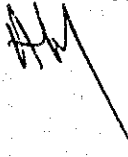
Road Department will maintain and use the equipment purchased under the Grant Aid properly and effectively, and to assign the necessary staff members for operation and maintenance of them as well as to bear all the expenses other than those to be borne by the Grant Aid.

6. Japan's Grant Aid System

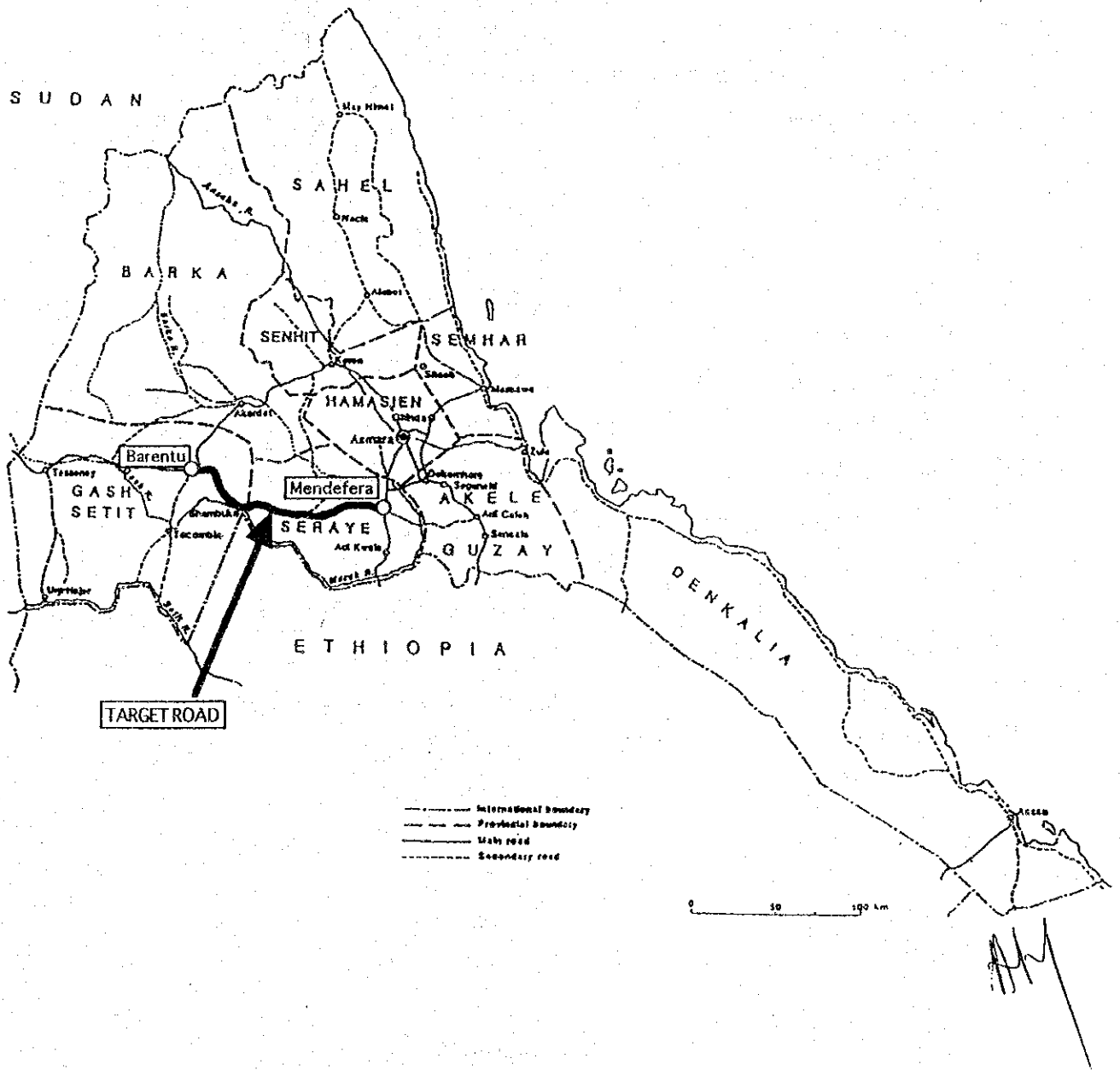
- 1) The Government of Eritrea has understood the system of the Japan's Grant Aid explained by the Study Team; the main feature is described in ANNEX-3.
- 2) The Government of Eritrea will take the necessary measures, described in ANNEX-4 for the smooth implementation of the program on condition that the Grant Aid by the Government of Japan is extended to the program.
- 3) The Government of Eritrea will take action on extending the period of the Grant Aid, if necessary.

7. Further Schedule of the Study

- 1) The Study Team will proceed to further studies in Eritrea until May 1, 1997.
- 2) Based on the results of the Basic Design Study, JICA will prepare the Draft Basic Design of the program and dispatch a team at the end of May 1997 in order to consult with the Government of Eritrea on outline of the Draft Basic Design.
- 3) Upon acceptance of the Draft Basic Design by the Government of Eritrea, JICA will complete the Basic Design Study Report and forward it to the Government of Eritrea around July, 1997.



ANNEX-1: PROJECT SITE



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ANNEX-2: ITEMS FINALLY REQUESTED BY THE GOVERNMENT OF ERITREA

No.	Equipment	Specifications
1	Motor Grader	200-220 HP, Steel Cab
2	Bulldozer	220-235 HP, Ripper, ROPS Cab
3	Wheel Loader	200-220 HP, 3.5m ³ Bucket, Steel Cab
4	Wheel type Hyd. Excavator	100HP Class, 0.7m ³ Bucket
5	Vibration Roller	8t class, F Smooth Drum, Sprinkler
6	Vibration Roller	10t class, F&R Smooth Drum, Sprinkler
7	Dump Truck	9m ³ , 6x4
8	Water Tanker Truck	12,000 lit.
9	Fuel Tanker Truck	18,000 lit.
10	Fuel Tanker Truck	8,000 lit.
11	Asphalt Distributor	6,000 lit.
12	Asphalt Boiler	6,000 lit., 16,000 lit. Store Capacity
13	Chip Spreader	4m width, Self-propelled
14	Low Bed Trailer Tractor	30t, 8m bed
15	Pick-up Truck	4x4, Double Cab
16	Mobil Rock Crusher	120t/h, 40-25-19-10-5 mm Screen
17	Crawler type Hyd. Excavator	150HP Class, 1.0m ³ bucket, Hyd. Breaker
18	Air Compressor	5.0m ³ /min, 3 set of Jack Hammer
19	Wagon Drill	4.5t, 65-90 mm dia.
20	Air Compressor	17m ³ , for Wagon Drill
21	Heavy Duty Tool Set	for maintenance of equipment
22	Truck Crane	25t
23	Lubrication Truck	6t Class, 4x2
24	Generator	100kVA
25	Generator	20kVA
26	Spare Parts	for above equipment

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ANNEX-3: JAPAN'S GRANT AID SCHEME

1. Grant Aid Procedure

- 1) Japan's Grant Aid Program is executed through the following procedures.

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan & Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

- 2) Firstly, the application or request for a Grant Aid Program submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using Japanese consulting firms.

Thirdly, the Government of Japan appraises the program to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA and the results are then submitted to the Cabinet for approval.

Fourth, the program, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Government of Japan and the recipient country.

Finally, for the implementation of the program, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

- 1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on the requested program (hereinafter referred to as "the Program"), is to provide a basic document necessary for the appraisal of the Program by the Government of Japan. The contents of the Study are as follows:

- a) confirmation of the background, objectives and benefits of the Program and also institutional capacity of agencies concerned of the recipient country necessary for the Program's implementation;
- b) evaluation of the appropriateness of the Program to be implemented under the Grant Aid Scheme from the technical, social and economic points of view;

- c) confirmation of items agreed on by both parties concerning the basic concept of the Program;
- d) preparation of a basic design of the Program; and
- e) estimation of costs of the Program.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid Program. The Basic Design of the Program is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Program. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Program. Therefore, the implementation of the Program is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For the smooth implementation of the Study, JICA uses a consulting firm selected through its own procedure (competitive proposal). The selected firm participate the Study and prepare a report based upon the terms of reference set by JICA.

At the beginning of implementation after the Exchange of Notes, for the services of the Detailed Design and Construction Supervision of the Program, JICA recommends the same consulting firm which participated in the Study to the recipient country, in order to maintain the technical consistency between the Basic Design and Detailed Design as well as to avoid any undue delay caused by the selection of a new consulting firm.

3. Japan's Grant Aid Scheme

1) What is Grant Aid?

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Program, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

3) "The period of the Grant" means the one fiscal year which the Cabinet approves

the Program for. Within the fiscal year, all procedure such as exchanging of the Notes, concluding contracts with consulting firms and contractors and final payment to them must be completed.

However, in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

- 4) Under the Grant, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However, the prime contractors, namely consulting, contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

- 5) Necessity of "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability of Japanese taxpayers.

- 6) Undertakings required to the Government of the recipient country

- a) to secure a lot of land necessary for the construction of the Program and to clear the site;
- b) to provide facilities for distribution of electricity, water supply, drainage and other incidental facilities outside the site;
- c) to ensure prompt unloading, tax exemption and customs clearance at ports of disembarkation in the recipient country and internal transportation therein of the products purchased under the Grant Aid.
- d) to exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts.
- e) to accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contracts such as facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.
- f) to ensure that the facilities constructed and products purchased under the Grant Aid be maintained and used properly and effectively for the Program;
and

g) to bear all the expenses other than those covered by the Grant Aid, necessary for the Program.

7) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign the necessary staff for operation and maintenance of them as well as to bear all the expenses other than those covered by the Grant Aid.

8) "Re-export"

The products purchased under the Grant Aid shall not re-exported from the recipient country.

9) Banking Arrangement (B/A)

- a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the verified contracts.
- b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of recipient country or its designated authority.

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ANNEX-4: NECESSARY MEASURES TO BE TAKEN BY THE GOVERNMENT OF ERITREA

The following necessary measures should be taken by the Government of Eritrea on condition that the Grant Aid by the Government of Japan is extended to the Program.

1. To ensure prompt unloading, tax exemption and customs clearance at ports of disembarkation in Eritrea and internal transportation from Asmara to the Project site of the products purchased under the Grant Aid.
2. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Eritrea with respect to the supply of the products and services under the Verified Contracts.
3. To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts such facilities as may be necessary for their entry into Eritrea and stay therein for the performance of their work.
4. To maintain and use equipment procured under the Grant Aid properly and effectively for the Program.
5. To bear commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement, namely the advising commission of the "Authorization to Pay" and payment commissions.
6. To bear all the expenses, other than those covered by the Grant Aid, necessary for the Program.

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MINUTES OF DISCUSSIONS

BASIC DESIGN STUDY ON THE EQUIPMENT SUPPLY PROGRAM FOR ROAD IMPROVEMENT PROJECT IN THE STATE OF ERITREA (Consultation on the Draft Basic Design)

The Japan international Cooperation Agency (JICA) has dispatched a basic design study team on the Equipment Supply Program for Road Improvement Project (hereinafter referred to as "the Program") to the State of Eritrea in April 1997. As a results of the series of discussions, field survey in Eritrea, and technical examination of the results in Japan, JICA prepared the Draft Basic Design of the Program.

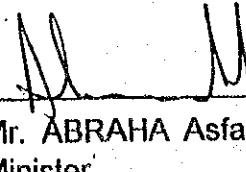
To inform the Eritrean side with the components of the Draft Basic Design, JICA sent to Eritrea a study team headed by Mr. UEGAKI Motoyuki, JICA. The team is scheduled to stay in Eritrea from June 3 to 13, 1997.

As results of discussions, both sides have confirmed the main items, quantity and specifications described on the attached sheets. The team will proceed to further works and finalize the Basic Design Study Report.

Asmara, June 12, 1997

上垣素行

Mr. UEGAKI Motoyuki
Leader,
Draft Basic Design Explanation Team,
JICA



Mr. ABRAHA Asfaha
Minister,
Ministry of Construction
The State of Eritrea

ATTACHMENT

1. Components of the Draft Basic Design

The Government of Eritrea has in principle accepted the components of the Draft Basic Design proposed by the team as described in ANNEX-1, which will be incorporated into the Basic Design Study Report.

2. Responsible Organization and Implementing Agency

Responsible Ministry : Ministry of Construction

Implementing Agency : Road Department

3. Management and Maintenance

Road Department will maintain and use the equipment purchased under the Grant Aid properly and to assign the necessary staff members for operation and maintenance of them as well as to bear all the expense other than those to be borne by the Grant Aid.

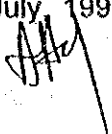
4. Japan's Grant Aid System

- 1) The Government of Eritrea has understood the system of the Japan's Grant Aid explained by the team; the main feature is described in ANNEX-2.
- 2) The Government of Eritrea will take the necessary measures, described in ANNEX-3 for the smooth implementation of the program on condition that the Grant Aid by the Government of Japan is extended to the program.
- 3) The Government of Eritrea will take action on extending the period of the Grant Aid, if necessary.

5. Further Schedule of the Study

JICA will complete the Basic Design Study Report in accordance with the confirmed items, and forward it in its final form to the Government of Eritrea around July, 1997.

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ANNEX - 1 : COMPONENTS OF THE DRAFT BASIC DESIGN

No.	Equipment	Specifications	Quantity
1.	Motor Grader	200-220 HP, Steel Cab.	5
2.	Bulldozer	220-235 HP, Ripper, ROPS Cab.	4
3.	Wheel Loader	200-220 HP, 3.5 cu.m. Bucket, Steel Cab.	6
4.	Wheel Type Hyd. Excavator	150 HP Class, 0.7 cu.m. Bucket	1
5.	Vibration Roller	10 t Class, F. Smooth Drum, Sprinkler	3
6.	Vibration Roller	9.5 t Class, F. & R. Smooth Drum, Sprinkler	4
7.	Dump Truck	9.0 cu.m., 6x4	16
8.	Water Tank Truck	12,000 lit.	6
9.	Fuel Tank Truck	16,000 lit.	1
10.	Fuel Tank Truck	8,000 lit.	2
11.	Asphalt Distributor	6,000 lit.	2
12.	Asphalt Boiler	6,000 lit/h, 16,000 lit. Store Capacity	1
13.	Chip Spreader	4 m width, Self-propelled	2
14.	Low Bed Trailer Tractor	40 t, 8 m bed	1
15.	Pick-up Truck	4 x 4, Double Cab.	4
16.	Mobile Rock Crusher	120 t/h, 40-25-19-10-5 mm screen	1
17.	Crawler type Hyd. Excavator	150 HP Class, 1.0 cu.m Bucket, Hyd. Breaker	1
18.	Air Compressor	7.5 cu.m/min, 3 set of Jack Hammer	2
19.	Wagon Drill	5 t, 65-90 mm dia.	1
20.	Air Compressor	20 cu.m/min, for Wagon Drill	1
21.	Repair Tool Set	for maintenance of equipment	1
22.	Truck Crane	25 t	1
23.	Lubrication Truck	6 t Class, 4 x 4	2
24.	Generator	100 KV	1
25.	Generator	30 KVA	1
26.	Spare Parts	for above equipment	8 %

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ANNEX - 2 : JAPAN'S GRANT AID SCHEME

1. Grant Aid Procedure

1) Japan's Grant Aid Program is executed through the following procedures.

Application Study	(Request made by a recipient country)
Appraisal & Approval	(Basic Design Study conducted by JICA)
Determination of Implementation	(Appraisal by the Government of Japan & Approval by Cabinet)
	(The Notes exchanged between the Government of Japan and the recipient country)

2) Firstly, the application or request for a Grant Aid Program submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using Japanese consulting firms.

Thirdly, the Government of Japan appraise the program to see whether or not it is suitable for Japan's Grant aid Program, based on the Basic Design Study report prepared by JICA and the results are then submitted to the Cabinet for approval.

Fourth, the Program, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Government of Japan and the recipient country.

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The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability of Japanese taxpayers.

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- a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the verified contracts.
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Appendix 5. Cost Estimation Borne by the Eritrean Side

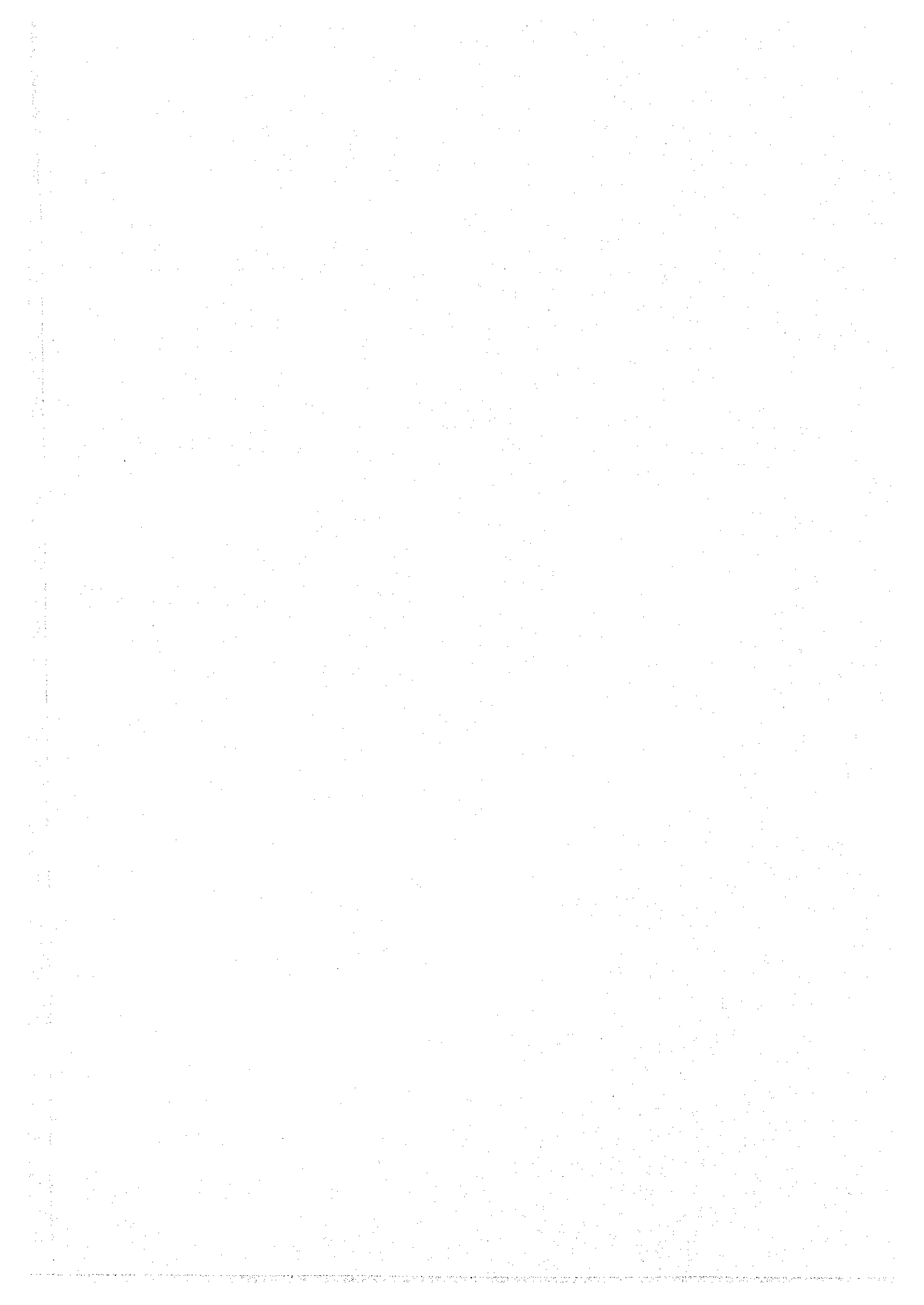
According to the Road Department the fund allocated to the Mendefera-Barentu road improvement project since its implementation is Birr 93,909,241. Applying the same unit price of work, the fund required for the completion of Phase 2 is estimated about Birr 6,200 million including engineering cost.

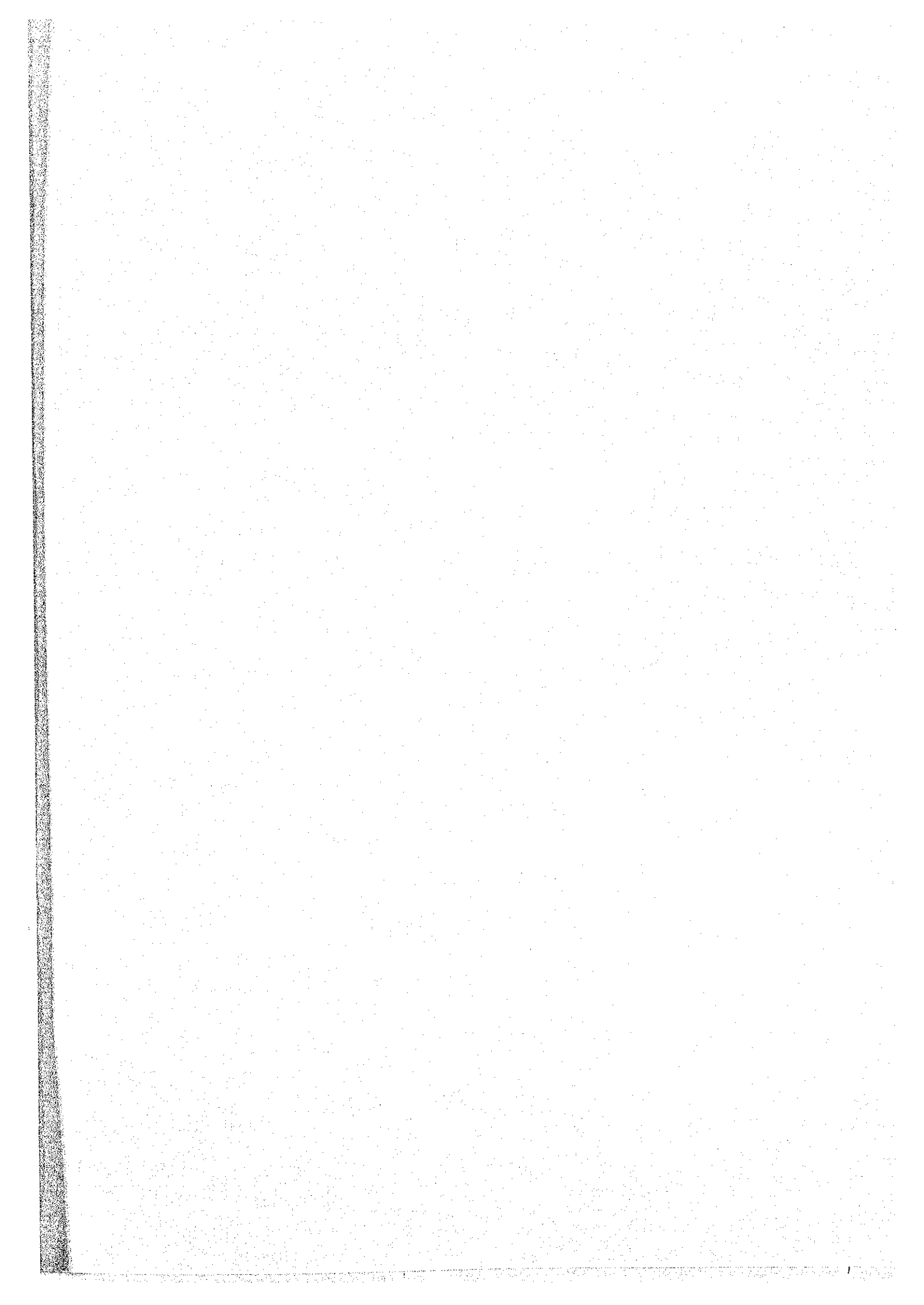
Assuming that 25% to 30% of the above required fund can be saved by the equipment supply under the Project about Birr 4,500 million will be required.

Construction cost estimate is shown in the following Table:

Estimation of Construction Costs

Item	Work Category	Unit	Quantity	Unit Price Birr	Amount Birr
1.	Clearing	m ²	1,500,000	5	7,500,000
	(Stripping)	m ³	300,000		
2.	Road Cutting				
	– General soil	m ³	780,000	35	27,300,000
	– Rock	m ³	195,000	45	8,775,000
3.	Road Filling				
	– Filling from cutting	m ³	600,000	60	36,000,000
	– Filling from borrow	m ³	350,000	60	21,000,000
4.	Subgrade Preparation	m ²	1,090,000		
5.	Subbase Course	m ³	–	50	–
6.	Base Course	m ³	313,500	203	63,653,040
7.	Surface Course				
	– Prime Coat	kg	1,890,000	12	21,942,900
	– AC (Base layer)	m ³	–		–
	– Tackcoat	kg	–		–
	– AC (Wearing layer)	m ³	–		–
	– DBST	m ²	1,400,000	36	50,400,000
8.	Concrete Structure				
	– Plain concrete	m ³	3,500	1,000	3,500,000
	– Boxculvert	m ³	14,000	1,900	26,600,000
	– Bridge	m ³	3,000	1,900	5,700,000
9.	Retaining Wall (Masonry)	m ³	99,700	250	24,925,000
10.	Filter	m ²	25,000	45	1,125,000
11.	Ditch Lining	m ²	300,000	130	38,880,000
12.	Guardrail	m	20,000	900	18,000,000
13.	Road Marking	m ²	80,000	40	3,168,000
14.	Traffic Sign	Unit	400	900	360,000
	Sub Total				358,828,940
	Engineering (15%)				53,824,341
	Total				412,653,281





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