Appendices

- 1. Member List of the Survey Team
- 2. Survey Schedule
- 3. List of Party Concerned in Tanzania
- 4. Minutes of Discussion
- 5. Study Data

1. Member List of the Survey Team

Mr. Shoshiro HORIGOME	Team Leader	Development Specialist, JICA				
Mr. Atsushi NAKAGAWA	Coordinator	Staff of Grant Aid Project Study Department, JICA				
Mr. Akihiko HIROTANI	Chief Consultant /	Executive Director,				
	Road Planner	Oriental Consultants Co., Ltd.				
Mr. Kenji NAGASAKI	Bridge Designer	Director,				
		Construction Project Consultants Inc.				
Mr. Masami FUKUDA	Natural Conditions	Project Director,				
	Surveyor	Oriental Consultants Co., Ltd.				
Mr. Keigo KONNO	Construction Planner /	Director,				
	Cost Estimator	Oriental Consultants Co., Ltd.				

2. Survey Schedule

No	Date	Day	Accommodation	Activitie	s
1	8/8	Thu.	On plane	Tokyo-Amsterdam	JLA11 (11:30-16:45)
4	Ļ	J		Amsterdam-Dar Es Salaam	KL567 (23:40-11:30) +1
				Join the officials at Dar Es Salaam (2 const	ultants: Hirotani, Fukuda)
2	8/9	Fri.	Dar Es	Meeting at JICA Office, Courtesy call at	authorities concerned (Ministry of
			Salaam	Works and Embassy of Japan)	
3	8/10	Sat.	Mtwara	Site survey (2 officials: Horigome, Nak	agawa +2 consultants: Hirotani,
Ļ	ļį	Ļ		Fukuda)	
4	8/11	Sun.			
5	8/12	Mon.	Dar Es	Meeting concerning the Inception Report (2 officials: Horigome, Nakagawa
			Salaam	+2 consultants: Hirotani, Fukuda)	2
6	8/13	Tue.	Dar Es	Signing of Minutes of Discussion, Courtes	y call to Embassy of Japan
			Salaam	(2 officials: Horigome, Nakagawa +2 const	
			On plane	Dar Es Salaam-Amsterdam	KL569 (23:45-08:05) +1
				(2 officials: Horigome, Nakagawa)	
			Dar Es	Continue Investigation (2 consultants: Hire	rtani Eukuda)
			Salaam	Continue investigation (2 consultants, infe	Jani, Fukuda)
7	8/14	Wed.	Amsterdam	(2 officials: Horigome, Nakagawa)	
1	0,14	, wear	Allacidani	(2 officials: Horigoine, Nakagawa)	
			On plane	Dar Es Salaam-London	BA068 (19:45-05:15)+1
			- Prairie	(1 consultant: Hirotani)	
8	8/15	Thu.	On plane	Amsterdam-Tokyo	JL412 (14:30-09:05) +1
				(2 officials: Horigome, Nakagawa)	
			On plane	London-Tokyo	JL402 (19:45-15:25) +1
	ł			(1 consultant: Hirotani)	``````````````````````````````````````

9	8/16	Fri.	Zurich	Tokyo-Zurich	SR169 (11:55-17:40)
				(2 consultants: Nagasaki, Konno)	
10	8/17	Sat.	On Plane	Zurich-Dar Es Salaam	SR292 (20:40-07:20) +1
				(2 consultants: Nagasaki, Konno)	
11	8/18	Sun.	Dar Es	Charter Flight from Dar Es Salaam to Survey S	Site
			Salaam	(2 consultants: Nagasaki, Konno)	
			Ļ		
			Mtwara	To Survey site(1 consultant: Fukuda)	
12	8/19	Mon.	Mtwara	Site Survey (3 consultants: Nagasaki, Fukuda,	Konno)
ļ	ļ	ļ]↓		
14	8/21	Wed.	Dar Es	Charter Flight from Survey Site to Dar Es Sala	am
	0, ===		Salaam	(3 consultants: Nagasaki, Fukuda, Konno)	
15	8/22	Thu.	Dar Es	Meeting at JICA Office, Courtesy call at Japan	Embassy and other authorities
			Salaam	concerned (Ministry of Works)	
	1			(3 consultants: Nagasaki, Fukuda, Konno)	
16	8/23	Fri.	Dar Es	Continue Investigation	
Ĵ	1	Ļ	Salaam	(3 consultants: Nagasaki, Fukuda, Konno)	
•			J.		
18	8/25	Sun.		Tokyo-London	NH201 (11:35-15:55)
				London-Dar Es Salaam	BA069 (22:25-11:35) +1
				(1 consultant: Hirotani)	
19	8/26	Mon.	Dar Es	Continue Investigation	
Ļ	↓	ļļ	Salaam	(4 consultants: Hirotani, Nagasaki, Fukuda, K	onno)
			Ļ		
28	9/4	Wed.		Meeting at JICA Office, Courtesy call at Japan	n Embassy and other authorities
				concerned (Ministry of Works)	
			1	(4 consultants: Hirotani, Nagasaki, Fukuda, K	lonno)
					BA068 (19:45-05:15) +1
			On plane	Dar Es Salaam-London	NH202(18:00-13:40) +1
				London-Tokyo	(11202(10.00 10/10) 14
	1			(1 consultant: Hirotani)	
			Dar Es	Close Office	
	1		Salaam	(3 consultants: Nagasaki, Fukuda, Konno)	
29	9/5	 Thu.	Zurich	Dar Es Salaam-Zurich	SR293 (09:00-18:05)
29		1 110.	Zunen	(3 consultants: Nagasaki, Fukuda, Konno)	
30	9/6	Fri.	On plane	Zurich-Tokyo	SR168 (12:50-07:40) +1
30	1 2/0	1,11,	on phane	(3 consultants: Nagasaki, Fukuda, Konno)	- · · · · ·
1	9/7	Sai.	1	Arrive at Tokyo	

3. List of Party Concerned in Tanzania

No. Name		Name		Position
	1.	Mr. H.G.Urio	:	Director of Roads
	2.	Dr. P.F.Komba	:	Chief Engineer, Rural Roads Acting Director
	3.	Mr. J.L.Ngumbulu	:	Chief Engineer, Trunk Roads
	4.	Mr. D.J. Mariki	:	Chief Engineer, Design
	5.	Mr. J.Ndyamukama	:	Senior Engineer, Maintenance, Trunk Roads
	6.	Mr. P.A.L. Mfugale	:	Senior engineer, Bridges
	7.	Mr. J.A.Kirway	, ,	Maintenance Management Engineer, Trunk Roads
	8.	Mr. C.R. Massawe	•	Bridge Unit Engineer
	9.	Mr. Issa Mlyomi	:	Engineer, Design
	10.	Mr. B.V. Katabwa	:	Regional Engineer, Mtwara
	11.	Mr. E.S.B. Ntagwabira	:	Regional Engineer, Lindi
	12.	Mr. T.Manai	:	JICA Expert in MoW
	13.	Mr. H. Kato	:	JICA Expert in MoW

MINUTES OF DISCUSSIONS ON THE BASIC DESIGN STUDY ON THE PROJECT FOR THE BRIDGE IMPROVEMENT ON TRUNK ROAD IN THE UNITED REPUBLIC OF TANZANIA

In response to the request from the Government of the United Republic of Tanzania, the Government of Japan decided to conduct the Basic Design Study on the Project for the Bridge Improvement on Trunk Road in Tanzania (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA")

JICA sent to Tanzania the Basic Design Study Team (hereinafter referred to as "the Study Team"), which is headed by Mr. HORIGOME Shoshiro, Development Specialist, JICA, and the Study Team is scheduled to stay in the country from August 1 to September 5, 1996.

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

In the course of discussions and field surveys, both parties confirmed the main items described on the attached sheets. The Study Team will proceed to further works and prepare the Basic Design Study Report.

Mr. HORIGOME Shoshiro Leader, Basic Design Study Team, JICA

Dar es Salaam, August 13, 1996

Ampassador Abdi H. Mshangama Principal Secretary, Ministry of Works

Mr. Emmanuel M . Masanjá Commissioner, External Finance & Debt Management, Ministry of Finance

4. Minutes of Discussion (Study Nission)

ATTACHMENT

1. Objective

This Project aims at rehabilitating some bridges on trunk road in Mtwara and Lindi Regions to provide stable road transport in the area and to contribute toward the enhancement of the nation's economy.

2. Responsible Organization and Implementing Agency

The responsible Ministry is the Ministry of Works (MOW). The implementing Agency is the Department of Roads, MOW.

3. Project Site

The Project site is shown in ANNEX-1.

4. Major Items Requested by the Government of Tanzania

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

The Project bridge, approximately three, for the Basic Design will be decided in Japan after the study team brings back the data and information .

However, the final items covered under the Project will be subject to further studies In Japan.

5. Management and Maintenance

The organization of the maintenance unit and its contents are confirmed as shown in ANNEX-3.

6. Japan's Grant Aid System

- The Government of Tanzania has understood the system of the Japan's Grant Aid explained by the Study Team; the main feature is described in ANNEX-4.
- 2) The Government of Tanzania will take the necessary measures, described in ANNEX-5 for the smooth implementation of the Project on condition that the Grant Aid by the Government of Japan is extended to the Project.

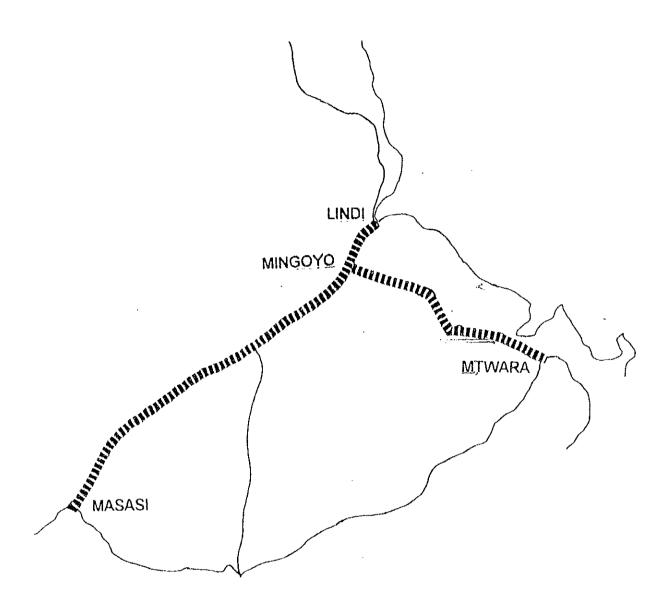
7. Further Schedule of the Study

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- 1) The Study Team will proceed to further studies in Tanzania until September 5, 1996.
- 2) Based on the results of the Basic Design study, JICA will prepare the Draft Basic Design and dispatch a team in the end of October 1996 in order to consult with the Government of Tanzania on outline of the Draft Basic Design.
- Upon acceptance of the Draft Basic Design by the Government of Tanzania, JICA will complete the Basic Design Study Report and forward it to the Government of Tanzania around February, 1997.

4. Ninutes of Discussion (Study Nission)

ANNEX-1 : PROJECT SITE



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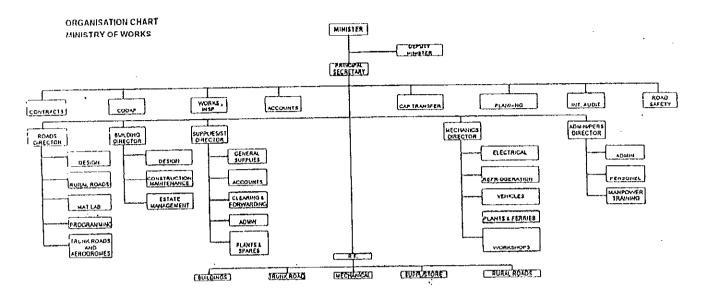
ANNEX-2 : ITEMS REQUESTED BY THE GOVERNMENT OF TANZANIA

List of Requested Bridges

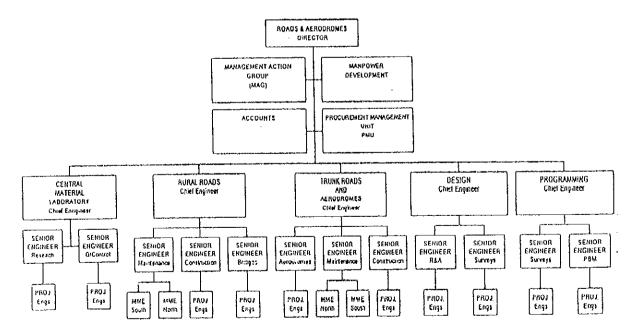
LIST	of Requested Bi	lages
No.	Number	Name
1	LIN-2-10010	Mtange
2	LIN-2-10020	Ngurumahamba
3	LIN-2-10030	Ngongo1
4	LIN-2-10040	Ngongo2
5	LIN-3-10010	Mkwaya
6	MTW-1-10050	Mpapura
7	MTW-1-10040	Mbuo
8	MTW-1-10030	Mikindani
9	LIN-4-10010	Nyangao
10	MTW-2-10060	Nanganga
11	MTW-2-10050	Nangoo
12	MTW-2-10040	Ndanda
13	MTW-2-10030	Mandiwa
14	MTW-2-10020	Liloya
15	MTW-2-10010	Namakongwa

4. Ninutes of Discussion (Study Nission)

ANNEX-3 : MANAGEMENT AND MAINTENANCE



PRESENT ORGANISATION CHART ROADS AND AERODROMES



ANNEX-4: JAPAN'S GRANT AID SCHEME

1. Grant Ald 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	(The Notes exchanged between the Governments of Japan
Implementation	and the recipient country)

2) Firstly, the application or request for a Grant Ald project 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 Ald. 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 project 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.

Fourthly, the project, 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 project, 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 project (hereinafter referred to as "the Project"), is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows:

- a) confirmation of the background, objectives and benefits of the requested project and also institutional capacity of agencies concerned of the recipient country necessary for the project's implementation;
- b) evaluation of the appropriateness of the project to be implemented under the Grant Aid Scheme from the technical, social and economic points of view;
- confirmation of items agreed on by both parties concerning the basic concept of the Project;
- d) preparation of a basic design of the Project; and

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e) estimation of costs of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project 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 Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project 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 Project, 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 Ald 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 project, 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 project 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 Ald 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 Project 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 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 be maintained and used properly and effectively for the Project, and
 - g) to bear all the expenses other than those covered by the Grant, necessary for the Project.
- 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

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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-5 : NECESSARY MEASURES TO BE TAKEN BY THE GOVERNMENT OF TANZANIA

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

- 1. To secure the land necessary for the execution of the Project, such as the land for bridges, temporary offices, working areas, storage yards and others.
- 2. To make all passable roads and bridges leading to the Project sites before the commencement of inland transportation of materials and equipment.
- 3. To demolish / relocate existing bridges and facilities those are located in the Project area according to the construction schedule which will be provided in the later stage.
- To ensure prompt unloading and customs clearance at ports of disembarkation in Tanzania and internal transportation therein of the products purchased under the Grant;
- 5. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Tanzania with respect to the supply of the products and services under the Verified Contracts;
- 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 Tanzania and stay therein for the performance of their work;
- 7. To maintain and use facilities constructed under the Grant properly and effectively for the Project.
- 8. 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.
- 9. To bear all the expenses, other than those covered by the Grant, necessary for the Project.
- 10. To coordinate and solve any issues related to the project which may be raised from third parties or inhabitants in the Project area during implementation of the Project.

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4. Record of Discussion

(Study mission)

Basic Design Sludy on The Project for The Bridge Improvement on Trunk Roads In The United Republic of Tanzania

Record of Discussions

The Study Team for the captioned has commenced the Study from the 9th August, 1996, and is now almost completing the Study in Tanzania. The Team members appreciate the carnest cooperation by the Tanzanian side and express their sincere gratitude to the people concerned.

During the Study here, based on the Minutes of Discussions signed on 13 August, 1996, the following was found; (1) Study Bridges

)	Stuay	/ Bridges			r1
	No	Bridge Number	Bridge Name	Bridge Type	Bridge Length
	1	MTW-1-10030	Mikindani	Temporary (1-Lane, Bailey)	37.71m
		MTW-1-10040	Mbuo	Temporary (1-Lane, Balley)	42.67m
		MTW-1-10050	Mpapura	Tempotary (1-Lane, Balley)	30.48m
			Mkwava	Temporary (1-Lane, Bailey)	48.77m
	4	LIN-3-10010	Mikwaya		

(2) Proposed Resolution (Tentative)

Final Component of the project will be determined during the Study in Japan

	Component or n	Bridge Name	Resolution	Location	Foundation	Substructure	Super-struc'e.
No	Bridge Number MTW-1-10030	Mikindani	Replace	Replace	Pile	RC	PC-based
1	MINV-3-10030	WIGHTER	(2-Lane,	Bailey	(RC or	(Cast In	L≖6+30+6n1
			Permanen!)	,	Section H)	place)	
2	MTW-1-10040	Mbuo	Replace	Replace	Plle	RC	PC-based
L			(2-Lane	Bailey	(RC or	(Cast In	L≃6+30+6m
			Permanent)		Section-H)	place)	
3	MTW-1-10050	Mpapura	Replace	Replace	Pile	RC	PC-based
			(2-Lone.	Bailey	(RC or	(Cast In	L=30m
			Permanent)		Section-H)	place)	
	LIN-3-10010	Mkwaya	Replace	Replace old	Pile	RC	PC-based
1			(2 Lane.	bridge	(RC or	(Cast in	L=30+30+30
1	1		Permanent)		Section-H)	place)	<u> 1</u>

(3) Proposed Slandard Cross Section of Road and Bridge

The carriageway width of 6 5m, shoulder width of 1.5m for both sides at earthwork section and 0.75m dt+ bridge section will be applied, though, the final component of the project will be determined during the Study in Japan.

(4) Pavement

Bituminous surface treatment of 25 to 30 mm thickness will be applied as a top coat, though, the final component of the project will be determined during the Study in Japan.

(5) Design of Bridge

Bridges will be designed by the Japanese Standard and confirmed of safety and durability by the BS5400 Live Loading of 11A + 11B45

- (6) Other Considerations
- a) River Regulation

River regulation will be designed only for the portion to protect the bridges.

b) Diversion during the construction of new bridges

The Tanzanian side will take responsibility on supplying parts and maintenance of Bailey bridges for diversions during the construction of new bridges.

(7) Maintenance after The Project

Maintenance of the Project will be the responsibility of the Regional Offices of Mtwara and Lindi, with the ludget allocated from the national maintenance budget

Dar es Salaam, 03 September, 1996

Yours sincerely, For The Consultant Study Team

Mr.A.Hirdtam, Executive Director, Oriental Consultants Company Limited For The Roads Department

A CTING Director of Roads, Ministry of Works, Government of Tanzania

4. Winutes of Discussion (DBD Nission)

MINUTES OF DISCUSSIONS ON THE BASIC DESIGN STUDY ON THE PROJECT FOR THE BRIDGE IMPROVEMENT ON TRUNK ROAD IN THE UNITED REPUBLIC OF TANZANIA

(Explanation of the Draft Basic Design)

From August to September 1996, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Basic Design Study team on The Project for The Bridge Improvement on Trunk Road (hereinafter referred to as "the Project") to the United Republic of Tanzania (hereinafter referred to as "Tanzania"), and through discussions and field survey in Tanzania; and technical examination of the results in Japan, has prepared the draft Basic Design of the study.

In order to explain and to consult with the Government of Tanzania on the components of the draft Basic Design, JICA sent to Tanzania a study team (hereinafter referred to as "the Study Team"), which is headed by Mr. HORIGOME Shoshiro, Development Specialist, JICA, and is scheduled to stay in the country from 29th of October to 4th of November, 1996.

As a result of discussions, both parties confirmed the main items described in the attached sheets.

S. Mayre

Mr. HORIGÓME Shoshiro Leader, The Basic Design Study Team , JICA

Dar es Salaam, November 4, 1996

Ambassador Abdi H. Mshangama Principal Secretary, Ministry of Works

Mr. Emmanuel M . Masarija Commissioner, Schwarz Schwarz External Finance & Debt Management , Ministry of Finance

4. Minutes of Discussion (DBD Mission)

ATTACHMENT

1. COMPONENTS OF THE DRAFT BASIC DESIGN

The Government of Tanzania has in principle agreed on and accepted the components of the Draft Basic Design proposed by the Study Team.

2. RESPONSIBLE ORGANIZATION AND IMPLEMENTING AGENCY

Responsible ministry for the Project is the Ministry of Works (MOW), and the implementing agency for the Project is the Department of Roads of MOW.

3. PROJECT SITE

The Project site is as shown in ANNEX-1, for four bridges in between Mtwara and Mingoyo.

4. JAPAN'S GRANT AID SYSTEM

The Government of Tanzania has understood the system of Japan's Grant Aid explained by the Study Team.

5. NECESSARY MEASURES TO BE TAKEN BY THE TANZANIAN SIDE

The Government of Tanzania is responsible for the items such as; to secure the land for the new access road construction and necessary construction yards and will also take necessary measures described in ANNEX-II for smooth implementation of the Project on condition that the Grant Aid by the Government of Japan is extended to the Project.

6. FURTHER SCHEDULE OF THE STUDY

The Study Team will make the Basic Design Study Report in accordance with the confirmed items, and forward it to the Government of Tanzania in around February, 1997.

7. MAINTENANCE AND MANAGEMENT

- 1) The Government of Tanzania shall prepare enough budget and staff for the maintenance and management of project bridges after completion of the construction work.
- 2) Both sides confirmed the content and cost estimation of the required maintenance and management works of project bridges shown in the draft Basic Design.

8. COUNTERPARTS TRAINING

The Government of Tanzania made a strong request that the counterparts for the Project shall be trained on site as well as in Japan during the implementation of the Project. The Study Team promised to convey the request to the JICA Headquarters.

9. OTHER RELEVANT ISSUE

The Government of Tanzania will take all possible measures to secure the safety of the concerned people during the project implementation.

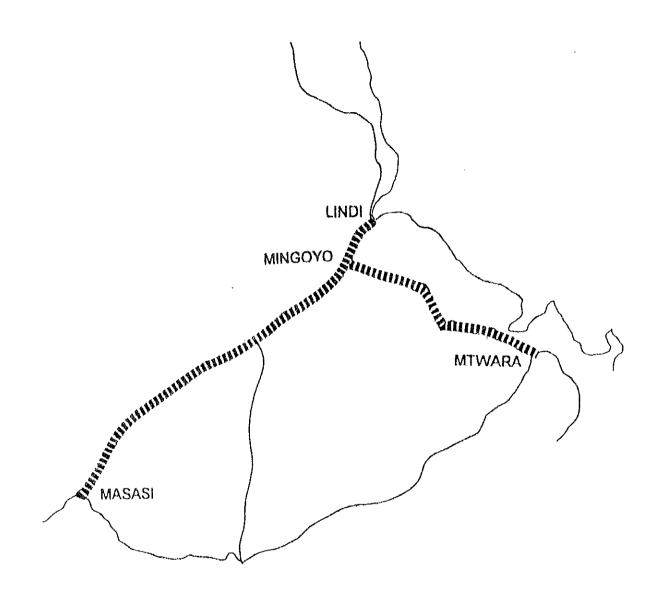


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4. Winutes of Discussion (DBD Nission)

ANNEX-1: PROJECT SITE



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ANNEX-2 : NECESSARY MEASURES TO BE TAKEN BY THE GOVERNMENT OF TANZANIA

The following necessary measures should be taken by the Government of Tanzania on condition that the Grant Aid by the Government of Japan is extended to the Project;

- 1. To secure the land necessary for the execution of the Project, such as the land for bridges, temporary offices, working areas, storage yards and others;
- To make all passable roads and bridges leading to the Project sites before the commencement of inland transportation of materials and equipment;
- To undertake the incidental works, such as gardening, fencing, electric installations and other incidental facilities in and around the Project sites, if necessary;
- 4. To ensure prompt unloading and customs clearance at ports of disembarkation in Tanzania and internal transportation therein of the products purchased under the Grant;
- To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Tanzania with respect to the supply of the products and services under the Verified Contracts;
- 6. 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 Tanzania and stay therein for the performance of their work;
- 7. To maintain and use facilities constructed under the Grant properly and effectively for the Project;
- 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;
- 9. To bear all the expenses, other than those covered by the Grant, necessary for the Project; and
- 10. To coordinate and solve any issues related to the project which may be raised from third parties or inhabitants in the Project area during implementation of the Project.



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			Drilling			<u> </u>			Soi	Invest	igation(IKINDAN
ill and Casing Type		Metres	Proje		LIN	DI -	MTWARA E	RIÐ	GES "			
Casing Drill bucket	150mm 137mm	17.60	Locat Boreh			-1-1	0030	• • • • • • • • • • • • • • • • • • • •	Elevation	 n	10.9	8m
PLACE DUCKEL	<u></u> /.IWN	 	-1		later Table		1.20m		Date	•		08.96
			Driller		S. Kanju	L			Logged	by A.	Mavum	ila
			7 ~		Ê	•0	Sar	nple			Undrainder	Shear Stre
Materials Des	cription		Reduced level(m)	Legend	(m) (m)	Strutum Thickness			T	. 3		<u></u>
			Red	291	â	Stru	Depth (m)	Туре	No	SPT SPT	C, KN/m	Degree
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Red lateritic grave	e1		ļ	i						ļ		
(Fill on bridge abu	tmont)		{		2.00					1	1	
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			ĺ	0	3.00		3.00-3.45		_	2		
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V				[}		
Very loose, wet lig gravelly SAND	gne prown								}			
graverry SAND		. •]	.			4.00-4.45	1	ł	0		
							4.00-4.40	-	}	0		
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Loose, wet darkish,	SAND			l: {			5.00-5.45	×	S1	6	1	
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Medium dense, wet 1	light brow	n SAND	{		_			{	}			[
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Como or share							0.00		1			
Same as above					8.00		8,00-8,45	×	S2	18	[
			}		-			l	1			
			1					{			ł	
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				┝┾			9.00-9.45	*	\$3	9	1	
Loose, wet darkish,		D		05	-				ļ			
with layers of coar	se gravel		ł	0				İ	}			
Very soft, wet dark	c. clavev	SILT	1	[-x]			10.00	1		0		
	., orașej	I I.	{	¦≻-L			.0.00					}
ater level Observations		Кеу:		Jane					 	4		
					e Stratum Chang	9						
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	·····	- " 1	U-4 S;	angue Bildonie			<u> </u>	Wate	r Table			
		. †	Bulk S	ampl	e							
······												
		W	Water				М	No of	Blows for	300mm er	nevation	

ill and Casing Type	Size	Metres	Projec Locati		MTW-1		MTWARA BRI					IKINDANI
			Boreh	oie M	0	1			Elevation		10.9	98m
				to Y	Vater Table S. Kanju		1. 20m		Date	٨		08.96
	1		Driller				San		Logged b	<u>y R.</u>	Mavur	d Shear Stree
			a ed	l p	Depth (m)	Strutum Thickness	1100	ipre		} .		
Materials Descript	DOM		Reduced level(m)	Legend	Dept	truth hick	Depth (m)	Туре		146	C, KN/m	¢u.
			<u>α =</u>	X	10.00		10.00-10.60		10	<u></u>	<u> </u>	Degree
Very soft, wet, dark,	olave	7 STLT		F, t			10.00-10.0	1		0		
very sort, wet, dark,	ciaye	y OLDI	1	x-		1		ļ				
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Some on object				×	12.00	{	10 00 10 70		}			
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				×		ļ						
			[×		ļ	ł			· ·	}	
Soft, wet, dark, claye	ey SIL	r		×	13.00	ł	13.00-13.45	*	\$5	4		
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				×							}	
				Π	15.00		15.00-15.49	*	56	5		
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Loose, wet, darkish, s	slight	ly	ł	[.]		1		ļ		ļ	I	1
clayey SAND			ł	۱· •								
			1			ĺ	16.00-16.45	5		3		
			1									
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Same as above			ļ		17.00	{	17.00-17.59		57	0	1	
						1				1	ĺ	
			1									
					10.00	{	10 0 10 0			-		
			1		18.00	[18.00-18.60	'		0		
			}			}					}	ļ
			Į		ļ							
				1	19,00	<u>}</u>	10 00 10 45	i ¥	60	10		
Very soft, wet, darki	sh, si	lty CLAY		-		ļ	19.00-19.45	1	58	10		
			1	 				;		ļ	ļ	}
Medium dense, slightl	y mois	t, darkis	sh		1			ļ			ļ	
clayey SAND with hard	coral	nodules	1-	- <u>1</u> -	20.00	ļ	20.00-20.4	: * *	59	18		
				i				- <u>!</u>	1~		})
Water level Observations	-	Key.		oxim	ate Stratum Char	nge						
		•			i Sample	-	¥	Star	ndard Pene	tration T	est	
·				Sam	nlə		<u> </u>					
		"	√ -4	Udill	hue.		<u> </u>	Wa	ter Table			
		- •	Bulk	; San	nple		-					
		*										

		1	Alling	Log	*******		NG DEPARTMEN		5. Study — Soil		gation(M)	KINDANI
rill and Casing Type	Size	Metres	Project		LINDI MTW-1-	- <u>MT</u>	MARA_BRID(JES_				
			Boreh		······································	1			Elevation	· · · · · · · ·	10.98	 3m
· · · · · · · · · · · · · · · · · · ·			-		Water Table		_1.20m		Date			3.96
	l		Driller		<u>S. Kanju</u>	1 .			Logged b	γ.Λ. N	avumi	la Shear Sher
Materiais Desc	rintion		a ced	g	E S	E au		nphe				onear sirei
matchala base	angeuen -		Reduced levol(m)	Legend	Depth	hick	San Deptin (m)	Туре	No	SPT N-Valu	C, KN/m ¹	•u Dectee
			<u> </u>	X	20.00	10 F		100		<u>07 Z</u>	{·− ···	
Medium dense, slight	tly mois	t, light		Ŀ								
green, clayey SILT w	with whi	te coral	3	× 	1 }							
nodules			1	×	21.00		21.00-21-4	l *	510	24		
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				X		1		1	ł			}
			İ.	ا ×	}			}				
Same as above			1	×		}	22,16-22.54	1	UL		ļ	
				x-		}]		Į	ł	
			<u> </u>	1×								
Medium dense, light	green w	<i>i</i> th	ļ	× ×	-			1		[{
yellow patches, SIL		-	}	×	23.00	·	23.00-23.4		S11	27		}
				x	<u> </u>						ļ	
			Į	X	-			}		Į		
Same as above but w	ith quar	tzitic	1	у х				ŀ				
gravel				x	24.00		24.00-24.4	*	S12	25		
			}	x	-					}		
				××	}							
Medium dense, sligh				X				}				
green, mottled brown	n clayey	/ SHT		×	25.00			<u> </u>				
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later level Observations		Кеу:	 Appro	xim	ate Stratum Chan	ae						
					Sample	.	¥	Stand	lard Penels	ation Test		
							¥					
			U-4 S	алэр	bie		÷	Water Table				
		\$	8ulk S	Sam	ple							
		W	Water				N	No of	Slows for 3	200mm oe	astration	

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	илтен				CHNICAL EN	GINEERI	NG DEPARTMEN	T	5.	Study		
Drill and Casing Type	ISice	Metres	rilling L Projec		LIND	M.	WARA BRIE	GES		Soil 1	nvestigat	ion (MBUO 1/2
Drill bucket	_ <u>1</u> 37mm_		Locatio			-1004						
Caŝing	150mm_	7.70	Boreho				1		Elevation Date		12.32	
			Driller		ater Table 5. KANJU	I	_4.20m		Logged b	yĂ.	_28.08 MAVUMI	
							l San				Undrainced	
Materials Descrip	tion		Reduced lcvel(m)	pua	Depth (m)	unti Muti					·	·····
			Red	Legend	Dej	Stru	San Depth (m)	Type	No	14.5°	C, KN/m ^t	≠u Degre⊷s
Fill on bridge abutment				0.00.00.00.00.00.00.00.00.00.00	1.00 1.00 							
Very soft, moist dark thin layers of sand	k, CLAY	with						· · · · · · · · · · · · · · · · · · ·				
		-			 		4.00-4.45	·	S1.	1		
					5.00 		5.00-5.45			4		
Same as above					 6.00 		6.00-6.45			0		
·					7.00 		7.00-7.45			0		
Medium dense, moist SILT	light gr	een,		× × × × × × × × × ×	8.00		8,00-8.45		\$2	15		
Medium dense, slight SILT with quartzitic				× × × • × • × ×	9.00		9.00-9.45	 	53	22.		
Vater fevel Observators 29.8.96: At 7.00 am level = 4.2 ground leve	0_m_belc			onma	te Stratum Ch Sample		- <u>1</u> 		dard Pene	l tration Te	- <u> </u>	
·		- k	B∪lk Wate		ple		<u>.</u> н		er Tatile of 8kows for	r 300mm	penetration	

INTER-CO.				ECHNICAL ENG	INEERI	NG DEPARTME	NT	5.	Study	Data	
Drill and Casing Type Size Met		Projec			- M	TWARA BRI	DGES		Soil I	nvestigat	ion (MBU0 2/2)
		Locat	lon	MTW-1-						··	
		Boreh			1	4 00-		levation		12.32m	
		Depth		Water Table S. KAN	ш	4.20m		nte ogged by	, Δ	<u>28.08.</u> MAVUMI	<u>96</u>
}		1	[Ê		S.	ample	01900	<u></u>	Undrainded	Shear Stren
Materials Description		Reduced level(m)	end	Depth (m)	tum				*		
{ 		Reduced level(m)	Legend	Del	Stru Thic	S. Depth (m)	Type N	0	SPT N-Valu	C∗KN/mŧ	Degrees
Light green, finc grained massi	ve,			10.00							
slightly weathered SILTSTONE	-			}							
				11.00						i.	
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Same As above		ł	}	 	1						
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Water level Observations Key		Approv	ក្រោទ	te Stratum Chang	9						
	0	Disturb		-		v	Standard	f Penetral	tion Test		
		11.4.5									
- I	•	ป-4 รล	mp	е		v	Water Ta	abie			
	>	Bulk Si	amp	le		T T	, rate fi				
	· .							. .			
	W	Water				N	No of 8k	ers for 30	i0mm per	retration	

			Drilling Log			NG DEPARTMENT			Study Da Soil Inv		n (MPAPURA
III and Casing Type	Size	Metres	Project			WARA BRIDO	ES				
Rotary drilling				MTW_1	-1005	NU		Elevation		9.73n	
without casing				Nater Table		3.Om		Date		30.08	3,96
			Driller			R. MSANGI Sam		Logged t	<u>by A.</u>		LA Shear Strengt
Materials Description			Reduced [evel(a)] Legend	Deptil (m)	En	Sam Depth (101)			1 3		
materials Description			evel.		Stru1	Depth (m)	Typel	tio	SPT SPT	C, Xthui	¥a Oartes≾
			80						1		
Reddish gravel with bo	ulders		00								
(Fill on bridge abutme			U.								
~			b;	1.00							
			00	·							
Stiff, moist greyish,	eilty C	LAY	7	2.00		2.00-2.45	* {	S1	8		
Juii, Moist groyish,	31209 0			•					:		
			_	_		r					
			×	3.00		3.00-3.45	×	52	9		
				1			i		Ì		
			1						1		
Same as above			· · ·		}				ĺ		
				4.00		4.00-4.45	*	\$3	10		
			-	:	Í					(
Same as above but very	stiff										
sume up above but vory	00000			5.00		5.00-5.45	*	S4	29		
				4 <u></u>		1					
				-							
			×	-;		1			 		
same as above				6.00		6.00-6.45	¥	55	17		
					}	ļ					
			F	<u> </u>	1						
Same as above			7	7.00		7.00-7.45	¥	S6	15		5
			1			t	}			ļ	1
			×	` 		1			ĺ	í	1
			-			-		1 			-
Medium dense, moist gr	ey clay	ey		8.00		8.00-8.45	*	S7	18		
SAND			1	- 							1
			100 Hereita (1997) 100 Hereita (1997) 100 Hereita (1997)								
				·9.00		9.00-9.45	×	58	14		
				,		3.00-3.40			14	ĺ	
				· : ·	}			ĺ			
Same as above				10.00		10 00 10 45	*		1-7	}	
				10.00		10.00-10.45		59	17		
Ther Havel Observations	-	Кеу	· · · · · · · · · · · · · · · · · · ·								
30.8.96 at 10.00 am WL	. 2 0-	-	-	nate Stratum Ch d Sample	ange	1.7	Stan	dard Pend	etration Tes	st	
		i- ≣				<u></u>					
1.9.96 at 7.00 am WI		Dan 🕍	U-4 Surr	νp'é		Ý	Wate	a Taola			
		_ ¢	Buth Sat	nple		د علي معر ريندر جو					
			· · · ·			11	{ le *	i Flynn In	or 300mm p	Yendration	
		W	Vvater			11	100)) ډهرينۍ . (പംപറവു		

		Metres	Project	LINHT	MT	WARA BRID	CFC	······•	Study I Soil In		i on (NPAPURA
ilt and Casing Type	Size	Metres	Location	MTW-1			060				
			Borehole No			1		Elevation		9.73n	 N
			Depth to Wate	r Table		3.От		Date		30.8	
			Driller			R. MSANG	[Logged b	<u>y A.</u>	MAVUMI	LA
					- 3	Sam	ple		{	Undrainded	Shear Strength
Materials D	Description	·	teduced evel(m) egend				ı ı	• • • • • • • • •	to t	ļ	
			Reduced ievel(n) Legand	د د	15 1	Sam Depth (m)	Type	No	SPT N-Value	C. Klifm	Denrees
Medium dense, mois	st grey, cl	ayey		10.00							
SAND	<u> </u>				}	I			ļ		
			×	_11.00	ļļ	11 00 11 45		010	10	Į.	
Firm to stiff, moi	ist darkish	grey,				11.00-11.45		S10	15	1	
silty CLAY					i l]	
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				_12.00		12.00-12.45	*	S11	14	1	
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			×			13.00-13.45	*	S12	11	1	1
						10.00		<u></u>			
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Same as above			·		ļ			_	:	ł	
				14.00	:	14.00-14.45	*	S13	13	ļ	
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				16.00		16.00-16.45	*	S15	9		:
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Same as above			×	17.00		17.00-17.45	*	S16	10	1	
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				-19.00		19.00-19.45	. ∣ * ∣	S18	9		
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Same as above			-	20.00		20.00-20-45	*	S19	13	1	
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		y	Uni Sangle			ъ у	No.	Table			
			Burk Currocke			- <u>¥</u> -	**466	1-1012			
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			Drilling	Log				NG DEPARTMEN			Study C		on (MPAPURA 3/
Drill and Casing Type	Si≃e	Metres	Project Locat			LINDI MTW-1		TWARA BRID	GES	5			
L 			Borch				-100	1		Elevation		9.73m	
			Depth	to		ter Table		3.Om		Date		30,08.	96
			Dritler	τ—		R. MSA	NGL	•···		Logged b	<u>ү_А.</u>	MAVUMI	LA Shear Streager
			10 2	1.0		<u></u>	121	Sam I	ple			Undrainded	Shear Streager
Materials De	scription		Reduced level(in)	0000	,	Depth (m)	trute vicke	Sara Deptis (14)	 	E	r aluev-	G, Killin ⁴	Ø.,
			10 3	ŀ			10 E	(Deoth (in)	Туре	180	4. 7		Gautes
	at doubtab	~~~~		x		20.00		1					
Firm to stiff, mois Silty CLAY	st darkisn	grey,						4					
SILLY CDAL				Í,		21.00	ł	21.00-21.45	¥	s20	13	1	
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Same as above			ĺ	-	}-	24.00	i I	24.00-24.45	*	523	15		
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Water level Of servations		Key		_ .									
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			Lastu	rber	d Sa	niple		<u></u>	ងឯក	dard Penet	rauen (res)	ι	
		- 2	U-4 S	់ទំពា	ple								
		}						<u></u>	Wat	er Table			
			Bulk S	Can	npla			-					
		 	Wate	r				н	Nor	f Blows for	200mm M	enatration	
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	INT		Ltd - G Drilling			INEERI	NG DEPARTMEN	Т		Study Da		
rill and Casing Type	Size	Metres	Projec	çt	LINDI	<u> </u>	TWARA BRI	DGES		Soil Inv	estigatio	on (NKWAYA 1
			Locat Boreh		LINDI	-3-1	0010		Elevation		65.34	1m
					Water Table		3.38m		Date	•	16.0	
			Driller	· 	S. Kanj		•		Logged	<u>by A. I</u>	<u>lavumi</u>	
			De f		E	E	Sar	nple			Undrainded	Shear Stren
Materials Desc	ription		Reduced level(m)	uəBə	Depth (m)	Strutum Thickness			<u>}.</u>	SPT N-Vature	С., KN/m'	¢.
			<u> α s</u>	<u>ت</u> ۲	0.00	0 F	Depth (m)	Туре	NO	3PT		Dearees
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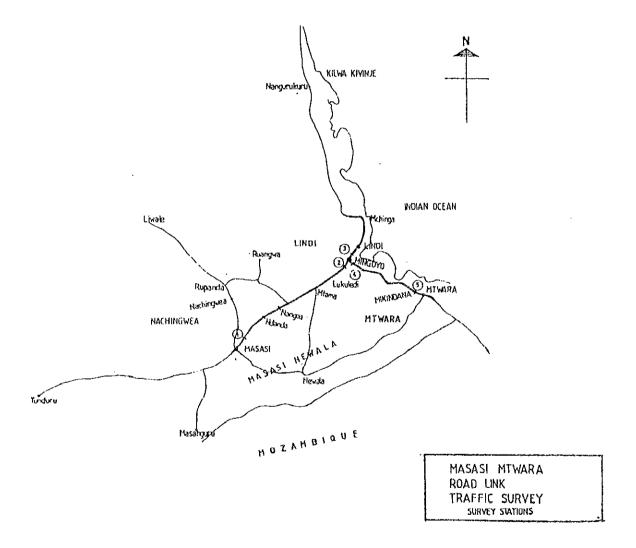
ill and Casing Type	Size	Metres	Projec Locat	ion	LIND-		MTWARA BRI	DGE				n (NKWAYA
			Boret			1			Elevation	•	65.34 16.08	
			Depth Driller		Vater Table S. Kanju		_ <u>3.38m</u>		Date Logged b	v A.	Mavumi	
	l			$\tau \tau$	2	, ș	Sam	ple		1		Shear Stren
Materials Descr	iption		Reduced level(m)	puol	Depth (m)	Strutum Thickness		1	<u></u>	SPT N-Vetue	C, KN/m ²	
			- ne - ne - ne	ě	<u>م</u>	Str Thi	Depth (m)	Туре	No	SPT X-V		Degrees
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thin layers of fine					11.00							ļ
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				٢	17.00	ĺ	17.00-17.45	^ -7	UJ.			
			ĺ	-	► ↓	ĺ	17.45-17.90		59	17		
				-	<u> </u>		11,40-11,50	1	53		1	
Very stiff, dark, C	I.AY			_	18.00		18.00-18.45	*	S10	20	ļ	
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				ļ		}	18.55-19.00	·	112	ł		
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In and Casing Type	Size	Metres	Drilling Project		LINDI	-MTW	ARA BRIDGE	s	S	oil Inv	estigatic	on (NKWAYA 3,
			Locat		LIN-3							
			Boreh		10		1		Elevation		65.34m	
					later Table		3.38m	· · · · · · · · · · · · · · · · · · ·	Date		16.08	.96
	1	l	Driller		S. KAI		Sam		Logged b	<u>y n. </u>	MAVUMI	LA Shear Streng
			In F	T.	E) F	nes:	San	pie			Undramoded	unear spend
Materials Desc	приов		Reduced level(m)	υeD	Depth (m)	rut. Icki	Sam Depth (m)			3PT N-Valu	C, KN/m ³	/ u
	·		<u> <u> </u></u>	د ا	<u> </u>	5 F	Depth (m)	Type	No	148 N-V-N		Degrees
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Stiff, dark, CLAY			1	1 1			23.00-23,45	 *	S15	17		
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Stiff, dark, CLAY			1		25.00		25.00-25.45	¥	S1.7	19		
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		I	2011		-							
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5. Study Data Traffic Congestion Investigation (1/11)

The traffic congestion investigation was held at the following 5 points.

- 1. 10km point toward Lindi from Masasi.
- 2. 3km point toward Masasi from Mingoyo Intersection
- 3. 3km point toward Lindi from Mingoyo Intersection
- 4. 3km point toward Mtwara from Mingoyo Intersection
- 5. 10km point toward Mingoyo from Mtwara City



SUMMARY

MASASI MTWARA ROAD LINK

Direction: TOWARDS MASASI CLASSIFIED TRAFFIC COUNT SURVEY Location: MASASI Station:1 Weather: Sunny

Date: 27/8/96

1	105-00-07-00	07.00-08.00	02:00-08:00 08:00-03:00	09:00-10:00	10:00-11:00	11.00-12:00 12:00-13:00		13:00-14:00	14:00-15:00	15:00-16:00	15:00-16:00 16:00-17:00	17:00-18:00	Subtotal
	1 10	30	3.	30	ω	7	13	7	60	50	Đ	4	216
r tuteural District/Origin + Troiler	25	42	59	62	43	38	30	20	36	30	36	31	447
byucie cycle - Lane	0	O		0	0	0	0	0	0	0	0	0	0
Administration	0	0	0	0	0	2	0	Ю	7	n	7	0	14
Motorrycie with Trailer	0	0	0	D	0	o	0	0	0	0	0	0	0
	0	0	0	0	0	0	Q	0	0	0	0	O	0
Standard Birkin of 4WD	2	N	4	খ	7	4	n	4	CO	10	S	ω	60
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Minihus/Pickup or Van	0	0	0	D	0	O	0	0	0	0	0	0	2
	C	0	4	0	2	o	0	0	0	7	0	N	13
2-axie 11000	0		0	0	O	0	C	ο	0	D	0	D	0
Tuck with more than 3-axies	0	0	D	0	σ	0	0	0	O	0	0	0	0
Military Vehicle	o	0	0	0	Ō	0	0	0	0	O	0	O	5
Subtotal non-motorised	50	72	06	92	51	45	43	27	44	80	44	35	663
Subtotal Motorised	63	2	12	S.	12	6	7	Ø	13	18	10	13	112

A-33

MASASI MTWARA ROAD LINK

SUMMARY

Date: 27/8/96 Direction: TOWARDS MINGOYO

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	00-00-00	00:90-00:20	09:00-00:00	09:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00			Sublea
Time		4C	74	30	16	6 0	<u>9</u>	15	52	11	-	22	241
Pedestrian					4	53	32	35	24	35	35	24	446
Bycicle/Cycle + Trailer		000		2				c		Ö	0	0	
Animal Cart	0	0	0	0		2	5	2	,			C	C
واعدمهم بمالم	0	0	6	0	4	0	4	0	e	11	2	N N	74
MOKOI CÁCIE			c	C	0	0	0	0	0	0	0	0	
Motorcycle with Trailer						C	G	0	0	0	0	0	
Passenger/Car/Sedan	0			2				C		r	00	4	65
Standard Pickuo or 4WD	·v)	5 5	G	80	5	4		o	\$				
	ч 	6	0	0	2	3	Э	7	7	0	7	7	7
A Standard Bus					C	0	C	0	0	0	0	C	
A Minibus/Pickup of Van	•	2						C	C	0	0	0	16
2-axie Truck		2		0	m		7						
		0		0		0	0	0	0	Q	D		
				C	0	0	0	0	0	0	D	0	
Truck with more than 3-axles										(C	C	
		0		0		0	0	0	0	D			
Military venicle	e e	5 1 1	55	5 80	57	7	48	50	46	46	46	46	687
Subtotal non-motorised	Ś					5 9	15	+ +	11	80	13	03	144
stated bit and and	ţ	5	4										

5. Study Data Traffic Congestion Investigation (3/11)

MASASI MTWARA ROAD LINK

SUMMARY

Direction: TOWARDS MINGOYO Date: 27/8/96 CLASSIFIED TRAFFIC COUNT SURVEY Location: MINGOYO Station: 2 Weather: Sunny

Pedestrian Bycicle/Cycle + Trailer	06:00-07:00	07:00-08:00	00:60-00:80	09:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	Subtotal
Bycicle/Cycle + Trailer	0	D	o	0	0	O	4	O	0	0	0	0	4
	0	0	ы	0	0	0	0	0	0	Q	0	O	
Animal Cart	0	O	0	0	0	0	0	0	0	0	0	0	0
Motorcycle	0	ō	0	0	0	0	0	0	0	0	0	O	0
Motorcycle with Trailer	0	Ö	O	0	0	0	0	0	0	0	0	O	0
Passenger/Car/Sedan	a	Ð	0	0	0	0	0	0	0	0	0	0	0
Standard Pickup or 4WD	4-		0	+-	2	2	0	Ō	0	T	Ó	2	10
Standard Bus	σ	G	2	-	2	ю	-	4-	m	2	Q	-	8
Co Ch Minibus/Pickup or Van	£.2	٣	0	N	m	***	ο	2	^{(N}	Ð	2	Q	23
2-ade Truck	4	0	0	Ю	2	4	0	2	en	D	0	0	14
3-axle Truck	0	O	0	0	O	0	0	0	0	0	0	ο	0
Truck with more than 3-axles	0	0	0	0	0	0	0	0	0	D	0	0	0
Military Vehicle	0	0	Q	0	0	0	0	0	0	0	0	0	0
Subtotal non-motorised	0	0	2	0	0	0	+-	0	0	0	O	0	3
Subtotal Motorised	n	ω	2	Q	σ	10		5	σ	Q	8	0	69

5. Study Data

Traffic Congestion Investigation (4/11)

A-35

MASASI MTWARA ROAD LINK

SUMMARY

Date: 27/8/96 CLASSIFIED TRAFFIC COUNT SURVEY Location: MINGOYO Station: 2 Weather: Sunny Direction: TOWARDS MASASI

		00-00 00-00	00-00-00-001	00.00-10.00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	N		
Time	06:00-0/:00		20.50-00.00		C		C	C	0	0	0	O	***
Pedestrian	0		2	2									
burieleviele + Toller	•	0	0	0	0	0	0	0	0	0	0	0	0
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Annual Carl	0	0	0	0	Q	-	0	0	0	**	0	Ö	5
Motorcycle with Trailer	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger/Car/Sedan	O	0	-	0	0	0				*-		*	5
Standard Picking of 4WD	0		0	1	Q		0			0	2	-	2
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and prepuleto	~		2	0	0		0		2	3	m	3	÷
							0	9	5	0	2	8	15
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Truck with more than 3-axles		0	0	0	0		0	0	0	0	0	0	0
Military Vehicle		0	0	0	0		0	0	0	0	0	0	0
Subtotal non-motorised	Ţ	0		0	0		0	0	0			0	¢~
Subtotal Motorised		• •	4	7	1		4	2 12	4	-	σ	Ø	22

5. Study Data

Traffic Congestion Investigation

A-36

SUMMARY

Date: 27/8/96 Direction: TOWARDS MINGOYO CLASSIFIED TRAFFIC COUNT SURVEY Location: MINGOYO Station: 3 Weather: Sunny

Peterstian 0	Time	06:00-07:00	07:00-08:00	00:00-00:00	09:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	Subtotal
Trailer 0<	Pedestrian	O		o		O	0						0	¥
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Sedan 0 <td>Motorcycle with Trailer</td> <td>0</td> <td></td> <td>0</td> <td></td> <td>0</td> <td>0</td> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td>0</td>	Motorcycle with Trailer	0		0		0	0	0					0	0
per AWD 0 0 3 1 2 2 0 2 1 0 revisit 4 2 0 1 1 0 2 1 3 0 0 0 revisit 3 2 0 1 1 1 1 3 0 <td>Passenger/Car/Sedan</td> <td>0</td> <td>0</td> <td>0</td> <td></td> <td>0</td> <td>0</td> <td>0</td> <td>-</td> <td></td> <td></td> <td></td> <td>**</td> <td>+</td>	Passenger/Car/Sedan	0	0	0		0	0	0	-				**	+
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or Van 3 2 0 2 1 1 1 2 3 2 2 3 2 3 2 3 3 2 3 3 2 3 <td>Standard Bus</td> <td>4</td> <td>2</td> <td>0</td> <td></td> <td>0</td> <td></td> <td>-7</td> <td>εŋ</td> <td></td> <td></td> <td></td> <td></td> <td>4</td>	Standard Bus	4	2	0		0		-7	εŋ					4
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sed 0 0 1 0 0 1 8 6 4 5 3 5 2 10 0 1	Military Vehicle	0	0	Φ		0	0	0	O	o	0	0	0	0
8 6 4 5 3 5 2 10 5 5	Subtotal non-motorised	0	O	0		Q	0	0	0	ō		0	0	3
	Subtotal Motorised	80	9 Q	4		<u>.</u>	S	7	10	ŝ	S	2	9	61

5. Study Data Traffic Congestion Investigation (6/11)

SUMMARY

Date: 27/8/96 CLASSIFIED TRAFFIC COUNT SURVEY Location: MINGOYO Station: 3 Weather: Sunny Direction: TOWARDS LINDI

Time	06:00-07:00	06:00-07:00 07:00-08:00 08:00-09:00	00:60-00:80	00:00-10:00	10:00-11:00	11:00-12:00	11:00-12:00 12:00-13:00 13:00-14:00		14:00-15:00	15:00-16:00	10.01-00.01	M:01-00:11	ouptotar
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	C	0	0	0	•••	0	0 0	0	0	0	0	0	
			0	0	0	0	0	0	0	O	0	0	0
Animal Cart				0	0	-	0	D	0	0	~	0	8
Motorcycle			0	0	0	0	0	0	0	0	0	0	0
Modecycle wru i farei Decement/Car/Sedan			0	0	0	0	0	0	0	*-	0	•	
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				3	0			19	4	-	7	D	17
Minkurs/Proxup or Van				0	6		<u>ب</u>	2	9	3	0	24	16
2-axe Truck				0	0		0		T	0	0	Ø	5
				0	0		0	0	0	o	0	0	a
				0		0	0	O	0	0	0	0	0
Millitary Vermus Subtotal con-multification		0		0	1		0	0	0	0	0	0	
Suttotal Motorised		3			4		7	00	5	9 U	3	7	57

(7/11)

SUMMARY

Date: 27/8/96 Direction: TOWARDS MTWARA CLASSIFIED TRAFFIC COUNT SURVEY Location: MINGOYO Station: 4 Weather: Sunny

Time	06:00-07:00	07:00-08:00	00:60-00:80	00:01-00:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	Subtotal
Pedestrian	2	n	2		0	5	D	0	0	0	0	0	13
Bycicle/Cycle + Trailer	-7	n	0	0	4	D	O	O	O	0	0	0	đ
Animal Cart	0	0	0	0	Ö	0	0	0	O	0	Ô	0	D
Matarayale	0	4-	0	0	0	0	**	0	0	0	0	0	•••
Motorcycle with Trailer	0	O	0	0	0	0	O	Ċ	0	D	D	0	a
Passenger/Car/Sedan	0	0	-	0	0	o	0	0	0	-	0	D	2
Standard Pickup or 4WD	*-	D	2	*	1	2	0	0	0	**	O	-	6
P Standard Bus		4-	ę	++	t-	¥	*	-	0	-	4-		13
6 Minibus/Pickup or Van	2	-1	4	Ŧ	Ŧ	-	D	~	0	e.	Ō	2	16
2-axle Truck	2	2	+-	2	*	D	0	0	2	0	-	++	12
3-ade Truck	0	0	O	0	D	0	0	0	Q	0	0	O	D
Truck with more than 3-axies	0	0	D	0	0	0	0	0	0	0	0	D	O
Military Vehicle	0	0	0	0	0	0	0	0	0	O	0	O	0
Subtotal non-motorised	*7	9 Q	7	t -	4	S	0	0	0	0	0	D	22
Subtotal Motorised	9	ي	10	ŝ	4	4	N	7	2	e	8	5	53

5. Study Data

Traffic Congestion Investigation (8/11)

SUMMARY

Date: 27/8/96 CLASSIFIED TRAFFIC COUNT SURVEY Location: MINGOYO Station: 4 Weather: Sunny Direction: TOWARDS MINGOYO

Time	06-00-07:00	02:00-08:00 08:00-06:00 08:00-10:0	00:00-00:00	8	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	Subtotal
		0	0	0	0	O	0	0	0	0	0	0	0
renesata		C	C	a	0	0	0	0	0	0	0	0	o
Bycicle/Cycle + Iralier					0	0	0	0	0	0	0	0	0
Animal Cart	5											0	6
Matarcycle	0	0											
Motorcycle with Trailer	0	Ö	Ċ	0	0	0	0	0	0	0	0	•	0
action of Sectors	0	C	0	0	0	0	0	0	2	0	0	D	2
	C	0	0		0	4	* *		0	0	2	0	Q
	-		~			0	3	17	0		0	-	14
V Standard Bus	-				ſ		- C		0	2	2	сл 	28
O Minibus/Pickup or Van	2		n 			-		-					
2-axle Truck	0	7	4 -0	0	0	4	0	40	2	4	۳ 	5	21
ave Toick	0	0	0	0	0	0	0	0	0	0	0	0	2
	G	0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	Ö	0	0	0	0	0	0	0	0
Subtotal non-motorised	0	0	0	0	ō	0	D	0	0	0	0	0	0
Suitetal Mataisad	м М	4	~	7	4	2	*	12	15	00	8	7	76

5. Study Data Traffic Congestion Investigation (9/11)

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SUMMARY

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CLASSIFIED TRAFFIC COUNT SURVEY Location: MTWARA Station: MIKINDANI-S Weather : Sunny Direction: TOWARDS MTWARA Date: 27.08.96

Time	06:00-07:00	07:00-08:00	08:00-03:00	09:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00 13:00-14:00		14:00-15:00	15:00-15:00	16:00-17:00	17:00-18:00	Subtotal
Pedestrian	40	23	20	13	22	21	22	15	13	13	24	40	236
Bycicle/Cycle + Trailer	45	48	42	44	33	31	18	19	16	22	38	21	388
Animal Cart	0		0	O	0	C	0	0	0	0	0	0	0
Matarcycle with Trailer	7	~	0	7	0		2	2	N	0	2	2	15
Motorcycle	0	o	0	0	O	0	0	0	0	0	0	0	0
Passenger/Car/Sedan	G	O	***	2	O	C	0	N	0	-	0	0	9
Standard Pickup or 4WD		ۍ ا	S.	10	7	Ø	12	7	3	9	80	7	84
V Standard Bus	2	0	*	*-	*-	5	0	-	O	*	2	0	+
Minibus/Pickup or Van	0	O	1	ç	O	0	0	0	-	0	D	0	2
2-axle Truck	2	D	-	4	+-	3	2 2	Я	й	2	Ŧ	n	25
3-axte Truck	0	0	0	*	O	O	0	0	+-	¢	O	0	7
Truck with more than 3-axl	0	0	Ö	0	0	Ð	0	0	0	0	0	0	0
Military Vehicle	0	0	0	0	0	O	C	0	0	0	0	0	D
Subtotal non-molorised	85	71	62	57	55	52	40	34	29	35	62	37	624
Subtotal Motorised	C7	Q	O	18	0	13	17	5	6	10	13	12	145

5. Study Data

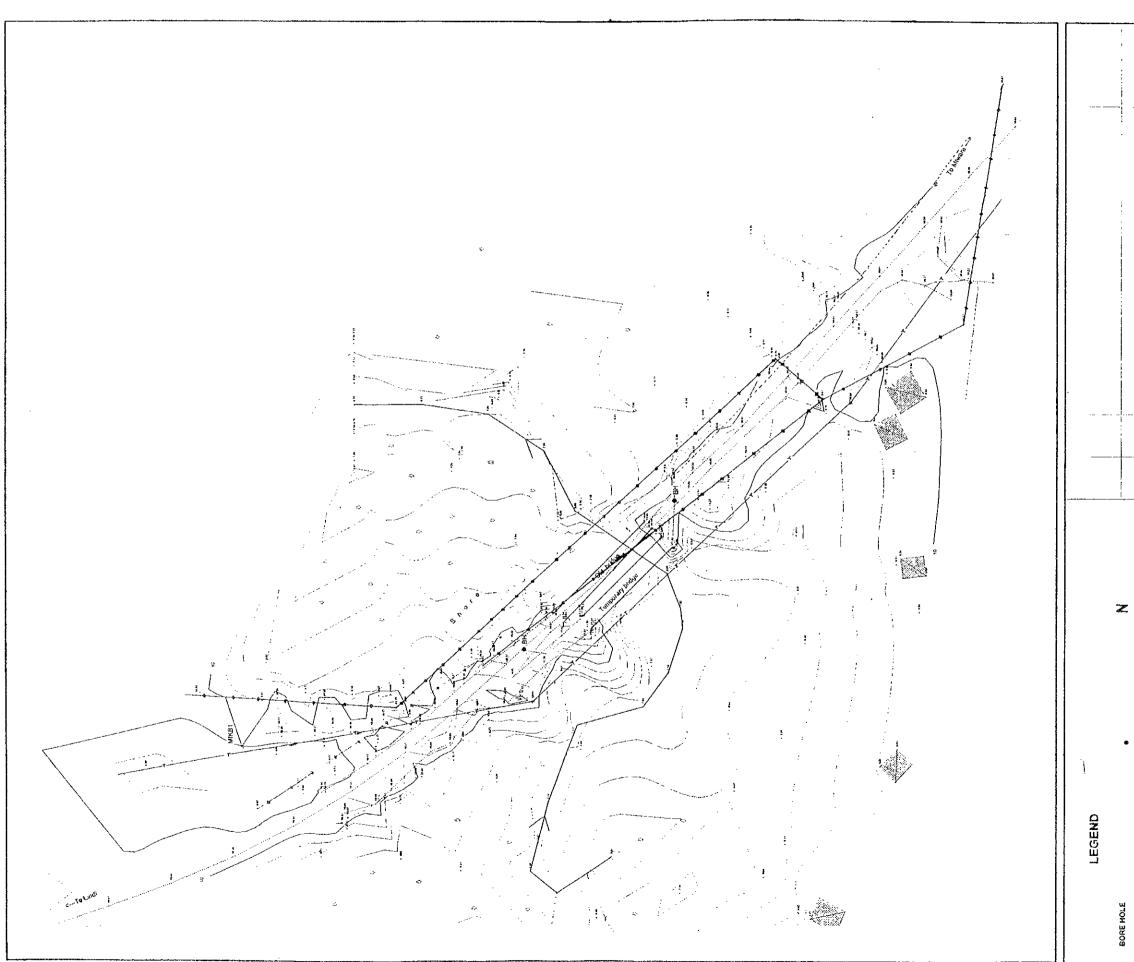
Traffic Congestion Investigation (10/11)

SUMMARY

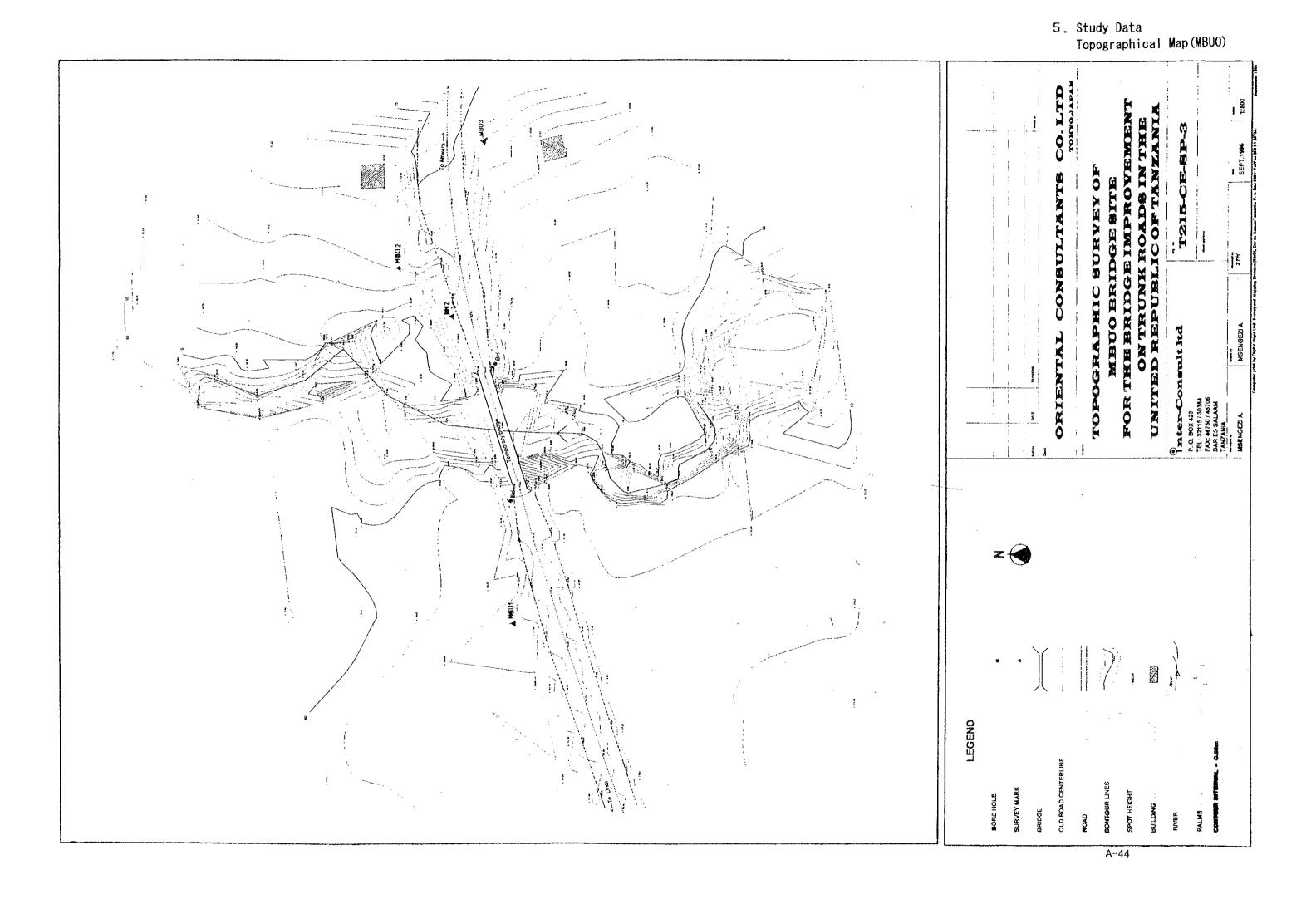
Date: 27/8/96 Direction: TOWARDS MINGOYO CLASSIFIED TRAFFIC COUNT SURVEY Location: MTWARA Station: MIKINDANI-5 Weather: Sunny

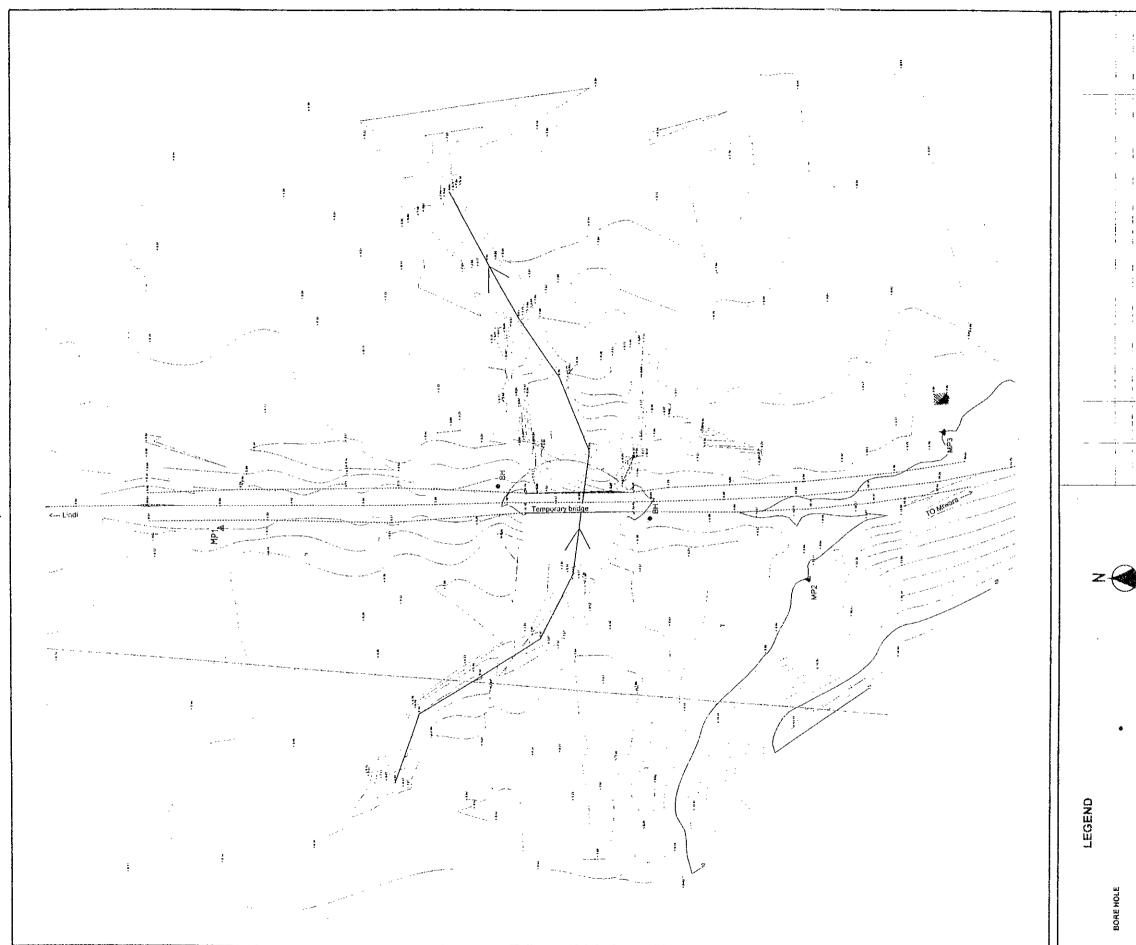
Time	00-01:C0	06:00-07:00 07:00-08:00 08:00-09:00	00:60-00:80	00:01-00:60	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	Subtotal
strian	28	22	0,	23	12	40	7	14	15	14	26	14	234
Bycicle/Cycle + Trailer	47	40	52	47	39	69 C	43	44	37	44	43	42	547
Animal Cart	0	0	0	0	0	0	0	0	0	0	0	0	Ö
Motorcycle	τ-	0	T	0	~	4	4	**	7	*-	0	2	
Motorcycle with Trailer	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger/Car/Sedan	0	0	0	0	0	0	0	0	0	0	0	*-	-
Standard Pickup or 4WD	7	2	£	S	4	1 1	Ø	17	o	Ø	80	6	6
Standard Bus	2	**	4.0	0	τ-	e	-	-	0	0	-	0	11
A Alinibus/Pickup or Van	0	0	D	**	0	0	0	0	0	0	0	0	*-
2-axie Truck	0	*-	7	æ	٣	9	2	e	4	2	2	+	27
3-axte Truck	0	D	O	••	•	4	-	•	0	0	0	0	4
Truck with more than 3-axles	0	0	0	0	0	0	0	0	0	0	0	0	0
Military Vehicle	0	0	0	0	0	0	0	0	0	0	0	ö	0
Subtotat non-motorised	75	62	11	70	51	109	50	58	52	ŝ	69	56	781
Subtotal Motorised	5	თ	2	10	7	22	<u>د</u> ر	23	15	4 -1		13	146

5. Study Data Traffic Congestion Investigation



SURVEY MARK	:	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	
BRUDGE)		-		
ROAD CENTERLINE		ORIEN	TAL CON	ORIENTAL CONSULTANTS	CO. LTD
avar		Ŧ			
CONTOUR LINES			MIKINDA	alisabata ang ang ang ang ang ang ang ang ang an	SITE
SPOT HEIGHT	51 22	FORT	HE BRID	FOM THE BRIDGE IMPROVEMENT	EMENT
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RIVER	Bree	Inter-Consult Itd	wult ltd	T215-CE-6P-4	6 P 4
MANGROOVE TREES	-9	TEL: 22/16/20084 FAX: 45/50 / 44/50		Annual Operation	
		DAR ES SALAM TANZAMA			
TRAFFICIER P.L.BIE		MSEMOEZI A.	MANUNA JI'H		ALL TOPE
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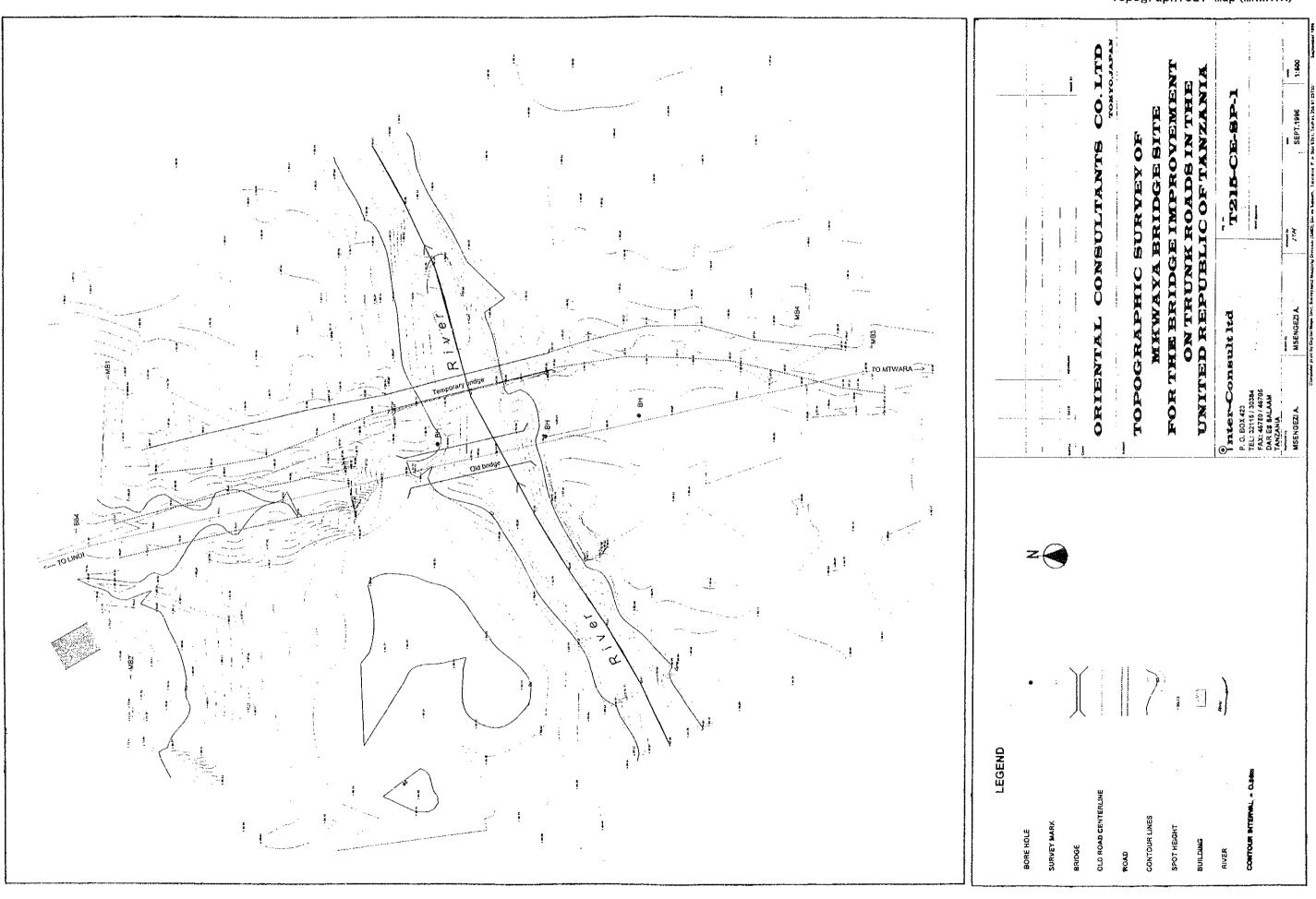


SURVEY MARK	:	; 	1	·i i ! !	:
BRIDGE)	NAVNU 1011 NAMADA	:		
ROAD CENTERLINE		ORIEN	TAL CONSI	ORIENTAL CONSULTANTS CO.LTD	O. LTD
ROAD				i	
CONTOUR LINES			Inparatil Burvey of Mpapura Bridge Bi	MPAPURA BRIDGE BITE	
SPOT HEIGHT	11.64	HL XOL	E BRIDGE	FOR THE BRIDGE IMPROVEMENT	LN
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RIVER	Heres	© finter-Consult Itd	wlt ltd	T215-CE-8P-2	1 1 1
PALMS		P. 0. BOX 423 TEL: 32116 / 30344 FAX: 46750 / 46705			
ELECTRICITY P. LINE	•	DAR ES SALAAM TANZANIA			
CORTOUR BUTERWAL - O.GAm		MSENGEZI A.	MSENGEZIA.	Z74 SEPT.1996	1.60

5. Study Data

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5. Study Data Topographical Map(MKWAYA)

A-46

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