

APPENDICES

Appendix A General

A-1 Member List of the Study Team

A-2 Survey Schedule

A-3 List of Party Concerned in Zambia

A-4 Minutes of Discussion

A-5 Cost Estimation Borne by the Zambian Government

A-1 Member List of the Survey Team

- | | | |
|---|---------------------|---|
| 1. Team Leader | : Koji OTA | Japan International Cooperation Agency |
| 2. Project Coordinator | : Keiji KATAI | Japan International Cooperation Agency |
| 3. Chief Consultant
/ Road Traffic Planner | : Hisashi MUTO | Japan Engineering Consultants Co., Ltd. |
| 4. Road Designer | : Hiroaki TAKAHASHI | Japan Engineering Consultants Co., Ltd. |
| 5. Natural Condition Surveyor: Ko KUWATA | | NIPPON KOEI Co., Ltd. |
| 6. Construction Planner
/ Cost Estimator | : Yoshimi OKANO | NIPPON KOEI Co., Ltd. |

A-2 Survey Schedule

No.	Date	Week	Activity	Place to stay	Survey Contents
1	Dec. 5	Sun	Muto, Departure from Japan	plane	Travelling
2	Dec. 6	Mon	Muto, Arrive at Lusaka	Lusaka	Visit to Embassy of Japan, JICA, MLGH, LCC
3	Dec. 7	Tue		Lusaka	Discussion with MLGH, LCC
4	Dec. 8	Wed		Lusaka	Road Inventory & PSI Survey
5	Dec. 9	Thu		Lusaka	Road Inventory & PSI Survey
6	Dec. 10	Fri		Lusaka	Road Inventory & PSI Survey
7	Dec. 11	Sat		Lusaka	Analysis of Survey Result
8	Dec. 12	Sun	Katai Coordinator, Departure from Japan	Lusaka	Analysis of Survey Result
9	Dec. 13	Mon	Katai Coordinator, Arrive at Lusaka Ota Team Leader & Takahashi, Join the Team	Lusaka	Discussion with Embassy of Japan, JICA Courtesy Call to MLGH, LCC
10	Dec. 14	Tue		Lusaka	Courtesy Call to MCT, Discussion with MLGH, LCC
11	Dec. 15	Wed		Lusaka	Discussion with National Roads Board/Road Dept. Courtesy Call to World Bank, Field Investigation
12	Dec. 16	Thu		Lusaka	Discussion with MLGH, LCC Signing of Minutes
13	Dec. 17	Fri		Lusaka	Preparation of Traffic & Geotechnical Survey
14	Dec. 18	Sat		Lusaka	Field Investigation
15	Dec. 19	Sun		Lusaka	Internal Meeting
16	Dec. 20	Mon		Lusaka	Traffic Survey, Topographic Survey, Pavement Structure Survey
17	Dec. 21	Tue		Lusaka	Traffic Survey, Topographic Survey, Pavement Structure Survey
18	Dec. 22	Wed	Katai Coordinator, Departure from Lusaka	Lusaka	Traffic Survey, Topographic Survey, Pavement Structure Survey
19	Dec. 23	Thu	Katai Coordinator, Arrive at Japan	Lusaka	Traffic Survey, Topographic Survey, Pavement Structure Survey
20	Dec. 24	Fri		Lusaka	Topographic Survey, Pavement Structure Survey
21	Dec. 25	Sat		Lusaka	Topographic Survey, Pavement Structure Survey
22	Dec. 26	Sun		Lusaka	Topographic Survey, Pavement Structure Survey
23	Dec. 27	Mon		Lusaka	Topographic Survey, Pavement Structure Survey
24	Dec. 28	Tue		Lusaka	Topographic Survey, Pavement Structure Survey
25	Dec. 29	Wed		Lusaka	Topographic Survey, Pavement Structure Survey
26	Dec. 30	Thu		Lusaka	Topographic Survey, Pavement Structure Survey, Confirmation of Utility Location (ZAMTEL)
27	Dec. 31	Fri		Lusaka	Topographic Survey, Pavement Structure Survey, Confirmation of Utility Location (LWSC)
28	Jan. 1	Sat		Lusaka	Topographic Survey, Pavement Structure Survey, Field Investigation
29	Jan. 2	Sun		Lusaka	Topographic Survey, Pavement Structure Survey, Internal Meeting
30	Jan. 3	Mon		Lusaka	Topographic Survey, Pavement Structure Survey, Analysis of Survey Results
31	Jan. 4	Tue		Lusaka	Topographic Survey, Pavement Structure Survey, Confirmation of Utility Location (ZESCO)
32	Jan. 5	Wed		Lusaka	Topographic Survey, Pavement Structure Survey, Analysis of Survey Results
33	Jan. 6	Thu		Lusaka	Topographic Survey, Pavement Structure Survey, Analysis of Survey Results
34	Jan. 7	Fri		Lusaka	Topographic Survey, Pavement Structure Survey, Analysis of Survey Results
35	Jan. 8	Sat	Okano, Departure from Japan	Lusaka	Topographic Survey, Pavement Structure Survey, Analysis of Survey Results
36	Jan. 9	Sun	Okano, Arrive at Lusaka	Lusaka	Topographic Survey, Pavement Structure Survey, Analysis of Survey Results
37	Jan. 10	Mon		Lusaka	Topographic Survey, Pavement Structure Survey, Analysis of Survey Results
38	Jan. 11	Tue		Lusaka	Discussion with MLGH, LCC Topographic Survey, Pavement Structure Survey
39	Jan. 12	Wed	Muto, Departure from Lusaka	Lusaka	Site Survey of Quarry and Borrow Pit, Topographic Survey, Pavement Structure Survey
40	Jan. 13	Thu	Muto, Arrive at Japan	Lusaka	Construction Survey, Topographic Survey, Pavement Structure Survey
41	Jan. 14	Fri		Lusaka	Construction Survey, Topographic Survey, Pavement Structure Survey
42	Jan. 15	Sat		Lusaka	Analysis of Survey Result
43	Jan. 16	Sun	Kuwata, Departure from Lusaka	Lusaka	Analysis of Survey Result
44	Jan. 17	Mon	Kuwata, Arrive at Japan	Lusaka	Construction Survey, Topographic Survey, Pavement Structure Survey
45	Jan. 18	Tue		Lusaka	Discussion with Zambia Railway
46	Jan. 19	Wed		Lusaka	Field Survey
47	Jan. 20	Thu		Lusaka	Field Survey
48	Jan. 21	Fri		Lusaka	Field Survey
49	Jan. 22	Sat		Lusaka	Analysis of Survey Result
50	Jan. 23	Sun		Lusaka	Field Investigation of Drainage Network & Outlet Survey
51	Jan. 24	Mon		Lusaka	Field Investigation of Drainage Network & Outlet Survey
52	Jan. 25	Tue		Lusaka	Analysis of Survey Result
53	Jan. 26	Wed		Lusaka	Analysis of Survey Result
54	Jan. 27	Thu		Lusaka	Final Discussion with MLGH/LCC
55	Jan. 28	Fri	Okano, Departure from Lusaka	Lusaka	Visit to Embassy of Japan, JICA
56	Jan. 29	Sat	Okano, Arrive at Japan	Lusaka	Analysis of Survey Result
57	Jan. 30	Sun	Takahashi, Departure from Lusaka	plane	Travelling
58	Jan. 31	Mon	Takahashi, Arrive at Japan	Japan	Travelling

A-4 Minutes of Discussion

- (1) Minutes on Field Survey**
- (2) Minutes on Explanation on Draft Basic Design**
- (3) Results of the Field Survey**
- (4) Valuation of Unit Rate per square meter for Properties to be Compensated along Great East Road**

(1)Minutes on Field Survey

MINUTES OF DISCUSSIONS
 on the Basic Design Study
 on the Project for Improvement and Maintenance of Lusaka City Road
 (Second Stage)
 in the Republic of Zambia

In response to a request from the Government of the Republic of Zambia (hereinafter referred to as "the Zambia"), the Government of Japan decided to conduct a Basic Design Study on the Project for Improvement and Maintenance of Lusaka City Road (Second Stage) (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to the Zambia the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr. Koji Ota, Deputy Resident Representative, JICA Zambia Office, and is scheduled to stay in the country from December 6th, 1999 to January 30th, 2000.

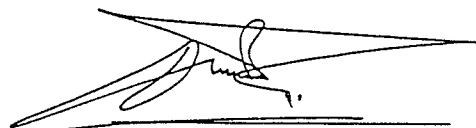
The Team held discussions with the officials concerned of the Government of Zambia and conducted a field survey at the study areas.

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

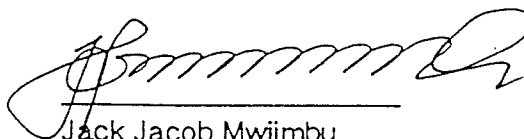
Lusaka, December 16th, 1999



Koji Ota
 Leader
 Basic Design Study Team
 JICA

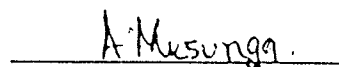


Overs M. M. Banda
 Permanent Secretary
 Ministry of Local Government and Housing



Jack Jacob Mwimbu
 Town Clerk
 Lusaka City Council

Witness:



Agnes Mpundu Musunga
 Chief Economist (BU)
 External Resource Mobilization Dept.
 Ministry of Finance & Economic Devt.

ATTACHMENT

1. Objective of the Project

The objective of the Project is to improve the existing roads in Lusaka City to cope with socio-economic demands.

2. Project Site

The Project sites map is attached as ANNEX-1. However the final sites of the Project will be decided by the Basic Design Study Team after further studies in Japan.

3. Responsible and Implementing Agency

The Responsible Agency : Ministry of Local Government and Housing

The Implementing Agency : Lusaka City Council (LCC)

(Organization Chart is shown in ANNEX-2)

4. Items Requested by the Government of Zambia

At the beginning of the Study, requested roads list was revised by Zambian side as ANNEX-3, and based on the list, the Team made evaluation of each road as ANNEX-4. After discussions the items in ANNEX-5 were finally requested by the Zambian side. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.

5. Specification of the Road

Road Width of each road class is the following :

	Carriageway Width	Shoulder	Sidewalk	Parking Lane	Median Strip
Class IA (4lane)	14.6m	-	3.0m X 2	*	*
(2lane)	7.3m	-	3.0m X 2	*	-
Class IB (2lane)	6.7m	2.0m X 2		-	-
Class IC (2lane)	6.1m	2.0m X 2		-	-

* : Width of Parking Lane of Class IA Road (4lane and 2 lane) and Median Strip of Class IA Road (4lane)

will be decided in consideration of site condition and the Right of Way.

However, the final components of the Project will be decided by the Basic Design Study Team after further studies in Japan.

6. Japan's Grant Aid System

(1) Zambian side understands the Japan's Grant Aid Scheme explained by the Team as described in ANNEX-6.

(2) Zambian side will take the necessary measures, as described in ANNEX-7, for smooth implementation of the Project as a condition for the Japanese Grant Aid to be Implemented.

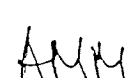
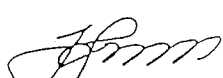
7. Schedule of the Study

(1) The consultants will proceed to further studies in Zambia until January 30th, 2000.

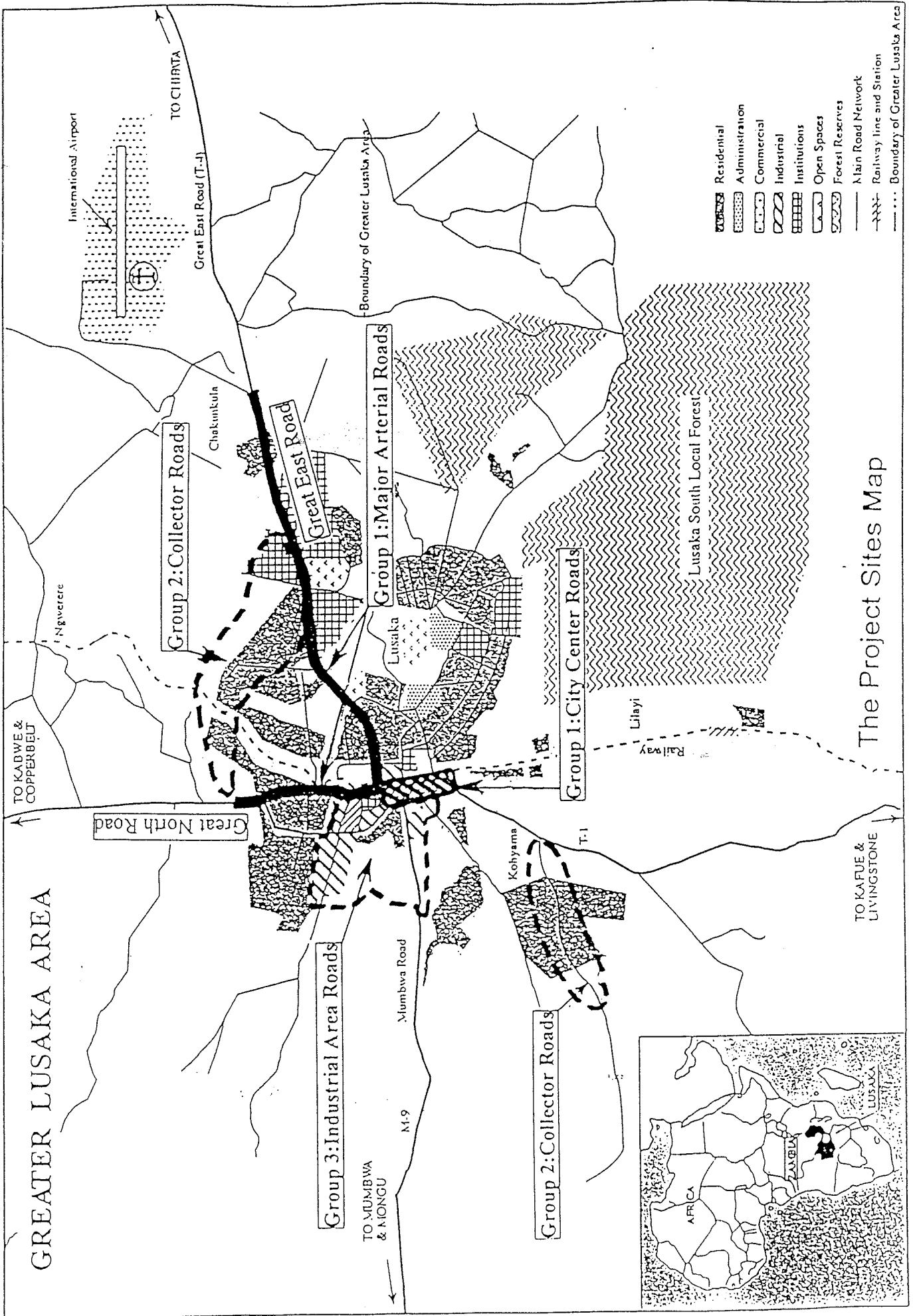
- (2) JICA will prepare the draft report in English and dispatch a mission in order to explain its contents in March, 2000.
- (3) In case that the contents of the report is accepted in principle by the Government of Zambia, JICA will complete the final report and send it to the Government of Zambia by June 2000.

8. Other Relevant Issues

- (1) JICA will submit the proposed map for land acquisition needed for the implementation of the Project in March, 2000. In accordance with the map, the Government of Zambia will complete land acquisition and compensation for property before the commencement of the Project.
- (2) The Government of Zambia will relocate public utilities such as power cable, telephone line and water pipe prior to the commencement of the Project.



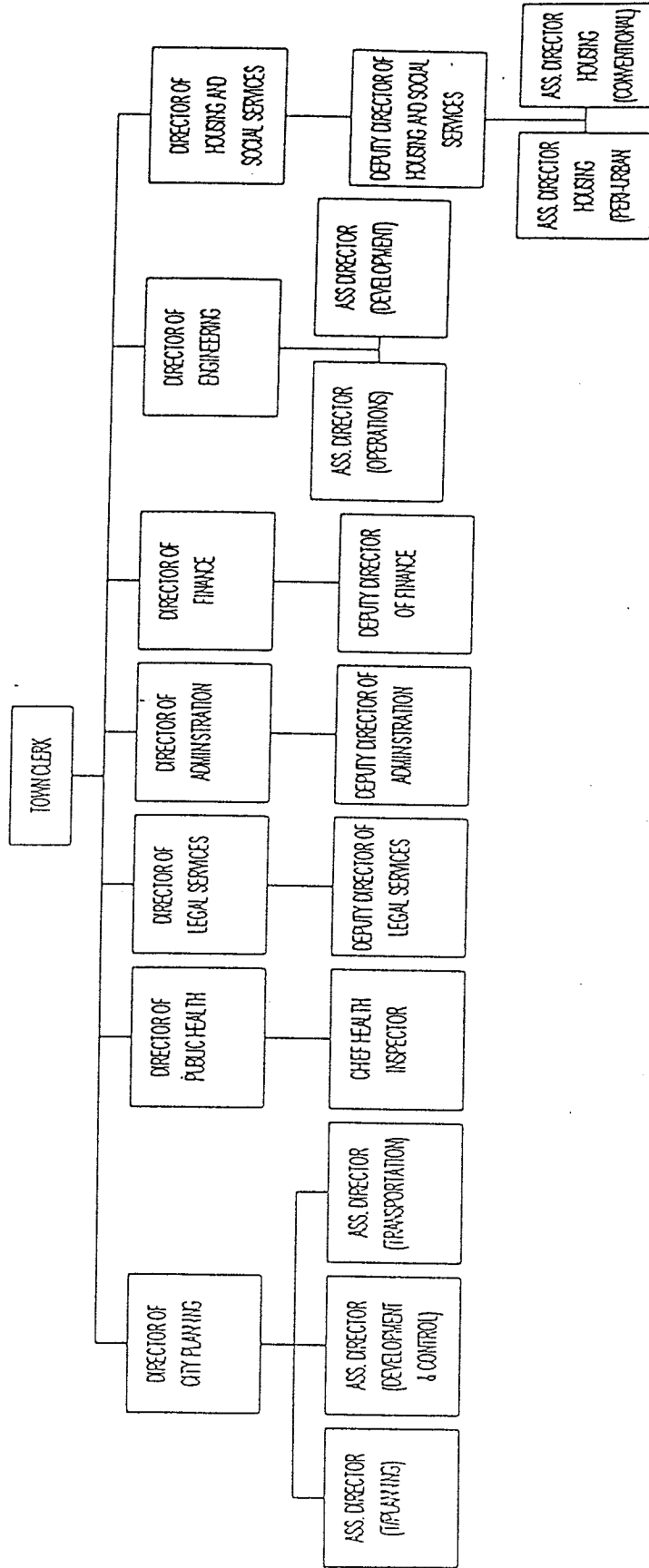
ANNEX-1: The Project Sites Map



The Project Sites Map

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LUSAKA CITY COUNCIL



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LUSAKA CITY COUNCIL

OFFICE OF THE TOWN CLERK

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Email: jjmwiimbu@zamncf.zm

CIVIC CENTRE
Independence Avenue
P O BOX 30077
LUSAKA, ZAMBIA, 10101

Our reference :

RK/ESD/5/3/29

Your reference:

The Team Leader
JICA Study Team
LUSAKA

9 December, 1999

Dear Sir,

RE: THE PROJECT FOR THE IMPROVEMENT AND MAINTENANCE OF
LUSAKA CITY ROADS – SECOND STAGE

Please find attached the list of roads proposed for rehabilitation under the Second Stage. However, we would like to make the following observations based on the Selection of Priority Roads.

1. The deterioration of pavement for roads like Great East and Great North Roads indicate that they will receive overlays but most sections of these roads will require reconstruction.
2. On the Daily Traffic Volume, most roads have scored quite lowly. It should be noted that these roads have a low traffic volume due the bad state in which the roads are. Once the roads are improved, traffic volume will subsequently increase.
3. On the Function of Road, some roads have scored zero (0) marks whilst the lowest mark on the criteria is five (5).
4. Vubu, Makeni, Lufubu, Kabelenga, Sadzu and Kambala are considered as priority on our side. We therefore request that you give them more consideration before the final draft report is done.

Please consider the above observations as you revise the draft document.

Yours faithfully,



JACK J MWIMBU
TOWN CLERK

AMM *AMM* *AMM* *Mwimbu*

Group 1 : Major Arterial and City Center Cross Roads

No	Road Name	Length(km)	Type of Road/Location
1	Great East	14.0	Major Arterial
2	Great North	5.0	Major Arterial
3	Chachacha	1.7	City Center
4	Ben Bella	0.4	City Center
5	Chiparamba	0.4	City Center
6	Katunjila	0.4	City Center
7	Nkwazi	0.4	City Center
8	Malasha	0.2	City Center
9	Sapele	0.9	City Center
10	Chainda Place	0.2	City Center
11	Nairobi Place	0.2	City Center
12	Dar-es-Salaam	0.2	City Center
13	Heroes Place	0.2	City Center
14	Buteko Place	0.2	City Center
	Total Length(km)	24.4	

Group 2 : Collector Roads

No	Road Name	Length(km)	Type of Road/Location
1	Mungwi	2.70	Major Collector
2	Manchinchi	2.30	Major Collector
3	Kasangula	5.00	Major Collector
4	Kaleya	0.90	Major Collector
5	Chitanda	2.50	Major Collector
6	Bauleni	1.00	Major Collector
7	Vubu	1.30	Major Collector
8	Makeni	4.50	Major Collector
9	Lunsemfwa	1.30	Major Collector
10	Lufubu	1.80	Major Collector
11	Mulungushi	1.60	Major Collector
	Total Length(km)	24.9	

Group 1	24.4
Group 2	24.9
Group 3	28.3
Total	77.6

Group 3 : Industrial and Commercial Area Roads

No	Road Name	Length(km)	Type of Road/Location
1	Kachidza	1.5	Heavy Industrial
2	Sheki Sheki	1.4	Heavy Industrial
3	Buyantanshi	2.1	Heavy Industrial
4	Mukwa	2.1	Heavy Industrial
5	Kansanshi	0.9	Heavy Industrial
6	Katanga	2.1	Heavy Industrial
7	Washama	1.2	Heavy Industrial
8	Chishango	1.1	Heavy Industrial
9	Nchoncho	0.7	Heavy Industrial
10	Mwayi	0.6	Heavy Industrial
11	Panganani	0.4	Heavy Industrial
12	Dedan Kimathi	0.4	Heavy Industrial
13	Tuleteka	0.3	Heavy Industrial
14	Kabelenga	1.0	Heavy Industrial
15	Longolongo	1.0	Heavy Industrial
16	Sadzu	0.5	Heavy Industrial
17	Mukatasha	1.7	Heavy Industrial
18	Chifinga	0.2	Heavy Industrial
19	Moobola	0.3	Heavy Industrial
20	Kambala	0.3	Heavy Industrial
21	Mwembeshi	1.4	Heavy Industrial
22	Kutwa	0.8	Heavy Industrial
23	Bombo	0.1	Heavy Industrial
24	Chela	0.1	Heavy Industrial
25	Polonalio Miti	0.3	Heavy Industrial
26	Njolwe	0.2	Heavy Industrial
27	Manda	1.0	Heavy Industrial
28	Umuzilikazi	2.2	Heavy Industrial
29	Nakambala	0.4	Heavy Industrial
30	Maunda	0.2	Heavy Industrial
31	Chandwe Musonda	1.2	Heavy Industrial
32	Mulalila	0.6	Heavy Industrial
	Total Length(km)	28.3	

ANNEX 4 Evaluation of Priority Roads

Group No.	ROAD NAME	Length	Width	Item of Evaluation						Marks	Priority Order	High Priority Roads (HPR)
				1-1: Deterioration of Pavement	1-2: Daily Traffic Volume	2-1: Function of Road	2-2: Landuse Pattern	3: Improvement of Basic Human Need	4: Development Policy of Lusaka City			
		(km)	(m)									
1-1	Great East	14.0	12.0	10	20	10	5	10	20	75	1	PR
1-2	Great North	5.0	12.0	10	20	10	5	10	20	75	1	PR
1-3	Cha Cha Cha	1.7	6.1	5	20	5	10	10	20	70	2	PR
1-4	Ben Bella	0.4	12.0	10	20	10	10	10	20	80	2	PR
1-5	Chiparamba	0.4	6.1	10	10	0	10	10	20	60	3	PR
1-6	Katunjila	0.4	6.1	10	10	0	10	10	20	60	3	PR
1-7	Nkwazi	0.4	6.1	10	10	0	10	10	20	60	3	PR
1-8	Malasha	0.3	6.1	10	10	0	10	10	20	60	3	PR
1-9	Sapele	1.0	6.1	5	10	25	10	10	20	55-60	3	PR
1-10	Chainda Place	0.2	6.1	10	10	0	10	10	20	60	3	PR
1-11	Nairobi Place	0.2	6.1	10	10	0	10	10	20	60	3	PR
1-12	Dar-es-Salaam	0.2	6.1	10	10	0	10	10	20	60	3	PR
1-13	Heroes Place	0.2	6.1	10	10	0	10	10	20	60	3	PR
1-14	Buteko Place	0.2	6.1	10	10	0	10	10	20	60	3	PR
2-1	Mungwi	2.7	6.1	10	10	5	5	10	20	60	3	PR
2-2	Manchichi	2.3	6.1	10	10	5	5	10	20	60	3	PR
2-3	Kasangula	5.0	6.1	20	0	10	5	20	20	75	1	PR
2-4	Kaleya Ngumbe	0.9	6.1	20	0	5	5	20	20	70	2	PR
2-5	Chitanda	2.5	6.1	10	0	5	5	20	20	60	3	PR
2-6	Bauleni	1.0	6.1	10	0	5	5	20	20	60	3	PR
2-7	Vubu	1.4	6.1	10	5	5	5	10	20	55		
2-8	Makeni	5.0	6.1	10	5	5	5	10	20	55		
2-9	Lunsemfwa	1.3	6.1	10	5	0	5	10	20	50		
2-10	Lufubu	1.8	6.1	20	0	0	0	10	20	50		
2-11	Mulungushi	1.6	6.1	10	0	0	0	10	20	40		
3-1	Kachidza	1.2	6.1	20	5	0	5	10	20	60	3	PR
3-2	Sheki Sheki	1.4	6.1	10	10	5	10	10	20	65	3	PR
3-3	Buyantanshi	1.9	6.1	10	5	5	10	10	20	60	3	PR
3-4	Mukwa	2.0	6.1	10	5	5	10	10	20	60	3	PR
3-5	Kansanshi	0.9	6.1	20	5	5	10	10	20	70	2	PR
3-6	Katanga	0.7	6.1	20	5	5	10	10	20	70	2	PR
3-7	Washama	1.2	6.1	20	5	0	10	10	20	65	3	PR
3-8	Chishango	1.2	6.1	20	5	0	10	10	20	65	3	PR
3-9	Nchocho	0.7	6.1	20	5	5	10	10	20	70	2	PR
3-10	Mwayi	0.6	6.1	20	5	0	10	10	20	65	3	PR
3-11	Panganani	0.5	6.1	20	5	0	10	10	20	65	3	PR
3-12	Dedan Kimathi	1.0	6.1	0	5	5	10	10	20	50		
3-13	Tuleteka	0.3	6.1	10	5	0	10	10	20	55		
3-14	Kabelenga	1.2	6.1	0	10	0	10	10	20	50		
3-15	Longolongo	0.4	6.1	0	5	0	10	10	20	45		
3-16	Sadzu	0.6	6.1	20	5	0	10	0	20	55		
3-17	Mukatasha	1.7	6.1	20	5	5	10	10	20	70	2	PR
3-18	Chifinga	0.2	6.1	20	5	0	10	10	20	65	3	PR
3-19	Moobola	0.2	6.1	20	5	0	10	10	20	65	3	PR
3-20	Kambala	0.2	6.1	20	5	0	10	10	20	65	3	PR
3-21	Mwembeshi	1.5	6.1	20	5	5	10	10	20	70	2	PR
3-22	Kutwa	0.8	6.1	20	5	0	10	10	20	65	3	PR
3-23	Bombo	0.1	6.1	20	5	0	10	10	20	65	3	PR
3-24	Chela	0.1	6.1	10	5	0	10	10	20	55		
3-25	Polonario Miti	0.3	6.1	20	0	0	10	10	20	60	3	PR
3-26	Njolwe	0.2	6.1	20	5	0	10	10	20	65	3	PR
3-27	Manda	1.2	6.1	20	5	5	10	10	20	70	2	PR
3-28	Umuzilikazi	2.3	6.1	20	5	5	10	10	20	70	2	PR
3-29	Nakambala	0.4	6.1	10	5	5	10	10	20	60	3	PR
3-30	Maunda	0.3	6.1	10	5	5	10	10	20	60	3	PR
3-31	Chandwe Musond	1.3	6.1	0	5	5	10	10	20	50		
3-32	Mulalila	0.7	6.1	0	5	5	10	10	20	50		
Total		77.4										

Criteria for Section of Priority Roads

<u>Items of Evaluation</u>	<u>Mark</u>	<u>Remarks</u>
1. Engineering View Points	(40)	
1-1 Deterioration Level of Pavement		
- Very Bad (PSI Value:0.0 – 1.5)	20	Reconstruction
- Bad (PSI Value:1.5 – 2.5)	10	Overlay
- Fair (PSI Value:2.5 – 3.5)	5	Patching
- Good (PSI Value:3.5 – 5.0)	0	Maintenance
1-2 Present Traffic Volume		
- ADT more than 5,000	20	
- 2,500 ≤ ADT ≤ 5,000	10	
- 1,000 ≤ ADT ≤ 2,500	5	
- ADT less than 1,000	0	
2. Socio-Economic View Points	(20)	
2-1 Function of Road		
- Arterial Roads	10	
- Collector Roads	5	
- Feeder Roads	0	
2-2 Landuse Pattern		
- Business Area	10	
- Populated Area	5	
- Less Developed Area	0	
3. Improvement of Basic Human Need	(20)	
- Large Impact on Basic Human Need	20	
- Medium Impact on Basic Human Need	10	
- Less Impact on Basic Human Need	0	
4. Development Policy of Lusaka City Council	(20)	
- High Priority	20	
- Priority	10	
- Others	0	
Total	<u>100</u>	

Group 1 : Major Arterial and City Center Cross Roads

No	Road Name	Length(km)	Width	Lane	Class
1	Great East	14.0	12.0	4.0	IA
2	Great North	5.0	12.0	4.0	IA
3	Chachacha	1.7	6.1	2.0	IC
4	Ben Bella	0.4	12.0	4.0	IB
5	Chiparamba	0.4	6.1	2.0	IC
6	Katunjila	0.4	6.1	2.0	IC
7	Nkwazi	0.4	6.1	2.0	IC
8	Malasha	0.3	6.1	2.0	IC
9	Sapele	1.0	6.1	2.0	IC
10	Chanda Place	0.2	6.1	2.0	IC
11	Nairobi Place	0.2	6.1	2.0	IC
12	Dar-es-Salaam	0.2	6.1	2.0	IC
13	Heroes Place	0.2	6.1	2.0	IC
14	Buteko Place	0.2	6.1	2.0	IC
	Total Length(km)	24.6			

Group 2 : Collector Roads

No	Road Name	Length(km)	Width	Lane	Class
1	Mungwi	2.7	6.1	2.0	IC
2	Manchinchi	2.3	6.1	2.0	IC
3	Kasangula	5.0	6.1	2.0	IC
4	Kaleya	0.9	6.1	2.0	IC
5	Chitanda	2.5	6.1	2.0	IC
6	Bauleni	1.0	6.1	2.0	IC
	Total Length(km)	14.4			

Group 1	24.6
Group2	14.4
Group3	21.7
Total	60.7

Group 3 : Industrial and Commercial Area Roads

No	Road Name	Length(km)	Width	Lane	Class
1	Kachidza	1.2	6.1	2.0	IC
2	Sheki Sheki	1.4	6.1	2.0	IC
3	Buyantanshi	1.9	6.1	2.0	IC
4	Mukwa	2.0	6.1	2.0	IC
5	Kansanshi	0.9	6.1	2.0	IC
6	Katanga	0.7	6.1	2.0	IC
7	Washama	1.2	6.1	2.0	IC
8	Chishango	1.2	6.1	2.0	IC
9	Nchoncho	0.7	6.1	2.0	IC
10	Mwayi	0.6	6.1	2.0	IC
11	Panganani	0.5	6.1	2.0	IC
12	Mukatasha	1.7	6.1	2.0	IC
13	Chifinga	0.2	6.1	2.0	IC
14	Moobola	0.2	6.1	2.0	IC
15	Kambala	0.2	6.1	2.0	IC
16	Mwembeshi	1.5	6.1	2.0	IC
17	Kutwa	0.8	6.1	2.0	IC
18	Bombo	0.1	6.1	2.0	IC
19	Polonali Miti	0.3	6.1	2.0	IC
20	Njolwe	0.2	6.1	2.0	IC
21	Manda	1.2	6.1	2.0	IC
22	Umuzilikazi	2.3	6.1	2.0	IC
23	Nakambala	0.4	6.1	2.0	IC
24	Maunda	0.3	6.1	2.0	IC
	Total Length(km)	21.7			

ANNEX-6 : JAPAN'S GRANT AID SCHEME

1. Grant Aid Procedures

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

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

2) Firstly, the application or request for a Grant Aid 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 Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study) using (a) Japanese consulting firm(s).

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 Governments of Japan and the recipient country.

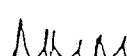
Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the study

The aim of the Basic Design Study (hereafter referred to as "the Study") conducted by JICA on a requested project (hereafter 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 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 a technical, social and economic point of view.
- c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- d) Preparation of a basic design of the Project.
- 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 the 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 smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms. The selected firm(s) carry(its) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA. The consultant firm(s) used for the Study is(are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency.

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 Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

3) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) 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 Aid, 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, constructing 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 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 to Japanese taxpayers.

6) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid Project, the recipient country is required to undertake such necessary measures as the following:

- (1) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.
- (2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.
- (3) To secure buildings prior to the procurement in case the installation of the equipment.
- (4) To ensure all the expenses and prompt excursion for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.
- (5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.

7) "Proper Use"

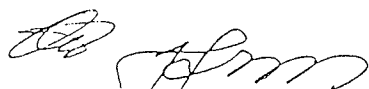
The recipient country is required to maintain and use the facilities constructed and the equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

8) "Rye-export"

The products purchased under the Grant Aid should not be rye-exported from the recipient country.

9) Banking Arrangements (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 a 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 the recipient country or its designated authority.



ANNEX-7 : Major Undertakings to be taken by Each Government

NO	Items	To be covered by Grant Aid	To be covered by Recipient side
1	To secure land		●
2	To relocate public utilities such as power cable, telephone line and water pipe, prior to the construction of the Project		●
3	To bear the following commissions to a bank of Japan for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
4	To ensure prompt unloading and customs clearance at port of disembarkation in recipient country		
	1) Marine(Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and customs clearance of the products at the port of disembarkation		●
5	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
6	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 contract		●
7	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
8	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for construction of the facilities		●
9	To coordinate and solve any issues related to the Project which may be raised from third parties or inhabitants in the Project area		●

(2)Minutes on Explanation on Draft Basic Design

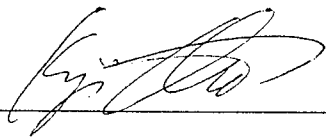
MINUTES OF DISCUSSIONS
on the Basic Design Study
on the Project for Improvement and Maintenance of Lusaka City Road.
(Second Stage)
in the Republic of Zambia
(Explanation on Draft Report)

In December 1999 the Japan International Cooperation Agency (hereinafter referred to as " JICA") dispatched a Study Team on the Project for Improvement and Maintenance of Lusaka City Road (Second Stage) (hereinafter referred to as "the Project") to the Republic of Zambia (hereinafter referred to as " Zambia "), and through discussions, field survey, and technical examination of the results in Japan, JICA prepared a Draft Report of the study.

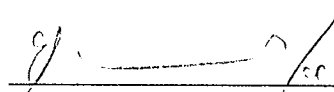
In order to explain and to consult Zambia on the components of the Draft Report, JICA sent to Zambia the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Koji Ota, Deputy Resident Representative, JICA Zambia Office, and is scheduled to stay in the country from April 9th to 16th, 2000.

In the course of discussions, both parties confirmed the main items described on the attached sheets.

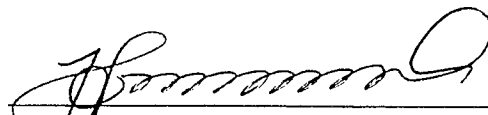
Lusaka, April 14th, 2000



Koji Ota
Leader
Study Team
Japan International Cooperation Agency

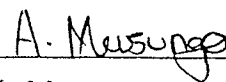


Overs M. M. Banda
Permanent Secretary
Ministry of Local Government and Housing



Jack Jacob Mwiimbu
Town Clerk
Lusaka City Council

Witness:



Agnes Mpundu Musunga
Chief Economist (BU)
External Resource Mobilization Dept.
Ministry of Finance & Economic Dept.

ATTACHMENT

1. Components of the Draft Report

The Government of Zambia agreed and accepted in principle the components of the Draft Report explained by the Team, including design concept, cross-sectional component, pavement, drainage, intersection design and implementation programme. The Government of Zambia also requested early commencement of the Project proposed in the Draft Report in order to streamline the industrial and business activities in Lusaka.

2. Japan's Grant Aid System

Zambian side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Zambia as explained by the Team and described in Annex-6 and Annex-7 of the Minutes of Discussions signed by both parties on December 16th 1999.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed item and send it to the Government of Zambia by June 2000.

4. Necessary Measures to be taken by the Government of Zambia

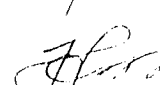
- (1) The Government of the Republic of Zambia shall have a budget for counterpart funds necessary for land acquisition, compensation of properties, relocation of public utilities and so forth in FY 2000/2001.
- (2) The Ministry of Local Government and Housing (hereinafter referred to as "MLGH") will make necessary arrangements to include in its budget for FY 2000/2001 the value of the compensation and relocation of public utilities such as lighting facilities, electric power cables, telephone lines and water pipes.
- (3) As a condition for the Japanese Grant Aid to be extended, the Government of the Republic of Zambia shall complete the payment of compensation for properties, relocation of public utilities and secure the land clearance before the commencement of construction. MLGH shall submit the detailed schedule of land preparation upon approval of its budget for FY 2000/2001.
- (4) MLGH will closely collaborate with Lusaka City Council for smooth implementation of the Project and subsequent proper utilization and upkeep of the facilities constructed under the Project.

5. Other Relevant Issues

- (1) Based on the request made by Zambian side, Japanese side agreed to consider designing of full lighting system for future improvement by Zambian side on the section where lighting poles would not be installed along side of the two Trunk Roads during Detailed Design Stage.
- (2) Zambia side requested further consideration on the possibility of introduction of Roundabout System on the intersection between Great North Road and Lumumba Road for easy maintenance. Japanese side recognized the request and would convey it to the Government of Japan.

A. Musungu

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Annex-1 ATTENDANT LIST

(1) JICA Study Team

Mr.K.Ota	Team Leader/Deputy Resident Representative, JICA Zambia Office
Mr.H.Muto	Chief Consultant/Road Traffic Planner
Mr.H.Takahashi	Road Designer
Mr.Y.Okano	Construction Plan/Cost Estimator

(2) Ministry of Finance and Economic Development

Ms.Agnes Mpundu Musunga	Chief Economist, External Resource Mobilization Dept.
Mr.Gladwell Kumalo Muchinba	Principal Economist

(3) Ministry of Local Government & Housing

Miss E.P.Kanoka	Acting Permanent Secretary
Mr.P.Lubambo	Director, Infrastructure & ^{Support} Social Services
Mrs.P.W.M.Sibaziya	Assistant Director, Dept.of Physical Planning & Housing
Mr.K. Chirwa	Principal Engineer (Roads)
Mr.N.Siame	Senior Engineer
Mr.C. Whitmarsh	Consultant: Urban Roads Support Programme
Mrs.T. Vaes	Transport Economist: Urban Roads Support Programme
Mr.A.Chiteshe	Senior Engineer

(4) Lusaka City Council

Mrs.P. N. Nawa	Mayor
Mr.J. J. Mwiimbu	Town Clerk
Mr.W. L. Lungu	Director of Engineering
Mr.Malumo	Assistant Director
Mr.K. Kasapo	Civil Engineer
Mr.R. M.Kangwa	Civil Engineer

(5) Ministry of Communication and Transport

Mr.Masahiko Takeuchi	JICA Expert
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(6) National Roads Board

Mr.E.Kaunda	Engineer
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(7) Zambia Office of Japan International Cooperation Agency

Mr.F.Lubinga	Assistant Resident Representative
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A. Musunga

 A-23 

7

(3)Results of the Field Survey



JAPAN
INTERNATIONAL
COOPERATION
AGENCY
ZAMBIA

Mail: P.O. Box 30027, Lusaka
Office: 59B Mutandwa Road, Roma, Lusaka
Telephone: 291075, 294433 Fax: 292619 Telex: Z.A 40470

Mr. P. Lubambo
Director of DISS
Ministry of Local Government & Housing
Lusaka
Zambia

Date: January 24, 2000

Ref.: LSKRIMP-01

Subj. : Results of the Field Survey
JICA Basic Design Study of the Project for Improvement and Maintenance
of Lusaka City Roads (Second Stage)

Dear Sir,

Followings are our findings and draft improvement proposal for the Objective Roads.

1. Confirmation of Classification of Roads

After conduction of the field investigation including Road Inventory Survey, Traffic Survey, Road Network Survey, Land use Survey and Public Facilities Survey, JICA Study Team has prepared and submit our findings on the draft classification of Roads and Road Length for your confirmation.

The Road Classification has be conducted as shown in **Attachment-A** based on the analysis of each road functions within the road network, such as origin and destination, type of connecting roads, alignment, contribution to public transport and accessibility to community facility, land use etc.

2. Draft Road Improvement Measures

A. Improvement of Great East Road and Great North Road

- Road Widening for Dual Carriageway (4 Lanes)
- Installation of Sidewalk
- Keeping of the existing Service Road
- Road Widening for Central Island (Median Strip)
- Rehabilitation or New Installation of Roadside Drainage System upto the natural stream

- Road Safety Measures required including Traffic Signal, Channelization, Traditional Roundabout, Turning Lane, Sign and Lane Marking.

B. Rehabilitation Measures for Collector and Area Roads

- Road Pavement Rehabilitation
- Rehabilitation or New Installation of Roadside Drainage System up to the natural stream
- Road Shoulder Rehabilitation
- Road Safety Measures including Hump, Sign and Lane Marking

The above mentioned measures to be implemented by the Project shall be evaluated and finalized by JICA and Japanese Authorities concerned during the Basic Design Work in Japan considering Road Classification, Traffic Volume, Road Deterioration, Socio-economic Function, Contribution of Basic Human Needs and Policy.

3. Proposed Alignment Plan of Great East Road

Draft Land Acquisition and Property Compensation Plans are shown in **Attachment-B**.

A. 2 Properties Compensation near Makishi Road Jct.

B. 2 Properties Compensation near District Road Jct.

JICA Study Team prepared two horizontal alternatives as per attached.

Alternative 1 : passing the filling station with affection to the existing building and under construction building. → (A-5)

Alternative 2 : passing in front of the filling station (No affection to the existing building and under construction building) → (A-6 ~ A-7)

4. Drainage Network

In conjunction with the on-going above mention study of the Project for Improvement and Maintenance of Lusaka City Roads (Second Stage), The JICA Study Team would like to submit the result of the identification of the flood prone area within objective roads at where installation of proper drainage facilities is definitely necessary from the proposed roadside drainage up to the natural stream as per **Attachment-C**.

Countermeasures for Flood Prone Area

- **Manchichi Road** at Manda Hill Road Jct. → (A-7 ~ A-9)

Manchichi Road Height should be raised up approximately 1.2m for connecting to the Outlet.

- **Kasangula Road** → (A-13)

Kasangula Road should be raised up approximately 1.0m for connecting the Outlet.

- **Area Roads at Southern Part of Industrial Area** → (A-16)

The Geographical feature of this Area is too Flat Area so that the Outlet is nothing.

Objective Roadside Drainage at this area should be Earth Drain for infiltrate to the Earth.

5. **Railway Level Crossing**

Railway Level Crossing are 13 places at the Objective Roads.

The Location and Existing Conditions of each Railway Crossings are shown as **Attachment-D**.

After detailed field investigation, JICA Study Team prepared the Proposed Improvement Measures at Railway Level Crossing is shown as follows;

- Installation of Warning Sign
- Concrete Pavement at Railway Level Crossing

Relocation and Repair&Maintenance Works of Existing Warning Signals at Great North Road are borne by Government of Zambia.

Your quick actions and answer are highly appreciated.

Truly yours,



Hisashi Muto

Chief Consultant,

JICA Study Team for

Improvement and Maintenance of

Lusaka City Roads (Second Stage)

- C.C.
1. JICA Lusaka Office
 2. Mr. W. Lungu
Director of Engineering, LCC

	Road Name	Length (km)	Road Classification			
			Principal Arterial IA	Minor Arterial IB	Collector IC	Local Road ID
1	1 Great East Road	14.0	○	○		
	2 Great North Road	5.0	○	○		
	3 ChaChaCha Road	1.7				
	4 Ben Bella Road	0.4				○
	5 Chiparamba Road	0.4			○	
	6 Katunjila Road	0.4				○
	7 Nkwazi Road	0.4				○
	8 Malasha Road	0.3				○
	9 Sapele Road	1.0				○
	10 Chainda Place	0.2				○
	11 Nairobi Place	0.2				○
	12 Dar es Salaam Place	0.2				○
	13 Heroes Place	0.2				○
	14 Buteko Place	0.2				○
Group 1 Total		24.6 km				○
2	1 Mungwi Road	2.7			○	
	2 Manchichi Road	2.3			○	
	3 Kasangula Road	5.0			○	
	4 Kaleya Ng'ombe	0.9			○	
	5 Chitanda Road	2.5			○	
	6 Bauleni	1.0			○	
Group 2 Total		14.4 km				○
3	1 Kachiza	1.2				○
	2 Sheki Sheki Road	1.4				○
	3 Buyantanshi Road	1.9				○
	4 Mukwa Road	2.0				○
	5 Kansanshi Road	0.9				○
	6 Katanga Road	0.7				○
	7 Washama Road	1.2				○
	8 Chisango Road	1.2				○
	9 Nchocho Road	0.7				○
	10 Mwayi Road	0.6				○
	11 Panganani Road	0.5				○
	12 Mukatasha Road	1.7				○
	13 Chifinga Road	0.2				○
	14 Moobola Road	0.2				○
	15 Kambala Road	0.2				○
	16 Mwembeshi Road	1.5				○
	17 Kutwa Road	0.8				○
	18 Bombo Road	0.1				○
	19 Polonalio Miti Road	0.3				○
	20 Njolwe Road	0.2				○
	21 Manda Road	1.2				○
	22 Umuzilikazi Road	2.3				○
	23 Nakambala Road	0.4				○
	24 Maunda Road	0.3				○
Group 3 Total		21.7 km				○
Grand Total		60.7 km				○


Table 4.2.2a - Standard Cross Sections for Various Road Classes

Road type	No. of lanes	Lane width (m)	Carriageway width (m)	Edge strip (m)	Shoulder width (m)	Median width (m)	Formation width (m)	Road reserve width (m)
I	4	3.5	2 x 7.5	0.2	3.0	3.0	24.0	2 x 60
IA	2	3.5	7.5	0.25	3.0	-	13.5	100
IB	2	3.5	7.0	-	2.5	-	12.7	100
IC	2	3.25	6.5	-	2.0	-	10.5	100
II	2	3.25	6.5	-	1.5	-	9.5	100
III	1	5.5	5.5 (min)	-	1	-	7.5	100
Unclassified	-	-	5.5 (min)	-	-	-	(1)	(1)

Table "a" is to be used for the construction of new roads

(1) Unclassified roads are not subject to geometric or full structural design or material control

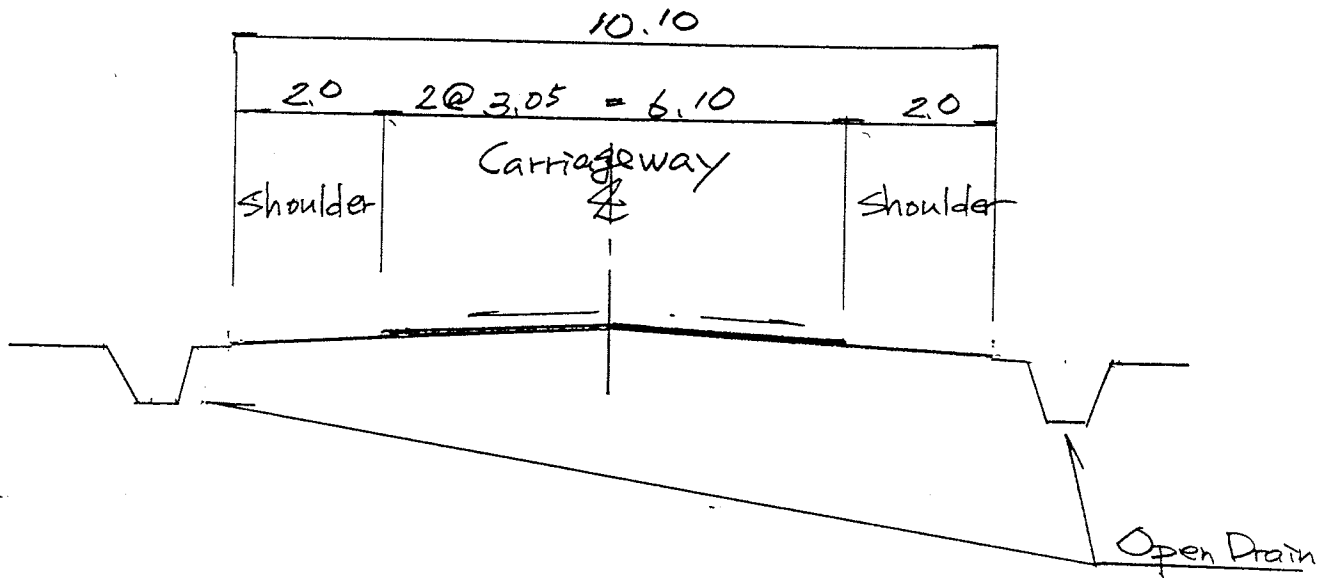
Table 4.2.2b - Standard Cross Sections for Various Road Classes



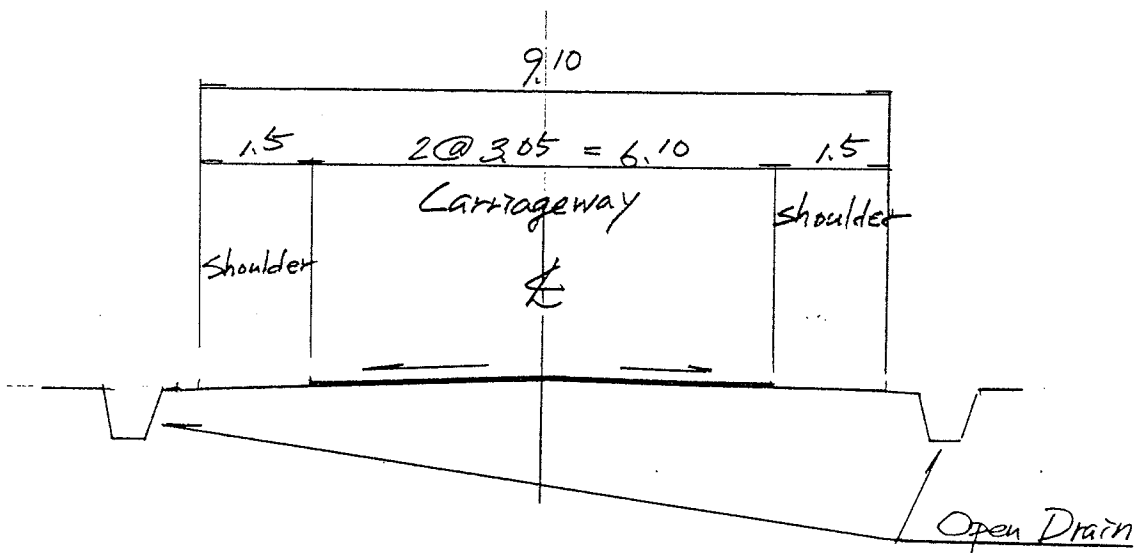
Road type	No. of lanes	Lane width (m)	Carriageway width (m)	Edge strip (m)	Shoulder width (m)	Median width (m)	Formation width (m)	Road reserve width (m)
I	4	3.5	2 x 7.4	0.2	3.0	3.0	23.8	2 x 60
IA	2	3.65	7.3 ✓	-	3.0	-	13.3	100
IB	2	3.35	6.7 ✓	-	2.5	-	12.0	100
IC	2	3.05	6.1 ✓	-	2.0	-	10.1	100
ID → II	2	3.05	6.1 ✓	-	1.5	-	9.1	100
III	1	5.5 (min)	5.5 (min) ✓	-	1	-	7.5	100
Unclassified	-	-	5.5 (min)	-	-	-	(1)	(1)

Note Table "b" is to be used for rehabilitation of roads constructed under the requirements of "Highway Design Standards, Roads Department", before 1994.

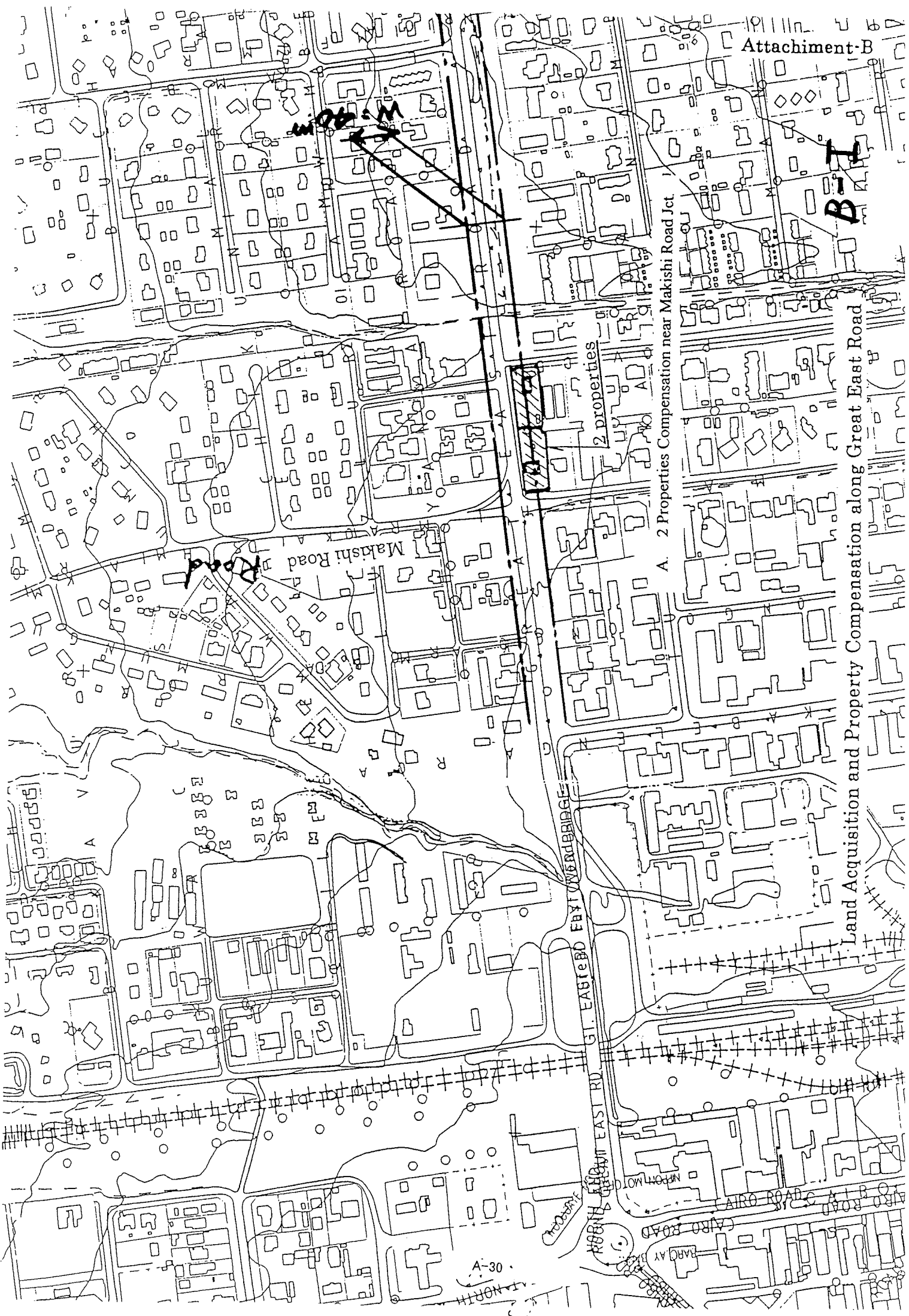
Collector Road (IC)



Local Road (ID → II)



B-1



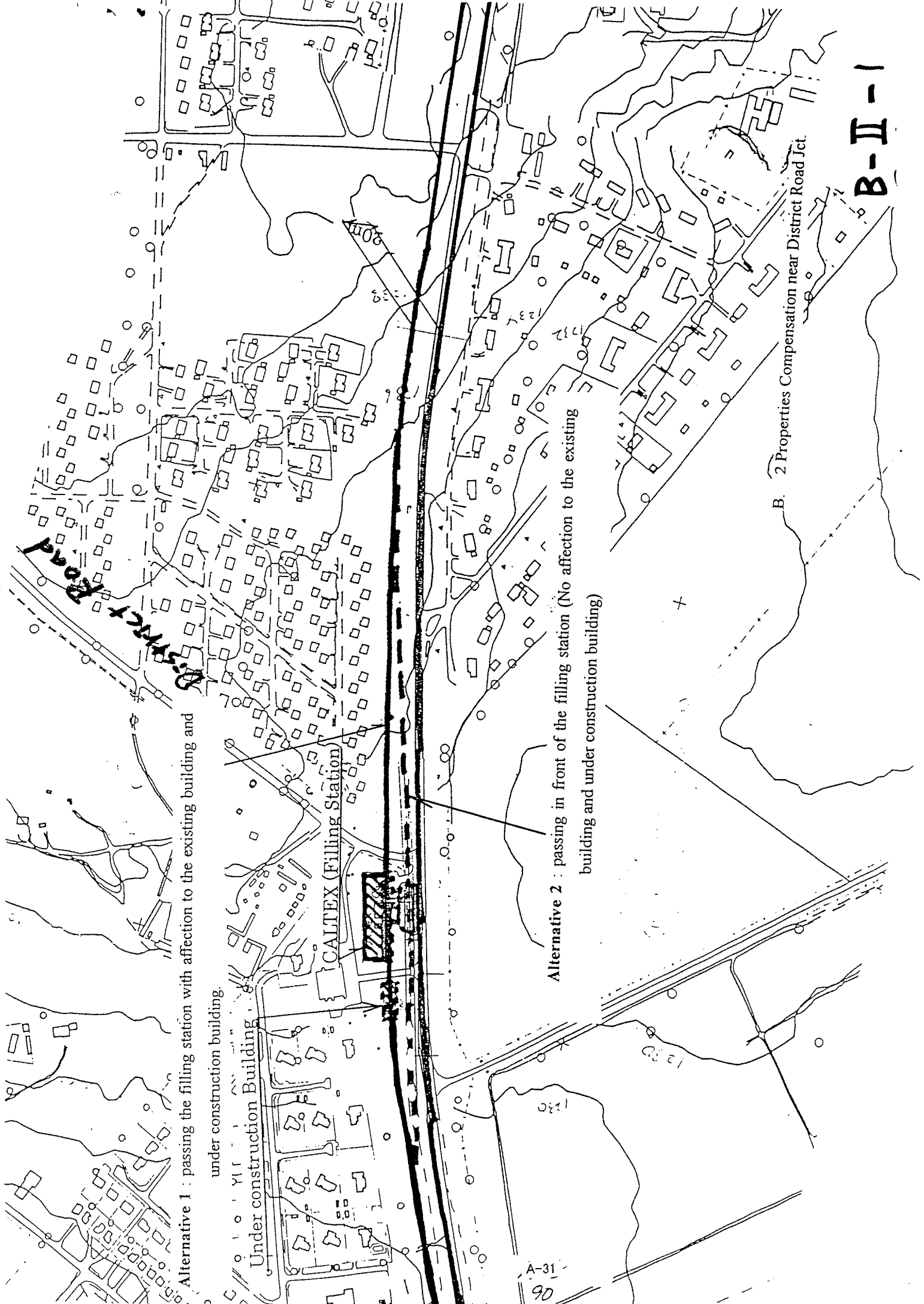
A. 2 Properties Compensation near Makishi Road Jct.

2 properties

Makishi Road

GI. EAST RD

Land Acquisition and Property Compensation along Great East Road



Alternative 1 : passing the filling station with affection to the existing building and under construction building.

Under construction Building

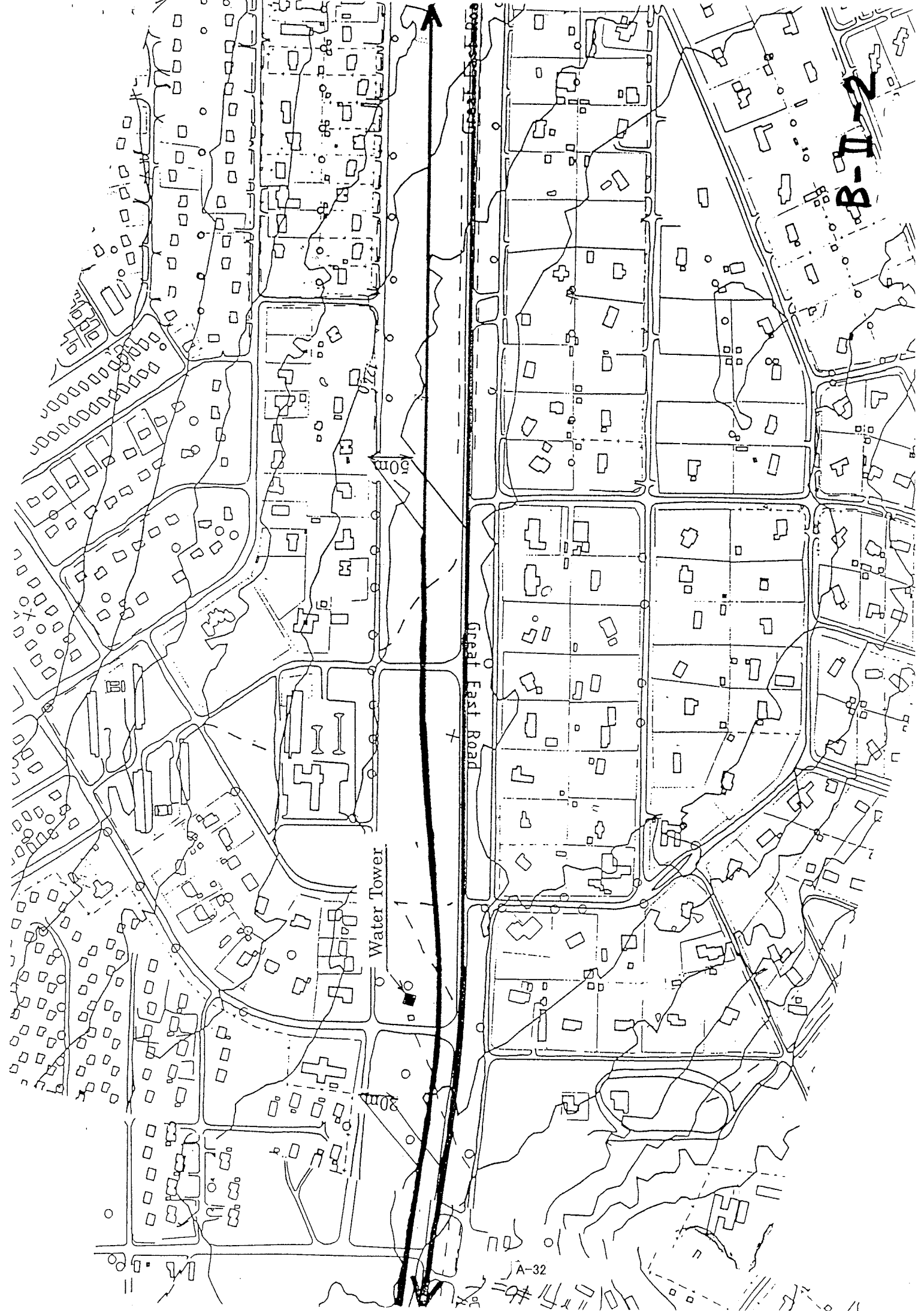
CALTEX (Filling Station)

Alternative 2 : passing in front of the filling station (No affection to the existing building and under construction building)

B. 2 Properties Compensation near District Road Jct.

A-31
90

B-II-1

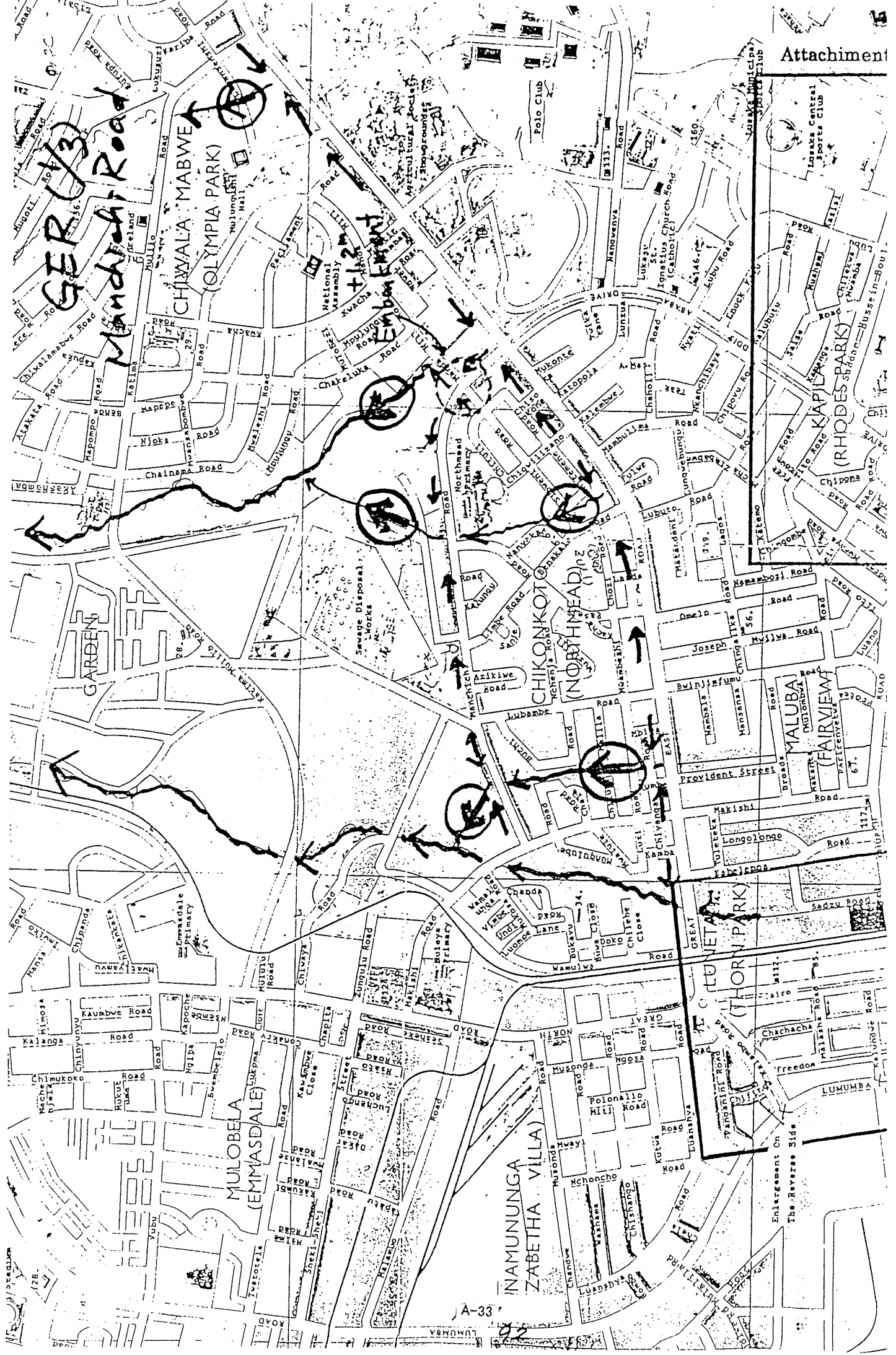


B-II-2

Great East Road

Water Tower

A-32

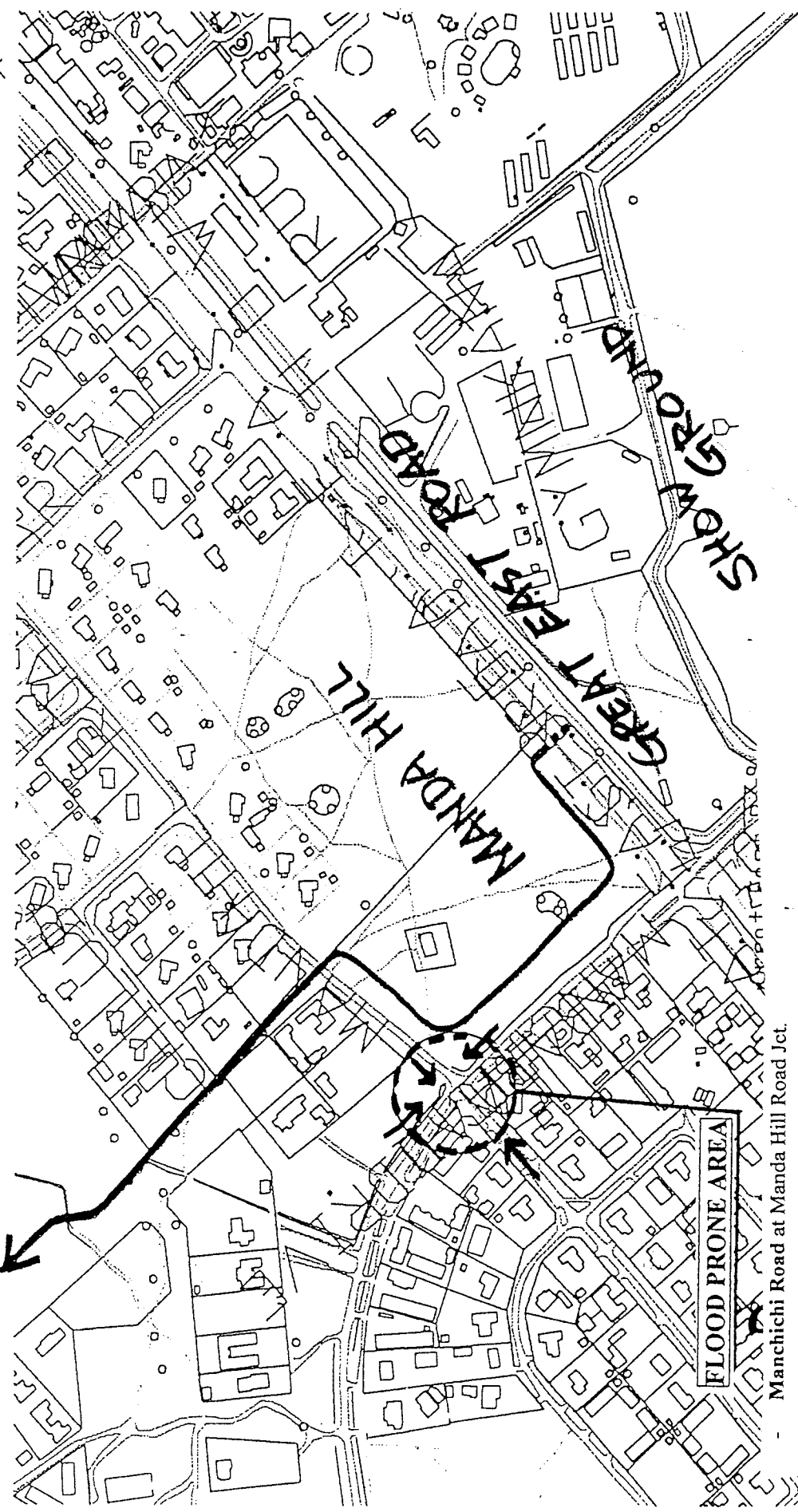


Flood Prone Area of Manchichi Road at Manda Hill Road Intersection

S=1:5000

Lot Airport

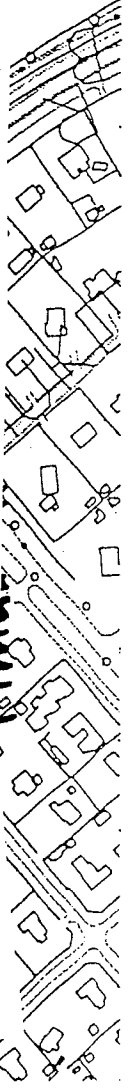
OUTLET



FLOOD PRONE AREA

Manchichi Road at Manda Hill Road Jct.

Manchichi Road Height should be raised up approximately 1.2m for connecting to the Outlet.



ADDIS
ABABA
EAST
AETHIOPIA

10/11/2008

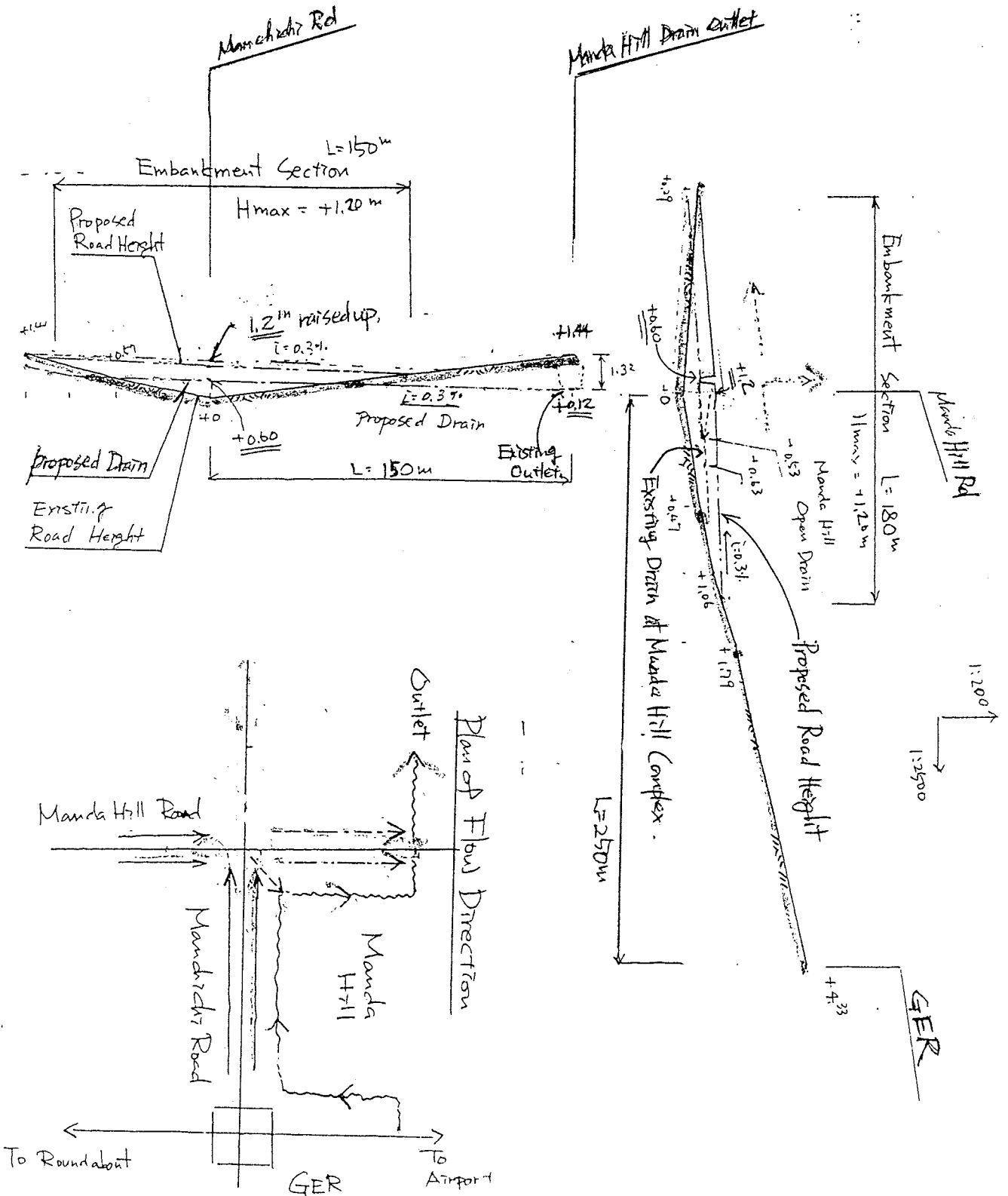
CLOSE

Manchichi Road

Improvement Plan at Manchichi Rd & Manda Hill Rd. Jct.

(Realignment Plan)

Profile of Manda Hill Road



Profile of Manchichi Road

GER (3/8)

CHAMBA VALLEY

CHAKUNKULA (CHESTON)

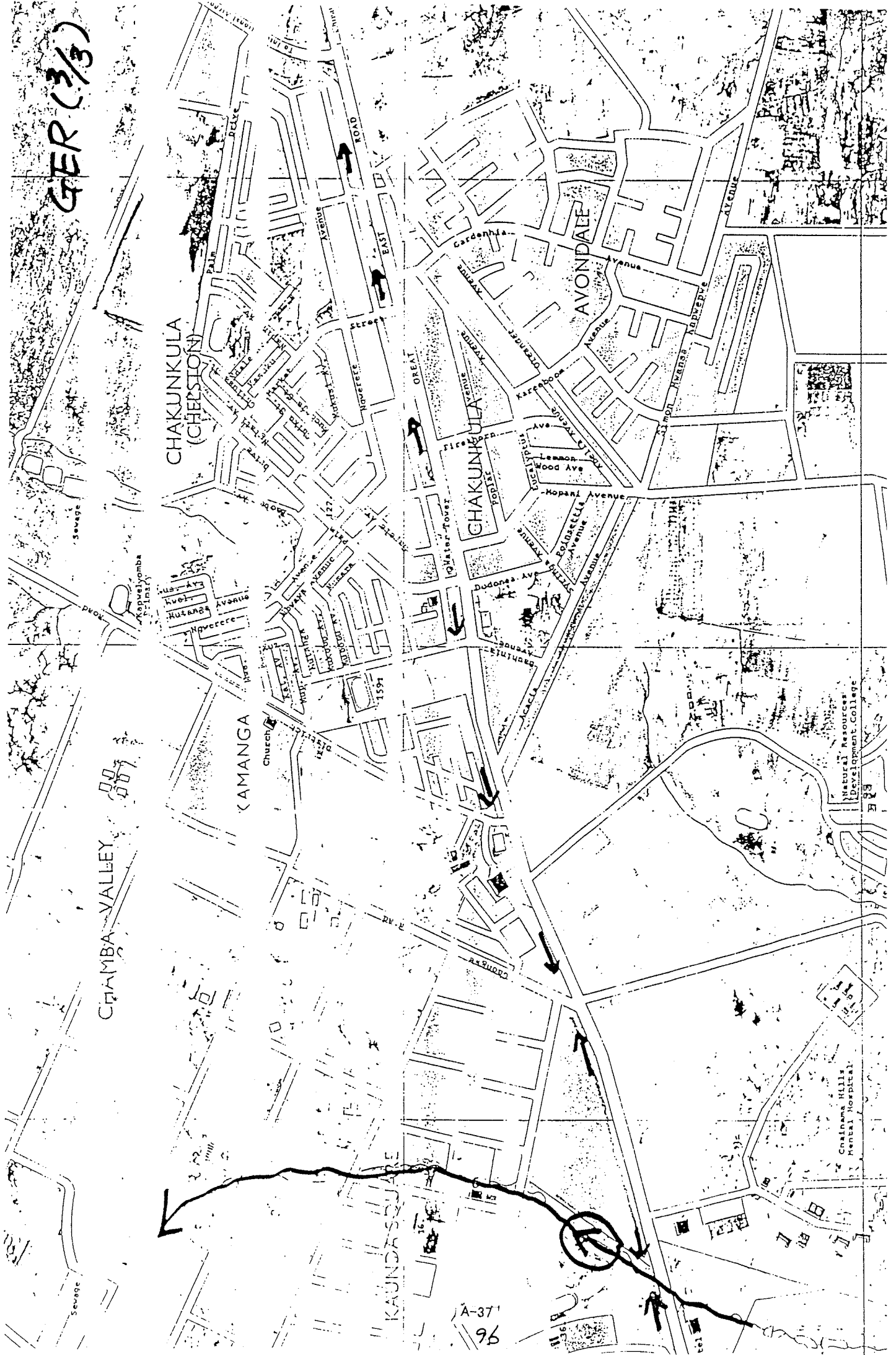
KAMANGA

CHAKUNKULA

AVONDALE

KAUNDA SQUARE

A-37
96

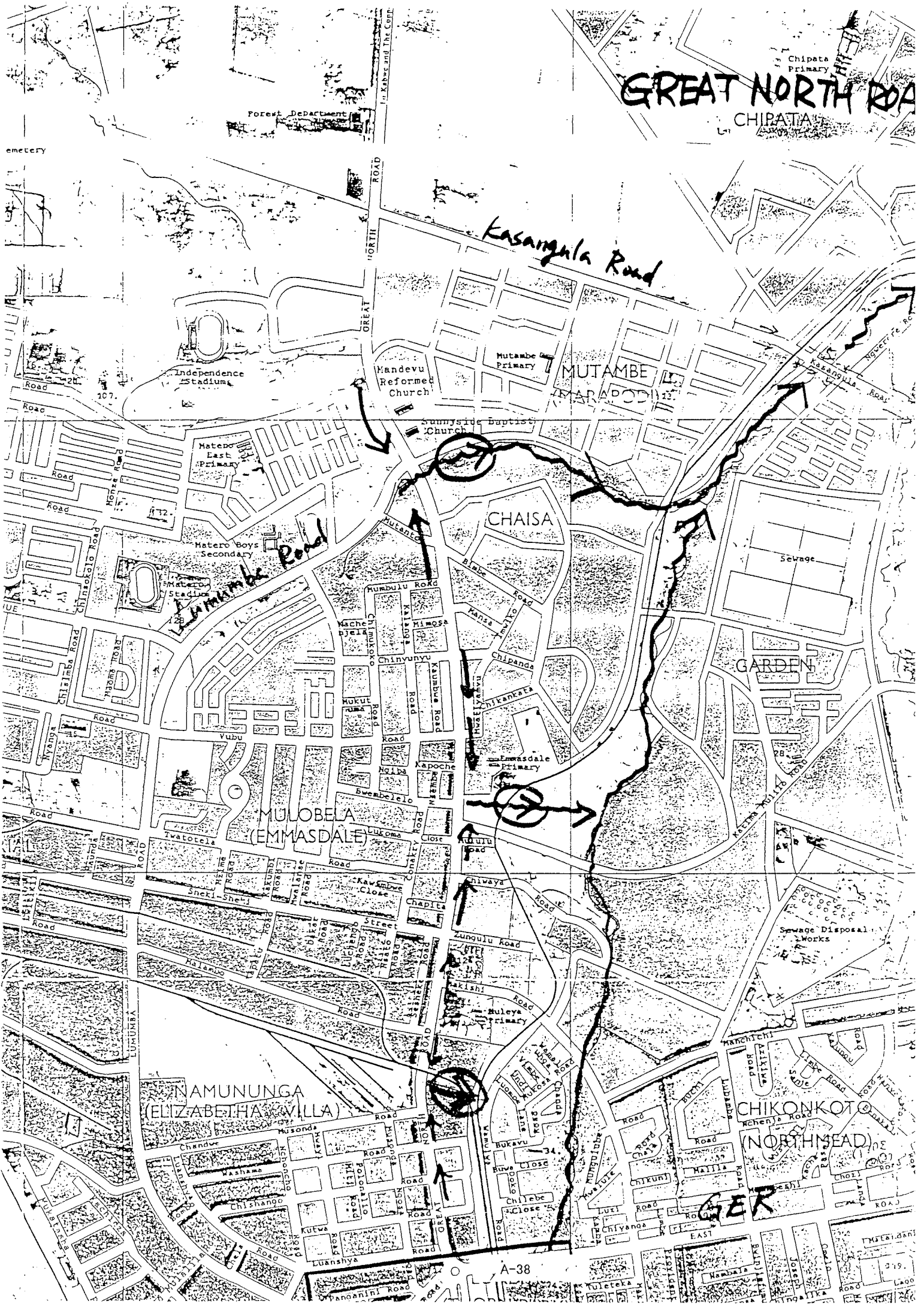


Natural Resources Development College

Graham Hill Mental Hospital

GREAT NORTH ROAD

CHIPATA



Kasangula Road

Lumumba Road

GER

A-38

emetery

Forest Department

Chipata Primary

Independence Stadium

Mandevu Reformed Church

Mutambe Primary

MUTAMBE

Sunnyside Baptist Church

Matepo East Primary

Matepo Boys Secondary

CHAISA

MULOBELA (EMMASDALE)

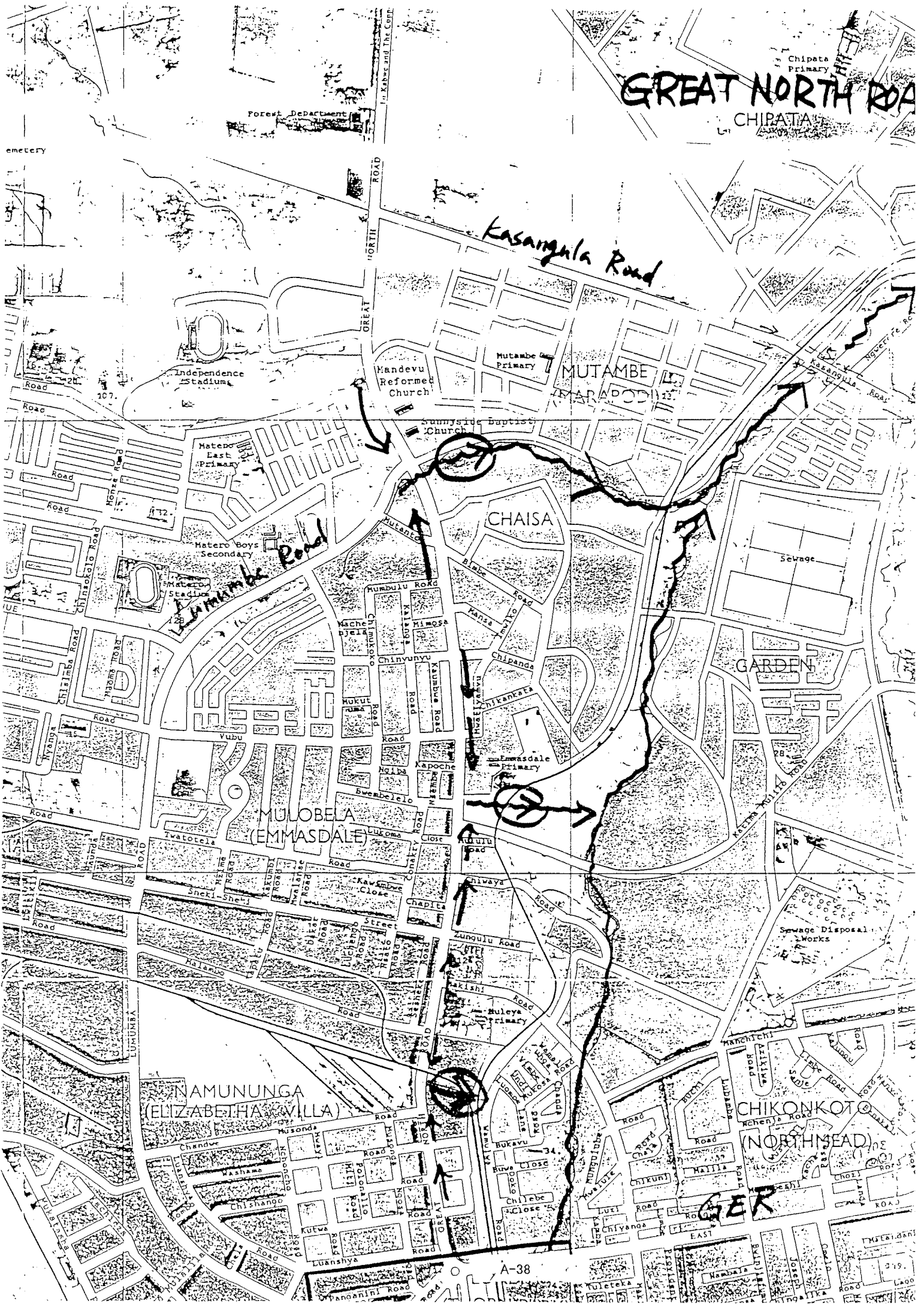
NAMUNUNGA (ELIZABETHA VILLA)

CHIKONKOT (NORTHHEAD)

Sewage

GARDEN

Sewage Disposal Works



Kasangula Road

Roma Girls Secondary

CHIPATA

Embankment

CHIWALA MABWE (OLYMPIA PARK)

GREAT NORTH ROAD

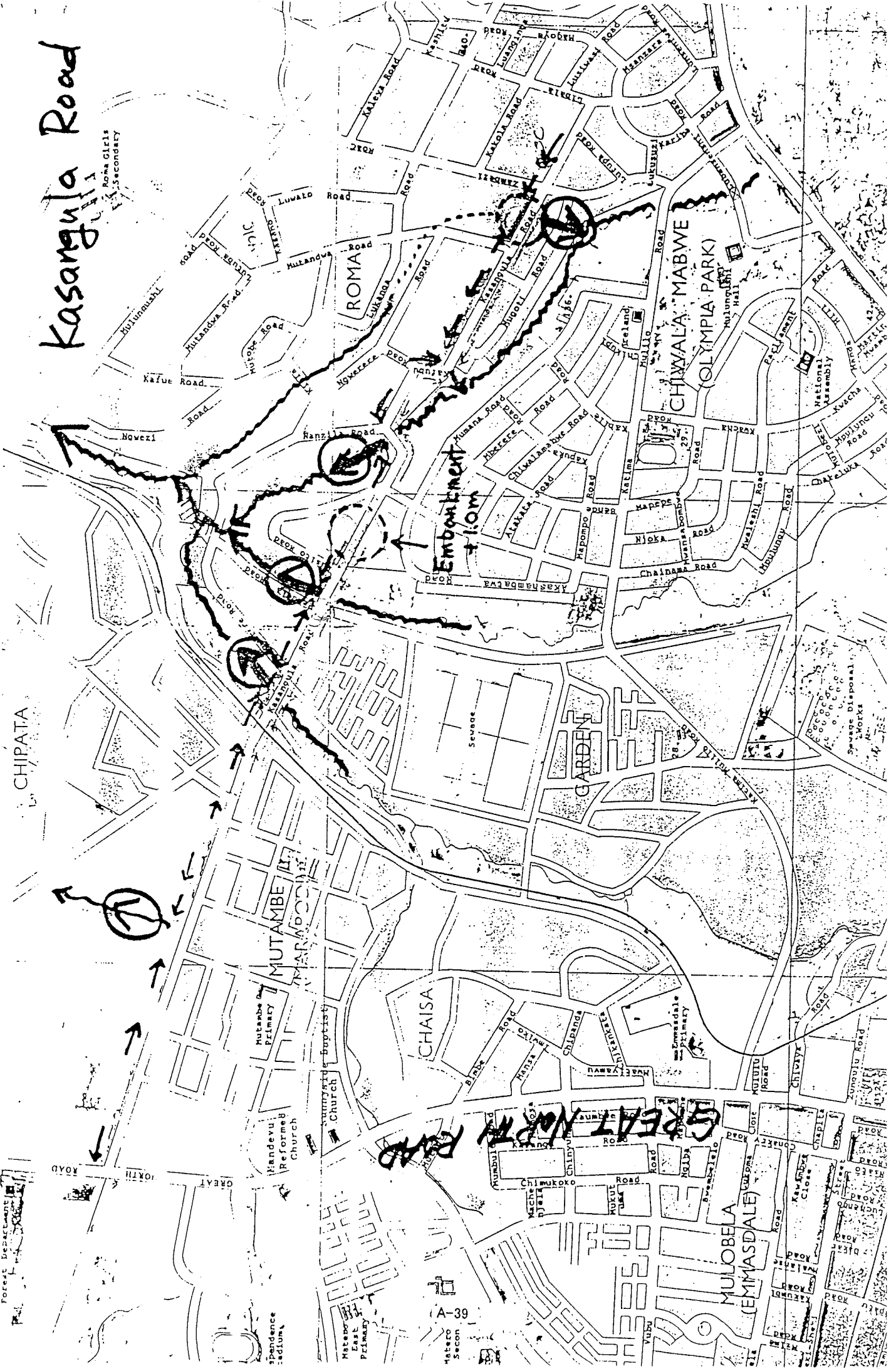
Forest Department

GREAT NORTH ROAD

Spandance Station

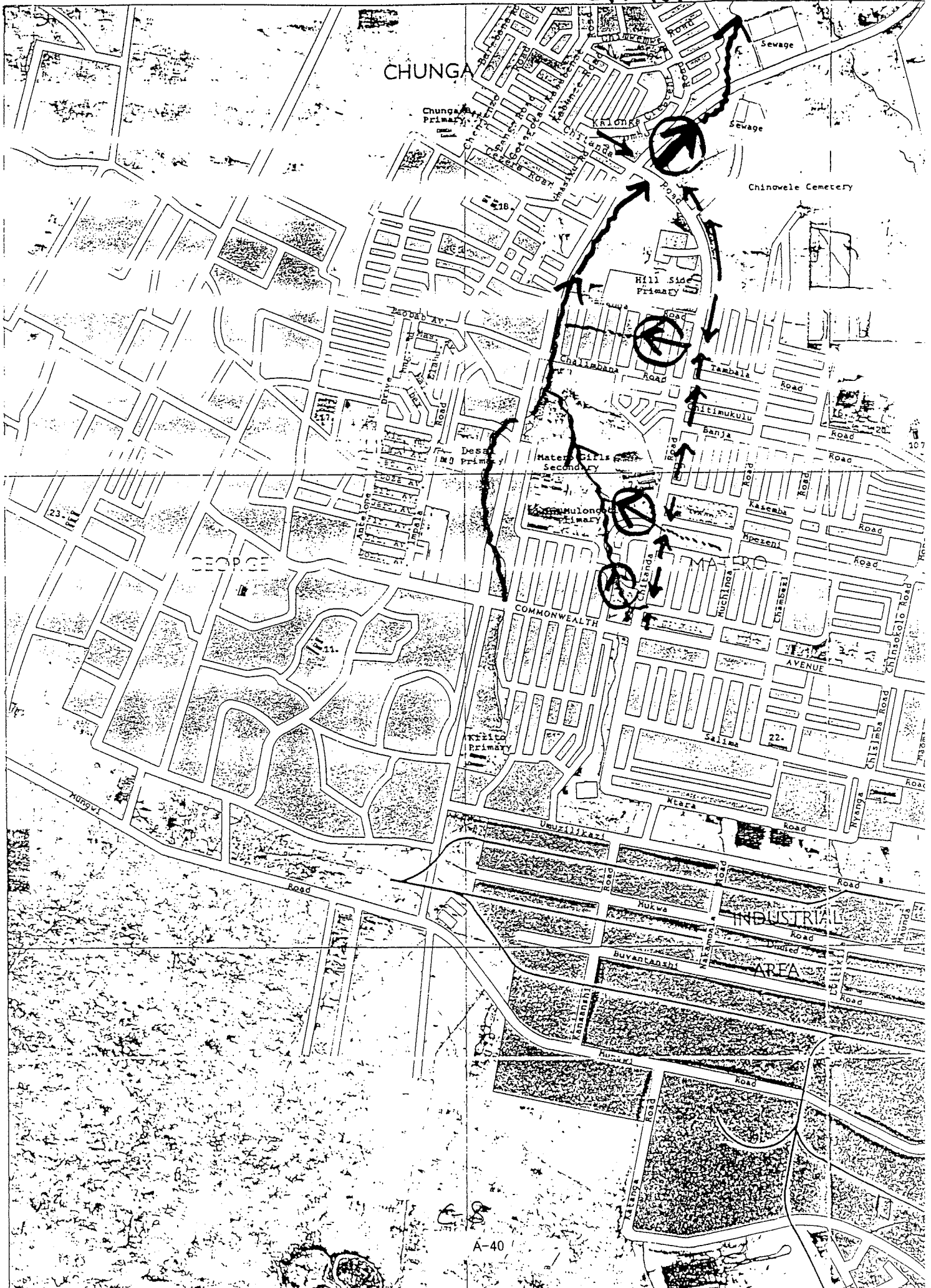
A-39

Matero Sec 2



A

Chitanda Road



1

2

3

G

F

E

Kaley Road

Namba Valley Primary

Reformed Church
Institutional
School

DEON

CHURCH

Institute for African Studies

CHUDLEIGH

MWAMBULA

Munali Secondary

SWORTH PARK

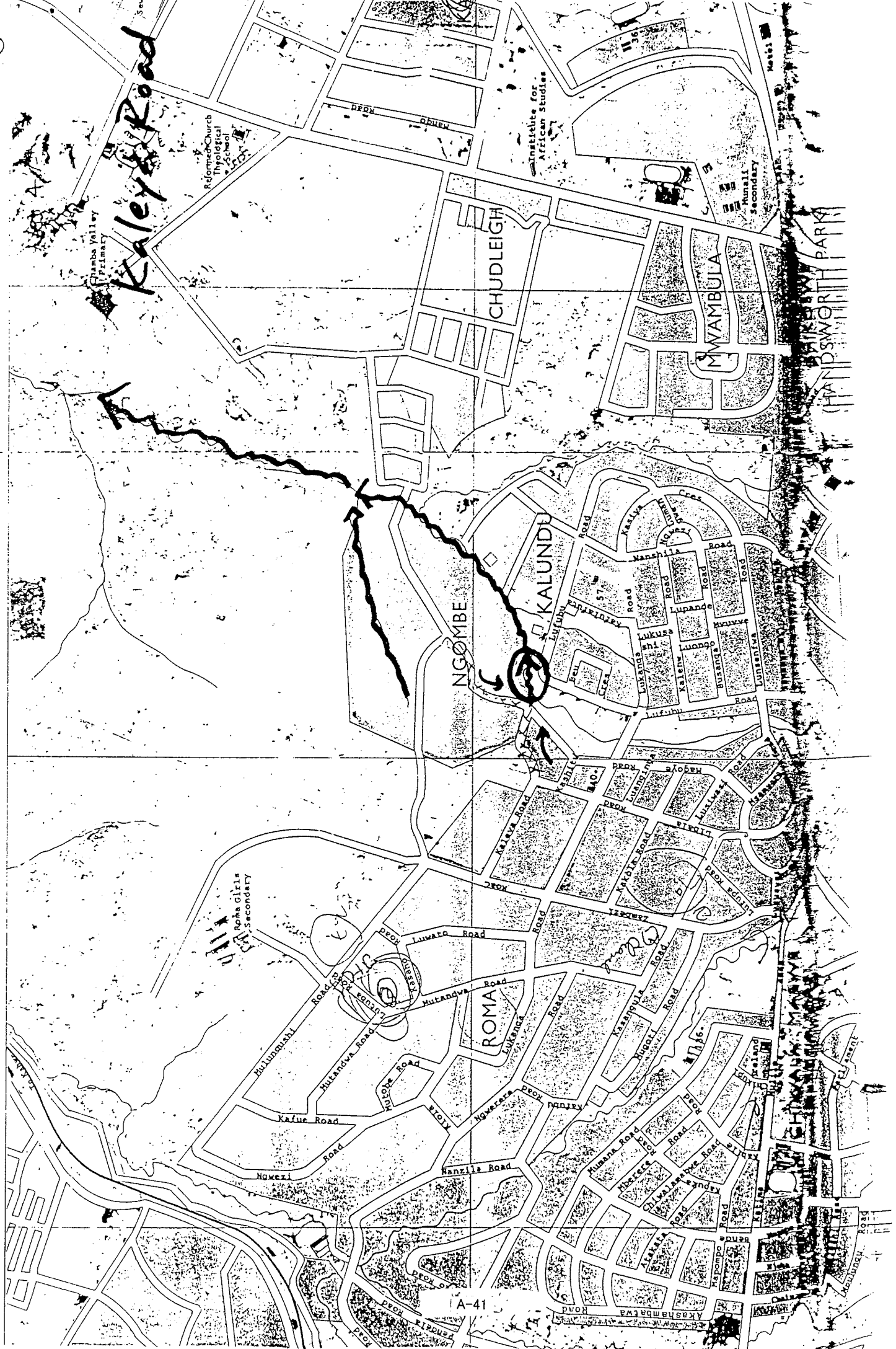
NGOMBE

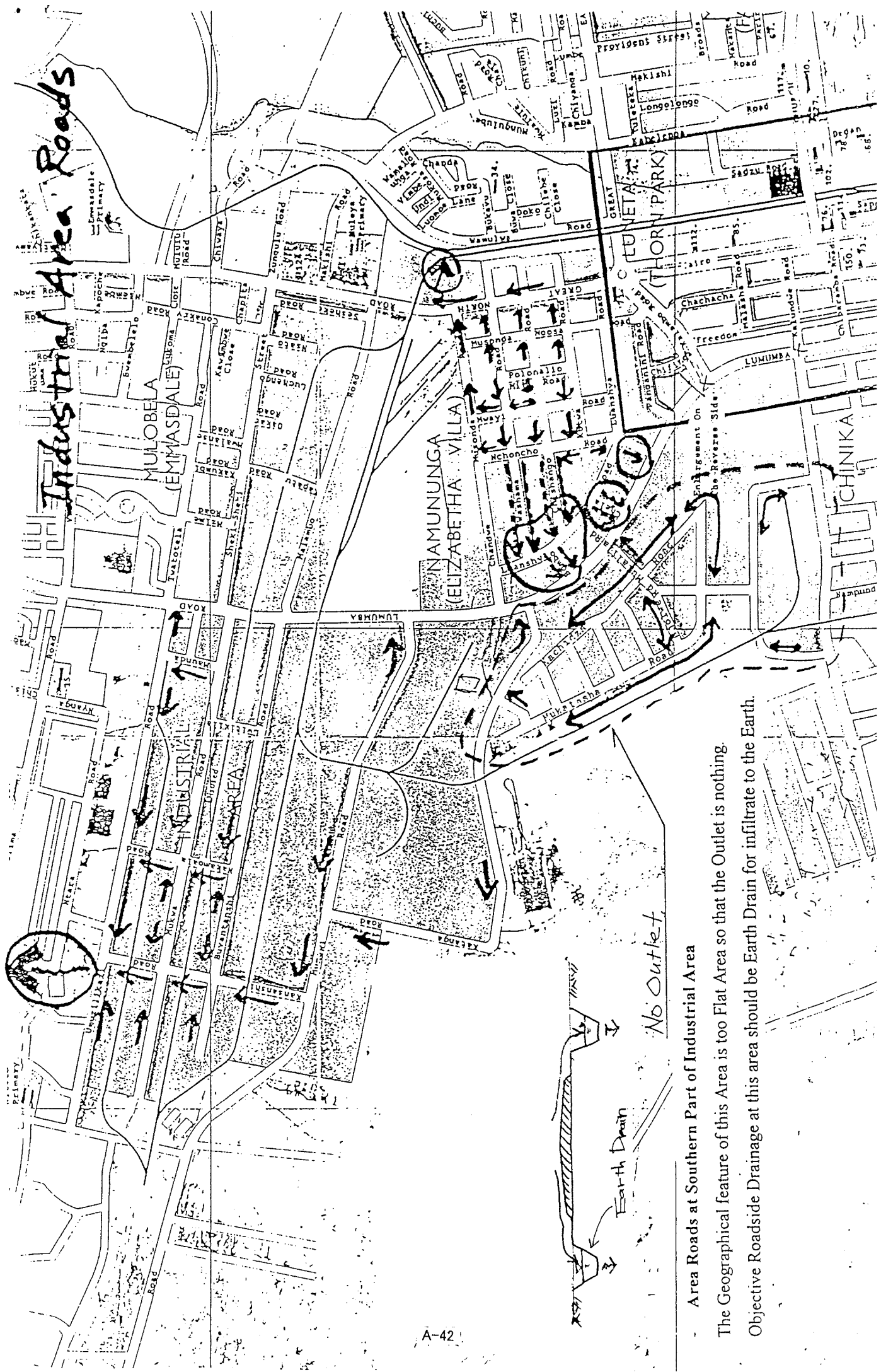
KALUNDI

Alpha Girls Secondary

ROMA

A-41

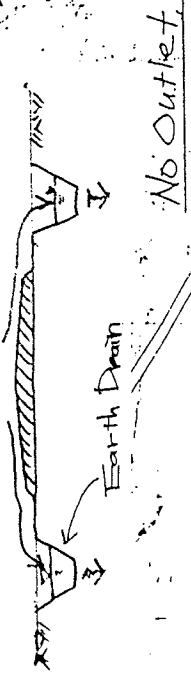




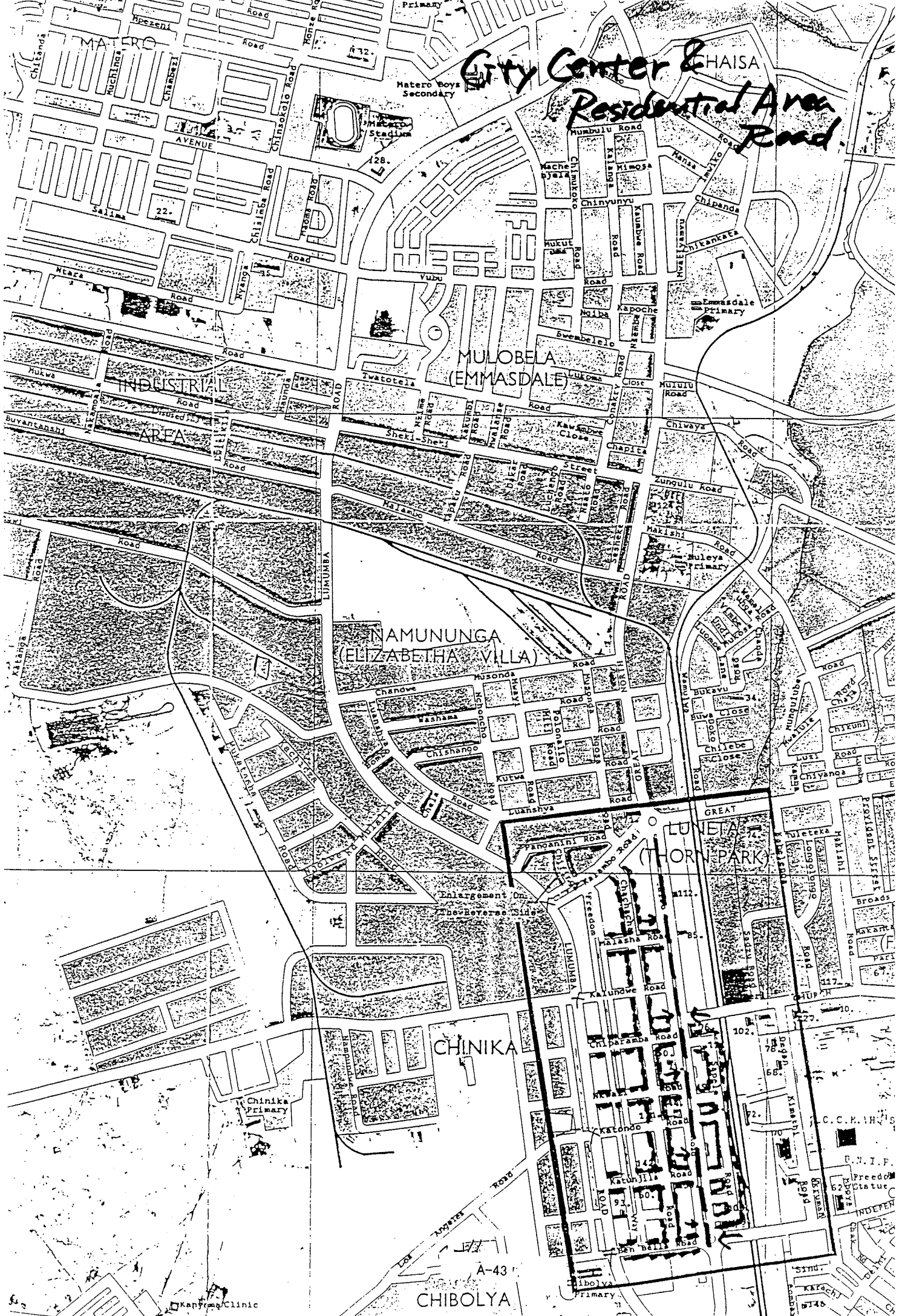
Industrial Area Roads

Area Roads at Southern Part of Industrial Area

The Geographical feature of this Area is too Flat Area so that the Outlet is nothing. Objective Roadside Drainage at this area should be Earth Drain for infiltrate to the Earth.



City Center & Residential Area Road

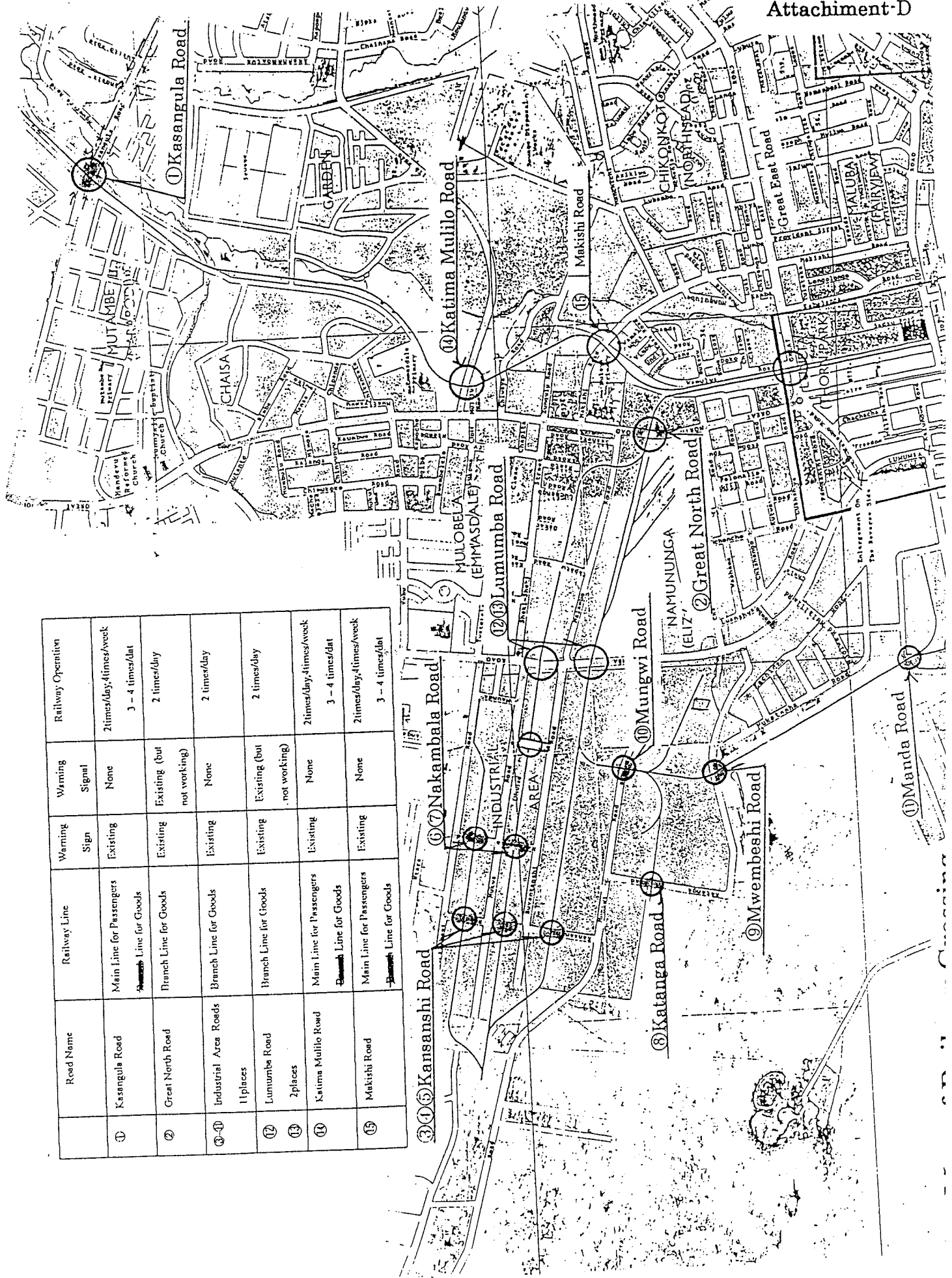


A-43
CHIBOLYA

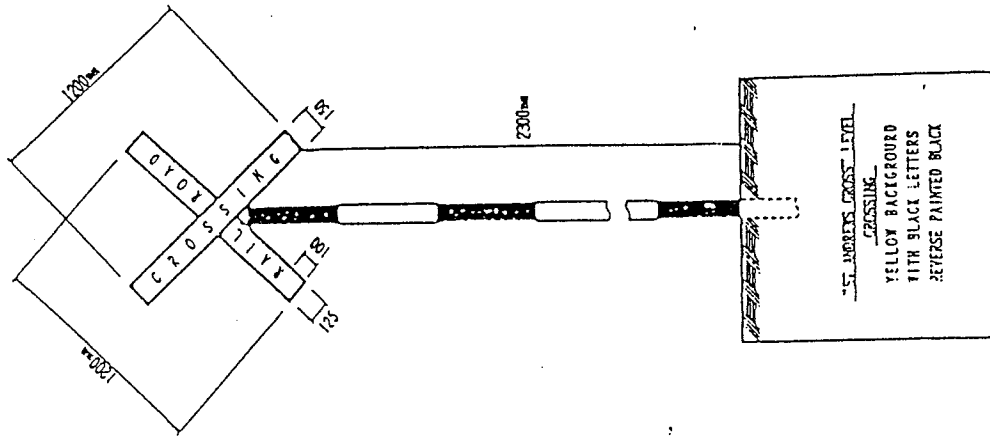
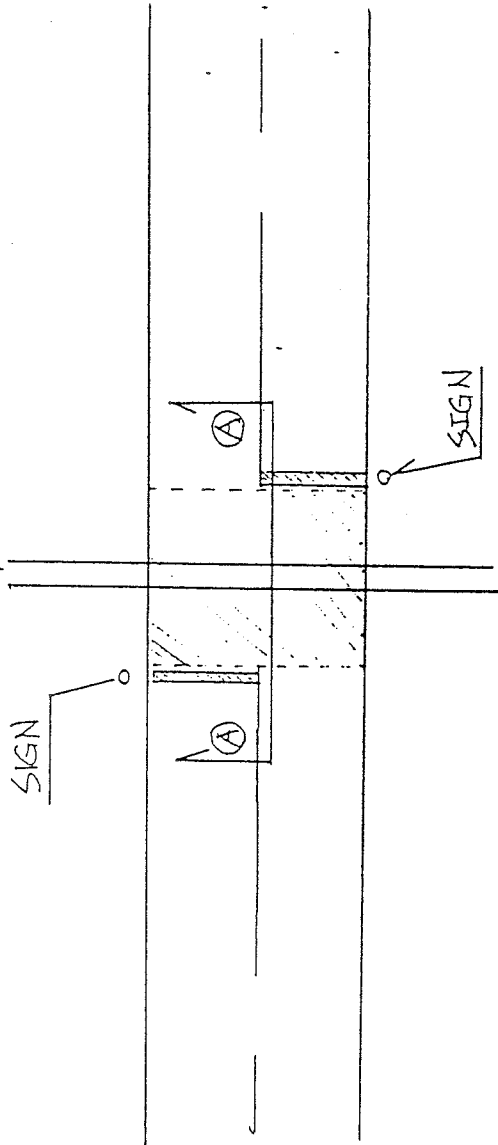
Kapfema Clinic

C.C.P. H.H.S.
F.V.I.F.
Freedom
Statue
INDEPEN

Road Name	Railway Line	Warning Sign	Warning Signal	Railway Operation
① Kasangula Road	Main Line for Passengers Branch Line for Goods	Existing	None	2 times/day, 4 times/week 3 - 4 times/day
② Great North Road	Branch Line for Goods	Existing	Existing (but not working)	2 times/day
③-④ Industrial Area Roads 11 places	Branch Line for Goods	Existing	None	2 times/day
⑤ Lumumba Road	Branch Line for Goods	Existing	Existing (but not working)	2 times/day
⑥ Katima Mulilo Road	Main Line for Passengers Branch Line for Goods	Existing	None	2 times/day, 4 times/week 3 - 4 times/day
⑦ Makishi Road	Main Line for Passengers Branch Line for Goods	Existing	None	2 times/day, 4 times/week 3 - 4 times/day

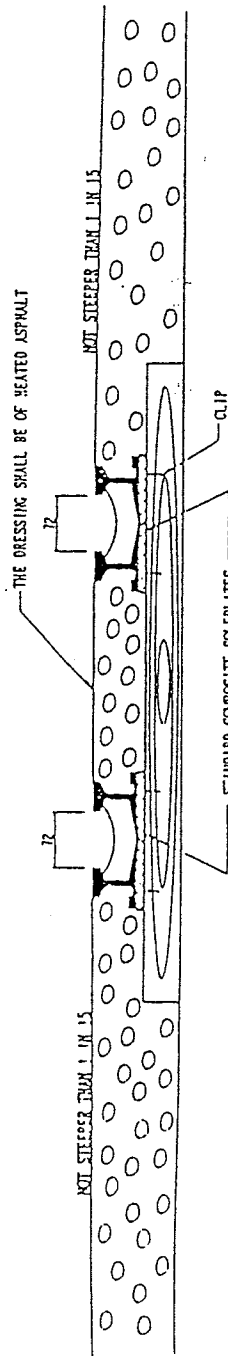


RAILWAY LINE



CROSS SECTION S=1:5

(A) - (A)



Warning Signals

Relocation and Repair & Maintenance Works of Existing Warning Signals at Great North Road are borne by Government of Zambia.

MINISTRY OF LOCAL GOVERNMENT AND HOUSING THE REPUBLIC OF ZAMBIA	THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF USAKA CITY ROADS (PHASE II) IN THE REPUBLIC OF ZAMBIA	NIPPON KOEI CO., LTD IN CONSORTIUM WITH JAPAN ENGINEERING CONSULTANTS CO., LTD	RAILWAY LEVEL CROSSING LAYOUT (REFERENCE DRAWING)
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(4) Valuation of Unit Rate per square meter for Properties to be Compensated along Great East Road

JAN 24, 2000

A-6 個別建物の算出根拠

It is, therefore, proposed that the fees be reviewed upwards as follows:-

A) PLAN SCRUTINY FEES

TABLE 3 COMMERCIAL DEVELOPMENT

TYPE OF DEV.	CENTRAL BUSINESS DISTRICT (CBD) (ZK)	NEIGHBOURHOOD SHOPPING AREAS (DISTRICT CENTRE) (ZK)	PERI-URBAN AREAS (LOCAL CENTRES) (ZK)
Retail Shops, Restaurants Take-aways			
Wholesale shops			
SERVICES Banks, Post Offices Telecommunications	500,000/m2	300,000/m2	200,000/m2
SERVICES INDUS. Maize Mills, Capentry Shops			
OFFICES			
COMMERCIAL ACCOMMODATION Hotels, Rest and Guest houses, Motels			
ENTERTAINMENT Bars, Night Clubs, Bottlestore			
PUBLIC SERVICES Clinics, Private Security Stations, Private Schools			
RECREATION (Private) Football			

Fields, Play grounds OTHER FACILITIES Petrol Filling Stations, Garages			
PLACES OF WORSHIP Churches, Mospques Temples	300,000/M2	200,000/M2	150,000/M2

NOTE: Commercial Development outside the three locational centres above (eg on major roads and residential areas) shall be subjected to a uniform rate of K400,000.00 per square metre.

TABLE 4 RESIDENTIAL DEVELOPMENT

TYPE OF DEVELOPMENT	RATE/M2 IN ZAMBIAN KWACHA
Low Cost	150,000
Medium Cost	200,000
High Cost	250,000

TABLE 5 INDUSTRIAL DEVELOPMENT

TYPE OF DEVELOPMENT	RATE/M2 (IN ZAMBIAN KWACHA)
Heavy Industry	400,000
Special Industry e.g	400,000
General Industry e.g	300,000
Light Industry e.g.	200,000

Please note that a light Industrial development in the Commercial category will attract commercial rates as indicated above under commercial development.

TABLE 6 OTHERS

TYPE OF APPLICATION	RATE (ZAMBIAN KWACHA)
Boundary Walls	100,000 per metre
Application in principle	100,000 per application
Subdivisions	75,000 per plot
Consolidations	150,000
Tracing supply of related information	50,000

A

Cost Estimation borne by the Recipient Country

1. Compensation for land acquisition / house relocation (Great East Road)

no.	Area(m2)	Unit cost(zmk)	Total (zmk)
2	1,750	300,000	1,050,000,000

2. Quantity of Utility Relocation (GREAT EAST ROAD)

Location	ZESCO						ZAMTEL						LWSC					
	Relocation of Electricity Line(m)						Relocation of Telephone Line(m)		Relocation of Water Main						Relocation of Sewerage			
	Overhead		Underground				Overhead	Underground	D75	D100	D150	D200	D375	D150	D300			
No.8 - No.14						600			600									
No.46 - No.49		340		440		400						300						
No.74 - No.76				250		200						250						
No.86 - No.89				400		200						200						
No.97 - No.99		400		400		200			150									
No.140				200		200					120							
TOTAL(m)	400	1,340		690		2,050	0	700	750	0	720	750	0	0	0			
Unit Cost(Kwacha)	45,000	21,840	210,000	156,170			334,500	334,500	737,610	737,610	737,610	737,610	380	380	380			
Cost(Kwacha)	18,000,000	29,265,600	144,900,000	320,148,500			0	234,150,000	0	553,207,500	0	531,079,200	553,207,500	0	0			
Total Cost(Kwacha)		512,314,100					234,150,000		1,637,494,200				0	0	0			

3. Extension of Water and Electricity to the site office

Location	ZESCO						ZAMTEL						LWSC					
	Relocation of Electricity Line(m)						Relocation of Telephone Line(m)		Relocation of Water Main						Relocation of Sewerage			
	Overhead		Underground				Overhead	Underground	D75	D100	D150	D200	D375	D150	D300			
No.8 - No.14						600			600									
No.46 - No.49		340		440		400						300						
No.74 - No.76				250		200						250						
No.86 - No.89				400		200						200						
No.97 - No.99		400		400		200			150									
No.140				200		200					120							
TOTAL(m)	400	1,340		690		2,050	0	700	750	0	720	750	0	0	0			
Unit Cost(Kwacha)	45,000	21,840	210,000	156,170			334,500	334,500	737,610	737,610	737,610	737,610	380	380	380			
Cost(Kwacha)	18,000,000	29,265,600	144,900,000	320,148,500			0	234,150,000	0	553,207,500	0	531,079,200	553,207,500	0	0			
Total Cost(Kwacha)		512,314,100					234,150,000		1,637,494,200				0	0	0			