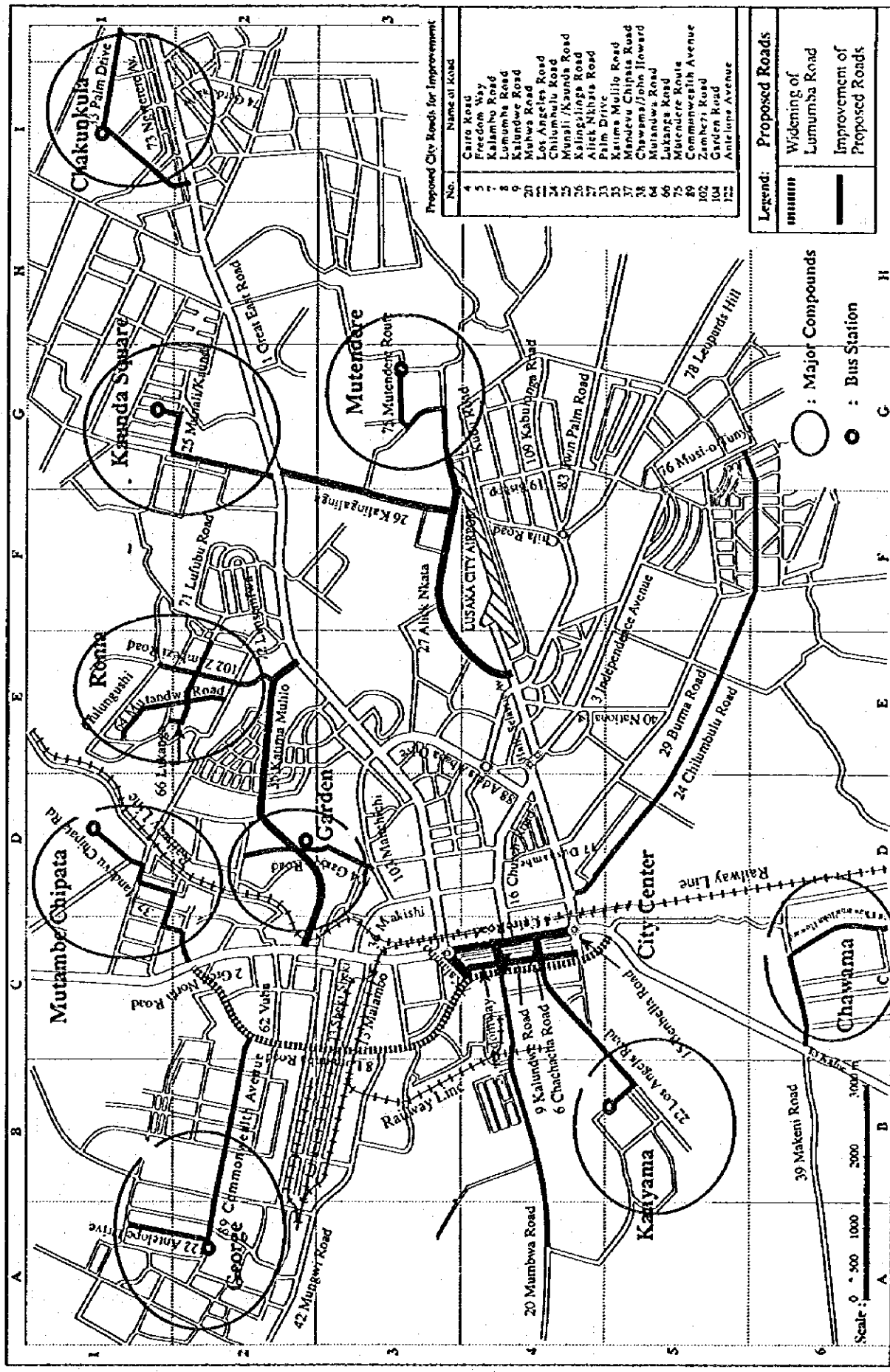


Appendices A: Drawings

- (i) Location Map
- (ii) Typical Cross Sections
- (iii) Group 1: Urgent Repair of Access to the Compounds
- (iv) Group 2: Improvement of Arterial Roads
 - Lumunba Road
 - Other Arterial Roads
- (v) Bus Station
- (vi) Drainage Facilities
- (vii) Road Facilities
- (viii) Relocation of Public Utilities
- (ix) Miscellaneous Work



Proposed City Roads for Improvement		Legend: Proposed Roads		DATE	
No.	Name of Road	Symbol	Description	DATE	SHEET NO.
4	Cairo Road	▬	Widening of	AUGUST, 1965	1
5	Freedom Way	▬	Lumumba Road		
7	Kalambo Road	▬	Improvement of		
8	Lumumba Road	▬	Proposed Roads		
9	Kalundwe Road	▬			
20	Muhwa Road	▬			
22	Lot Angeles Road	▬			
24	Chilumbulu Road	▬			
25	Munali /Kaunda Road	▬			
26	Kalincalings Road	▬			
27	Aliet /Nkhata Road	▬			
27	Palm Drive	▬			
31	Kisima Mulilo Road	▬			
35	Mshewe Chipata Road	▬			
37	Chawama/John Inward	▬			
38	Murandwa Road	▬			
64	Lukanga Road	▬			
66	Mutendere Route	▬			
75	Commonwealth Avenue	▬			
89	Zambezi Road	▬			
102	Garden Road	▬			
104	Antelope Avenue	▬			
122	Antelope Avenue	▬			

THE REPUBLIC OF ZAMBIA
LUSAKA CITY CONCIL

THE PROJECT FOR IMPROVEMENT AND MAINTENANCE
OF LUSAKA CITY ROADS

JAPAN INTERNATIONAL
COOPERATION AGENCY

LOCATION MAP

DATE: AUGUST, 1965

SHEET NO. 1

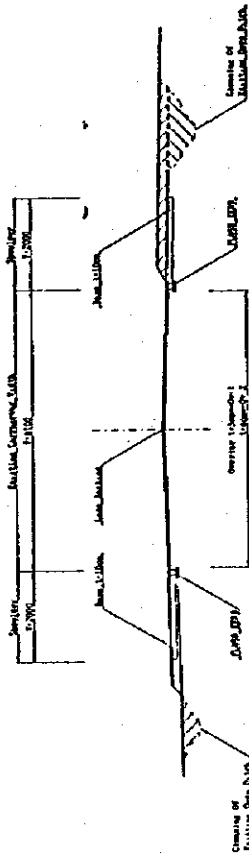
Scale: 0 500 1000 2000 3000

○ : Major Compounds
● : Bus Station

Ov-1 1:3cm
Ov-2 1:4cm

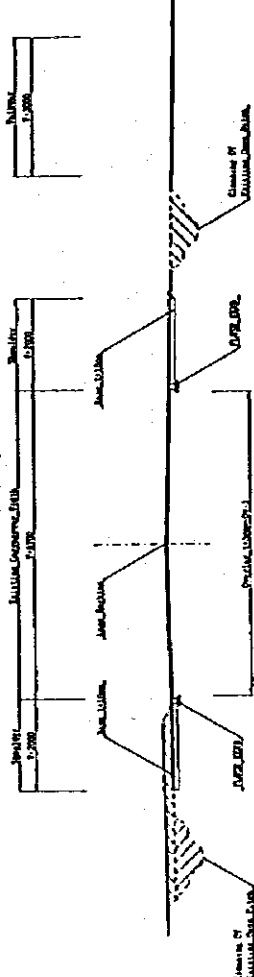
Cross section Type 2-1 Roads	
21 Los Angeles Rd	Ov-2
25 Musali Kaunda Rd	Ov-1
33 Manderre Chipata Rd	Ov-2
34 Chavama/John Howard Rd	Ov-2
54 Mutanga Rd	Ov-1
56 Lukanga Rd	Ov-1
75 Mutendere Rd	Ov-2
102 Zuberi Rd	Ov-2
104 Garden Rd	Ov-1
89 Cosmohealth Rd	Ov-2
172 Antelope Av	Ov-1
70 Numbwa Rd	Ov-1
26 Kalipangalanga Rd	Ov-2
27 Allick Khata Rd	Ov-1

Type A-1: Overlay(C-Class Road)



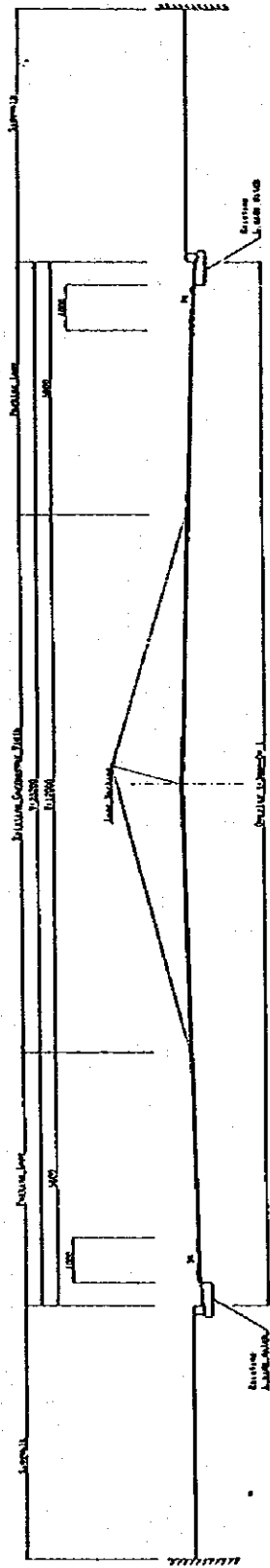
Cross section Type 2-2 Roads	
24 Chilumbulu Rd	Ov-1
35 Katika Mulilo Rd	Ov-2

Type A-2: Overlay(C-Class Road)



Cross section Type 2-3 Roads	
9 Kalundwe Rd	Ov-1

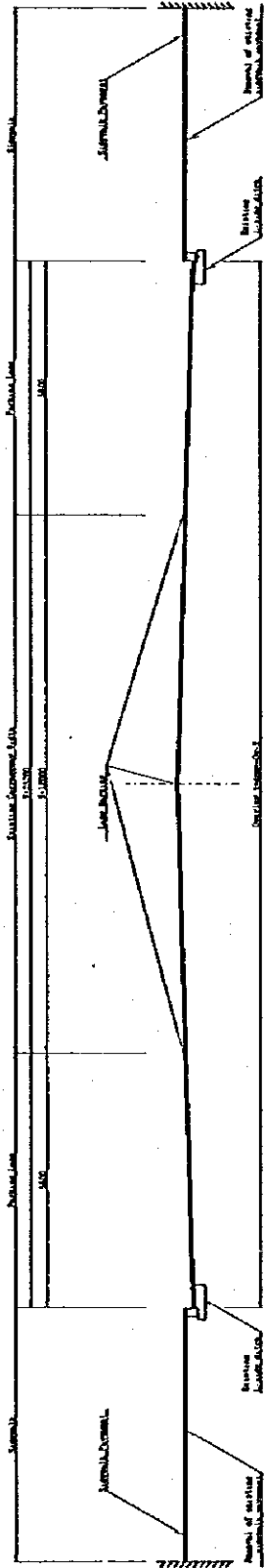
Type A-3: Overlay



THE REPUBLIC OF ZAMBIA LUSAKA CITY CONCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	OVERLAY SECTION	DATE	SHEET NO
			TYPICAL CROSS SECTION (1)	APRIL 1995	2

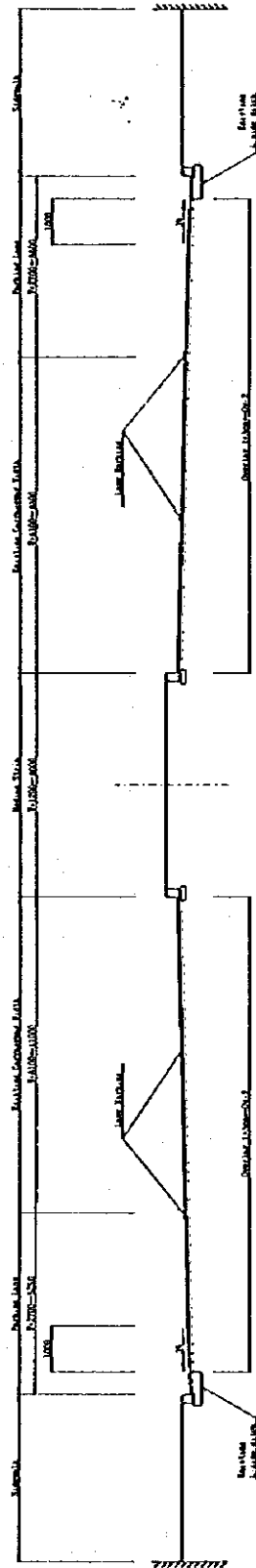
Cross section Type 2-4 Roads
 21 Extension of Los Angeles Dr-2

Type A-4: Overlay



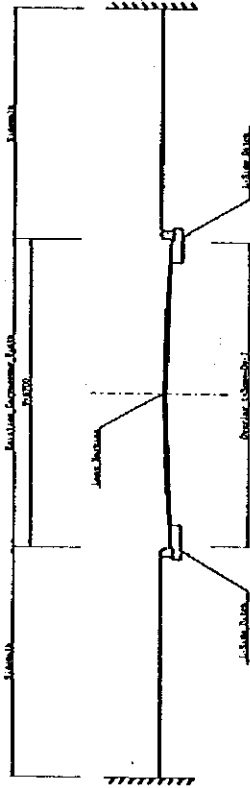
Cross section Type 2-5 Roads
 4 Cairo Rd
 5 Preston Way
 7 Malambo Rd

Type A-5: Overlay



Type A-6: Overlay(C-Class Road)

Cross section Type J-1 Roads
24 Chibumbulu Rd (0+0)

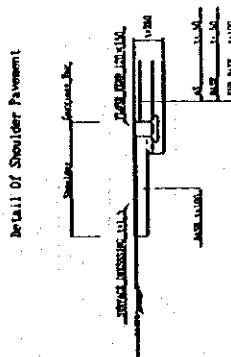
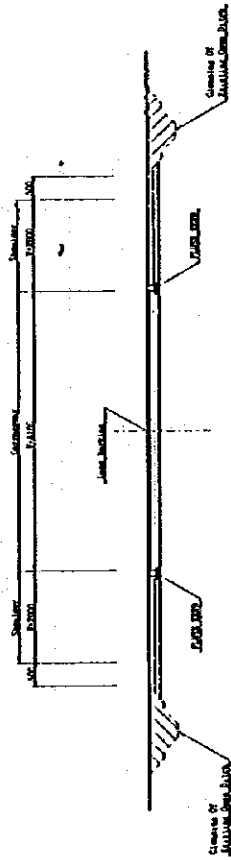


THE REPUBLIC OF ZAMBIA LUSAKA CITY COUNCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	OVERLAY SECTION TYPICAL CROSS SECTION (3)	DATE AUGUST, 1995	SHEET NO 4
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Type B-1: Reconstruction of Pavement

Cross section Type 3-1 Roads

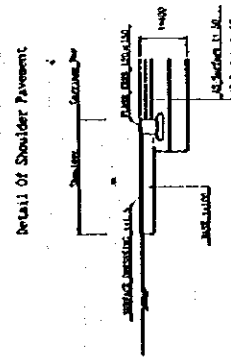
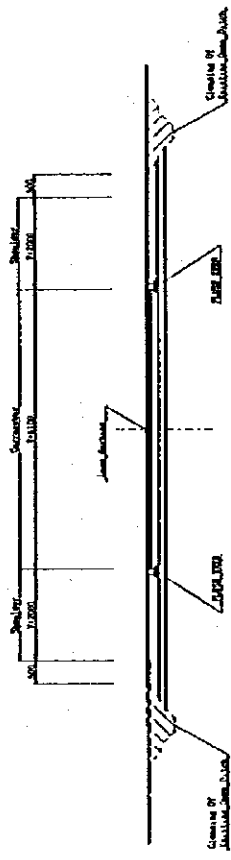
25	Manali/Kaund Rd
64	Kuandwe Rd
66	Lukanga Rd
102	Zambezi Rd
23	Pala Drive



Type B-2: Reconstruction

Cross section Type 3-2 Roads

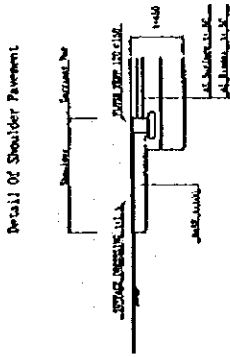
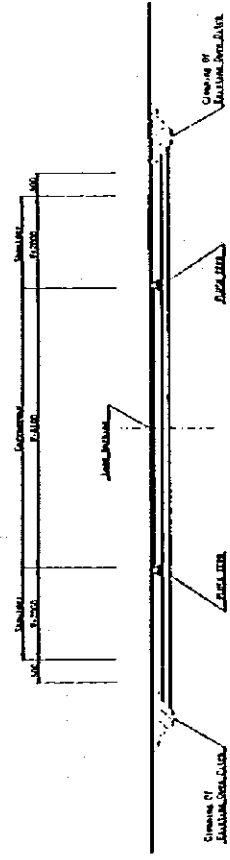
38	Chavua/John Howard Rd
27	Alick Nkata Rd
21	Los Angeles Rd
37	Mandevu Chipata Rd
75	Mutendere Rd



Type B-3: Reconstruction

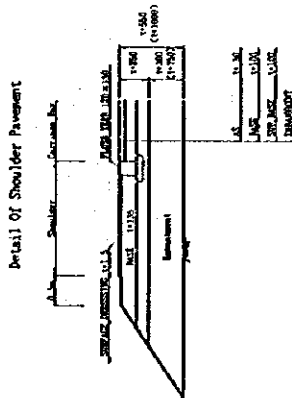
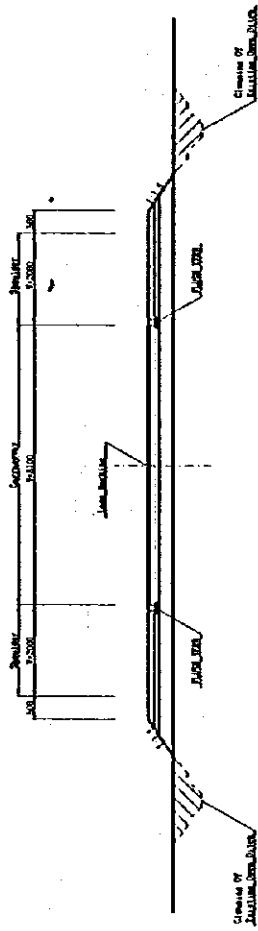
Cross section Type 3-3 Roads

20	Numbwa Rd
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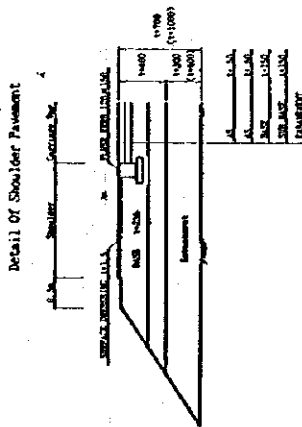
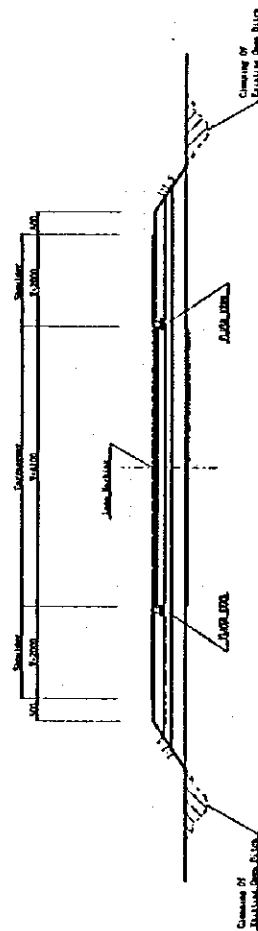
Type B-4: Reconstruction of Pavement (Embankment Section)

Cross section Type 3-1 Roads
 25 Namoli/Kaund Rd
 64 Mutandwa Rd
 66 Lukanga Rd
 102 Zambesi Rd
 33 Palm Drive



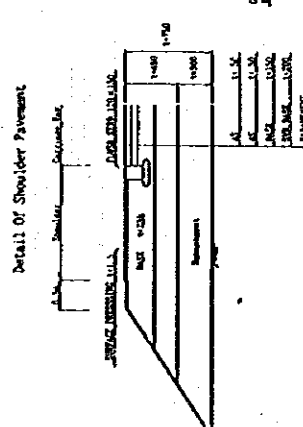
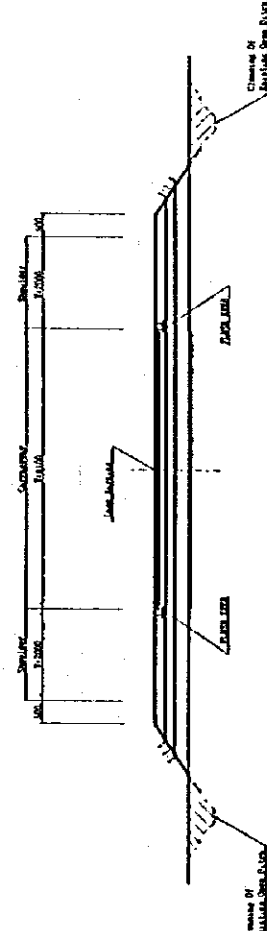
Type B-5: Reconstruction

Cross section Type 3-2 Roads
 29 Chawana/John Howard Rd
 27 Alrick Nkato Rd
 22 Los Angeles Rd
 37 Mandwe Chipata Rd
 75 Mutendere Rd

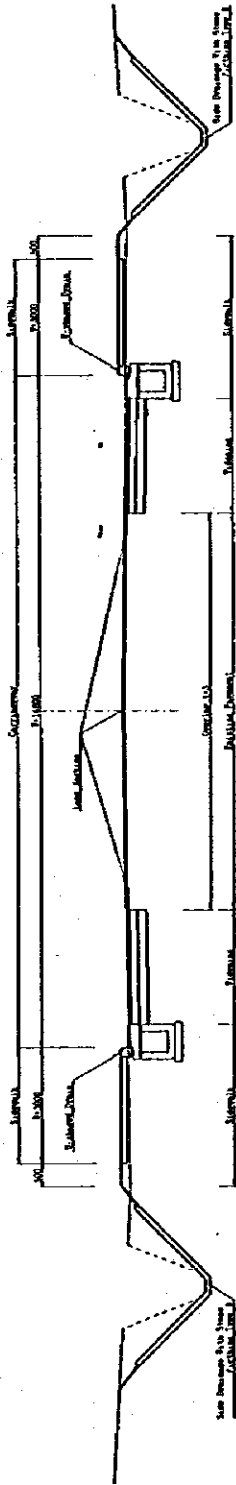


Type B-6: Reconstruction

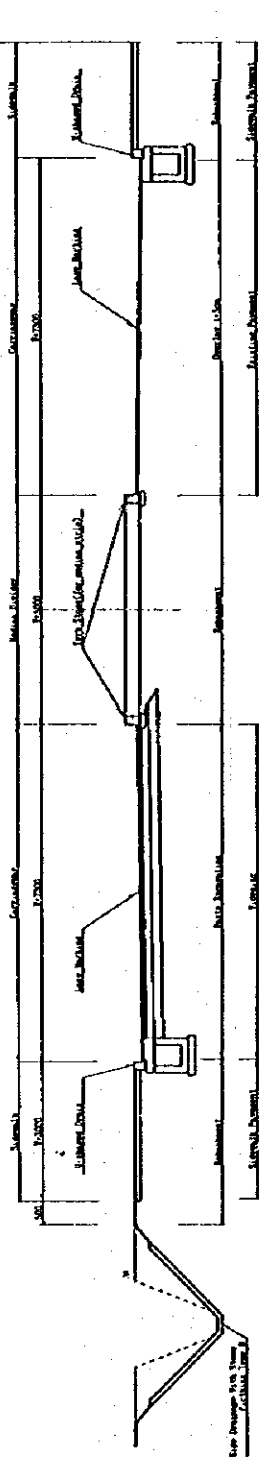
Cross section Type 3-3 Roads
 20 Numbwa Rd



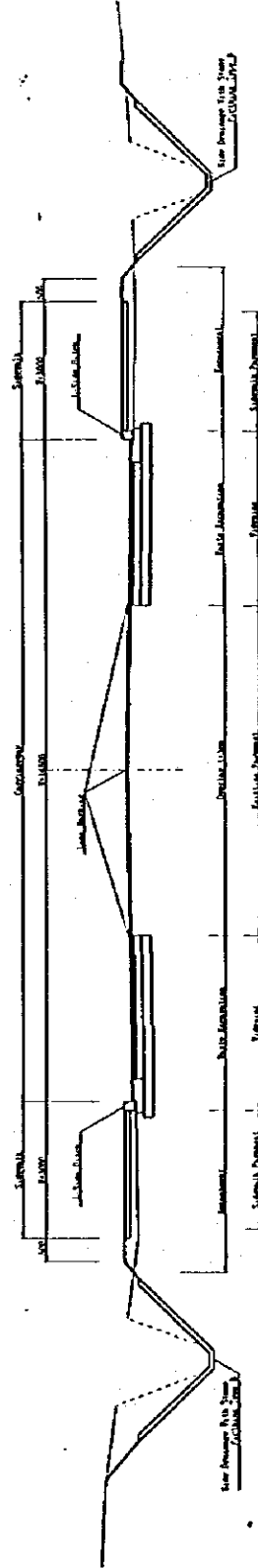
LUNUNBA ROAD SECTION-1 Type C-1



LUNUNBA ROAD SECTION-2 Type C-2

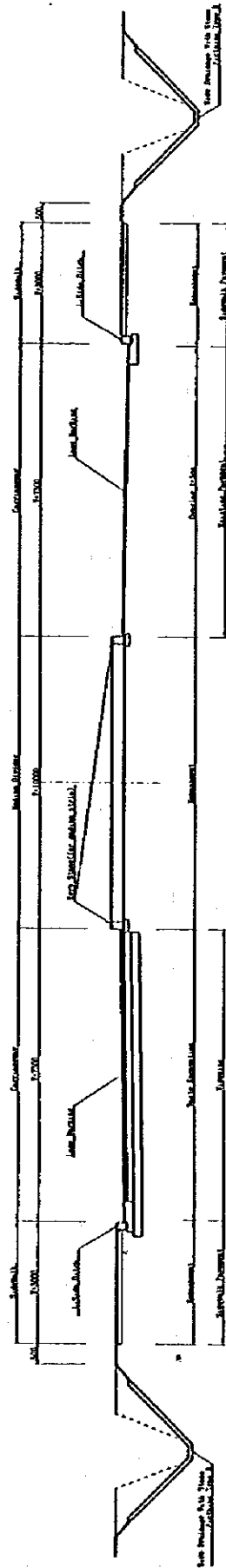


LUNUNBA ROAD SECTION-3and5 Type C-3



<p>THE REPUBLIC OF ZAMBIA LUSAKA CITY CONCIL</p>	<p>THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS</p>	<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p>	<p>LUNUNBA ROAD TYPICAL CROSS SECTION (1)</p> <p>DATE: AUGUST, 1975</p> <p>SHEET NO: 7</p>
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LUNUBA ROAD SECTION-4 Type C-4

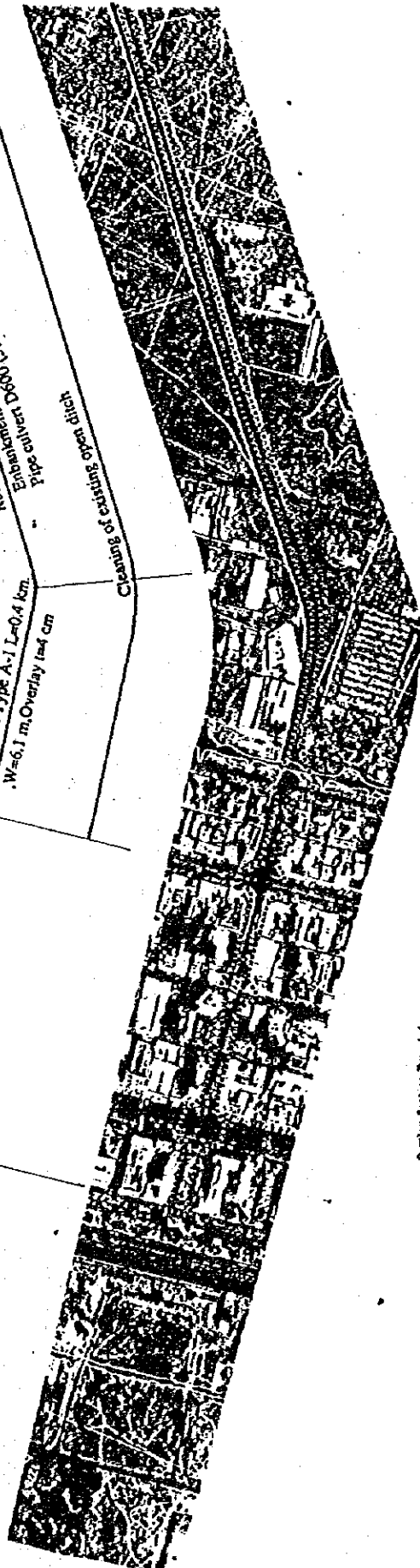


<p>THE REPUBLIC OF ZAMBIA LUSAKA CITY COUNCIL</p>	<p>THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS</p>	<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p>	<p>LUNUBA ROAD TYPICAL CROSS SECTION (2)</p>	<p>SHEET NO 8</p>
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Overlay Section Type A-4 L=0.8 km.
W=23.2 m, Overlay 1m4 cm

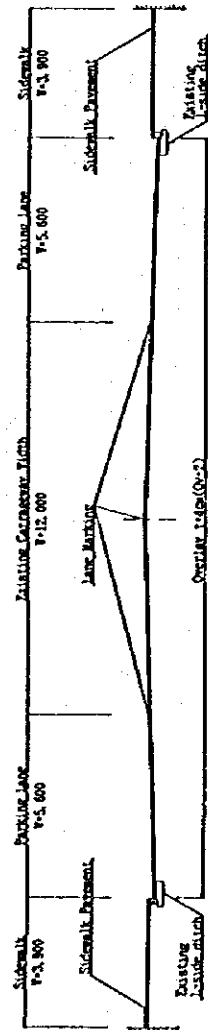
Overlay Section Type A-1 L=0.4 km.
W=6.1 m, Overlay 1m4 cm

Reconstruction Section Type B-5 L=2.3 km, W=6.1 m
Reconstruction Section B-6 L=1.7 m, W=7 m
Enhancement Section C-1 L=0.6 km, W=6.1 m
Reconstruction Section C-2 L=0.6 km, W=6.1 m

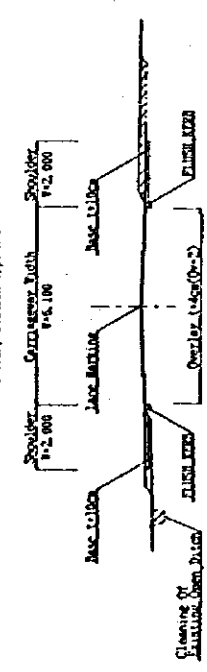


Clearing of existing open ditch

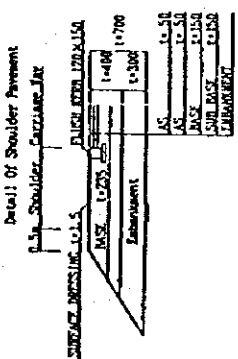
Overlay Section Type A-4



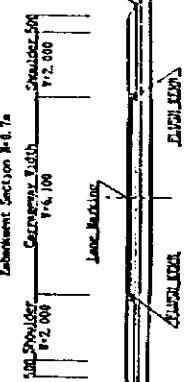
Overlay Section Type A-1



Reconstruction Section Type B-5



Reconstruction Section B-6



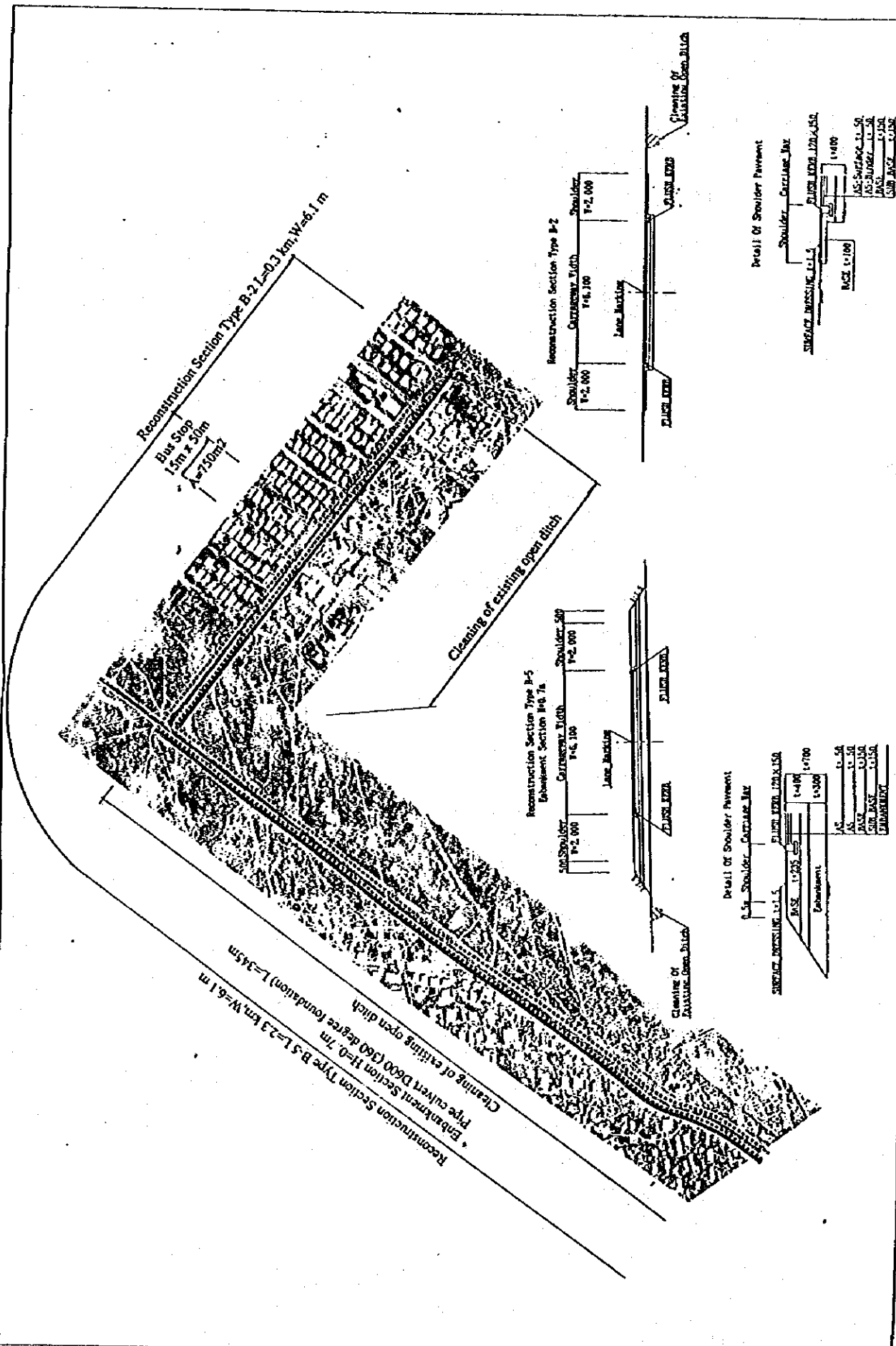
THE REPUBLIC OF ZAMBIA
LUSAKA CITY COUNCIL

THE BASIC DESIGN STUDY ON
THE PROJECT FOR IMPROVEMENT AND MAINTENANCE
OF LUSAKA CITY ROADS

JAPAN INTERNATIONAL
COOPERATION AGENCY

22, Los Angeles Road(1/2)
PLAN AND PROFILE

DATE: AUGUST, 1995
SHEET NO: 9



THE BASIC DESIGN STUDY ON
 THE PROJECT FOR IMPROVEMENT AND MAINTENANCE
 OF LUSAKA CITY ROADS

THE REPUBLIC OF ZAMBIA
 LUSAKA CITY COUNCIL

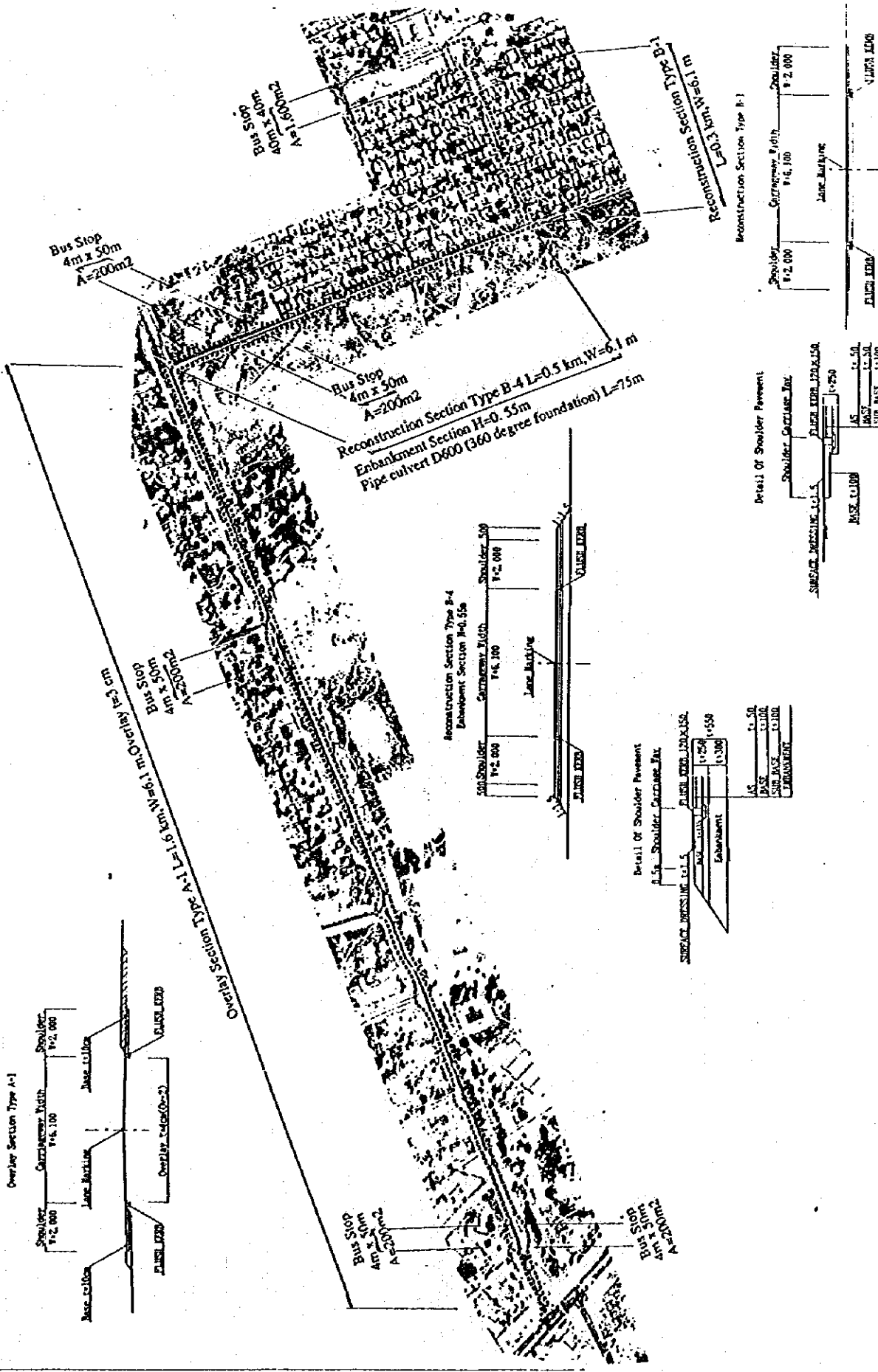
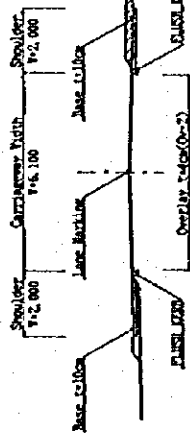
JAPAN INTERNATIONAL
 COOPERATION AGENCY

22, Los Angeles Road(2/2)
 PLAN AND PROFILE

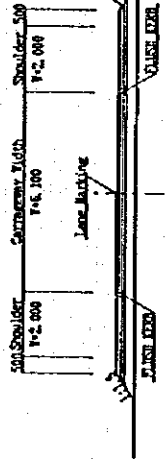
DATE
 AUGUST, 1995

SHEET NO
 10

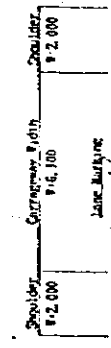
Overlay Section Type A-1



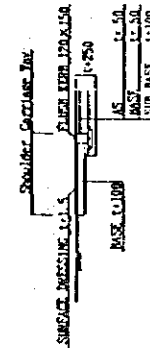
Reconstruction Section Type B-4
Embankment Section H=0.55m



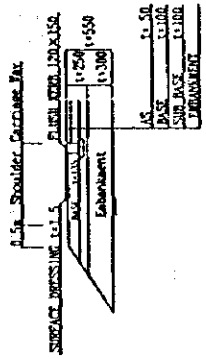
Reconstruction Section Type B-1



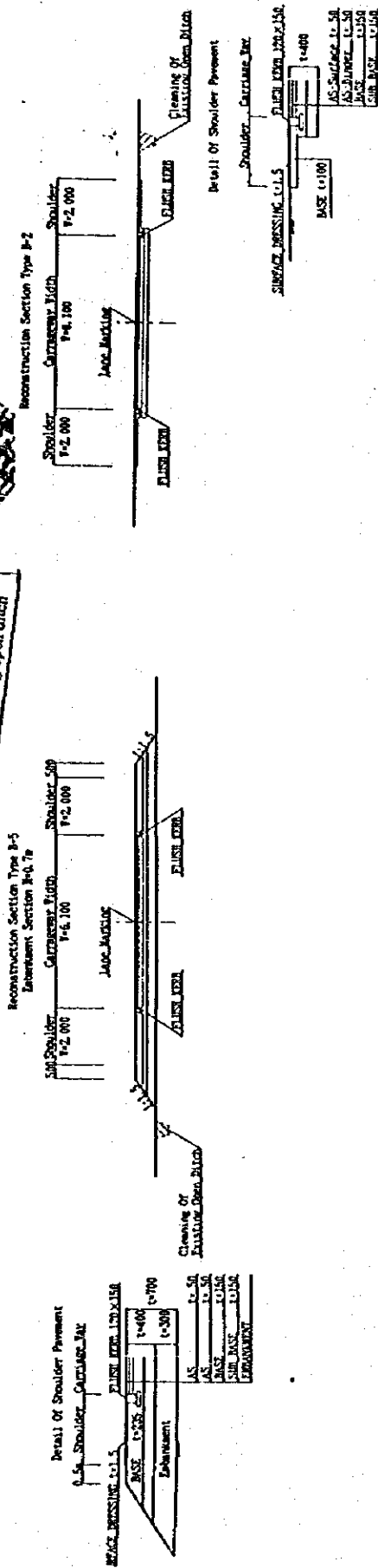
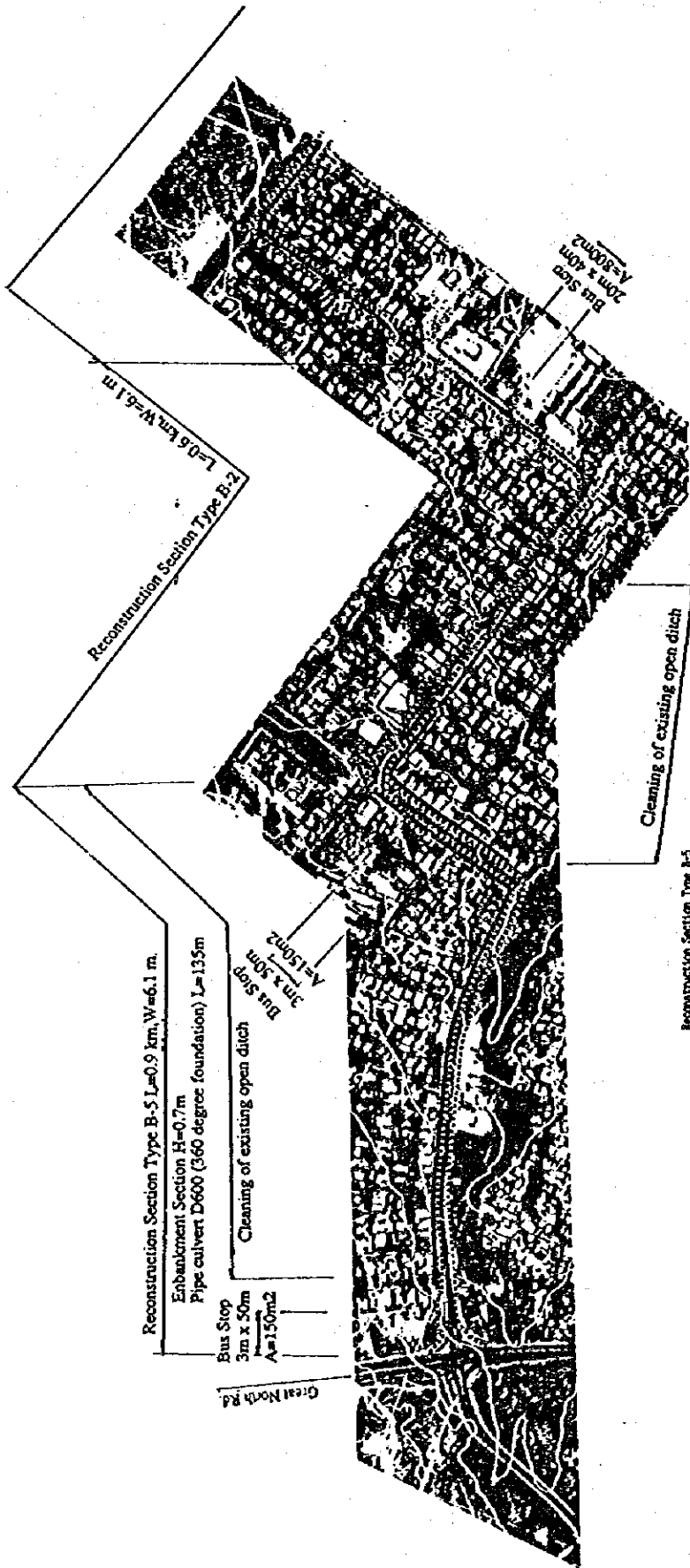
Detail of Shoulder Pavement



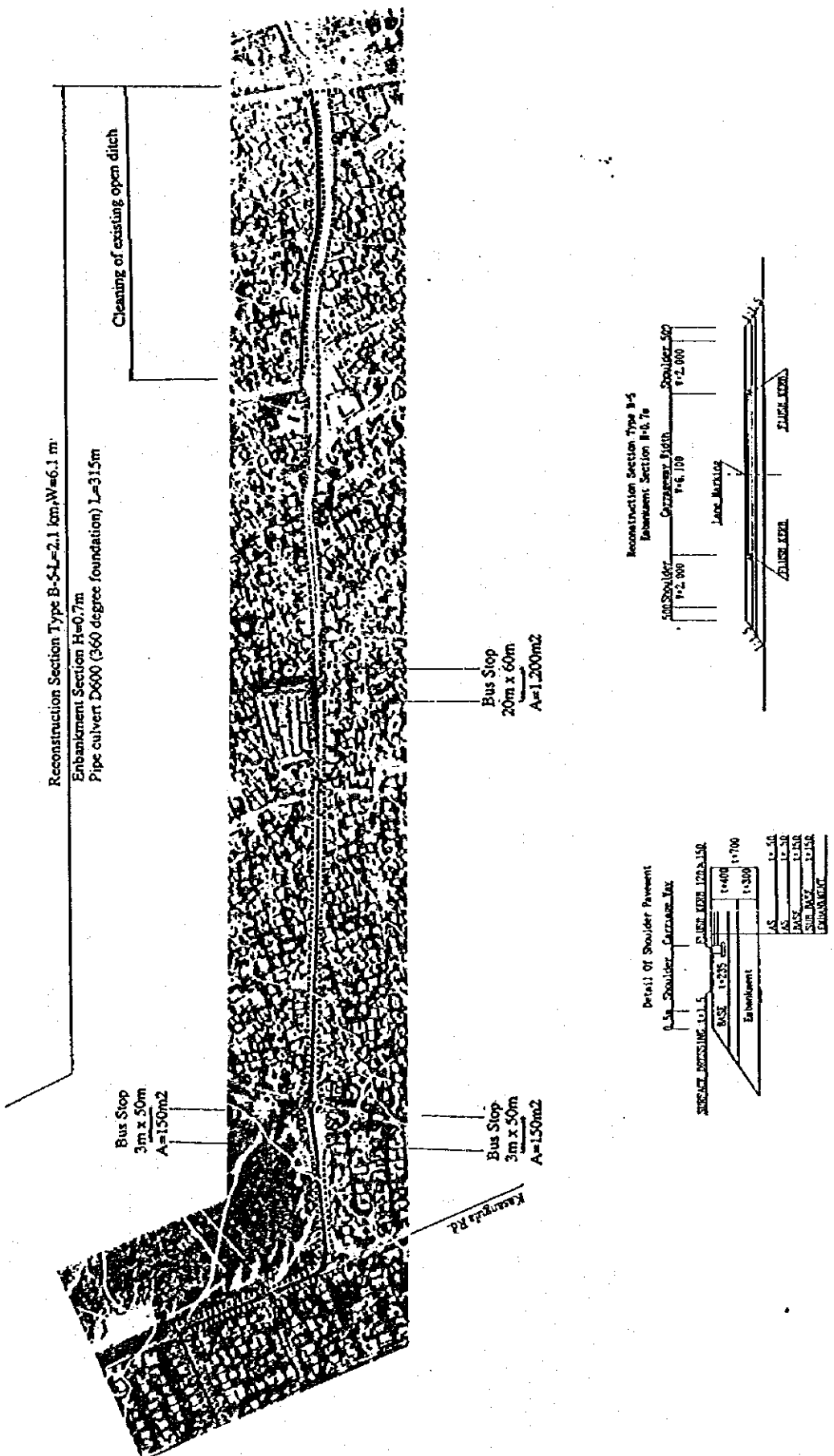
Detail of Shoulder Pavement



THE REPUBLIC OF ZAMBIA LUSAKA CITY COUNCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	25. Munali Kaunda Road (1/1)	DATE	SHEET NO
			PLAN AND PROFILE	APRIL, 1995	11



THE REPUBLIC OF ZAMBIA LUSAKA CITY CONCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	37, Mandevu Chipata Road (1/2)	DATE AUGUST, 1995	SHEET NO 12
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Reconstruction Section Type B-5 L=2.1 km, W=6.1 m.
 Enbankment Section H=0.7m
 Pipe culvert D600 (360 degree foundation) L=315m

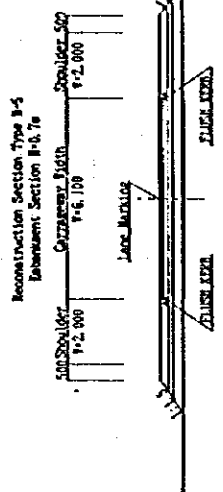
Bus Stop
 3m x 50m
 A=150m²

Bus Stop
 3m x 50m
 A=150m²

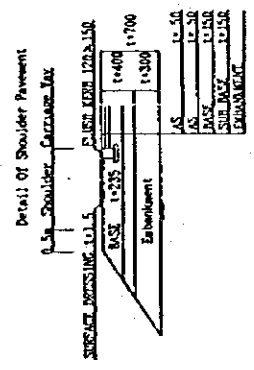
Bus Stop
 20m x 60m
 A=1,200m²

Cleaning of existing open ditch

Kasungu Rd



Reconstruction Section Type B-5
 Enbankment Section H=0.7m



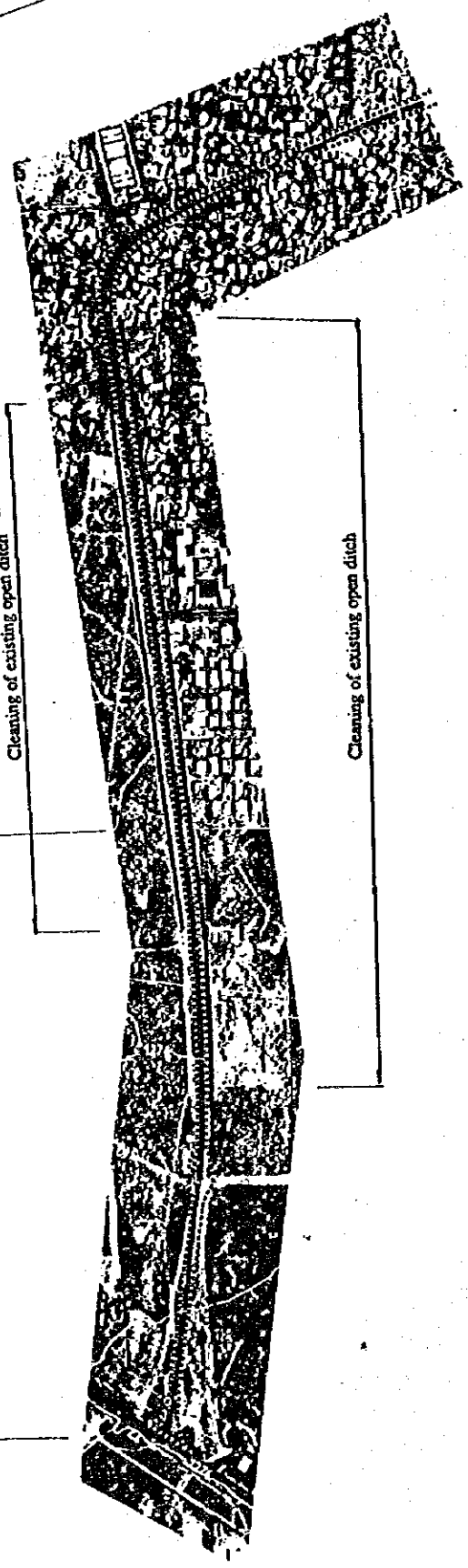
Detail of Shoulder Pavement
 0.5m Shoulder Carriageway

Reconstruction Section Type B-5 L=0.7 km, W=6.1 m
 Embankment Section H=0.7m
 Pipe culvert D600 (360 degree foundation) L=345m

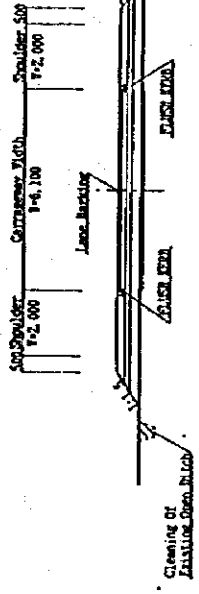
Reconstruction Section Type B-5 L=0.7 km, W=6.1 m
 Embankment Section H=1.0m
 Pipe culvert D600 (360 degree foundation) L=105m

Cleaning of existing open ditch

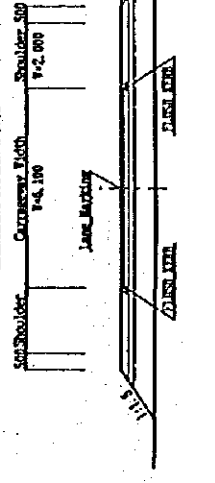
Cleaning of existing open ditch



Reconstruction Section Type B-5
 Embankment Section H=0.7m



Reconstruction Section Type B-5
 Embankment Section H=1.0m



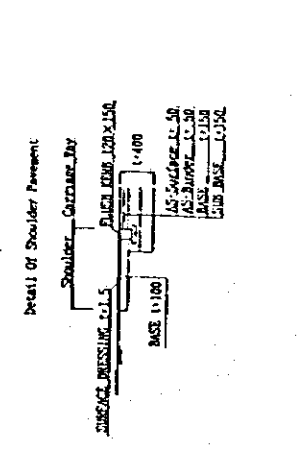
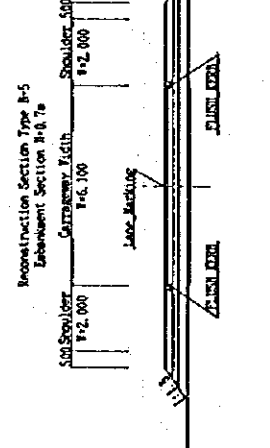
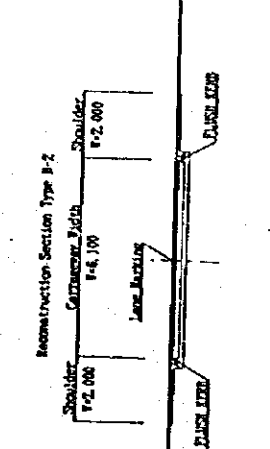
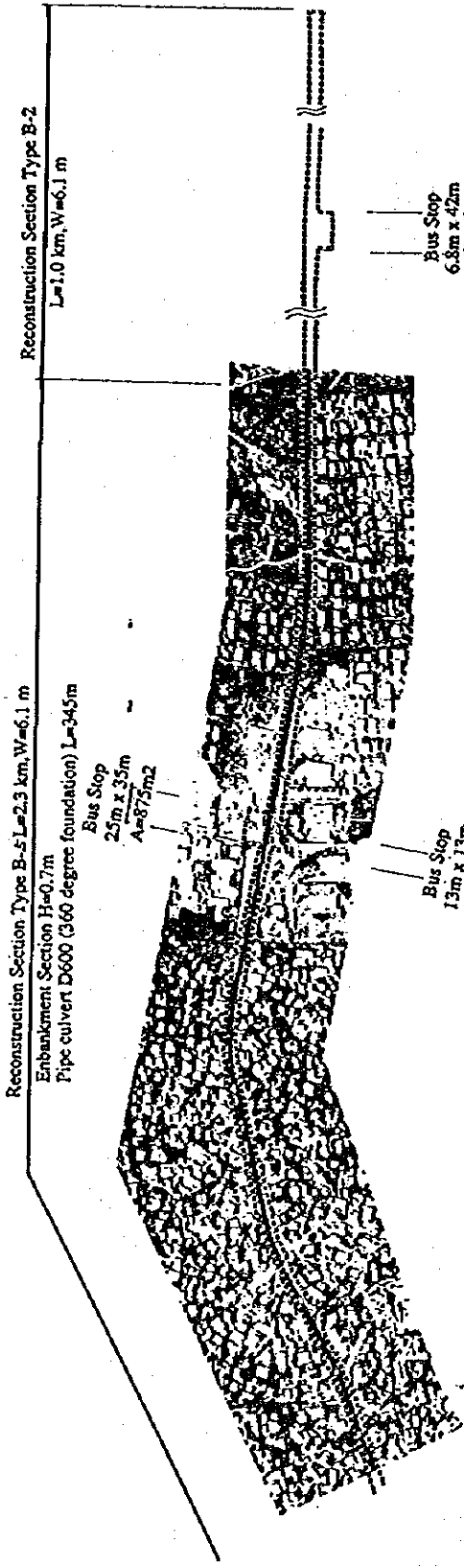
THE REPUBLIC OF ZAMBIA
 LUSAKA CITY COUNCIL

THE BASIC DESIGN STUDY ON
 THE PROJECT FOR IMPROVEMENT AND MAINTENANCE
 OF LUSAKA CITY ROADS

JAPAN INTERNATIONAL
 COOPERATION AGENCY

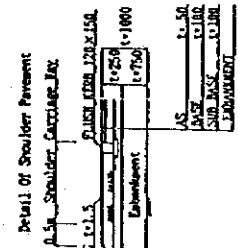
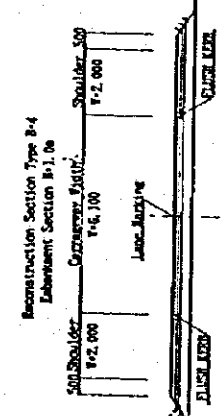
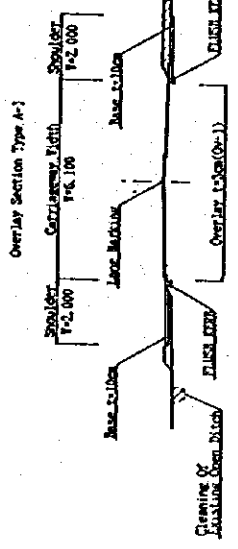
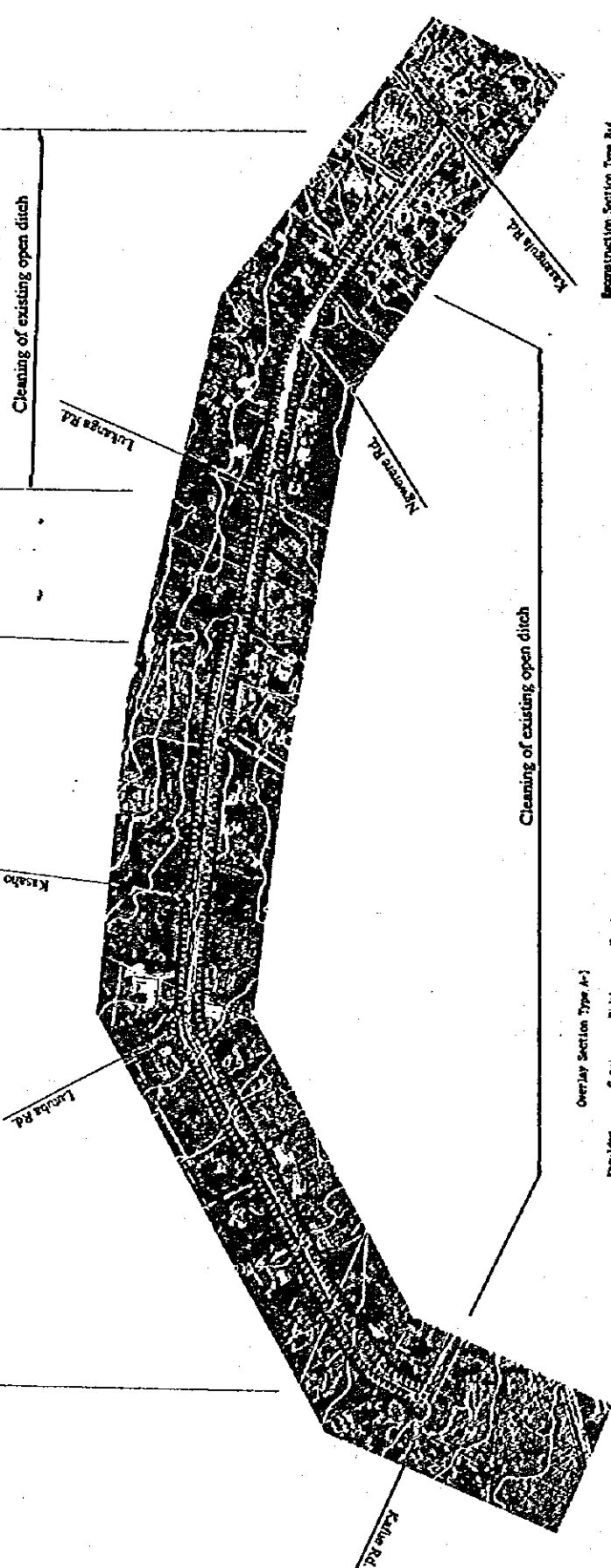
38. Chewama/John Howard(1/2) DATE
 PLAN AND PROFILE AUGUST, 1993

SHEET NO
 14



Reconstruction Section Type B-4 L=0.5 km, W=6.1 m
 Embankment Section H=1.0m
 Pipe culvert D600 (360 degree foundation) L=75m

Overlay Section Type A-1 L=1.2 km, W=6.1 m, Overlay \approx 3 cm
 Cleaning of existing open ditch

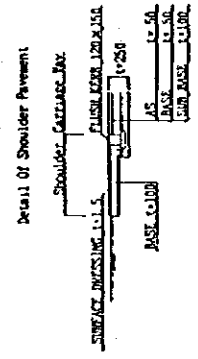
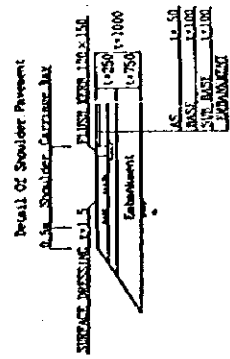
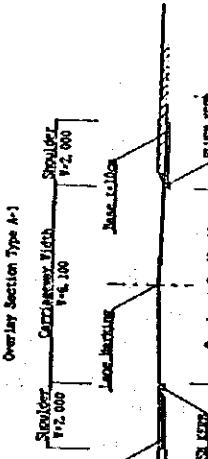
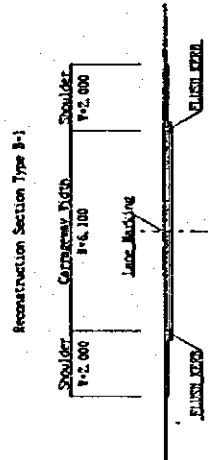
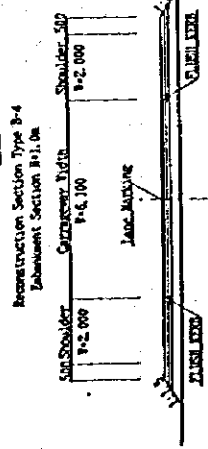
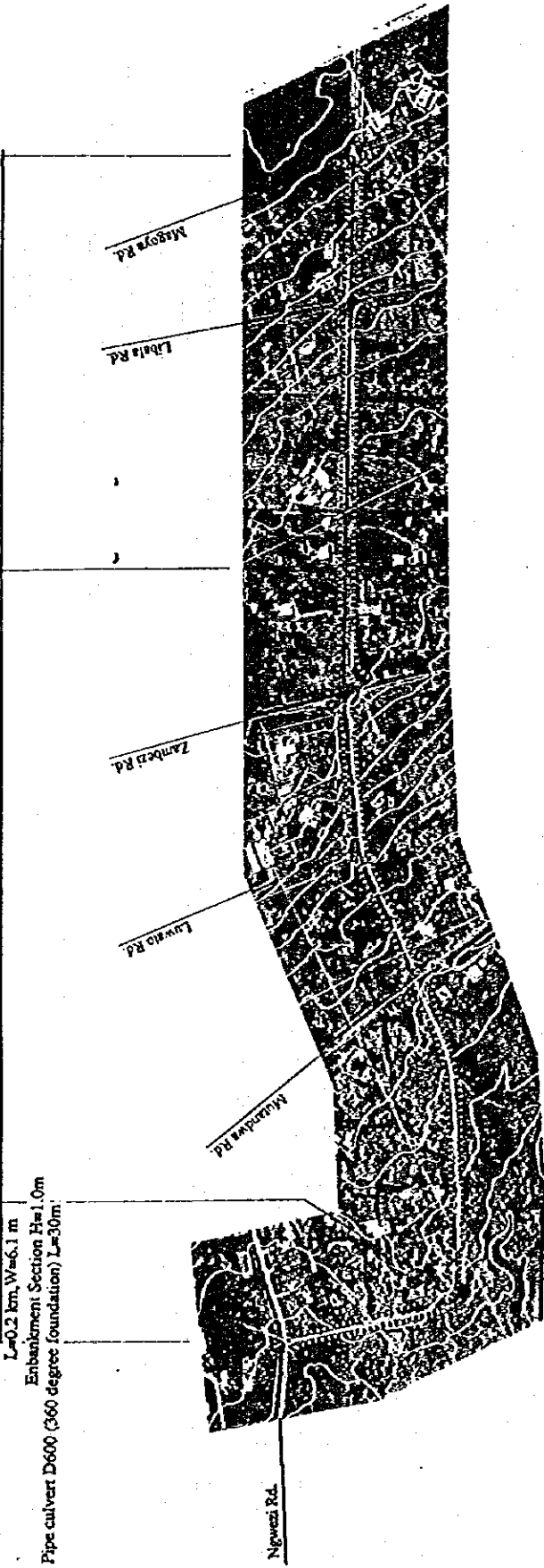


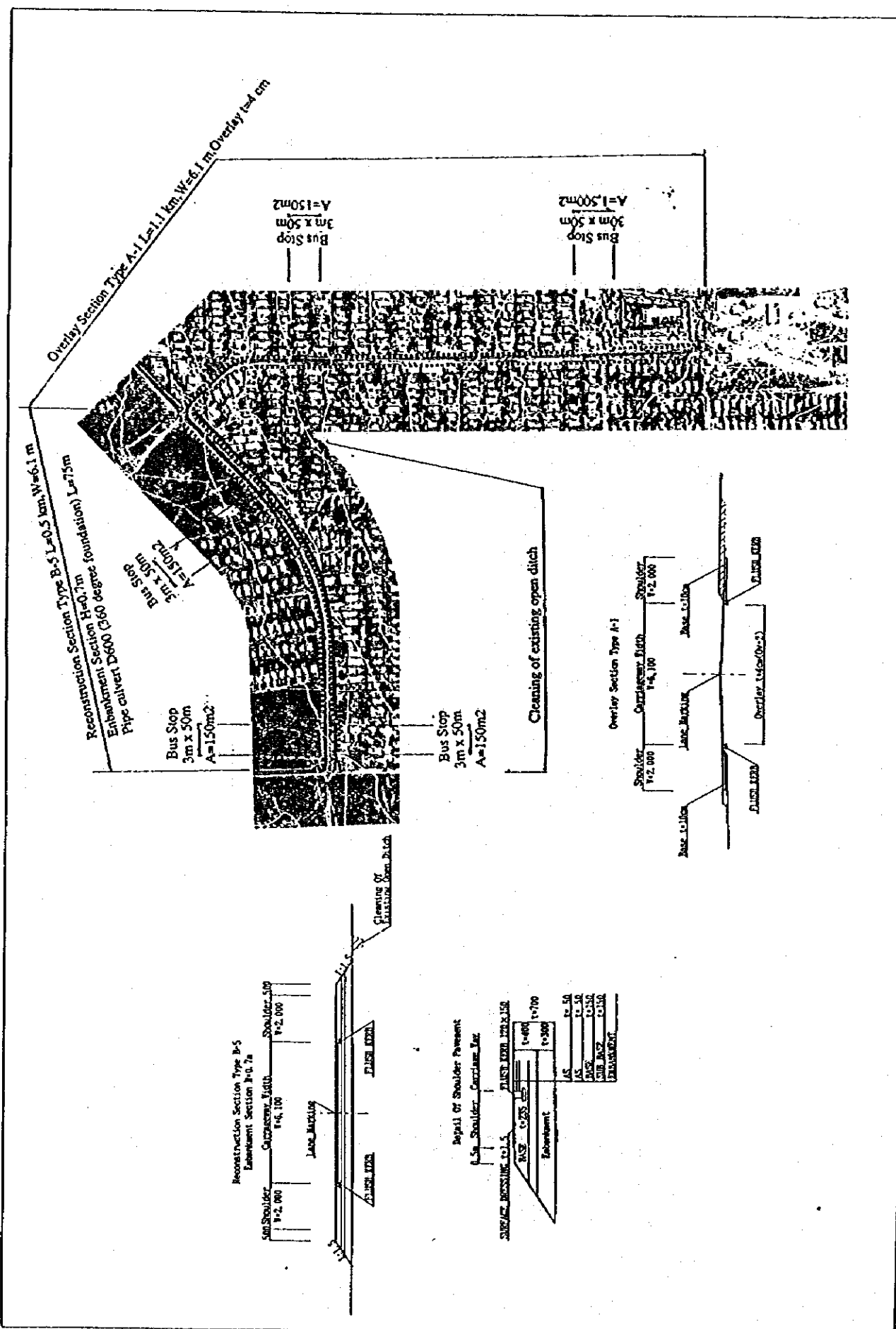
THE REPUBLIC OF ZAMBIA LUSAKA CITY COUNCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	64. Mutandwa Road (1/1)	DATE	SHEET NO
			PLAN AND PROFILE	AUGUST, 1995	16

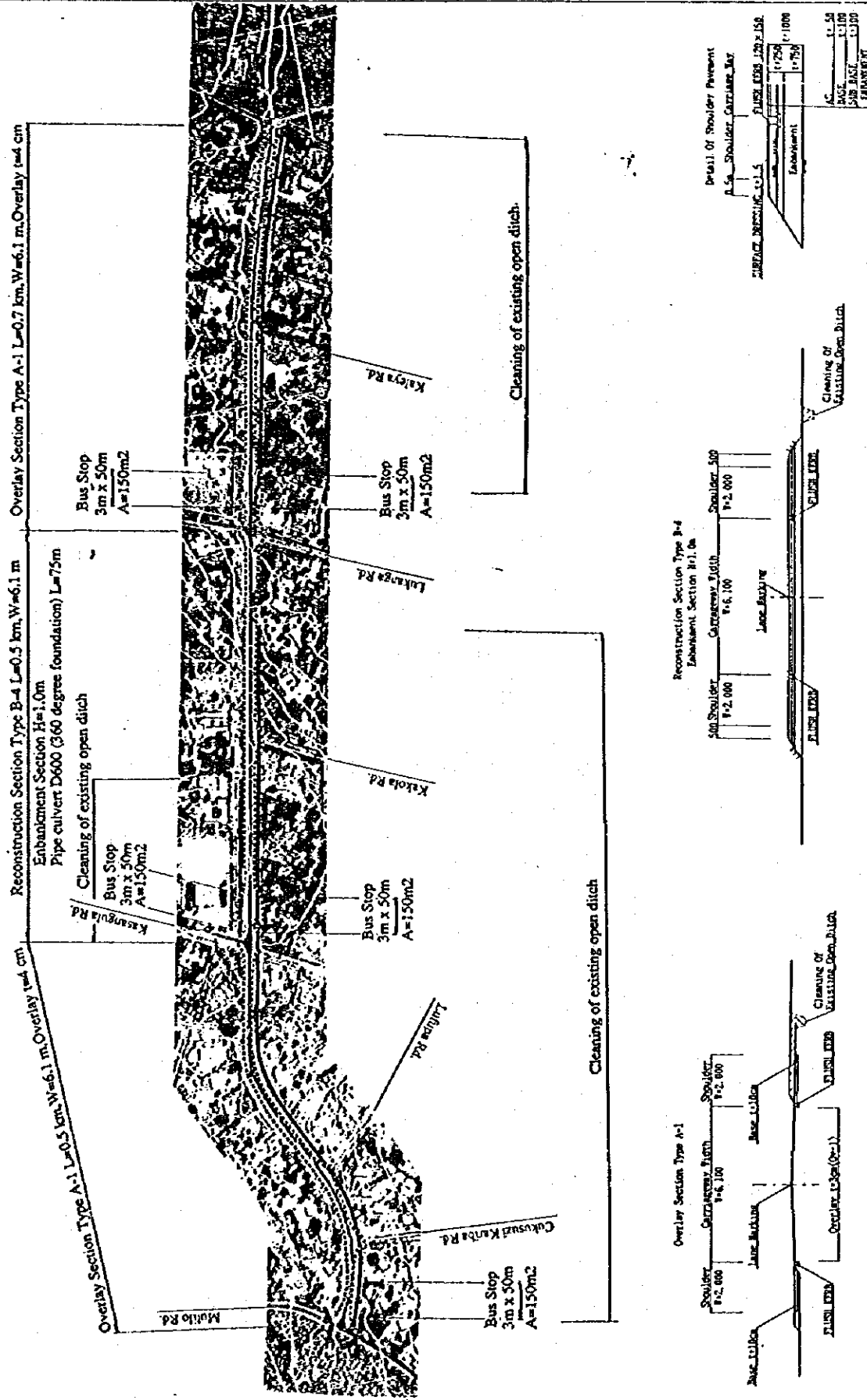
Reconstruction Section Type B-4
 L=0.2 km, W=6.1 m
 Enbankment Section H=1.0m
 Pipe culvert D600 (360 degree foundation) L=30m

Reconstruction Section Type B-1 L=0.9 km, W=6.1 m

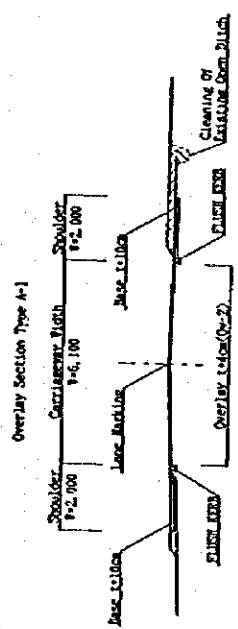
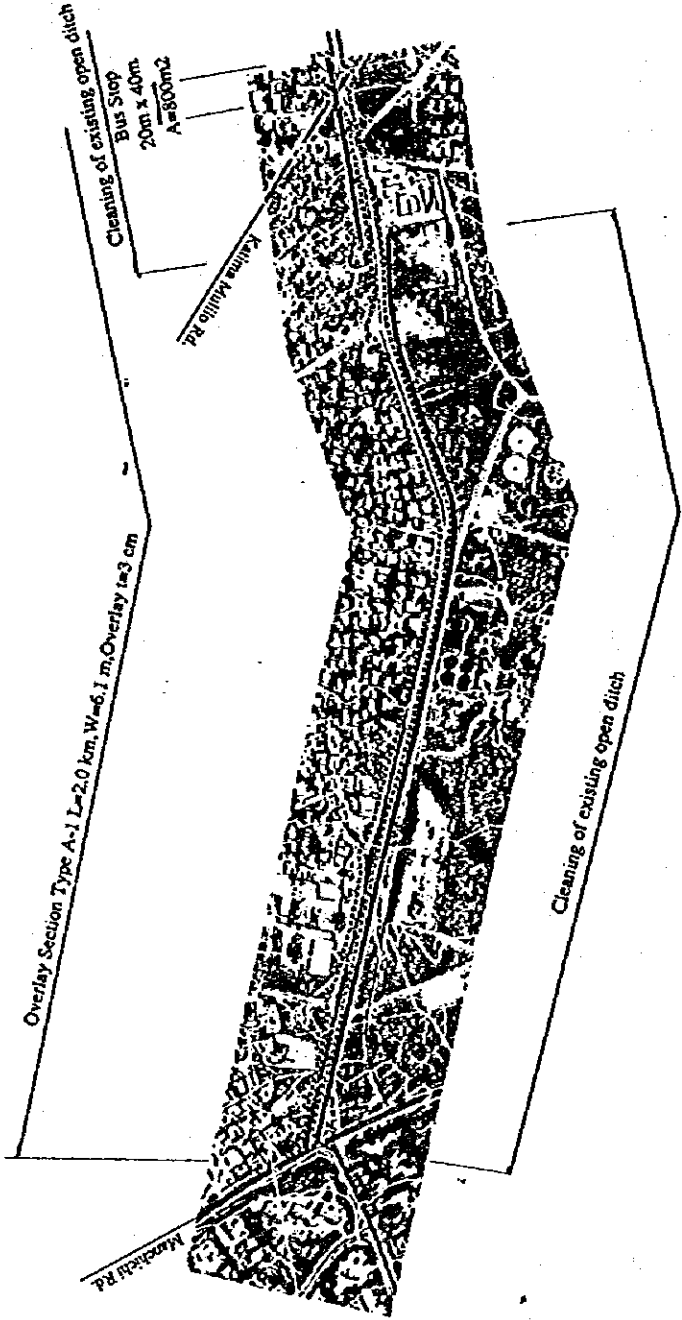
Overlay Section Type A-1 L=0.5 km, W=6.1 m, Overlay t=3 cm







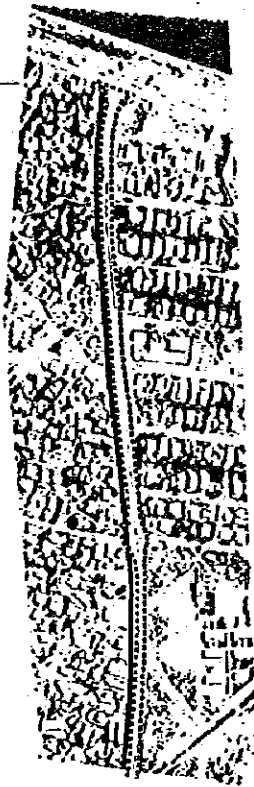
THE REPUBLIC OF ZAMBIA LUSAKA CITY COUNCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	102, Zambesi Road (1/1)	DATE AUGUST, 1995	SHEET NO 19
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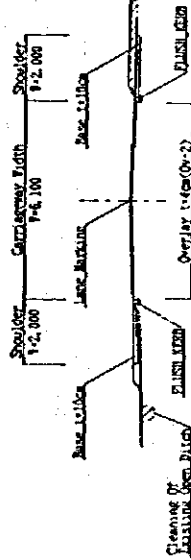
THE REPUBLIC OF ZAMBIA LUSAKA CITY CONCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	104. Carden Road(1/2)	DATE	SHEET NO.
			PLAN AND PROFILE	AUGUST, 1995	20

Overlay Section Type A-1 L=2.0 km, W=6.1 m, Overlay = 3 cm

Cleaning of existing open ditch



Overlay Section Type A-1



Reconstruction Section Type B-1 L=1.8 km, W=6.1 m

Bus Stop
5m x 30m
A=150m²

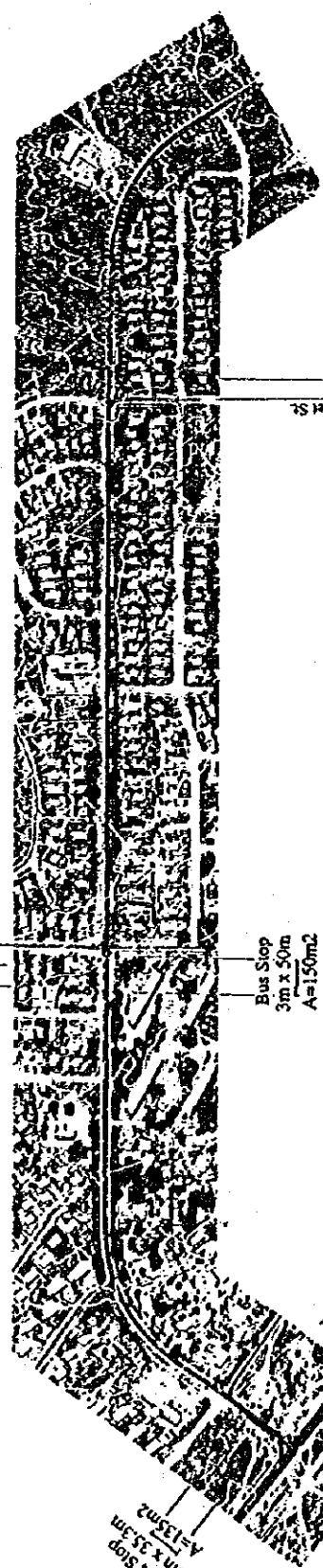
Market St
Bus Stop
4.6m x 22.5m
A=103.5m²

Bus Stop
7m x 30m
A=210m²
Newere Av.

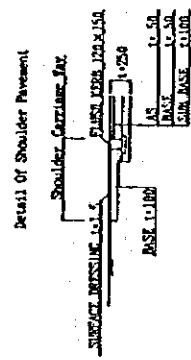
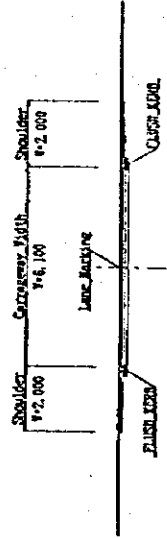
Bus Stop
3m x 50m
A=150m²

Bus Stop
3.8m x 35.3m
A=135m²

Green East Rd
Bus Stop
3.8m x 35.3m
A=135m²

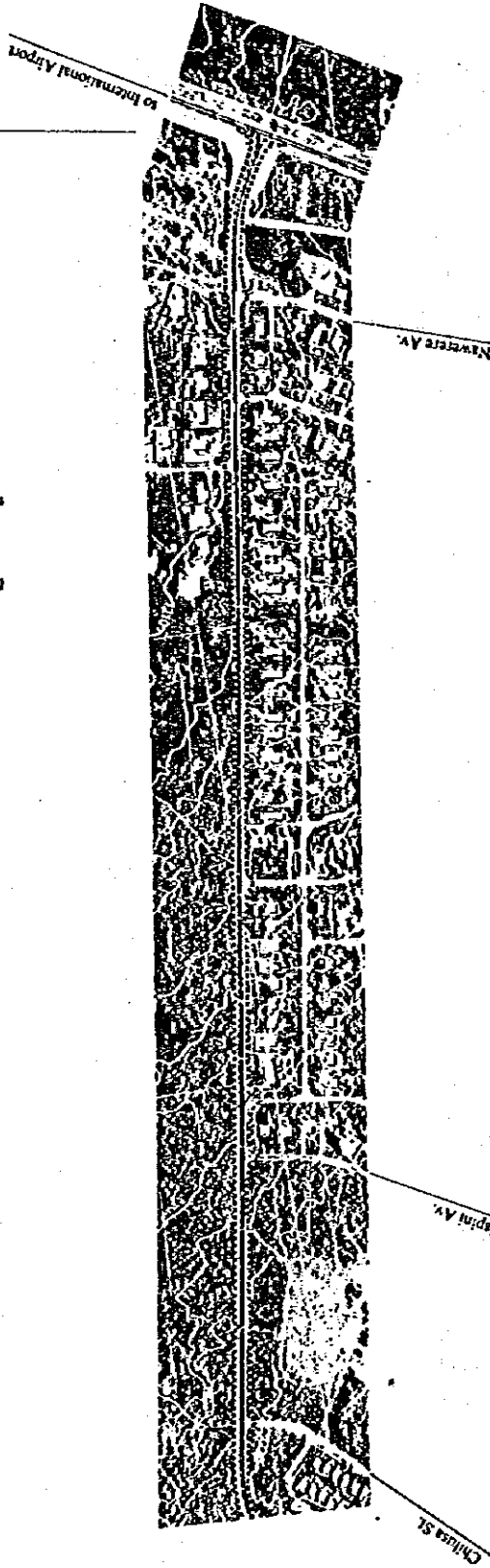


Reconstruction Section Type B-1

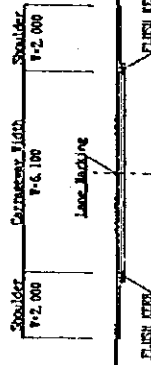


THE REPUBLIC OF ZAMBIA LUSAKA CITY CONCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	33. Palm Drive (1/2)	DATE AUGUST, 1995	SHEET NO 22
		PLAN AND PROFILE			

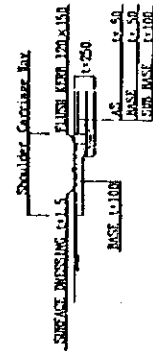
Reconstruction Section Type B-1 L=1.8 km, W=6.1 m



Reconstruction Section Type B-1

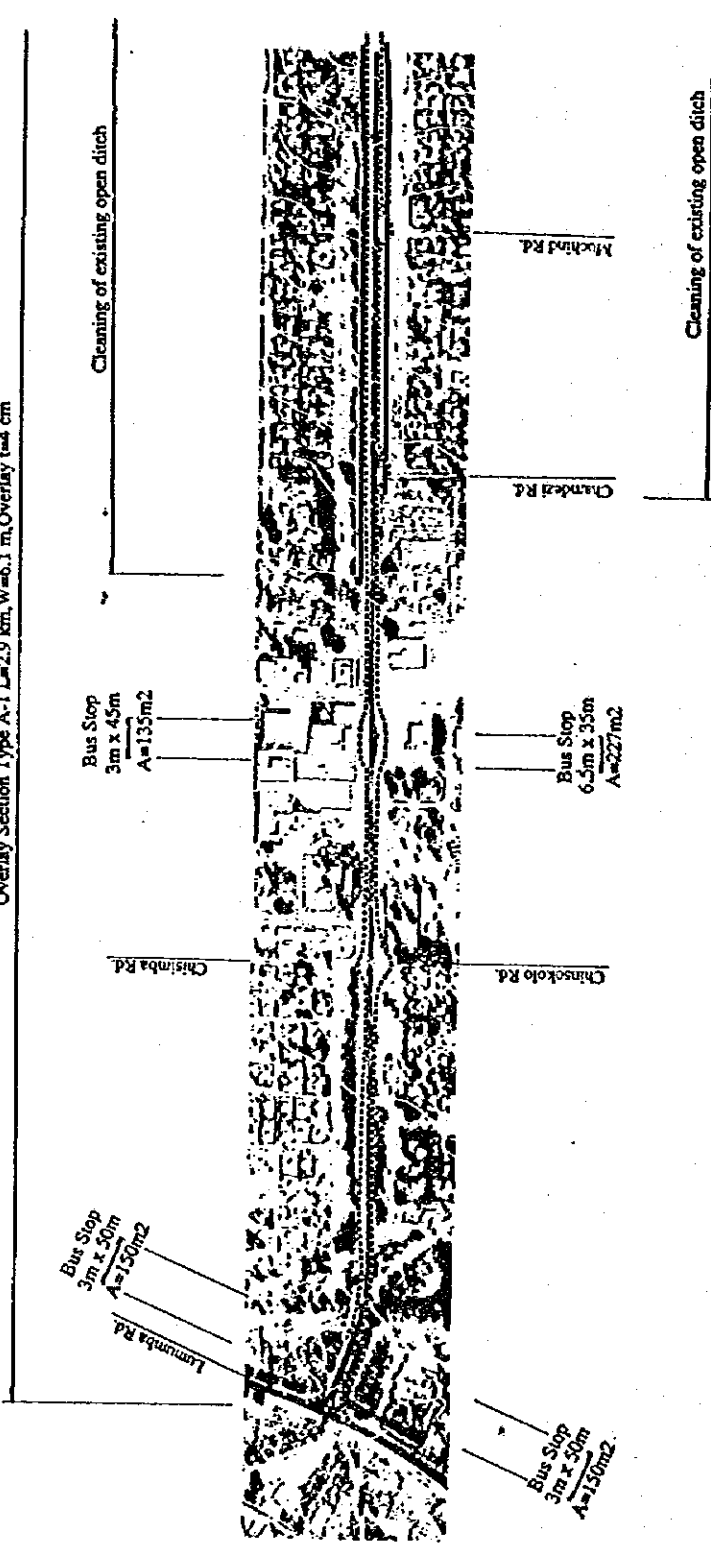


Detail of Shoulder Pavement

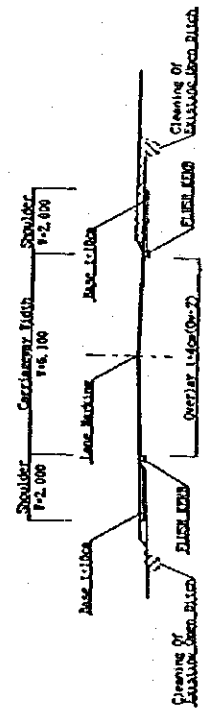


THE REPUBLIC OF ZAMBIA LUSAKA CITY COUNCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	33, Palm Drive(2/2) PLAN AND PROFILE DATE: AUGUST 1985 SHEET NO: 23
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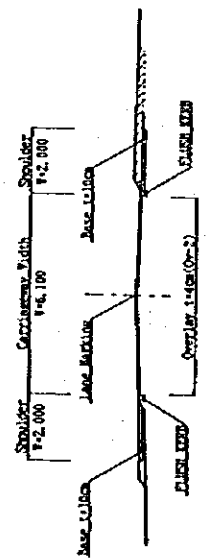
Overlay Section Type A-1 L=2.9 km, W=6.1 m, Overlay t=4 cm



Overlay Section Type A-1



Overlay Section Type A-1



Overlay Section Type A-1 L=2.9 km, W=6.1 m, Overlay t=4 cm

Cleaning of existing open ditch

Bus Stop
20m x 60m
A=1,200m²

Bus Stop
12m x 60m
A=720m²

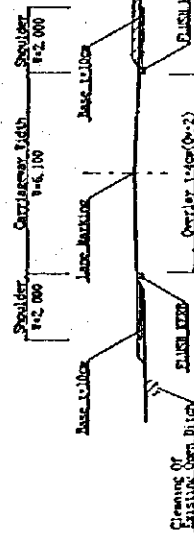


Chilanda Rd

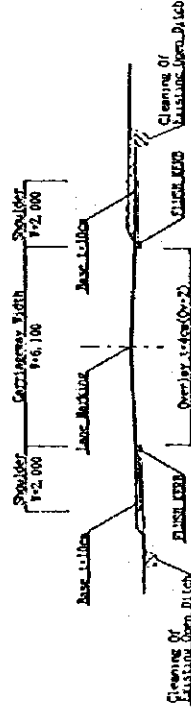
Impela Rd

Antelope Dr.

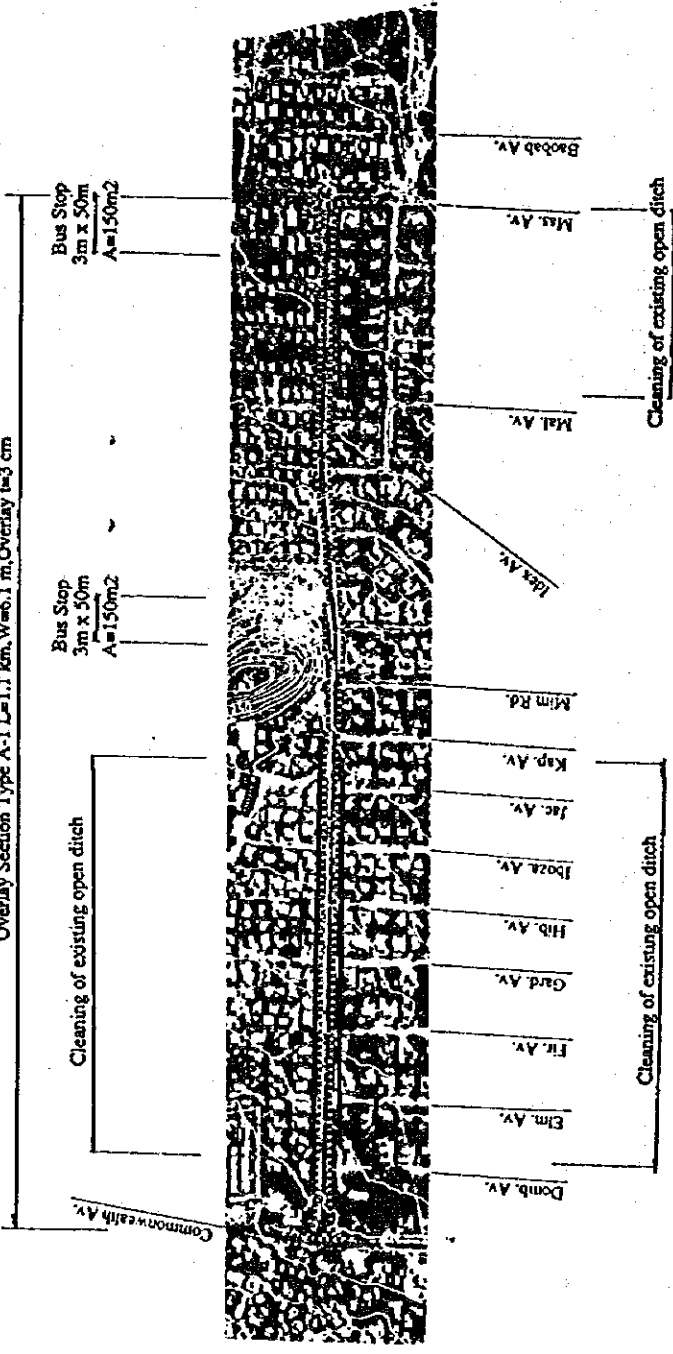
Overlay Section Type A-1



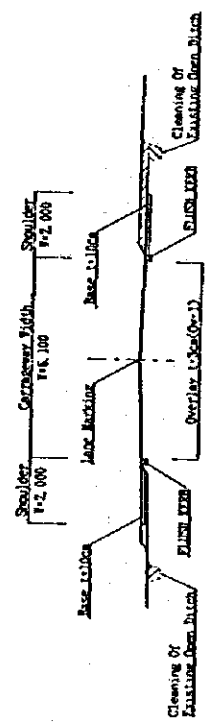
Overlay Section Type A-1



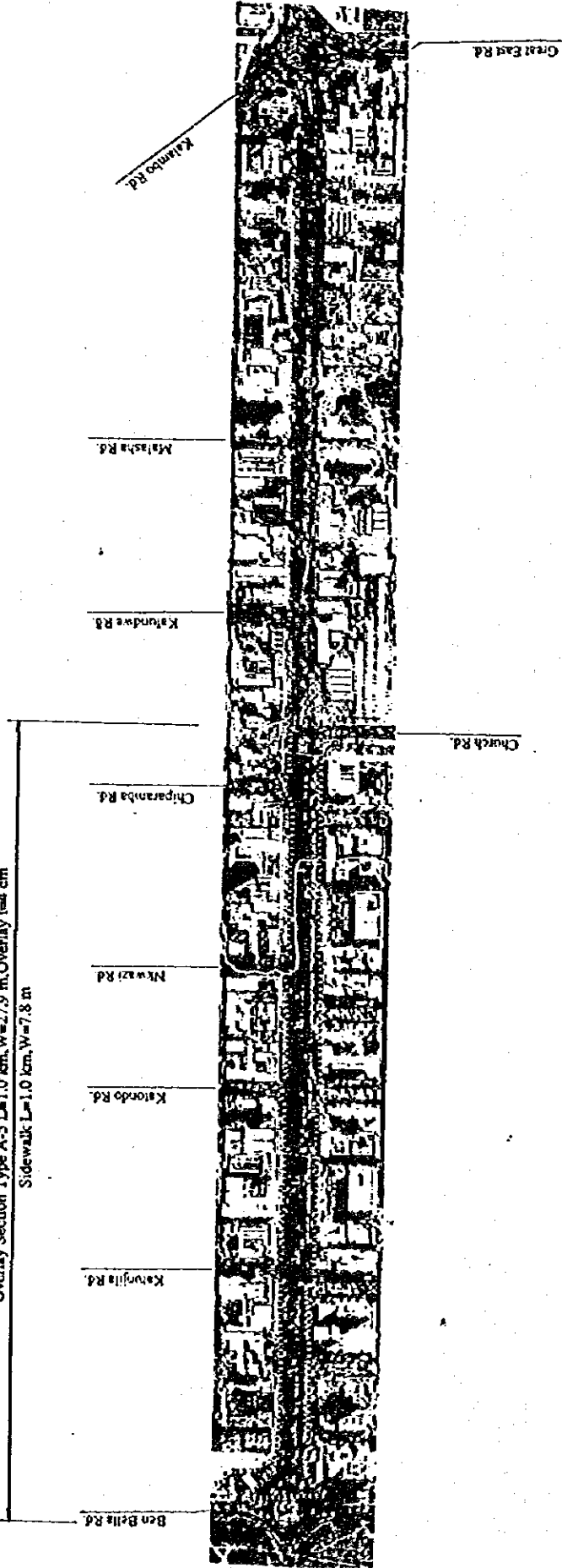
Overlay Section Type A-1 L=1.1 km, W=6.1 m, Overlay t=3 cm



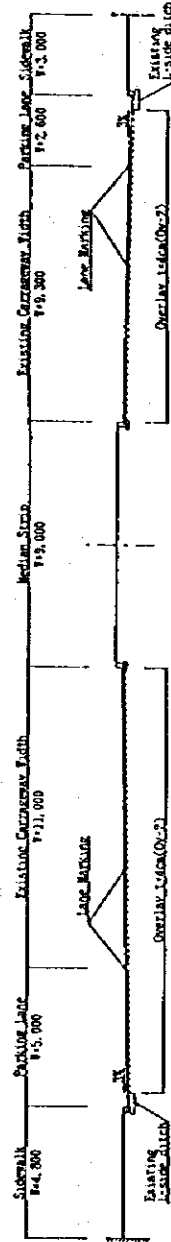
Overlay Section Type A-1



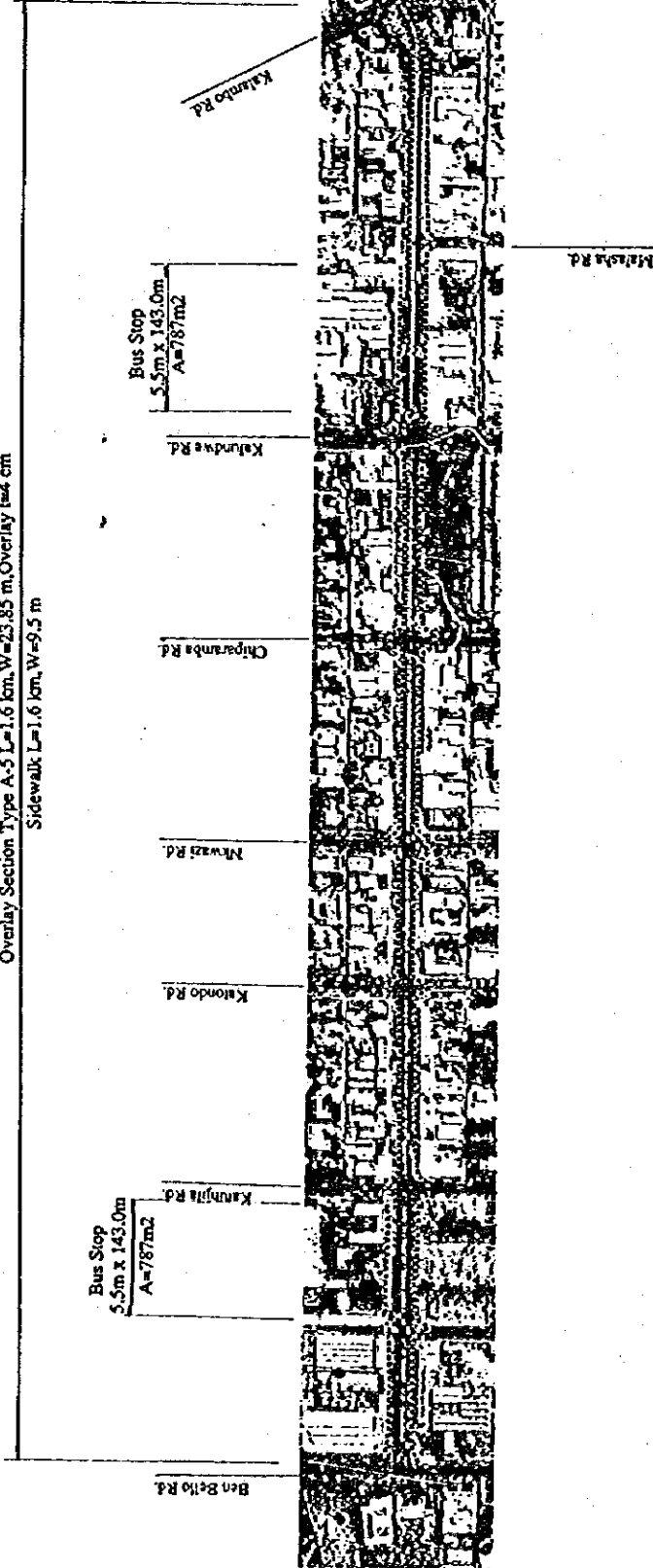
Overlay Section Type A-5 L=1.0 km, W=27.9 m, Overlay 1=4 cm
 Sidewalk L=1.0 km, W=7.8 m



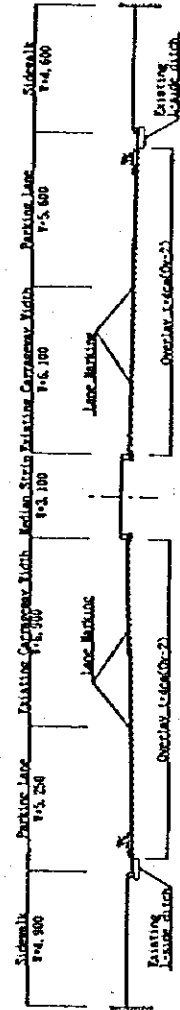
Overlay Section Type A-5



Overlay Section Type A-5 L=1.6 km, W=23.85 m, Overlay 1m4 cm
Sidewalk L=1.6 km, W=9.5 m



Overlay Section Type A-5



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LUSAKA CITY COUNCIL

THE BASIC DESIGN STUDY ON
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OF LUSAKA CITY ROADS

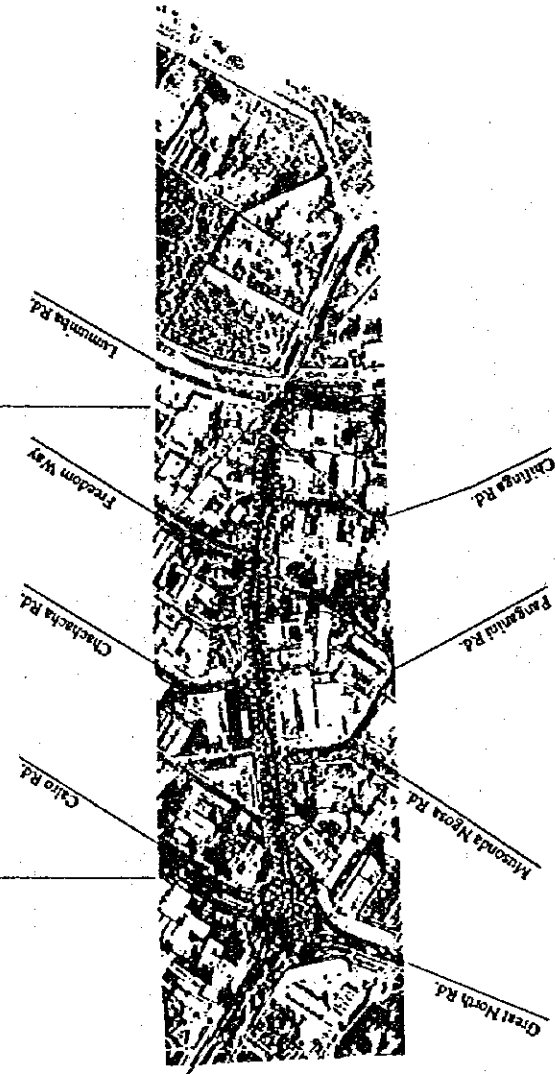
JAPAN INTERNATIONAL
COOPERATION AGENCY

5. Freedomway (L1)

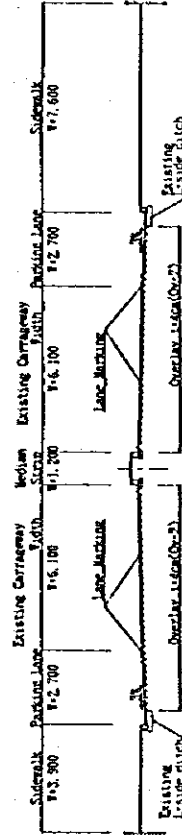
DATE... AUGUST, 1995

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Overlay Section Type A-5 L=0.7 km, W=17.6 m, Overlay I=4 cm
 Sidewalk L=0.7 km, W=11.5 m



Overlay Section Type A-5



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 LUSAKA CITY CONCIL

THE BASIC DESIGN STUDY ON
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 OF LUSAKA CITY ROADS

JAPAN INTERNATIONAL
 COOPERATION AGENCY

7. Kalambo Road(1/1)
 PLAN AND PROFILE

DATE: AUGUST, 1966
 SHEET NO:
29

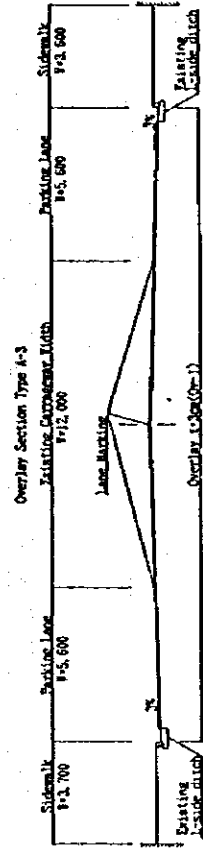
Overlay Section Type A-3 L=0.8 km, W=23.2 m, Overlay = 3 cm
 Sidewalk L=0.8 km, W=7.9 m

Cairo Rd

Chachacha Rd

Freedom Way

Lumumba Rd



THE REPUBLIC OF ZAMBIA
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THE BASIC DESIGN STUDY ON
 THE PROJECT FOR IMPROVEMENT AND MAINTENANCE
 OF LUSAKA CITY ROADS

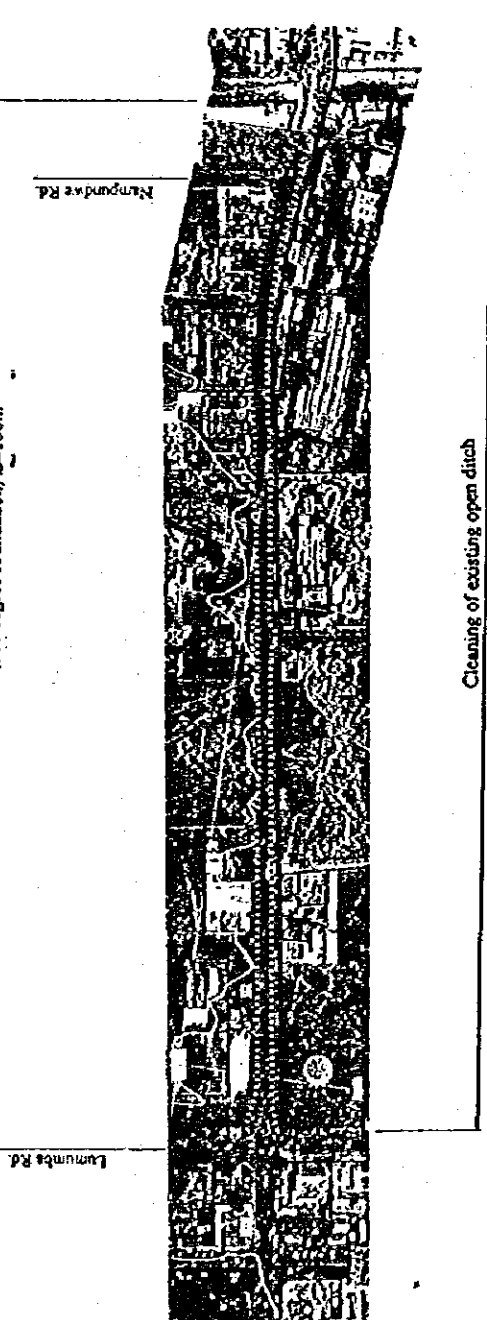
JAPAN INTERNATIONAL
 COOPERATION AGENCY

9. Kalundwe Road(3/1)
 PLAN AND PROFILE

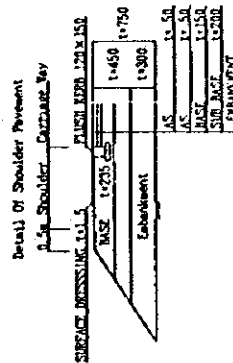
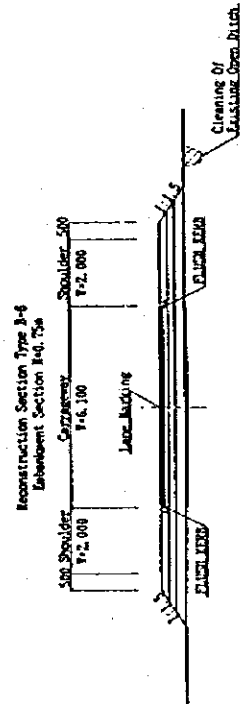
DATE
 AUGUST, 1995

SHEET NO
 30

Reconstruction Section Type B-6 L=1.2 km, W=6.1m
 Embankment Section H=0.75m
 Pipe culvert D600 (360 degree foundation) L=180m



Cleaning of existing open ditch



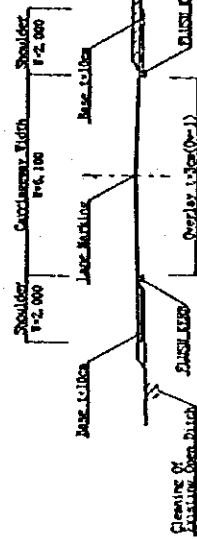
Overlay Section Type A-1 L=2.5 km, W=6.1 m, Overlay 1e3 cm

Cleaning of existing open ditch



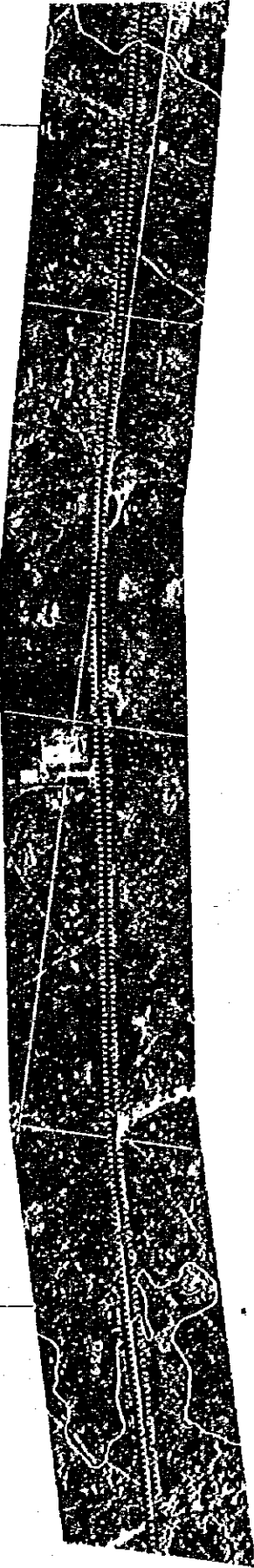
Cleaning of existing open ditch

Overlay Section Type A-1

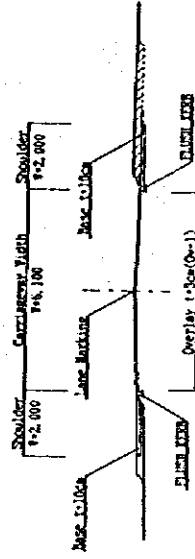


Overlay Section Type A-1 L=2.5 km, W=6.1 m, Overlay t=3 cm

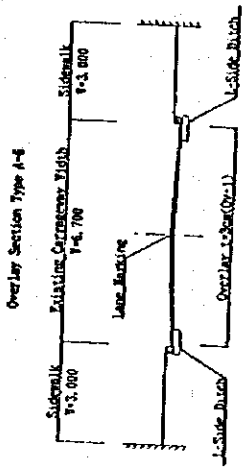
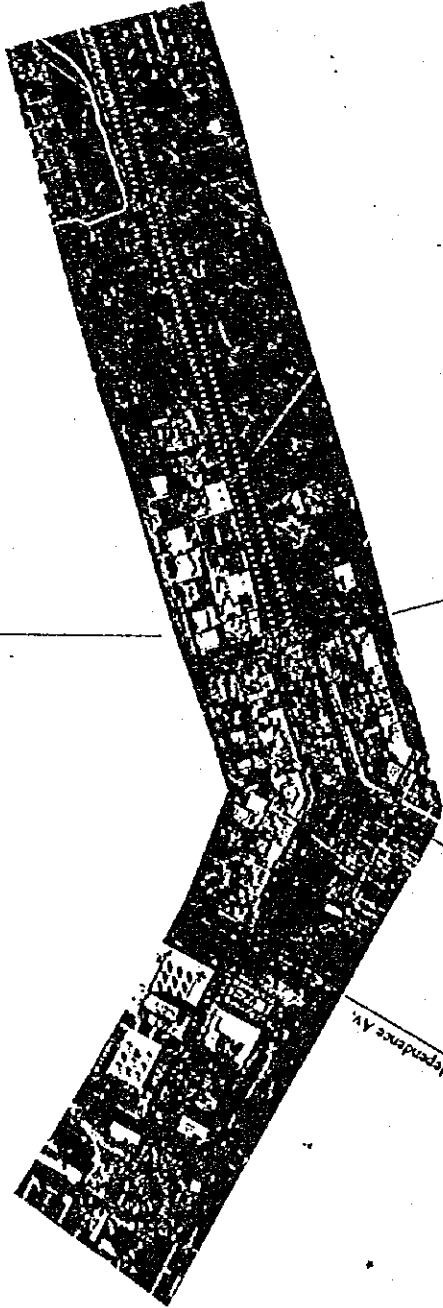
Cleaning of existing open ditch



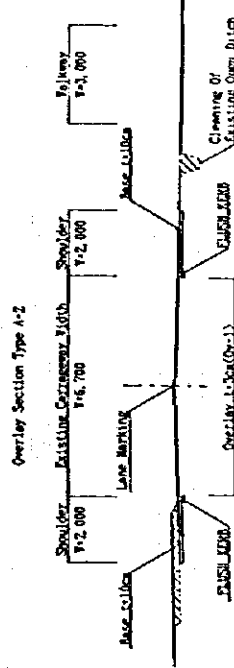
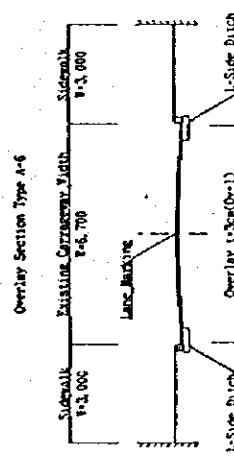
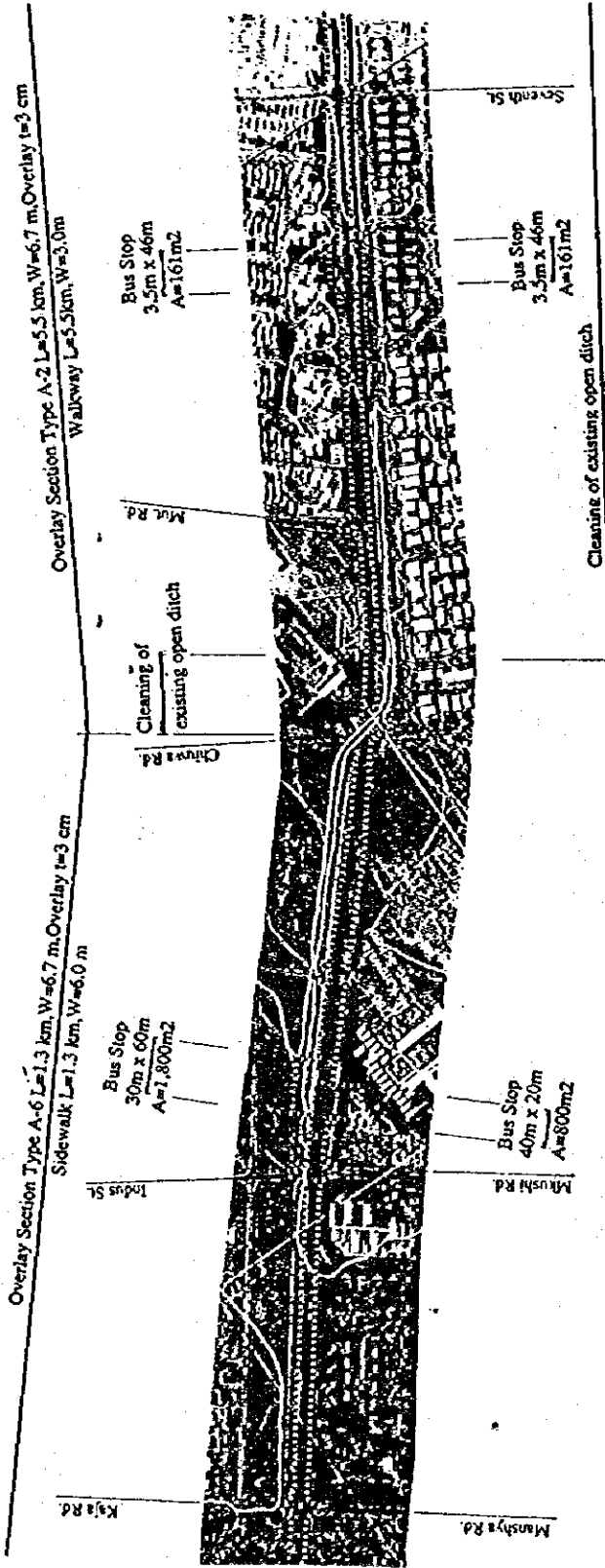
Overlay Section Type A-1



100,000
 200,000
 300,000
 400,000
 500,000
 600,000
 700,000
 800,000
 900,000
 1,000,000
 1,100,000
 1,200,000
 1,300,000
 1,400,000
 1,500,000
 1,600,000
 1,700,000
 1,800,000
 1,900,000
 2,000,000



THE REPUBLIC OF ZAMBIA LUSAKA CITY CONCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	24, Chilumbulo Road (1/5)	DATE	SHEET NO
			PLAN AND PROFILE	AUGUST, 1995	34



THE REPUBLIC OF ZAMBIA
LUSAKA CITY COUNCIL

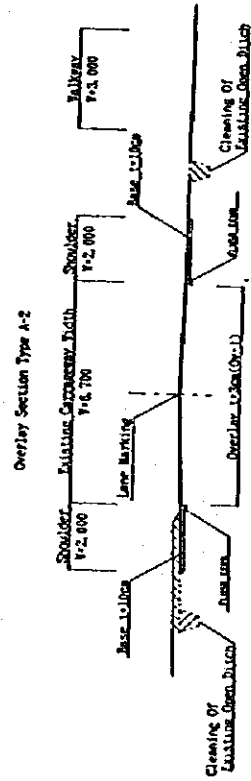
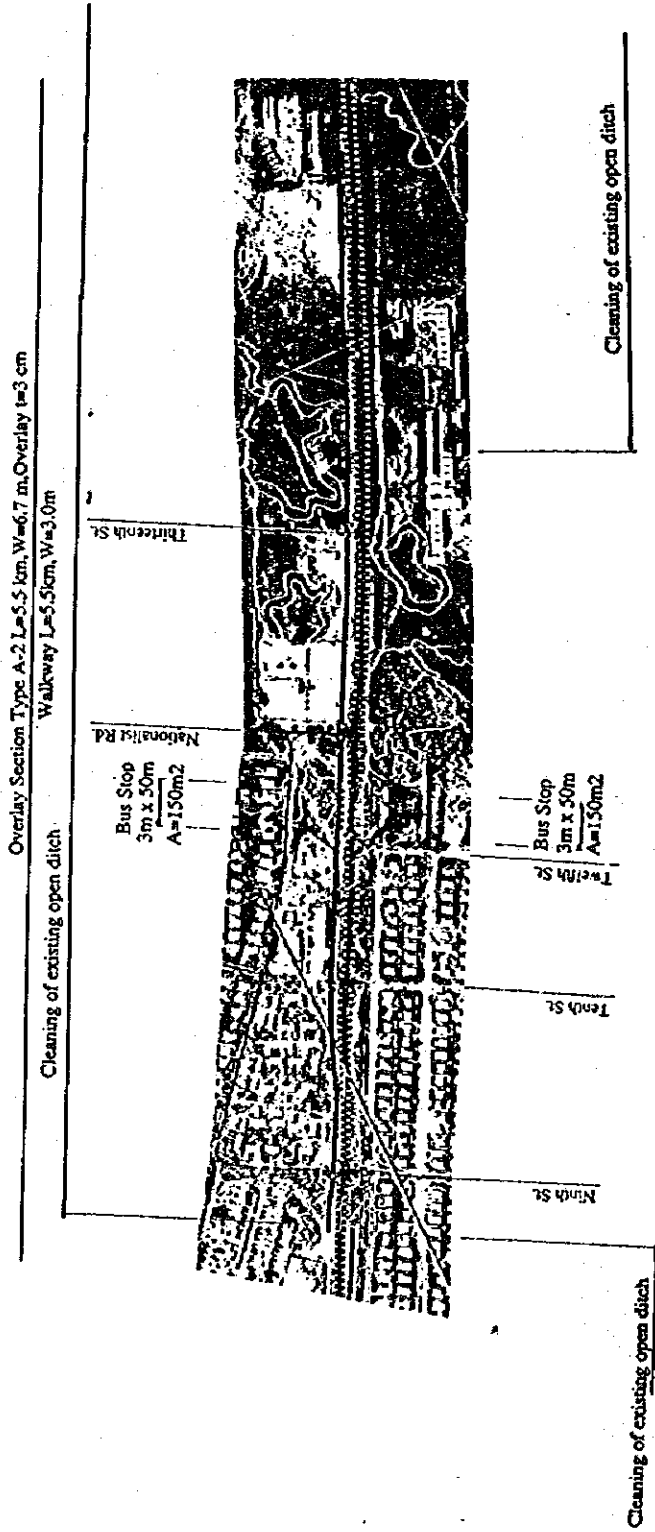
THE BASIC DESIGN STUDY ON
THE PROJECT FOR IMPROVEMENT AND MAINTENANCE
OF LUSAKA CITY ROADS

JAPAN INTERNATIONAL
COOPERATION AGENCY

24, Chitumbulu Road(2/5)
PLAN AND PROFILE

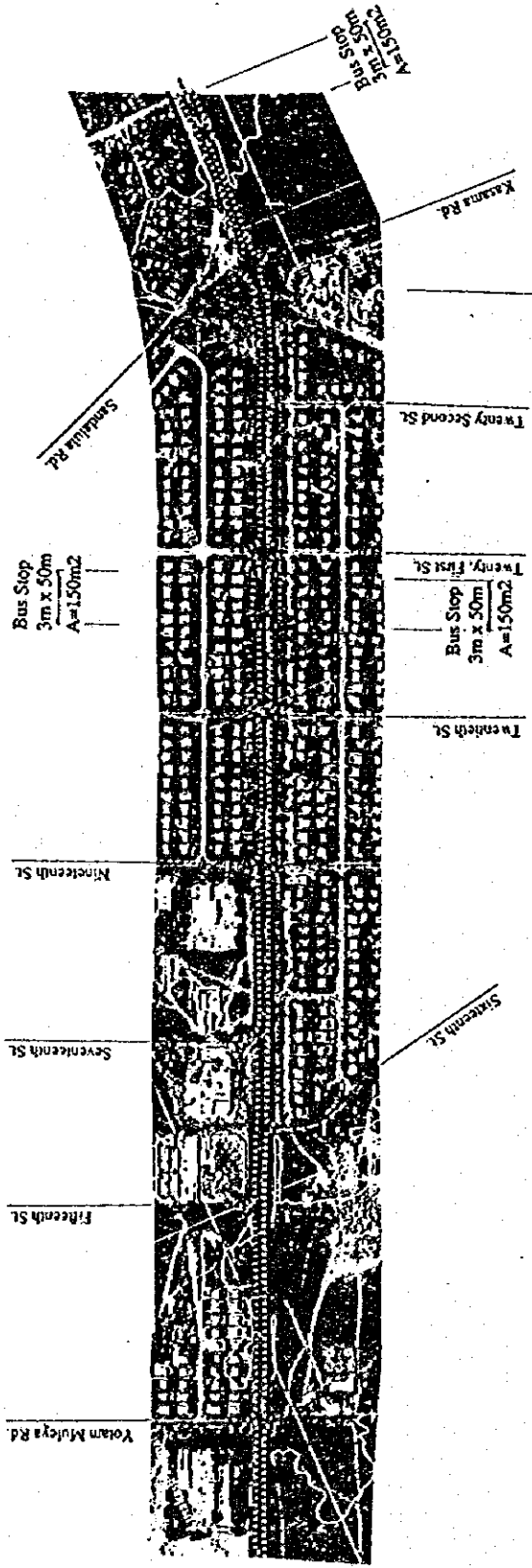
DATE
AUGUST, 1994

SHEET NO
35

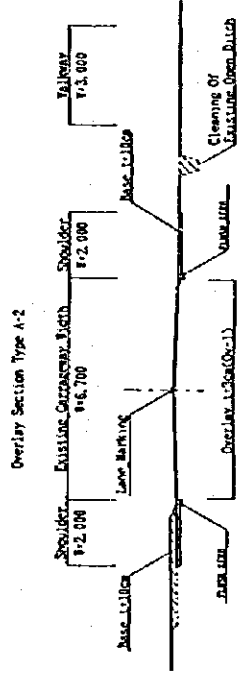


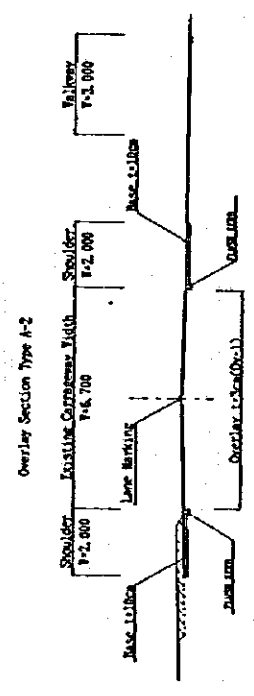
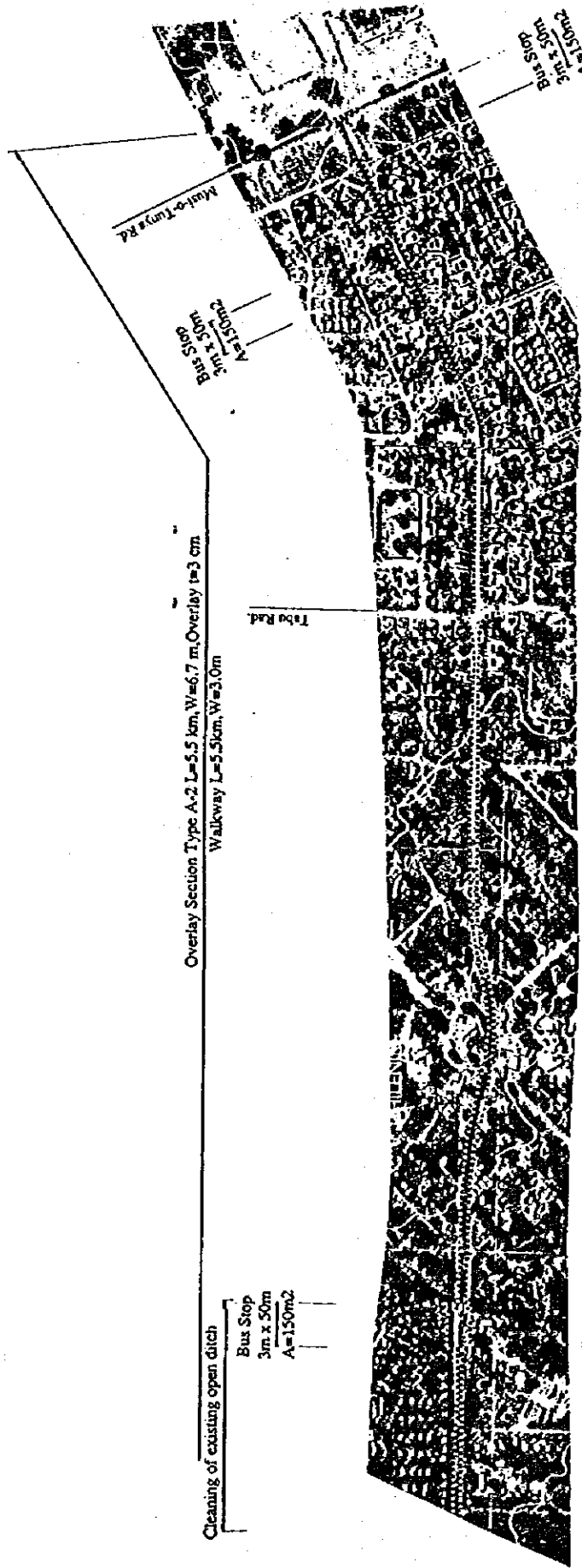
THE REPUBLIC OF ZAMBIA LUSAKA CITY CONCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS		JAPAN INTERNATIONAL COOPERATION AGENCY	24, Chitumbulu Road(3/5) PLAN AND PROFILE	DATE AUGUST, 1995	SHEET NO 36

Overlay Section Type A-2 L=5.5 km, W=6.7 m, Overlay = 3 cm!
 Walkway L=5.5 km, W=3.0m!



Cleaning of existing open ditch

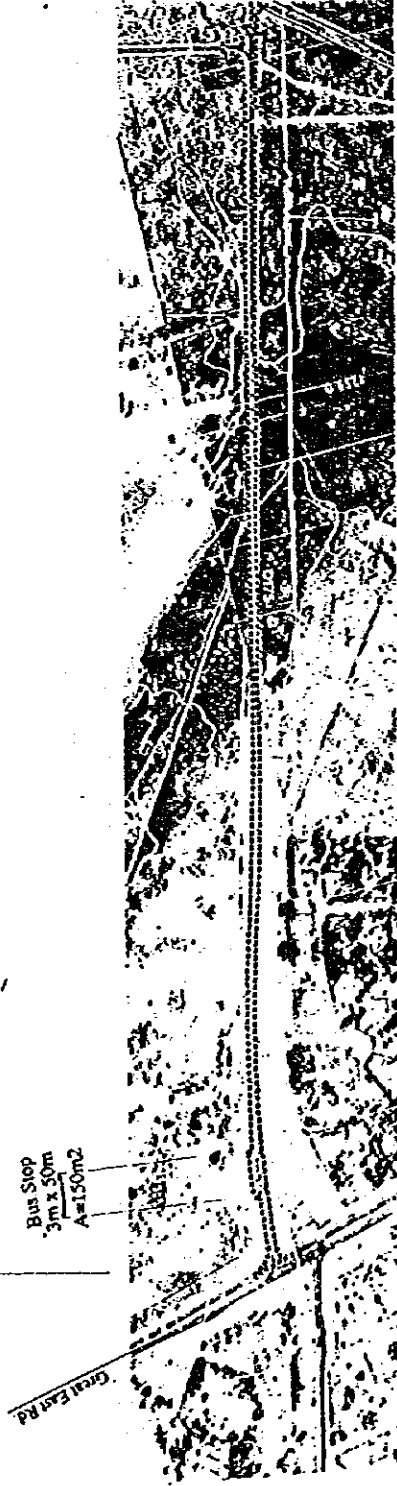




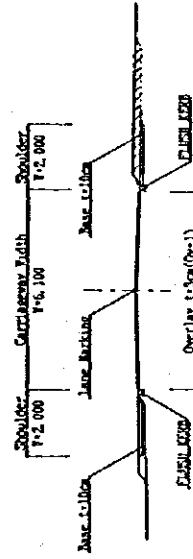
THE REPUBLIC OF ZAMBIA LUSAKA CITY COUNCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	24. Chitumbulu Road(S/S) PLAN AND PROFILE	SHEET NO 38
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DATE
AUGUST 1995

Overlay Section Type A-1 L=2.5 km, W=6.1 m, Overlay = 3 cm



Overlay Section Type A-1



THE REPUBLIC OF ZAMBIA
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THE BASIC DESIGN STUDY ON
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OF LUSAKA CITY ROADS

JAPAN INTERNATIONAL
COOPERATION AGENCY

26. Kalingsinga Road(1/2)
PLAN AND PROFILE

DATE
AUGUST, 1995

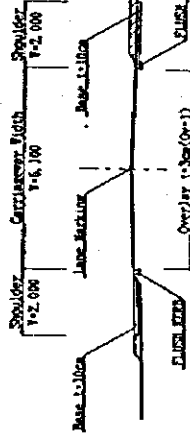
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39

Overlay Section Type A-1 L=2.5 km, W=6.1 m, Overlay t=3 cm

Alice Nkhosho Av.



Overlay Section Type A-1



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OF LUSAKA CITY ROADS

JAPAN INTERNATIONAL
COOPERATION AGENCY

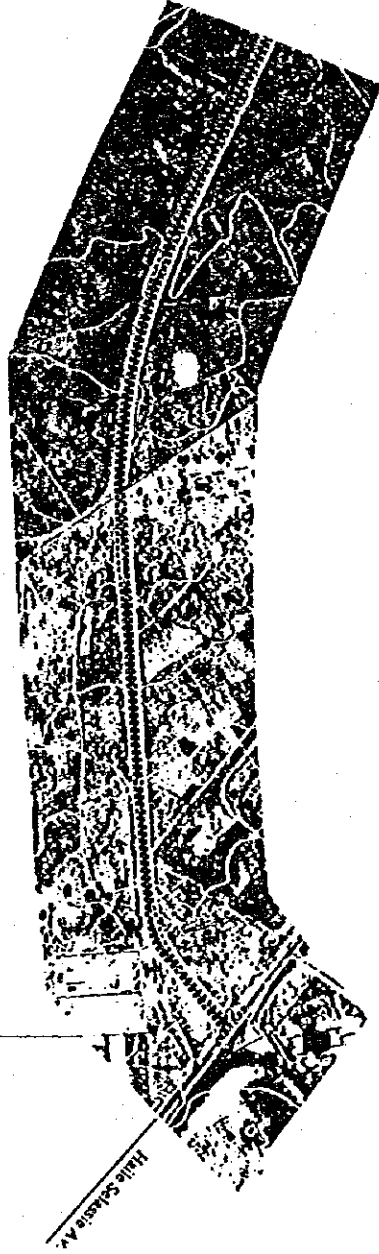
26. Kaitungulung Road(ZZ)

DATE
AUGUST, 1995

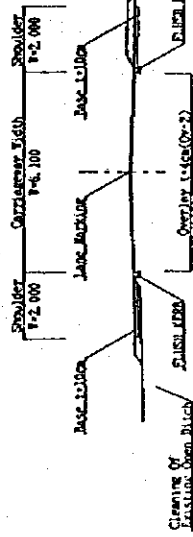
SHEET NO.
40

PLAN AND PROFILE

Overlay Section Type A-1 L=1.5 km, W=6.1 m, Overlay (cm)



Overlay Section Type A-1



THE REPUBLIC OF ZAMBIA
LUSAKA CITY COUNCIL

THE BASIC DESIGN STUDY ON
THE PROJECT FOR IMPROVEMENT AND MAINTENANCE
OF LUSAKA CITY ROADS

JAPAN INTERNATIONAL
COOPERATION AGENCY

27. Alick Nkhata Road (1/3)
PLAN AND PROFILE

DATE
AUGUST, 1992

SHEET NO

41

Overlays Section Type A-1 L=1.5 km, W=6.1m, A=150m²

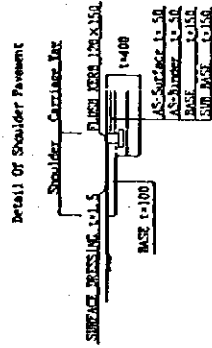
Reconstruction Section Type B-2 L=2.8 km, W=6.1m

Bus Stop
3m x 50m
A=150m²

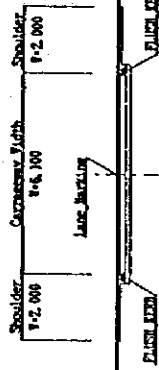
Bus Stop
3m x 50m
A=150m²

Bus Stop
3m x 50m
A=150m²

Bus Stop
3m x 50m
A=150m²



Reconstruction Section Type B-2



THE REPUBLIC OF ZAMBIA
LUSAKA CITY CONCIL

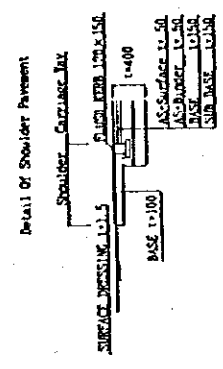
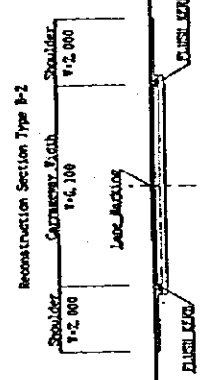
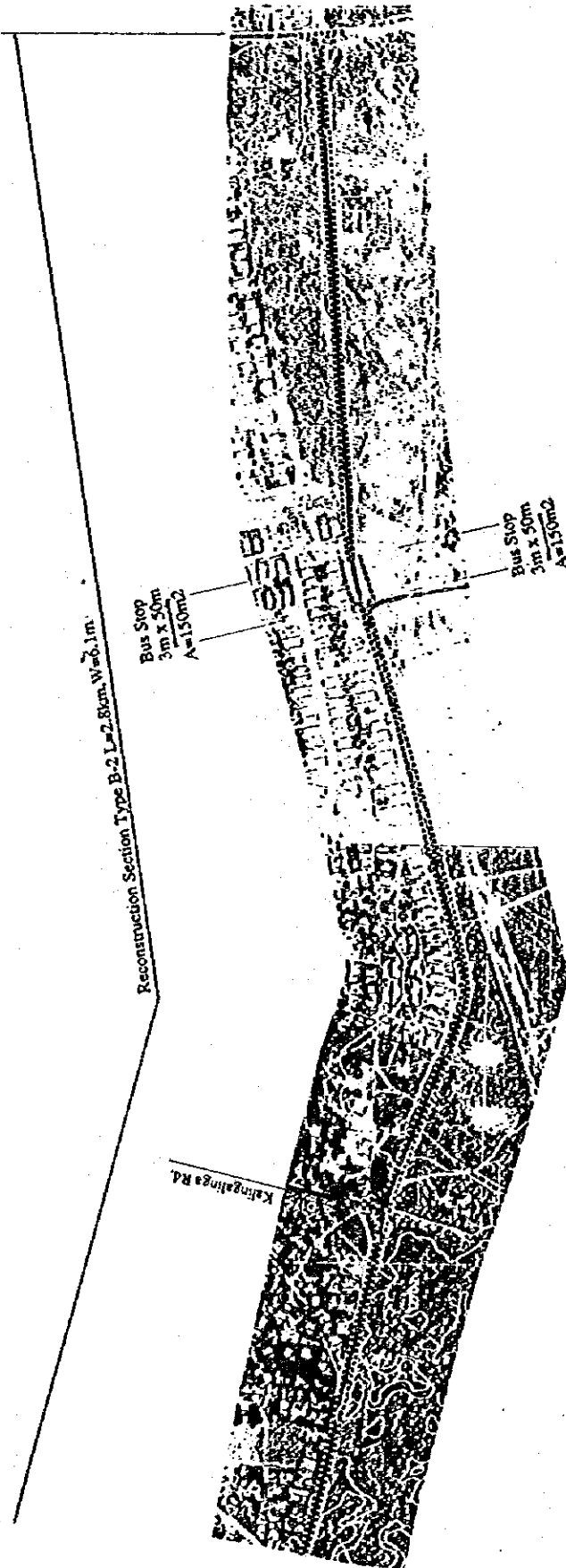
THE BASIC DESIGN STUDY ON
THE PROJECT FOR IMPROVEMENT AND MAINTENANCE
OF LUSAKA CITY ROADS

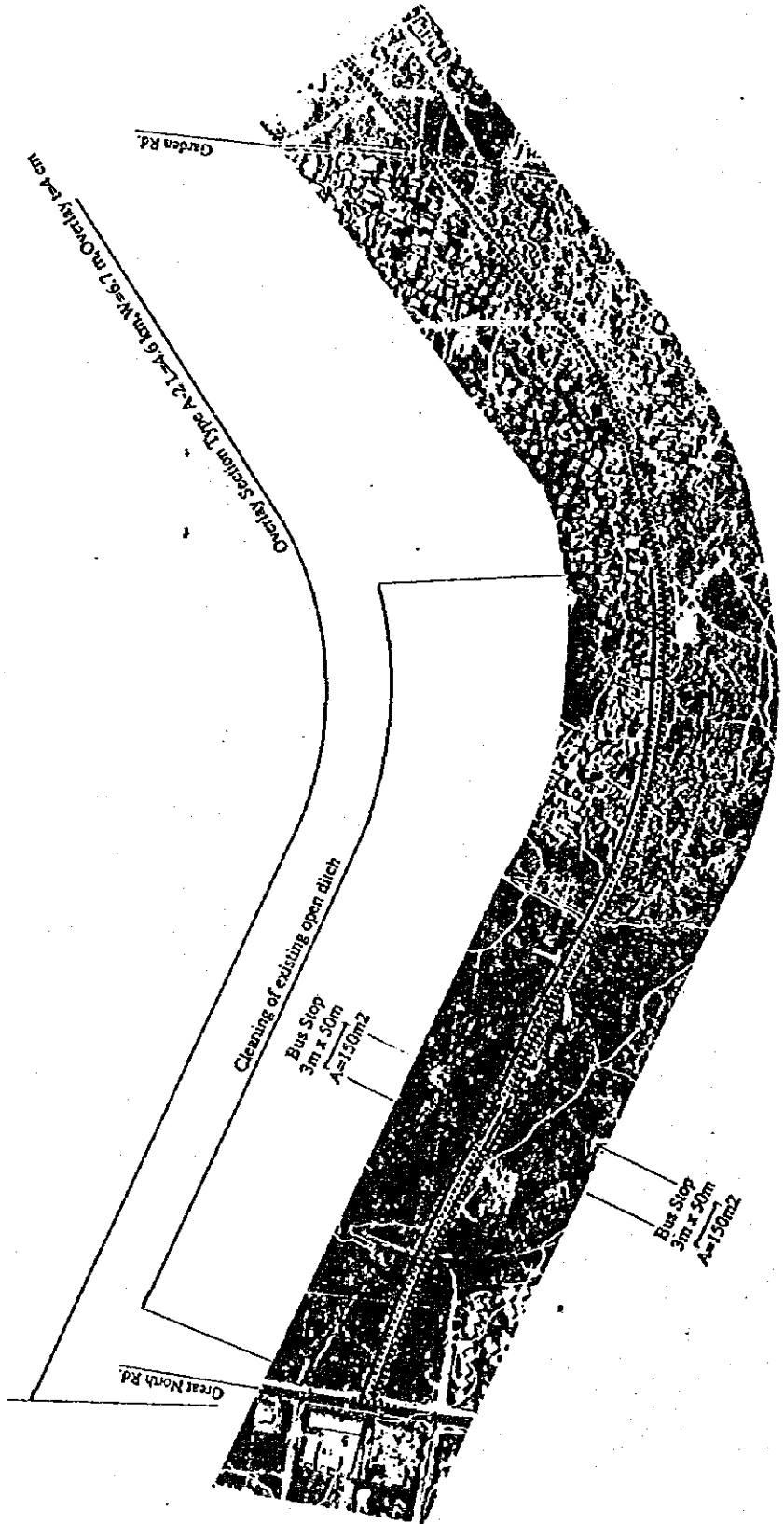
JAPAN INTERNATIONAL
COOPERATION AGENCY

27. Alick Niketa Road(2/3)
PLAN AND PROFILE

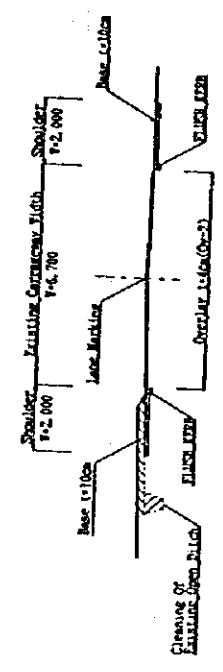
DATE
AUGUST, 1995

SHEET NO
42



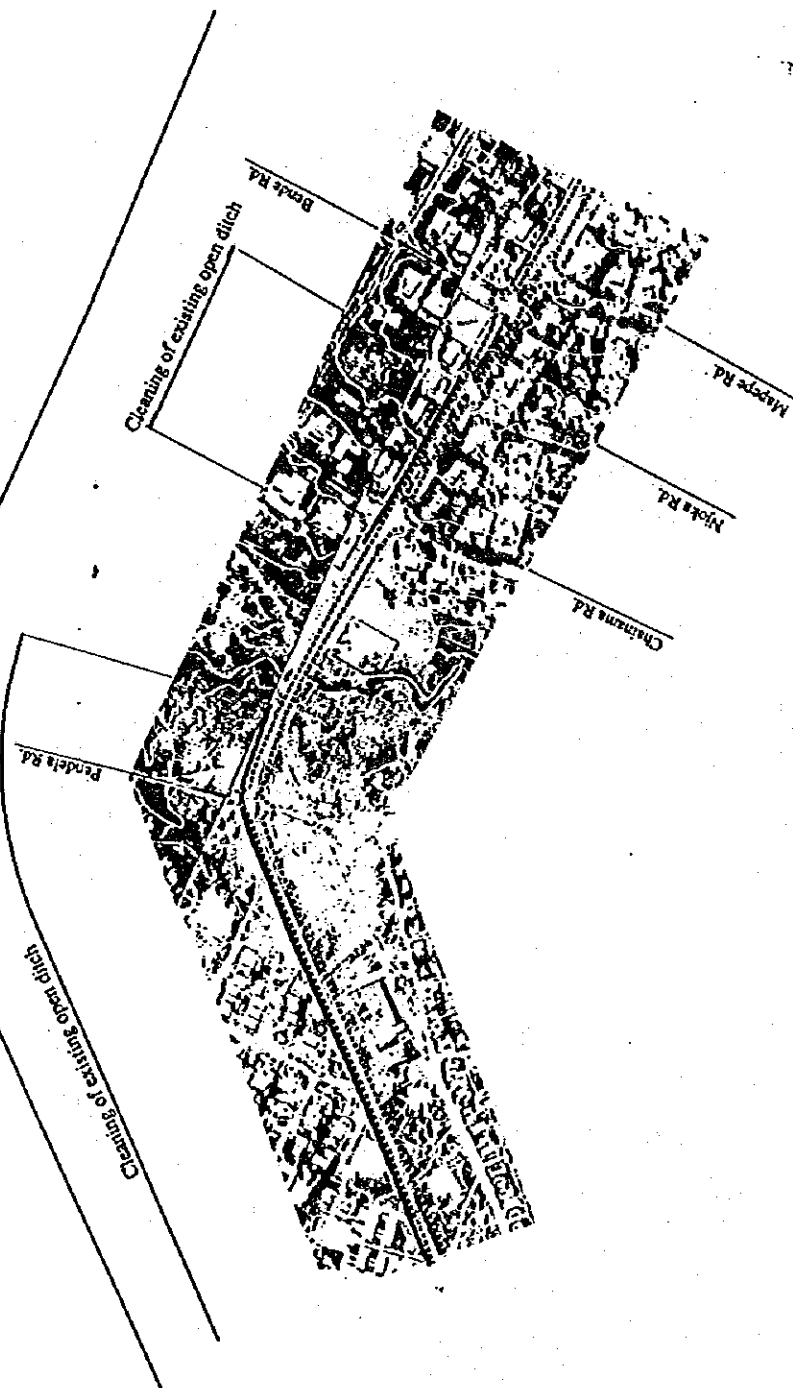


Overlay Section Type A-2

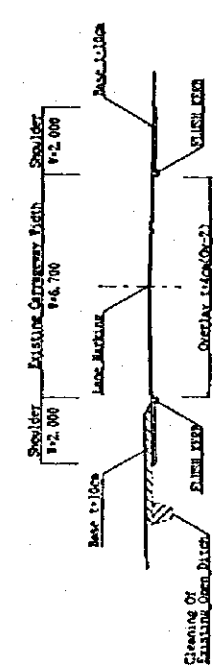


THE REPUBLIC OF ZAMBIA LUSAKA CITY COUNCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	35. Katima Mulilo Road(1/3) PLAN AND PROFILE	DATE AUGUST, 1995	SHEET NO 44
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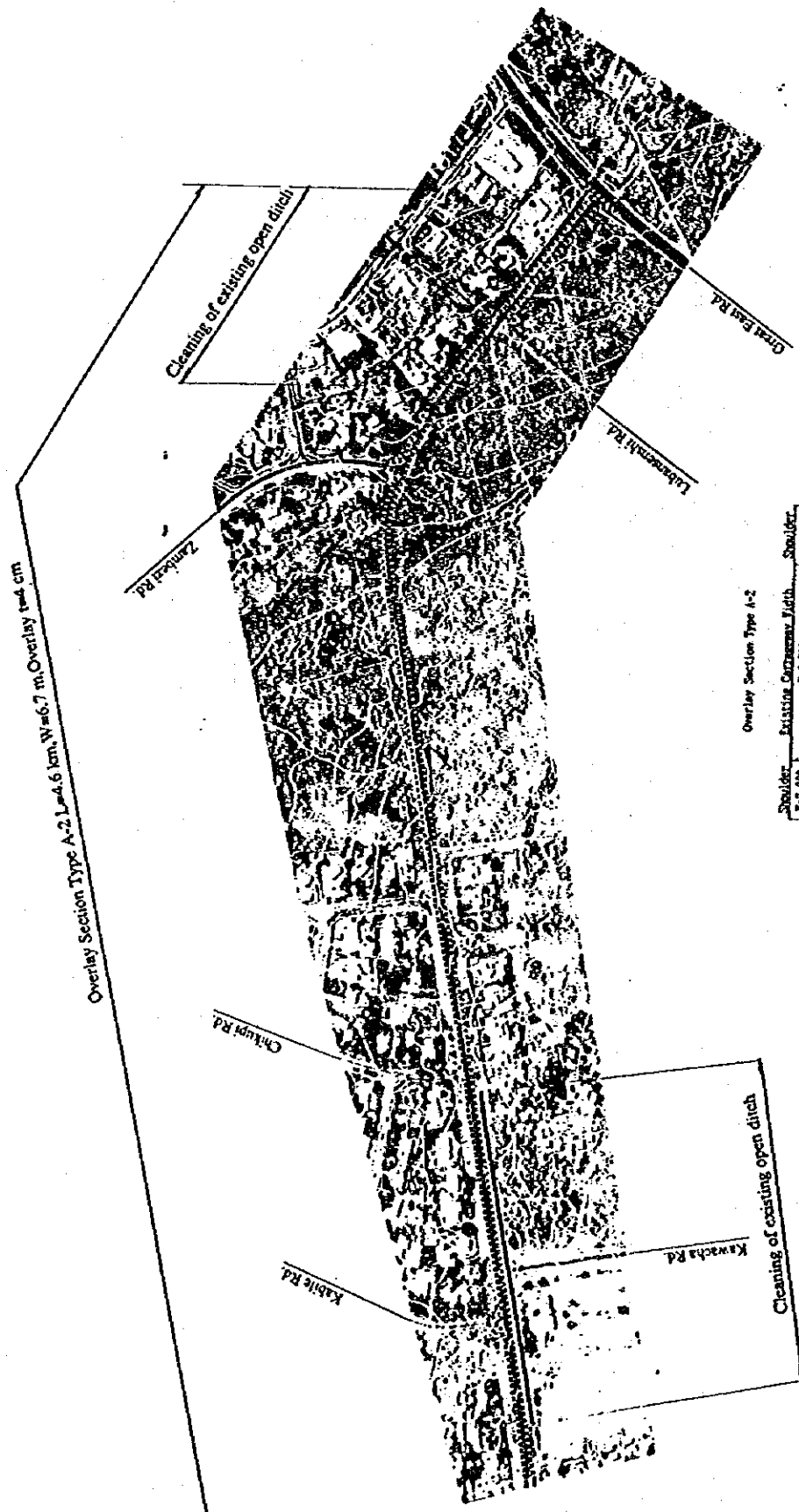
Overlay Section Type A-2 L=4.6 km, W=6.7 m, Overlay 144 cm



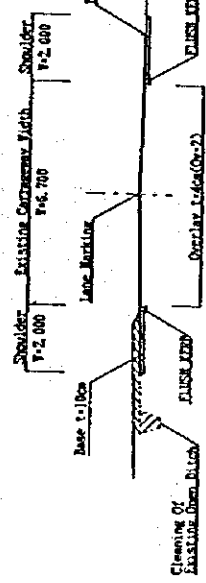
Overlay Section Type A-2



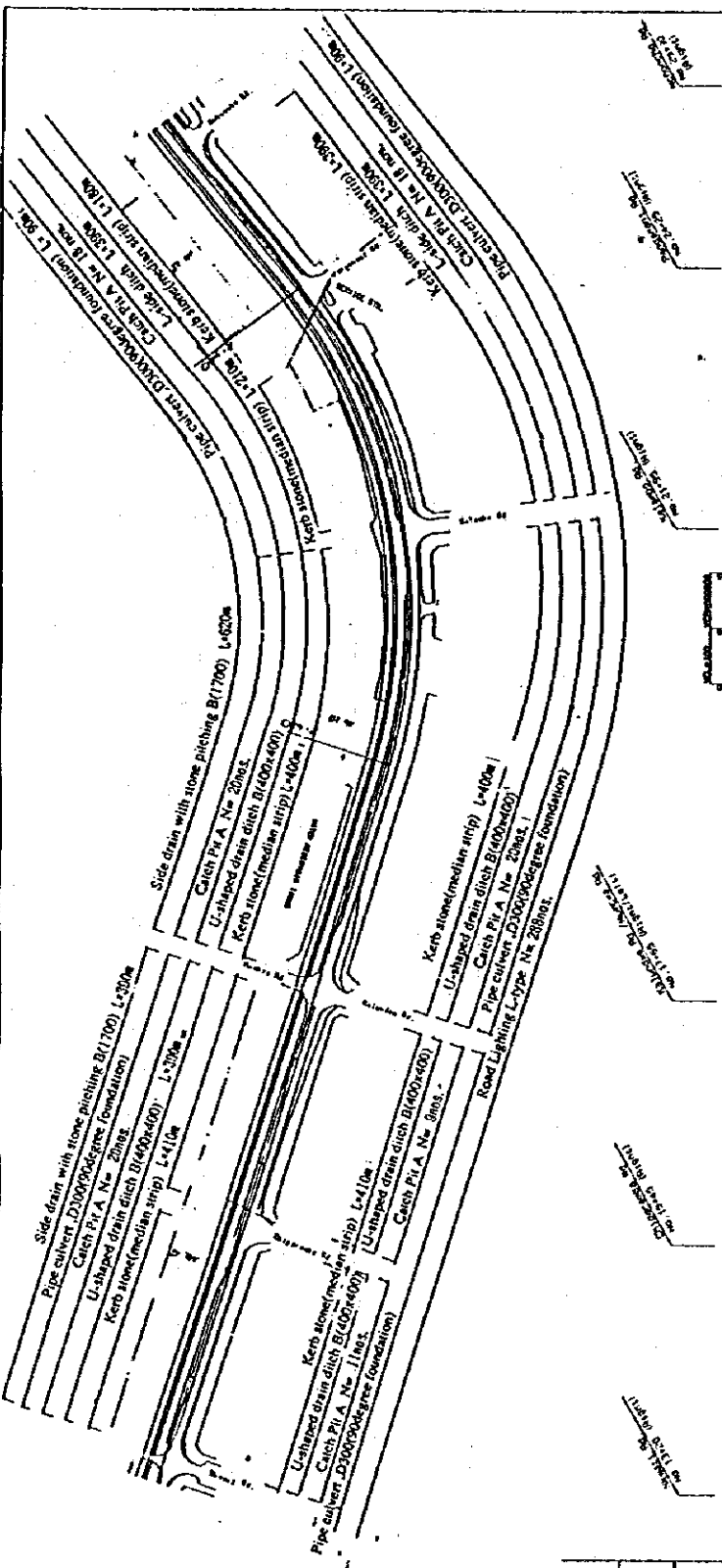
THE REPUBLIC OF ZAMBIA LUSAKA CITY COUNCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	35. Katima Mulilo Road(2/3)	SHEET NO	DATE	PLAN AND PROFILE	AUGUST, 1995	45
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Overlay Section Type A-2



THE REPUBLIC OF ZAMBIA LUSAKA CITY CONCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	35. Kasima Mulilo Road(3/3) PLAN AND PROFILE	DATE August, 1995	SHEET NO 46
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STATION NO.	CUMULATED DISTANCE	GROUND HEIGHT	PROPOSED HEIGHT	CUT HEIGHT	EMBANKMENT HEIGHT	GRADIENT
0+00	0.00	1270.00	1270.00	0.00	0.00	0.00%
0+10	10.00	1270.00	1270.00	0.00	0.00	0.00%
0+20	20.00	1270.00	1270.00	0.00	0.00	0.00%
0+30	30.00	1270.00	1270.00	0.00	0.00	0.00%
0+40	40.00	1270.00	1270.00	0.00	0.00	0.00%
0+50	50.00	1270.00	1270.00	0.00	0.00	0.00%
0+60	60.00	1270.00	1270.00	0.00	0.00	0.00%
0+70	70.00	1270.00	1270.00	0.00	0.00	0.00%
0+80	80.00	1270.00	1270.00	0.00	0.00	0.00%
0+90	90.00	1270.00	1270.00	0.00	0.00	0.00%
1+00	100.00	1270.00	1270.00	0.00	0.00	0.00%
1+10	110.00	1270.00	1270.00	0.00	0.00	0.00%
1+20	120.00	1270.00	1270.00	0.00	0.00	0.00%
1+30	130.00	1270.00	1270.00	0.00	0.00	0.00%
1+40	140.00	1270.00	1270.00	0.00	0.00	0.00%
1+50	150.00	1270.00	1270.00	0.00	0.00	0.00%
1+60	160.00	1270.00	1270.00	0.00	0.00	0.00%
1+70	170.00	1270.00	1270.00	0.00	0.00	0.00%
1+80	180.00	1270.00	1270.00	0.00	0.00	0.00%
1+90	190.00	1270.00	1270.00	0.00	0.00	0.00%
2+00	200.00	1270.00	1270.00	0.00	0.00	0.00%
2+10	210.00	1270.00	1270.00	0.00	0.00	0.00%
2+20	220.00	1270.00	1270.00	0.00	0.00	0.00%
2+30	230.00	1270.00	1270.00	0.00	0.00	0.00%
2+40	240.00	1270.00	1270.00	0.00	0.00	0.00%
2+50	250.00	1270.00	1270.00	0.00	0.00	0.00%
2+60	260.00	1270.00	1270.00	0.00	0.00	0.00%
2+70	270.00	1270.00	1270.00	0.00	0.00	0.00%
2+80	280.00	1270.00	1270.00	0.00	0.00	0.00%
2+90	290.00	1270.00	1270.00	0.00	0.00	0.00%
3+00	300.00	1270.00	1270.00	0.00	0.00	0.00%
3+10	310.00	1270.00	1270.00	0.00	0.00	0.00%
3+20	320.00	1270.00	1270.00	0.00	0.00	0.00%
3+30	330.00	1270.00	1270.00	0.00	0.00	0.00%
3+40	340.00	1270.00	1270.00	0.00	0.00	0.00%
3+50	350.00	1270.00	1270.00	0.00	0.00	0.00%
3+60	360.00	1270.00	1270.00	0.00	0.00	0.00%
3+70	370.00	1270.00	1270.00	0.00	0.00	0.00%
3+80	380.00	1270.00	1270.00	0.00	0.00	0.00%
3+90	390.00	1270.00	1270.00	0.00	0.00	0.00%
4+00	400.00	1270.00	1270.00	0.00	0.00	0.00%
4+10	410.00	1270.00	1270.00	0.00	0.00	0.00%
4+20	420.00	1270.00	1270.00	0.00	0.00	0.00%
4+30	430.00	1270.00	1270.00	0.00	0.00	0.00%
4+40	440.00	1270.00	1270.00	0.00	0.00	0.00%
4+50	450.00	1270.00	1270.00	0.00	0.00	0.00%
4+60	460.00	1270.00	1270.00	0.00	0.00	0.00%
4+70	470.00	1270.00	1270.00	0.00	0.00	0.00%
4+80	480.00	1270.00	1270.00	0.00	0.00	0.00%
4+90	490.00	1270.00	1270.00	0.00	0.00	0.00%
5+00	500.00	1270.00	1270.00	0.00	0.00	0.00%
5+10	510.00	1270.00	1270.00	0.00	0.00	0.00%
5+20	520.00	1270.00	1270.00	0.00	0.00	0.00%
5+30	530.00	1270.00	1270.00	0.00	0.00	0.00%
5+40	540.00	1270.00	1270.00	0.00	0.00	0.00%
5+50	550.00	1270.00	1270.00	0.00	0.00	0.00%
5+60	560.00	1270.00	1270.00	0.00	0.00	0.00%
5+70	570.00	1270.00	1270.00	0.00	0.00	0.00%
5+80	580.00	1270.00	1270.00	0.00	0.00	0.00%
5+90	590.00	1270.00	1270.00	0.00	0.00	0.00%
6+00	600.00	1270.00	1270.00	0.00	0.00	0.00%
6+10	610.00	1270.00	1270.00	0.00	0.00	0.00%
6+20	620.00	1270.00	1270.00	0.00	0.00	0.00%
6+30	630.00	1270.00	1270.00	0.00	0.00	0.00%
6+40	640.00	1270.00	1270.00	0.00	0.00	0.00%
6+50	650.00	1270.00	1270.00	0.00	0.00	0.00%
6+60	660.00	1270.00	1270.00	0.00	0.00	0.00%
6+70	670.00	1270.00	1270.00	0.00	0.00	0.00%
6+80	680.00	1270.00	1270.00	0.00	0.00	0.00%
6+90	690.00	1270.00	1270.00	0.00	0.00	0.00%
7+00	700.00	1270.00	1270.00	0.00	0.00	0.00%
7+10	710.00	1270.00	1270.00	0.00	0.00	0.00%
7+20	720.00	1270.00	1270.00	0.00	0.00	0.00%
7+30	730.00	1270.00	1270.00	0.00	0.00	0.00%
7+40	740.00	1270.00	1270.00	0.00	0.00	0.00%
7+50	750.00	1270.00	1270.00	0.00	0.00	0.00%
7+60	760.00	1270.00	1270.00	0.00	0.00	0.00%
7+70	770.00	1270.00	1270.00	0.00	0.00	0.00%
7+80	780.00	1270.00	1270.00	0.00	0.00	0.00%
7+90	790.00	1270.00	1270.00	0.00	0.00	0.00%
8+00	800.00	1270.00	1270.00	0.00	0.00	0.00%
8+10	810.00	1270.00	1270.00	0.00	0.00	0.00%
8+20	820.00	1270.00	1270.00	0.00	0.00	0.00%
8+30	830.00	1270.00	1270.00	0.00	0.00	0.00%
8+40	840.00	1270.00	1270.00	0.00	0.00	0.00%
8+50	850.00	1270.00	1270.00	0.00	0.00	0.00%
8+60	860.00	1270.00	1270.00	0.00	0.00	0.00%
8+70	870.00	1270.00	1270.00	0.00	0.00	0.00%
8+80	880.00	1270.00	1270.00	0.00	0.00	0.00%
8+90	890.00	1270.00	1270.00	0.00	0.00	0.00%
9+00	900.00	1270.00	1270.00	0.00	0.00	0.00%
9+10	910.00	1270.00	1270.00	0.00	0.00	0.00%
9+20	920.00	1270.00	1270.00	0.00	0.00	0.00%
9+30	930.00	1270.00	1270.00	0.00	0.00	0.00%
9+40	940.00	1270.00	1270.00	0.00	0.00	0.00%
9+50	950.00	1270.00	1270.00	0.00	0.00	0.00%
9+60	960.00	1270.00	1270.00	0.00	0.00	0.00%
9+70	970.00	1270.00	1270.00	0.00	0.00	0.00%
9+80	980.00	1270.00	1270.00	0.00	0.00	0.00%
9+90	990.00	1270.00	1270.00	0.00	0.00	0.00%
10+00	1000.00	1270.00	1270.00	0.00	0.00	0.00%

THE BASIC DESIGN STUDY ON
THE PROJECT FOR IMPROVEMENT AND MAINTENANCE
OF LUSAKA CITY ROADS

THE REPUBLIC OF ZAMBIA
LUSAKA CITY COUNCIL

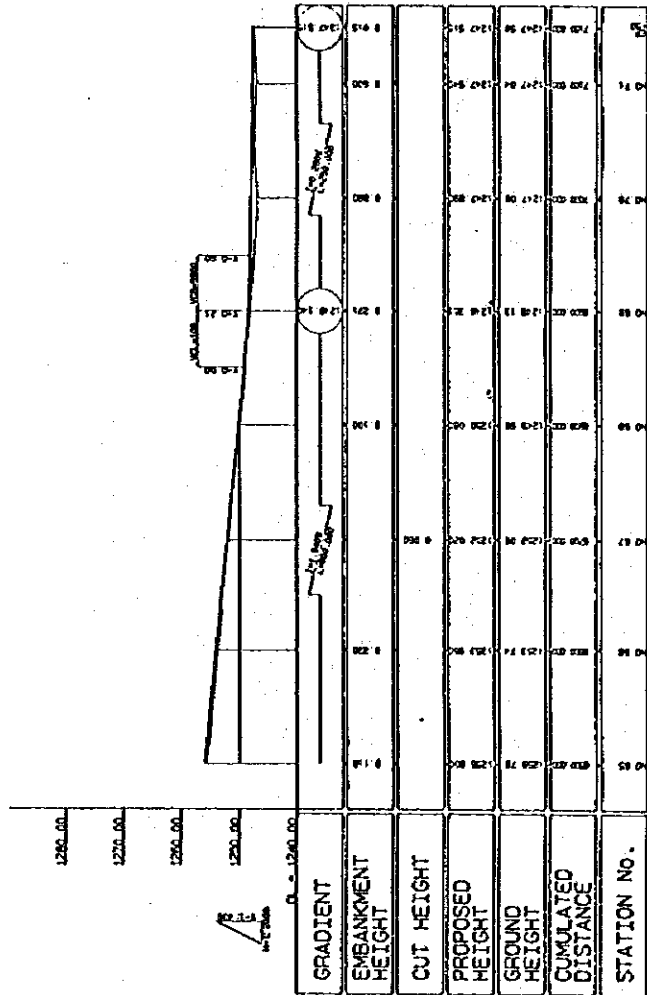
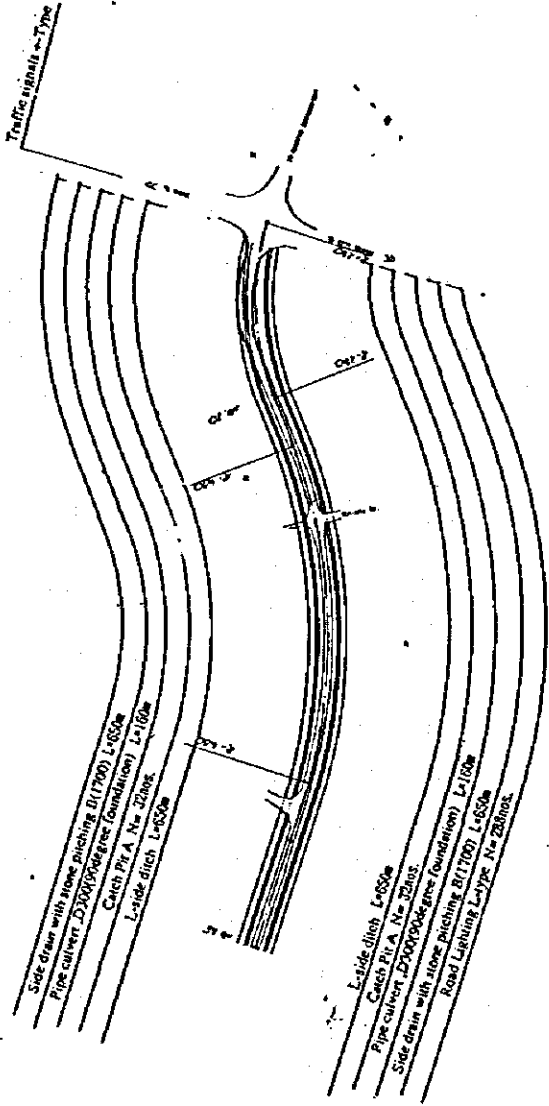
JAPAN INTERNATIONAL
COOPERATION AGENCY

LUMUMBA ROAD

PLAN AND PROFILE (2)

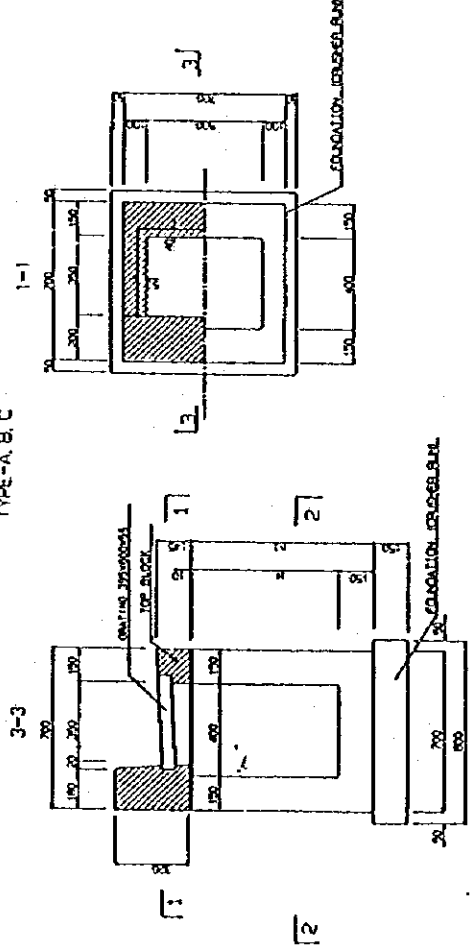
DATE 4/2/81 1979

SHEET NO 43



CATCH PIT 5 = 1:10

TYPE-A, B, C



MATERIALS LIST CATCH PIT-A

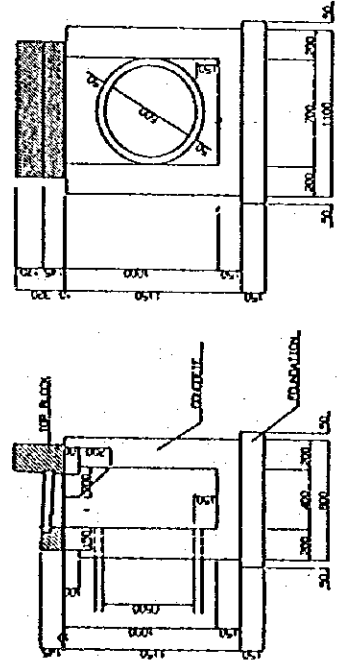
CLASSIFICATION	SYMBOL	UNIT	QUANTITY	REMARKS
CONCRETE	100	m ³	0.15	
FOUNDATION	100	m ³	0.05	
TOP BLOCK	100	NO.	1	

DIMENSION TABLE

SYMBOL	UNIT	VALUE
100	mm	100
200	mm	200
300	mm	300

CATCH PIT 5 = 1:15

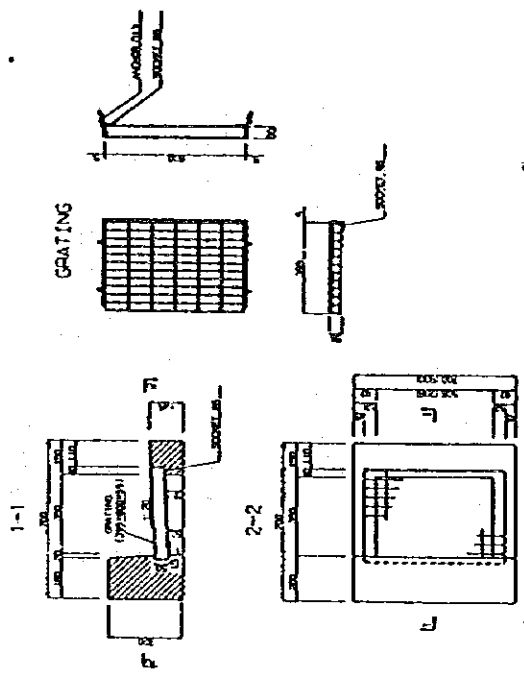
TYPE-D



MATERIALS LIST CATCH PIT TYPE-D

CLASSIFICATION	SYMBOL	UNIT	QUANTITY	REMARKS
CONCRETE	100	m ³	0.15	
FOUNDATION	100	m ³	0.05	
TOP BLOCK	100	NO.	1	

TOP BLOCK 5 = 1:10



MATERIALS LIST TOP BLOCK-A, B

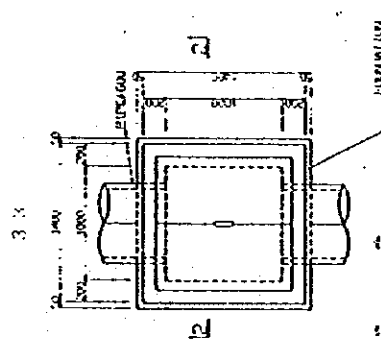
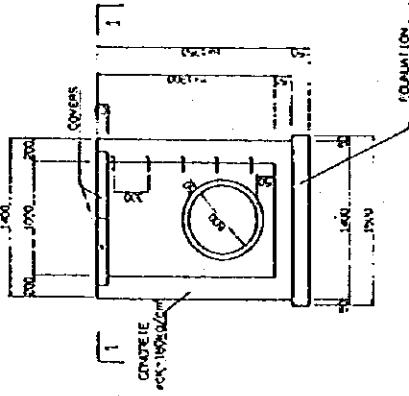
CLASSIFICATION	SYMBOL	UNIT	QUANTITY	REMARKS
CONCRETE	100	m ³	0.05	
FOUNDATION	100	m ³	0.05	
TOP BLOCK	100	NO.	1	

MAN HOLE

S = 1:20

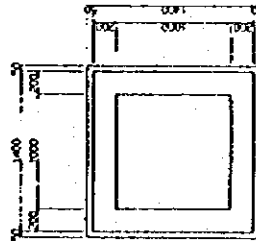
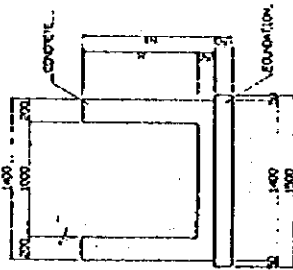
MAN HOLE - (A)

2-2



3-X

MAN HOLE - (B, C, D)

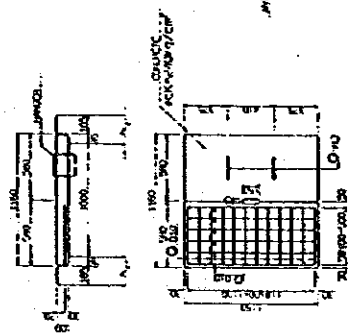


DIMENSION TABLE MAN HOLE (B, C, D)

NO.	DESCRIPTION	UNIT	QUANTITY
1	CONCRETE	M ³	1.00
2	IRON	KG	100
3	PIPE	M	1.00
4	COVER	NO.	1
5	FOUNDATION	M ³	1.00

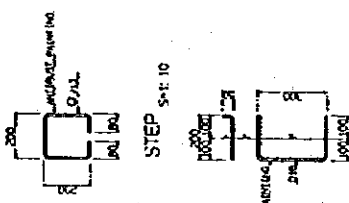
DETAIL OF COVERS

S = 1:20



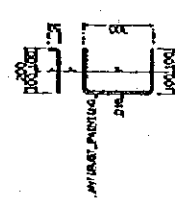
HANGER

S = 1:10



STEP

S = 1:10



MATERIALS LIST (MAN HOLE (A, B, C, D))

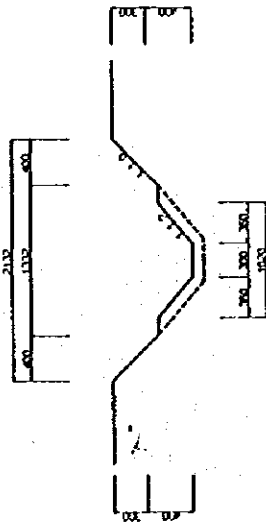
NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1	CONCRETE	M ³	1.00	1.20	1.20
2	IRON	KG	100	0.10	10.00
3	PIPE	M	1.00	1.00	1.00
4	COVER	NO.	1	1.00	1.00
5	FOUNDATION	M ³	1.00	1.20	1.20
6	ANTIRUST-PAINTING	M ²	1.00	0.10	0.10
7	STEP	NO.	1	1.00	1.00
8	HANGER	NO.	1	1.00	1.00
9	MAN HOLE	NO.	1	1.00	1.00

MATERIALS LIST (COVER)

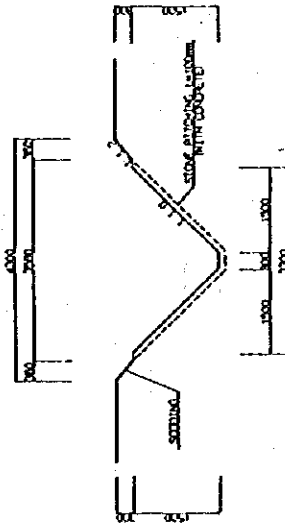
NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1	CONCRETE	M ³	1.00	1.20	1.20
2	IRON	KG	100	0.10	10.00
3	PIPE	M	1.00	1.00	1.00
4	COVER	NO.	1	1.00	1.00
5	FOUNDATION	M ³	1.00	1.20	1.20
6	ANTIRUST-PAINTING	M ²	1.00	0.10	0.10
7	STEP	NO.	1	1.00	1.00
8	HANGER	NO.	1	1.00	1.00
9	MAN HOLE	NO.	1	1.00	1.00

SIDE DRAIN WITH STONE PITCHING

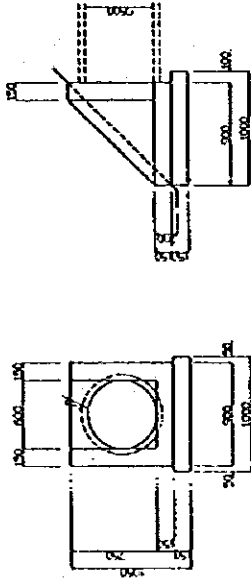
TYPE-A (700) 5-11-20



TYPE-B (1800) 5-11-20



OUT LET 5-11-20

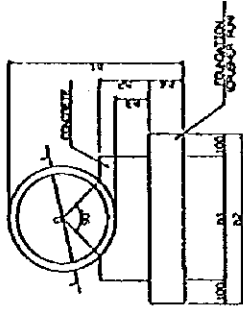


MATERIALS LIST (REF. LET)

CLASSIFICATION	DESCRIPTION	UNIT	QUANTITY	REMARKS
CONCRETE	FOUNDATION	cu.m	0.328	
CONCRETE	OUTLET	cu.m	0.150	
STONE	PITCHING	m ²	2.381	

PIPE CULVERT TYPE-A

(D=300, 400, 500, 1000) S=1:20



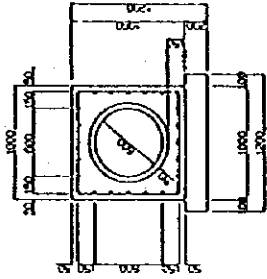
D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
D=300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
D=400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
D=500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
D=1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

MATERIALS LIST PIPE CULVERT TYPE-A

CLASSIFICATION	STANDARD	UNIT	QUANTITY	REMARKS
CONCRETE	CPY 10/10	m ³	10.00	
FOUNDATION	CPY 10/10	m ³	10.00	
PIPE CULVERT	JIS A 5303	m	10.00	
REINFORCEMENT	CPY 10/10	m ²	10.00	

PIPE CULVERT TYPE-B

(D=500) S=1:20

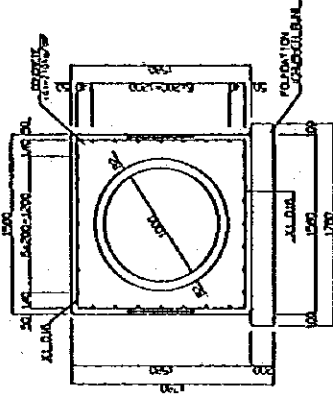


MATERIALS LIST PIPE CULVERT TYPE-B

CLASSIFICATION	STANDARD	UNIT	QUANTITY	REMARKS
CONCRETE	CPY 10/10	m ³	10.00	
FOUNDATION	CPY 10/10	m ³	10.00	
PIPE CULVERT	JIS A 5303	m	10.00	
REINFORCEMENT	CPY 10/10	m ²	10.00	

PIPE CULVERT TYPE-A

(D=1000) S=1:20



MATERIALS LIST PIPE CULVERT TYPE-A

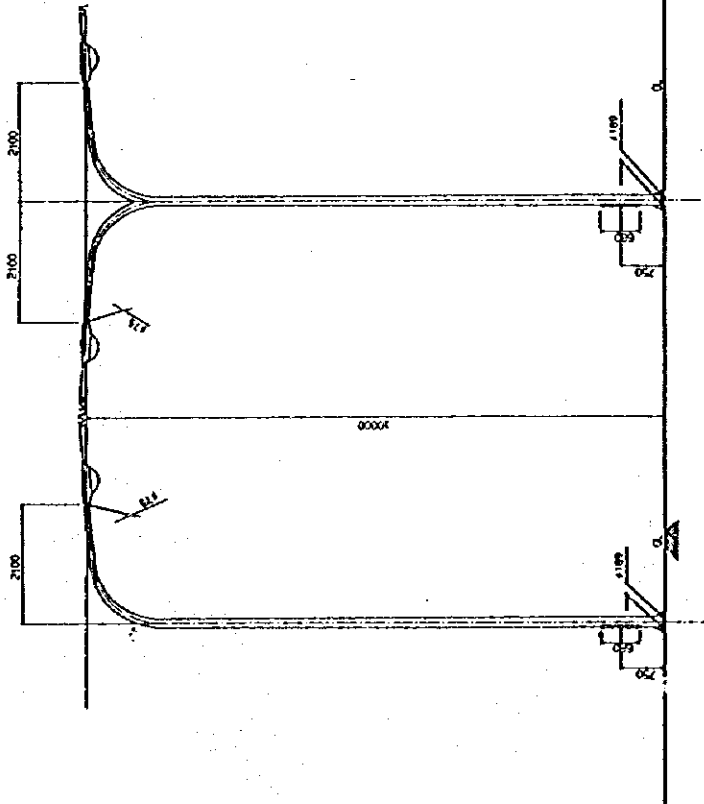
CLASSIFICATION	STANDARD	UNIT	QUANTITY	REMARKS
CONCRETE	CPY 10/10	m ³	15.00	
FOUNDATION	CPY 10/10	m ³	15.00	
PIPE CULVERT	JIS A 5303	m	15.00	
REINFORCEMENT	CPY 10/10	m ²	15.00	

ROAD LIGHTING

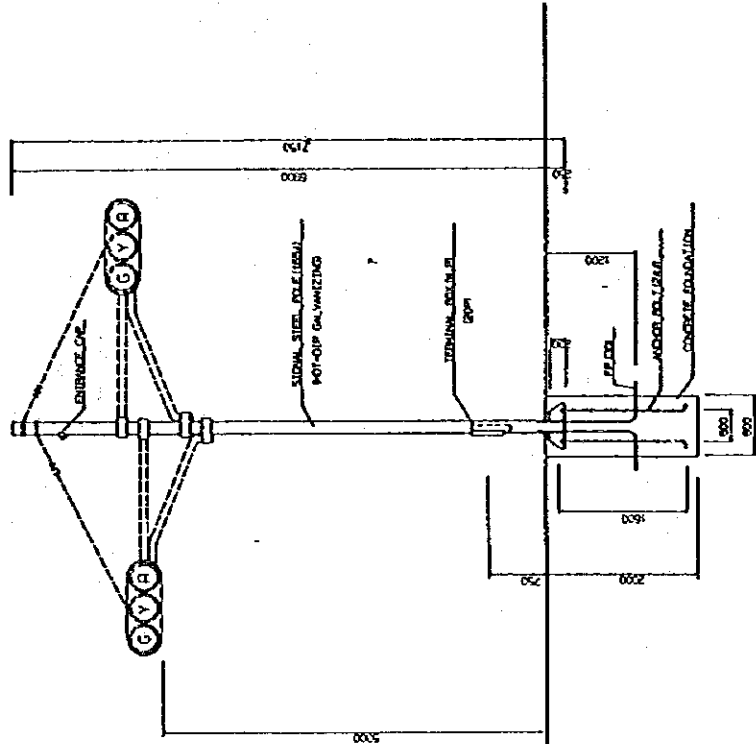
L-TYPE

T-TYPE

S=1:40



TRAFFIC SIGNAL



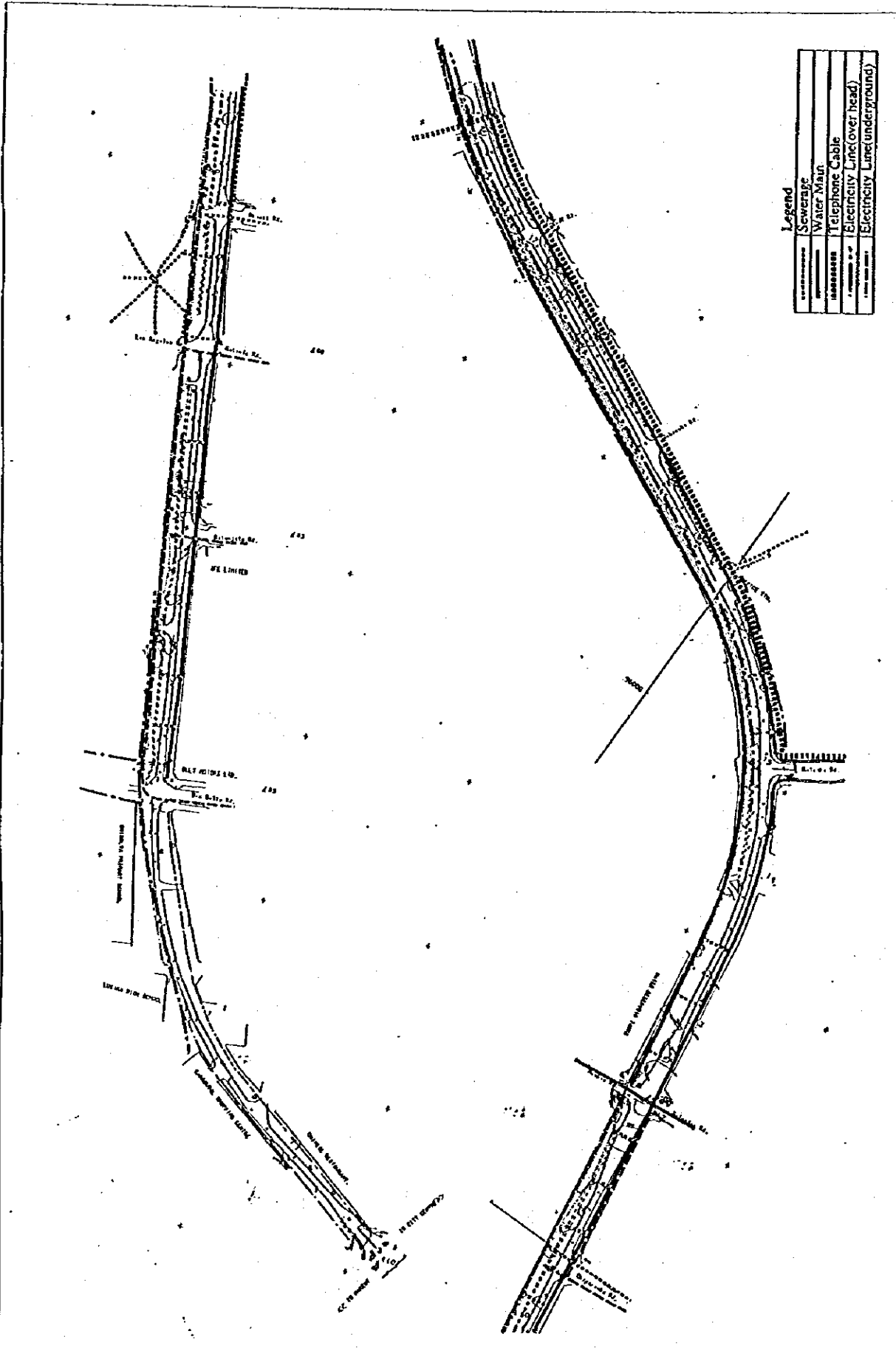
THE REPUBLIC OF ZAMBIA
LUSAKA CITY CONCIL

THE BASIC DESIGN STUDY ON
THE PROJECT FOR IMPROVEMENT AND MAINTENANCE
OF LUSAKA CITY ROADS

JAPAN INTERNATIONAL
COOPERATION AGENCY

ROAD LIGHTING AND
TRAFFIC SIGNAL

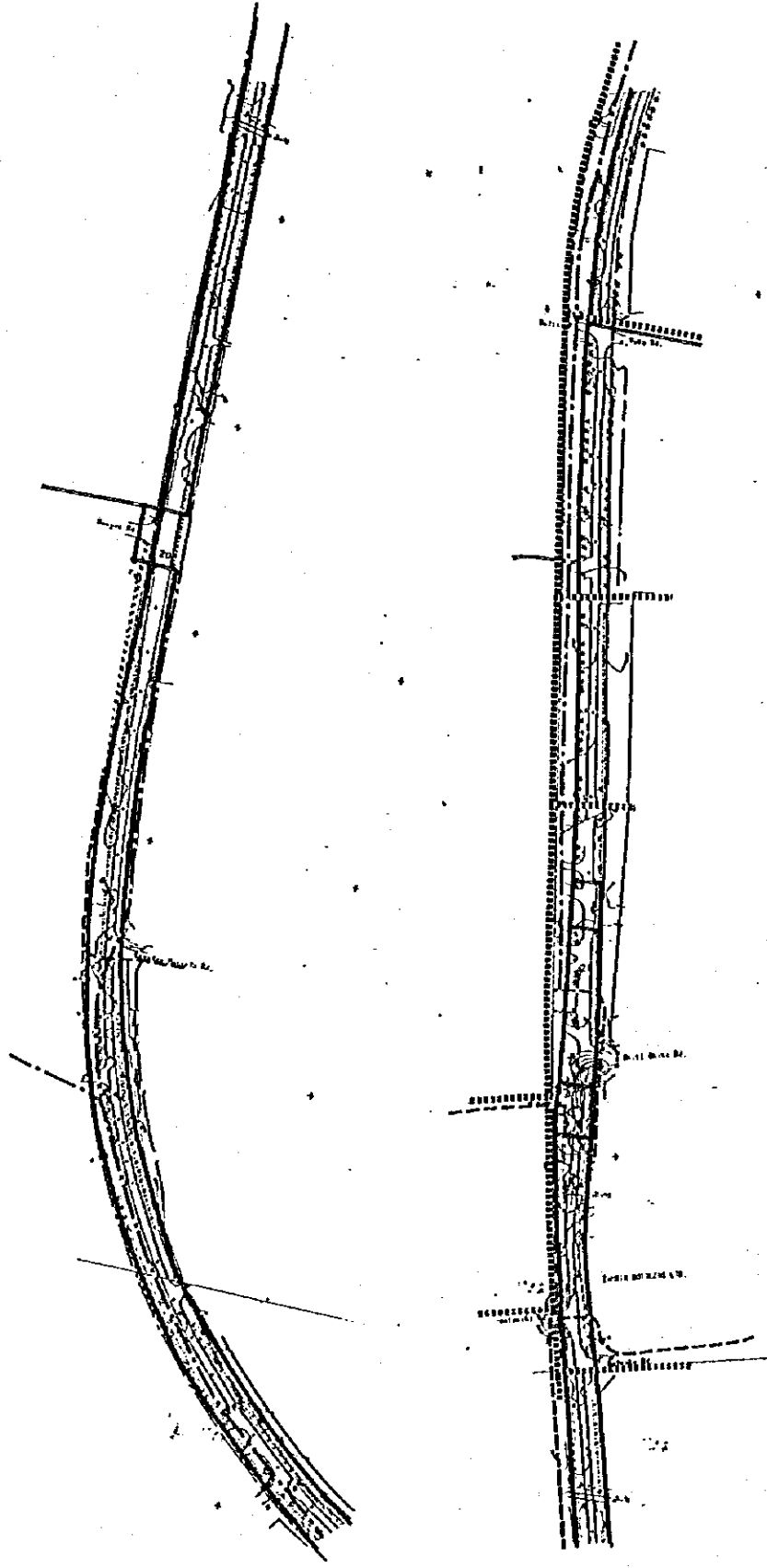
DATE: MAY 1999
SHEET NO: 50



Legend

	Sewerage
	Water Main
	Telephone Cable
	Electricity Line (over head)
	Electricity Line (underground)

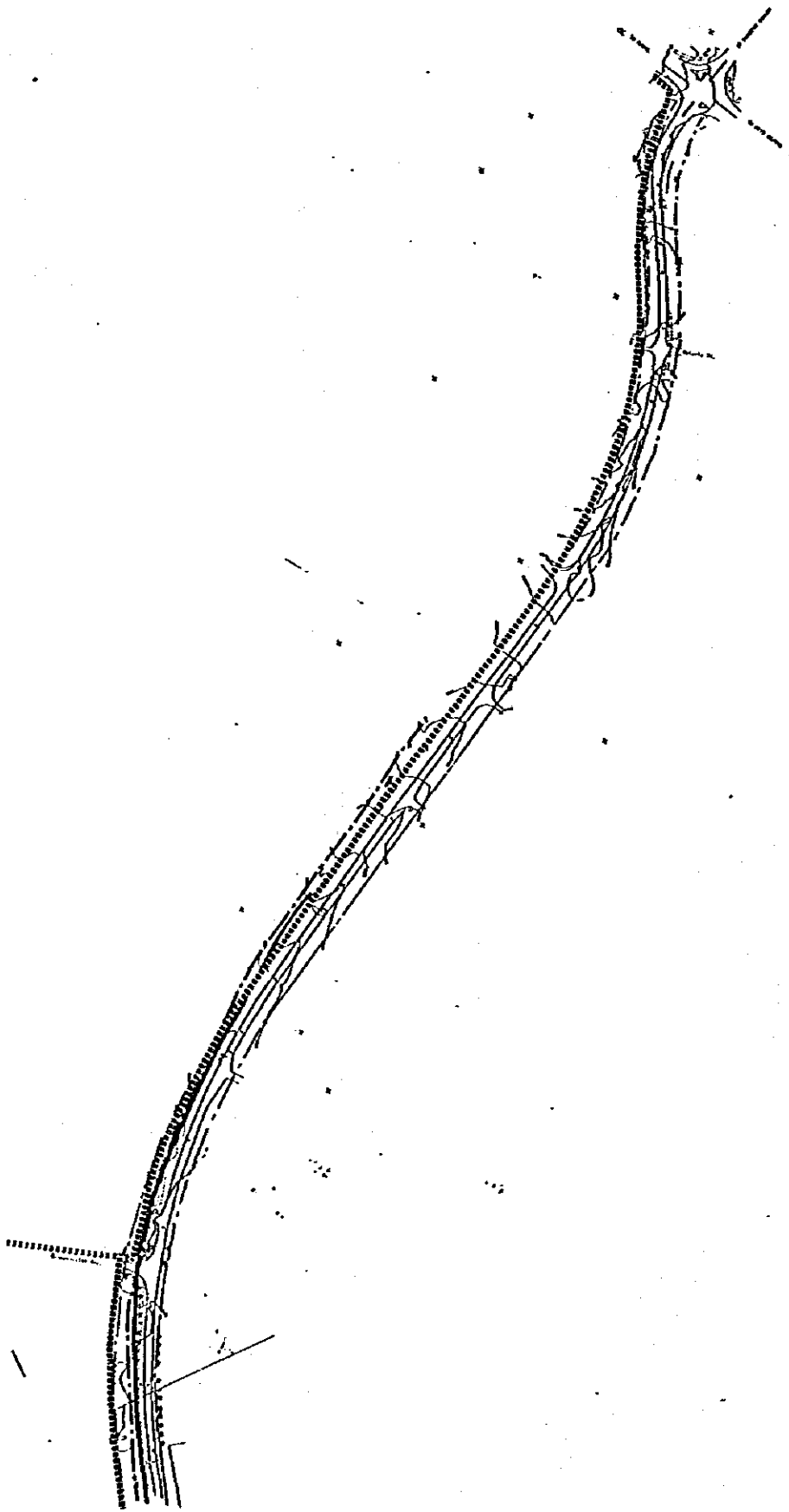
THE REPUBLIC OF ZAMBIA LUSAKA CITY COUNCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	Lumumba Road	DATE	SHEET NO
				August, 1995	60



Legend

	Sewerage
	Water Main
	Telephone Cable
	Electricity Line (over head)
	Electricity Line (underground)

THE REPUBLIC OF ZAMBIA LUSAKA CITY CONCIL	JAPAN INTERNATIONAL COOPERATION AGENCY	Lumumba Road	DATE	SHEET NO
THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS		Utilities Location Map (1/5) August, 1983		61



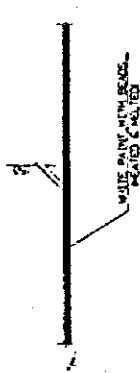
Legend

	Sewerage
	Water Main
	Telephone Cable
	Electricity Line (over head)
	Electricity Line (underground)

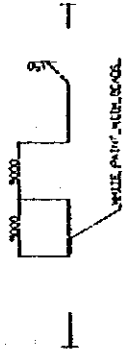
THE REPUBLIC OF ZAMBIA LUSAKA CITY COUNCIL	THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS	JAPAN INTERNATIONAL COOPERATION AGENCY	Lumumba Road	DATE	SHEET NO
				August, 1995	62

MARKINGS

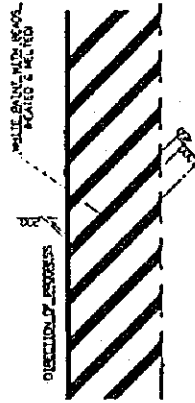
OUTER-BOUNDARY LINE S=1:200



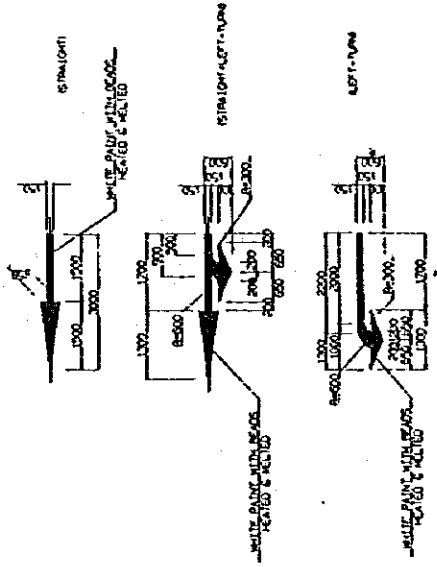
CENTER LINE S=1:200



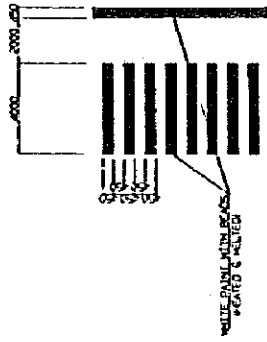
ZEBRA MARKS S=1:100



ARROW MARK S=1:200



PEDESTRIAN CROSSING S=1:100



<p>THE REPUBLIC OF ZAMBIA LUSAKA CITY COUNCIL</p>	<p>THE BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT AND MAINTENANCE OF LUSAKA CITY ROADS</p>	<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p>	<p>LANE MARKINGS</p>	<p>DATE AUGUST 1979</p> <p>SHEET NO. 62</p>
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Appendices B: Relevant Data

- B-1: Member List of the Survey Team**
- B-2: Survey Schedule**
- B-3: List of Party Concerned in the Recipient Country**
- B-4: Minutes of Discussion**

B-1: Member List of the Survey Team

Leader	ADACHI Hayao	Japan International Cooperation Agency
Grant Aid Program	NISHIMOTO Toshiyuki	Economic Cooperation Bureau, Ministry of Foreign Affairs
Technical Adviser (Road Planning)	ABE Koichi	Japan Highway Public Corporation
Chief Consultant	SHINKAI Hiroki	Nippon Koei
Road Planner	KUWATA Kou	Japan Engineering Consultants
Traffic Planner	MATSUDA Katsuyoshi	Nippon Koei
Equipment Planner/ Quantity Surveyor	KATAHIRA Kunihiro	Nippon Koei

B-2: Survey Schedule

Seq. No.	Date	Movement	Station	Activities
1	28 (Sun.)	Mr. Adachi, Mr. Nishimoto, Mr. Abe, Mr. Shinkai, Mr. Kuwata will arrive at Lusaka	Lusaka	Internal Meeting
2	29 (Mon.)		- do -	Visit JICA, Embassy of Japan (EOJ), Lusaka City Council (LCC), Ministry of Local Government and Housing (MLGH)
3	30 (Tue.)		- do -	Discussion at LCC
4	31 (Wed.)		- do -	Site Visit
5	June 1 (Thu.)	Mr. Matsuda, Mr. Katahira, will arrive at Lusaka	- do -	Site Visit
6	2 (Fri.)		- do -	Discussion at LCC Preparation of Draft Minutes
7	3 (Sat.)		- do -	Proof Reading of Draft Minutes Site Visit
8	4 (Sun.)		- do -	Internal Meeting
9	5 (Mon.)		- do -	Discussion at LCC Signature on Minutes
10	June 6 (Tue.)	Mr. Adachi, Mr. Nishimoto, Mr. Abe will leave Lusaka	Lusaka	Visit JICA, EOJ Start Road Inventory Survey, PSI Pavement Survey, Traffic Survey
11	7 (Wed.)		- do -	Road Inventory Survey, PSI Pavement Survey, Traffic Survey
12	8 (Thu.)		- do -	Start Pavement Structural Survey, Subsoil Survey, Topo. Survey
13	9 (Fri.)	Mr. Adachi, Mr. Nishimoto, Mr. Abe will arrive at Tokyo	- do -	Execution of Road Inventory Survey, PSI Survey, Pavement Structural Survey, Survey, Subsoil Survey, Traffic Survey, Topo. Survey
14	10 (Sat.)		- do -	- do -
15	11 (Sun.)		- do -	- do -
16	12 (Mon.)		- do -	- do -
17	13 (Tue.)		- do -	- do -
18	14 (Wed.)		- do -	- do -
19	15 (Thu.)		- do -	- do -
20	16 (Fri.)		- do -	Analysis of Survey Results
21	17 (Sat.)		- do -	- do -
22	18 (Sun.)		- do -	- do -
23	19 (Mon.)		- do -	- do -
24	20 (Tue.)	Mr. Matsuda, Mr. Katahira will leave Lusaka	- do -	Analysis of Survey Results (Laboratory Test, Mapping)
25	21 (Wed.)		- do -	- do -
26	22 (Thu.)		- do -	Analysis of Survey Results, Study of Proposed Measures
27	23 (Fri.)		- do -	- do -
28	24 (Sat.)		- do -	- do -
29	25 (Sun.)		- do -	- do -
30	26 (Mon.)		- do -	Preliminary Evaluation and Selection of Priority Roads
31	27 (Tue.)		- do -	- do -
32	28 (Wed.)		- do -	- do -
33	29 (Thu.)		- do -	- do -
34	June 30 (Fri.)		Lusaka	- do -
35	July 1 (Sat.)		- do -	Visit Lusaka City Council, Ministry of Local Government and Housing
36	2 (Sun.)	Mr. Shinkai, Mr. Kuwata will leave Lusaka	London	

B-3: List of Party Concerned in the Recipient Country

- (1) Ministry of Local Government and Housing**
Permanent Secretary, Mr. Nelson Mapala
Advisor, Mr. Manibhai D. Patel
Staff, Mis Sukapaipi

- (2) Lusaka City Council**
Director of Engineering Services, Mr. Wilson Liambiza Lungu
(Former Director of Engineering Services, Mr. Peter Lubambo)
Director of Administration, Mr. Matoto
Director of Legal Service, Mr. Mwimbu
Director of Finance, Mr. Limowi

- (3) Ministry of Communications and Transport**
Permanent Secretary, Mr. Ronald, C. Mukunma

- (4) Ministry of Works and Supply**
Permanent Secretary, Mr. M. X. Mufwaya
Director of Roads, Mr. Mwila

- (5) National Roads Board**
Chairman, Mr. Raymond Jhala
Advisor, Mr. N. Gawanadha

- (6) National Committee Development Planning**
Permanent Secretary, Mess. Irene M. Kamanga

- (7) Zambia Revenue Authority**
Commissioner VAT, Mr. David Child

Minutes of Discussions
on
the Basic Design Study
on
The Project for Improvement and Maintenance of Lusaka City Roads
in
the Republic of Zambia


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

JICA sent to Zambia a Basic Design Study Team headed by Mr. Hayao ADACHI, Development Specialist, JICA, which is scheduled to stay in the country from May 28 to July 2, 1995.

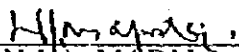
The team held discussions with the concerned officials of the Government of Zambia and conducted a field survey at the study area.

As a result of discussions and field survey, the Ministry of Local Government and Housing ensured that the necessary funds required for road maintenance to the Project Roads shall be allocated to the City Council properly and also both parties confirmed the main items described on the attached sheets.


Lusaka, June 5, 1995




Mr. Hayao ADACHI
Leader
Basic Design Study Team
JICA



Mr. Nelson MAPALA
Permanent Secretary
Ministry of Local Government
and Housing



Mr. Ronald C. MUKUMA
Permanent Secretary
Ministry of Communications and
Transport



Mr. Peter LUBAMBO
Director
Engineering Services Department
Lusaka City Council

1. OBJECTIVE OF THE PROJECT

The objective of Project is to improve the existing road network in Lusaka City and enhance the capital's economic, social and administrative activities.

2. PROJECT IMPLEMENTING AGENCY

The responsible agency is the Ministry of Local government and Housing, and the implementing agency is the Lusaka City Council.

3. SITE TO BE COVERED UNDER THE PROJECT

The sites listed in Annex-1 are requested by the Zambia side to be covered under the Project. However, the final list of the selected sites will be decided after further studies and discussions between both parties.

4. MAJOR ITEMS REQUESTED BY THE ZAMBIA SIDE

After a series of discussions, the items listed in Annex-2 are finally requested by the Zambia side. However, the items to be covered by the Project will be finalized after further studies and discussions between both parties.

5. JAPANESE GRANT AID PROGRAMME

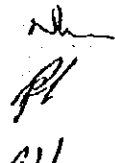
The Zambia side has understood the system of Japanese Grant Aid Programme explained in Annex-3.

6. NECESSARY MEASURES TO BE TAKEN BY THE ZAMBIA SIDE

The Government of the republic of Zambia will take necessary measures described in Annex-4 for 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

- 1) The team will proceed to further studies in Zambia until July 2, 1995.
- 2) Based on the results, JICA will prepared a Draft Final Report and dispatch a team in the beginning of September, 1995 in order to explain and to confirm on the contents of the report.
- 3) Upon acceptance of the Draft Final Report by the Zambia side, JICA will complete the Study Report and forward it to the Zambia side by December, 1995.



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ANNEX-2

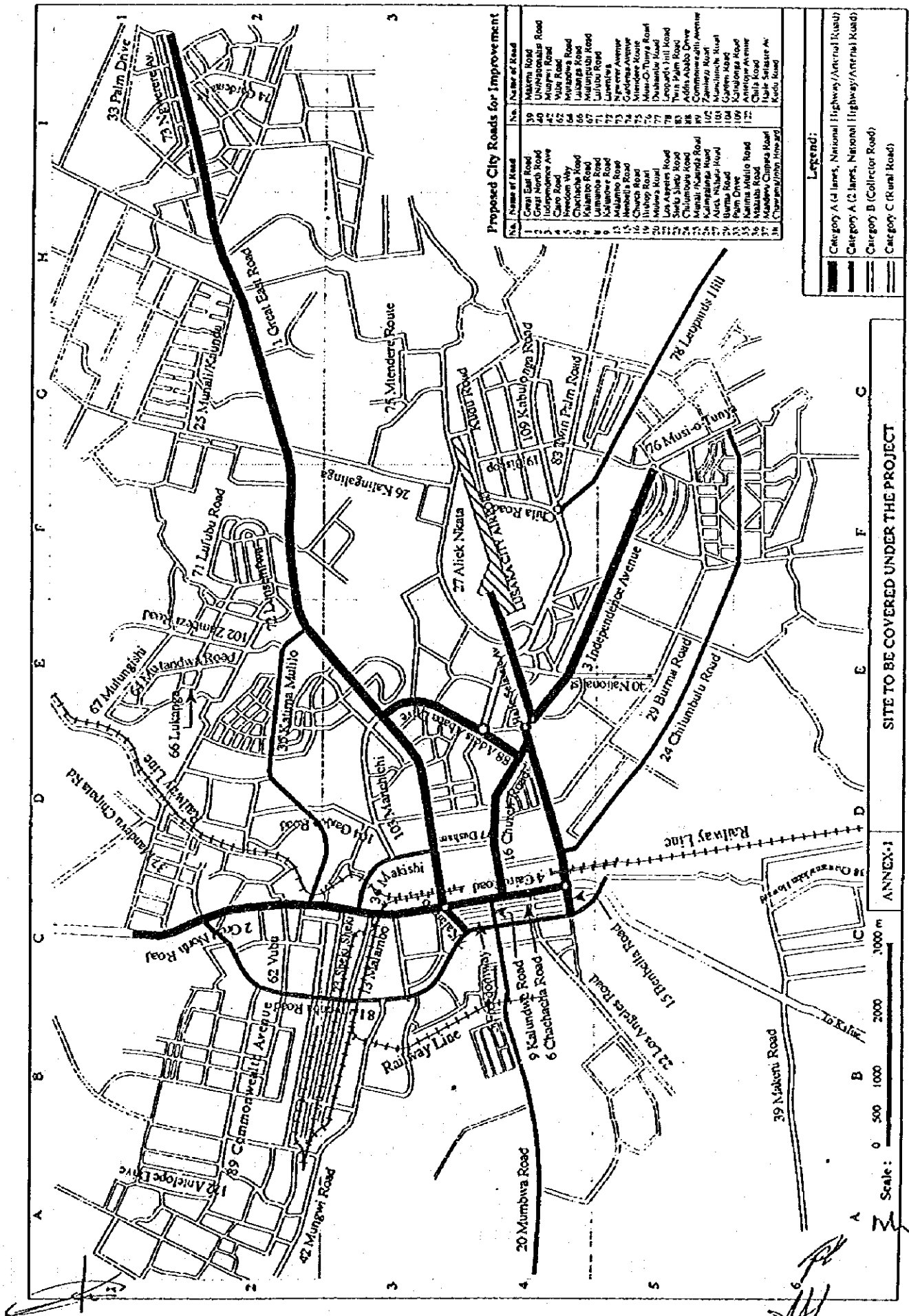
MAJOR ITEMS REQUESTED BY THE ZAMBIA SIDE

No.	Route No.	ROAD NAME	Length	Width	Proposed Countermeasures				
					Type A	Type-B	Type-C	Type-D	Sidewalk
					Partial Improvement	Overlay	Re-construction with Base	Re-construction with Base/Sub base	Re-construction
					15%	100%	100%	100%	100%
		% of Repair	(m)	(m)	(km)	(km)	(km)	(km)	(km)
1	1	Great East Road	14.0	12.0	4.0	4.0		6.0	6.0
2	2	Great North Road	5.0	12.0		5.0			5.0
3	3	Independance Ave	6.0	12.0	6.0				
4	4	Cairo Road	1.8	12.0	1.8				
5	5	Freedomway	1.6	12.0	0.6	1.0			
6	6	Chatbacha Road	1.7	6.0	1.7				
7	7	Kalambo Road	0.7	12.0	0.7				
8	8	Lumumba Road	7.2	6.0		7.2			4.0
9	9	Kalundwe Road	0.8	6.0	0.8				
10	13	Malambo Road	1.7	6.0		1.7			
11	15	Benbella Road	0.8	12.0	0.8				
12	16	Church Road	2.5	12.0	2.5				
13	19	Bishop Road	1.0	6.0	1.0				
14	20	Mubwa Road	3.7	6.0	0.7	1.0	2.0		1.5
15	22	Los Angels Road	3.4	6.0	0.5	1.0	1.9		3.4
16	23	Sheki Sheki Road	1.3	6.0		1.3			
17	24	Chilumbulu Road	7.2	6.0	1.7	5.5			5.2
18	25	Manali/Kaunda Road	3.5	6.0		1.5	2.0		
19	26	Kalingalinga Road	2.5	6.0	0.9	1.6			
20	27	Alick Nkata Road	4.3	6.0	2.0	2.3			
21	29	Burma Road	6.0	6.0	6.0				
22	33	Palm Drive	3.2	6.0	1.4	1.8			
23	35	Katima Mulilo Road	4.6	6.0	3.0	1.6			
24	36	Makishi Road	2.5	6.0	1.5	1.0			1.5
25	37	Mandevu Chipata Rd	3.6	6.0	0.7		2.9		
26	38	Chawama/John Howard	4.5	6.0	0.5	1.0	3.0		4.0
27	39	Makeni Road	4.5	6.0		4.0	0.5		
28	40	UN/Nationalist Road	2.5	6.0	2.5				2.5
29	42	Mungwi Road	4.7	6.0	4.7				2.0
30	62	Yubu Road	1.3	6.0		1.3			
31	64	Mutandwa Road	1.7	6.0	0.7	0.5	0.5		
32	66	Lukanga Road	1.6	6.0	0.4	1.2			
33	67	Mufungushi Road	1.6	6.0		1.6			
34	71	Lufubu Road	1.8	6.0			1.8		
35	72	Lunsemfwa Road	1.3	6.0		1.3			
36	73	Ngwreere Avenue	3.2	6.0	0.4	0.7	2.1		
37	74	Gardenia Avenue	1.5	6.0	1.5				
38	75	Afendere Route	1.6	6.0			1.6		
39	76	Musi-o-Tunya	1.3	6.0	1.3				
40	77	Dushambe Road	1.0	6.0	1.0				
41	78	Leopards Hill	15.0	6.0	15.0				
42	83	Twin Palm Road	2.3	6.0		2.3			
43	88	Addis Ababa Drive	2.5	6.0	1.8	0.7			
44	89	Commonwealth Avenue	2.9	6.0		2.9			2.9
45	102	Zambezi Road	1.7	6.0	0.6	1.1			
46	103	Manchinchi Road	2.3	6.0	1.5	0.8			
47	104	Garden Road	2.0	6.0		2.0			
48	109	Kabulonga Road	2.5	6.0	1.0	1.5			
49	122	Antelope Avenue	1.1	6.0		1.1			
50		Kudu Road	1.3	6.0	1.0	0.3			
51		Chila Road	1.0	6.0		1.0			
Total			159.3		72.2	62.8	18.3	6.0	38.0
6 m Road			126.9		55.8	52.8	18.3	0.0	
12 m Road			32.4		16.4	10.0	0.0	6.0	

Note: Type of the countermeasures and its quantities are subject to the result of further study as well as the conditions of Japanese Grant Aid Programme.

The final figure will be presented in the Draft Final Report which is scheduled to be submitted at the beginning of September, 1995.

ANNEX-1 SITE TO BE COVERED UNDER THE PROJECT



ANNEX 3 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 a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Government of Japan and 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 result 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 (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project").

is to provide a basic document necessary for the appraisal of the Project by the Japanese Government. 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 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 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) firms (s) based on proposals submitted by interested firms. The Firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consulting 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 and also to avoid any undue delay in implementation should the selection process be repeated.

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 the 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 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 execution 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.
- (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 the recipient country and stay therein for the performance of their work.

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 staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

8) **"Re-export"**

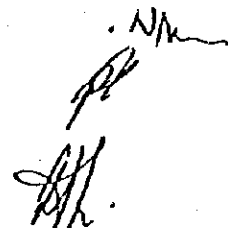
The products purchased under the Grant Aid should not be re-exported from the recipient country.

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 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 the recipient country or its designated authority.



ANNEX-4

NECESSARY MEASURES TO BE TAKEN BY THE ZAMBIA SIDE

Following necessary measures should be taken by the government of the Republic of Zambia on condition that the Grant Aid by the Government of Japan is extended to the Project:

1. To provide data and information necessary for the Project
2. To secure and clear the site for the project prior to the Project implementation.
3. To provide proper access road to the Project area.
4. To undertake incidental works, such as gardening, fencing, lighting, and other incidental facilities in and around the Project site, if necessary.
5. To bear commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement, namely the advising commission of the "Authorization to Pay" and payment commission.
6. To ensure prompt unloading, tax exemption, customs clearance at the port of disembarkation in Zambia and prompt internal transportation therein of the materials and equipment for the Project purchased under the Grant Aid.
7. To exempt Japanese juridical and physical nationals engaged in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Zambia with respect to the supply of the products and services under the verified contracts.
8. To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contact such facilities as may be necessary for their entry into Zambia and stay therein for the performance of their work.
9. To provide necessary permissions, licenses and other authorizations for implementing the Project, if necessary.
10. To assign appropriate budget and staff members for proper and effective operation and maintenance of the facilities constructed under the Project.
11. To maintain and use properly and effectively the facilities constructed and the equipment provided under the Project.
12. To bear all the expenses, other than those to be borne by the Japanese Grant Aid with the scope of the Project.

