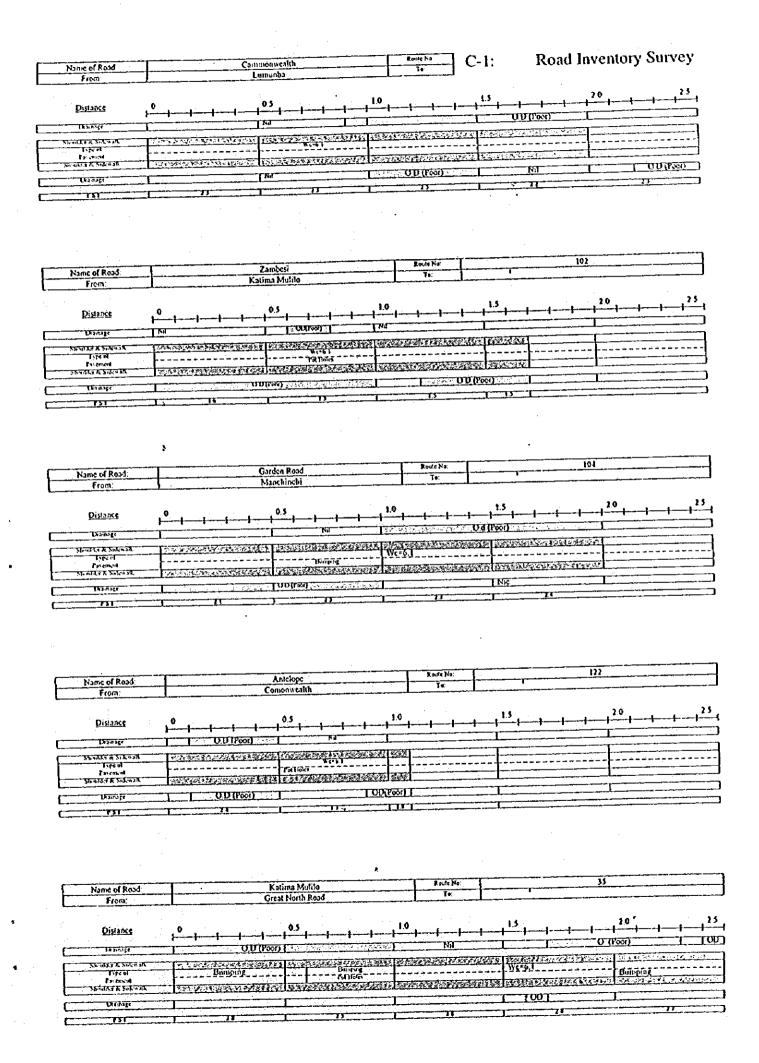
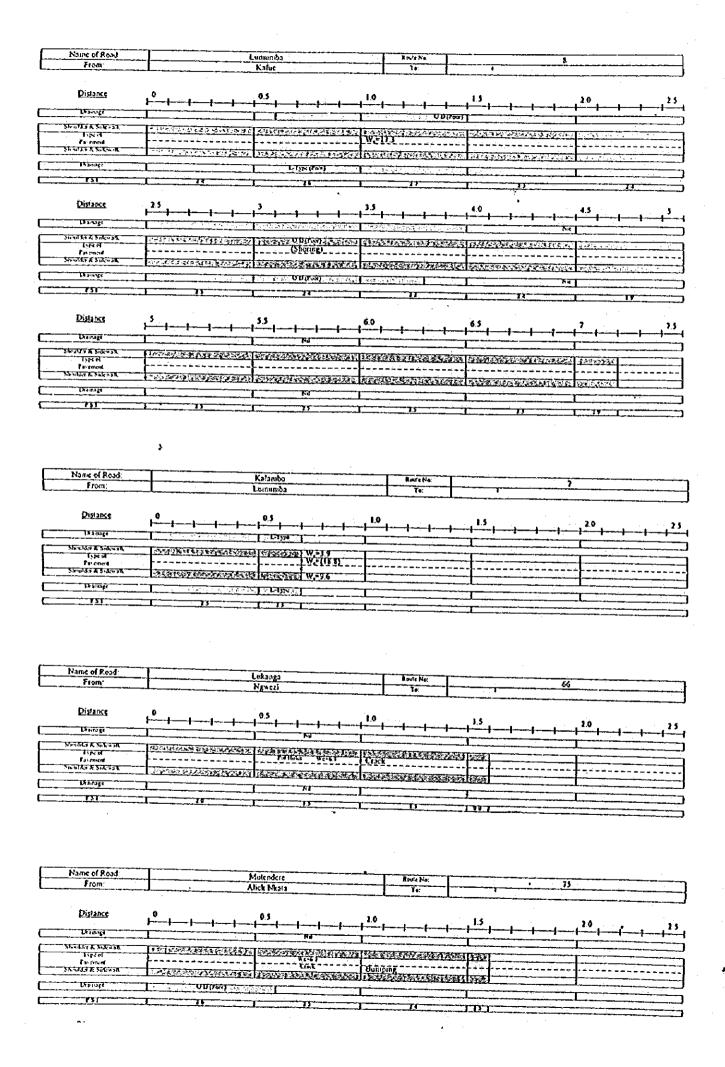
## Appendices C: Technical Data

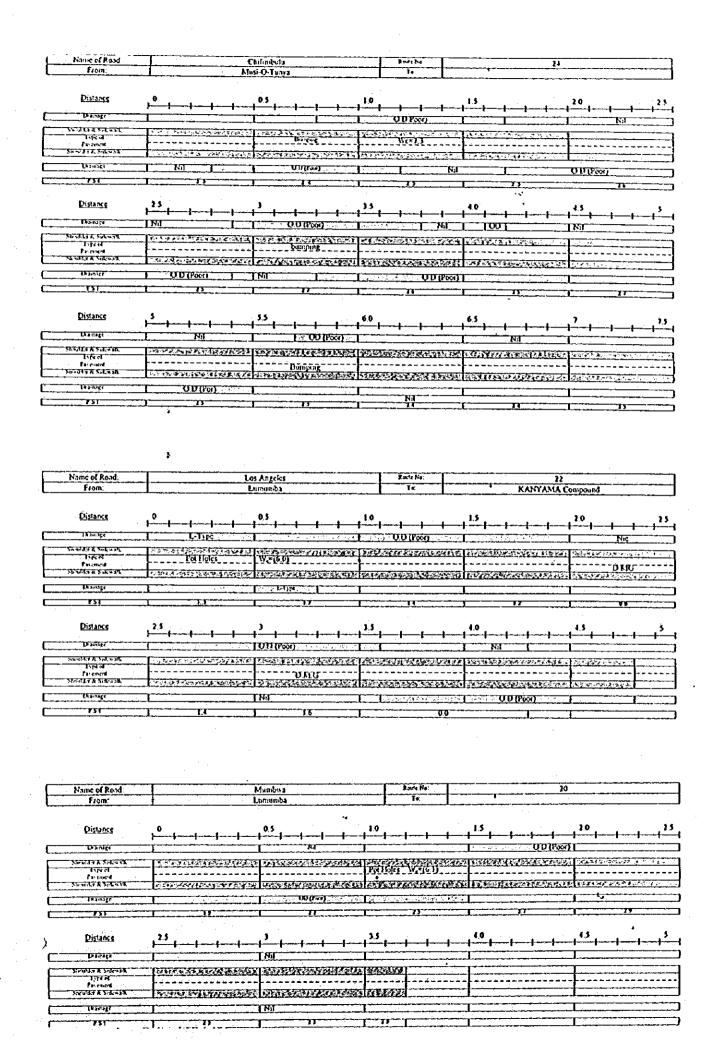
C-1: Road Inventory Survey

C-2: Pavement Surface Survey and Subsoil Survey

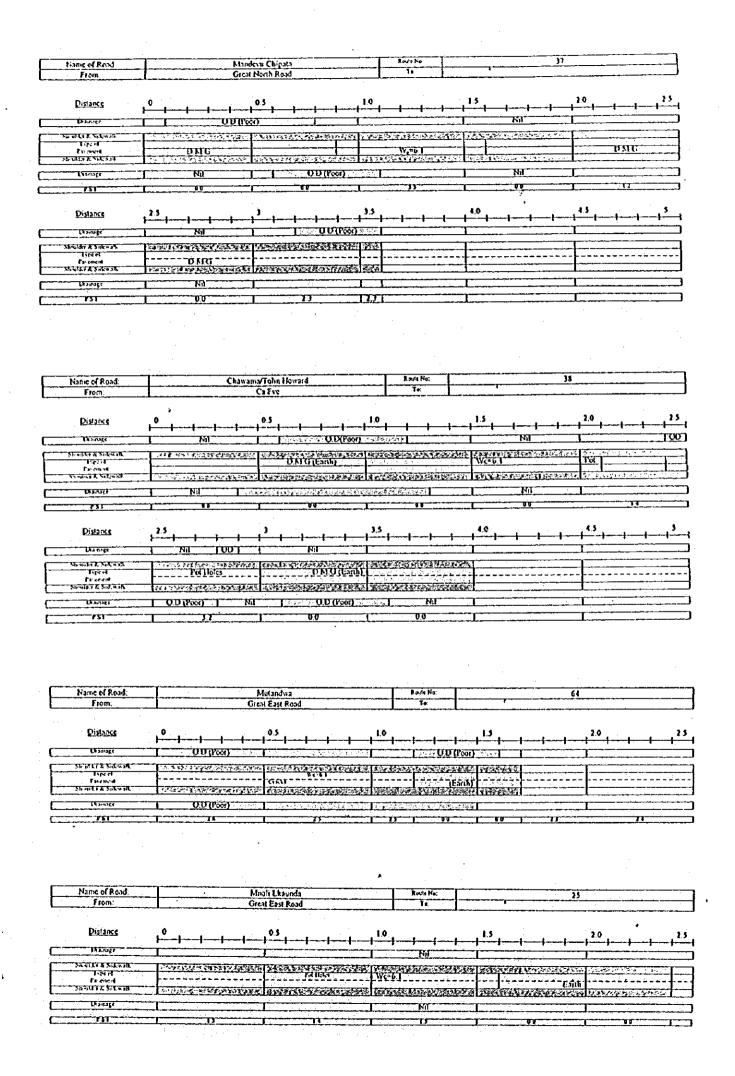
C-3: Traffic Count Survey

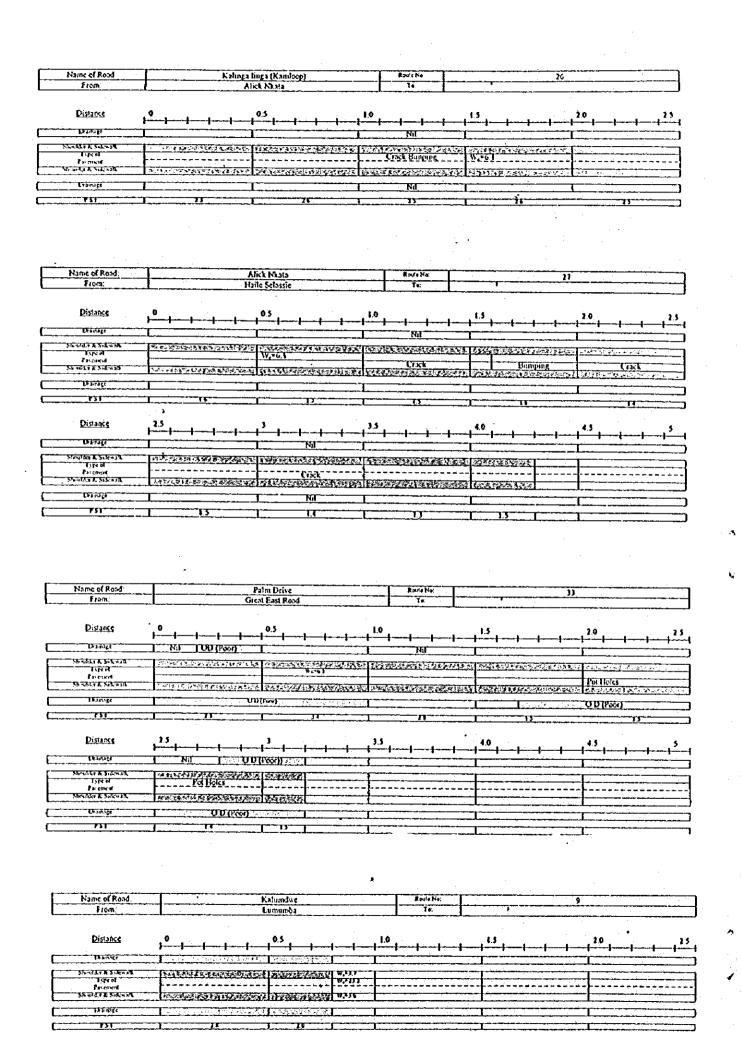


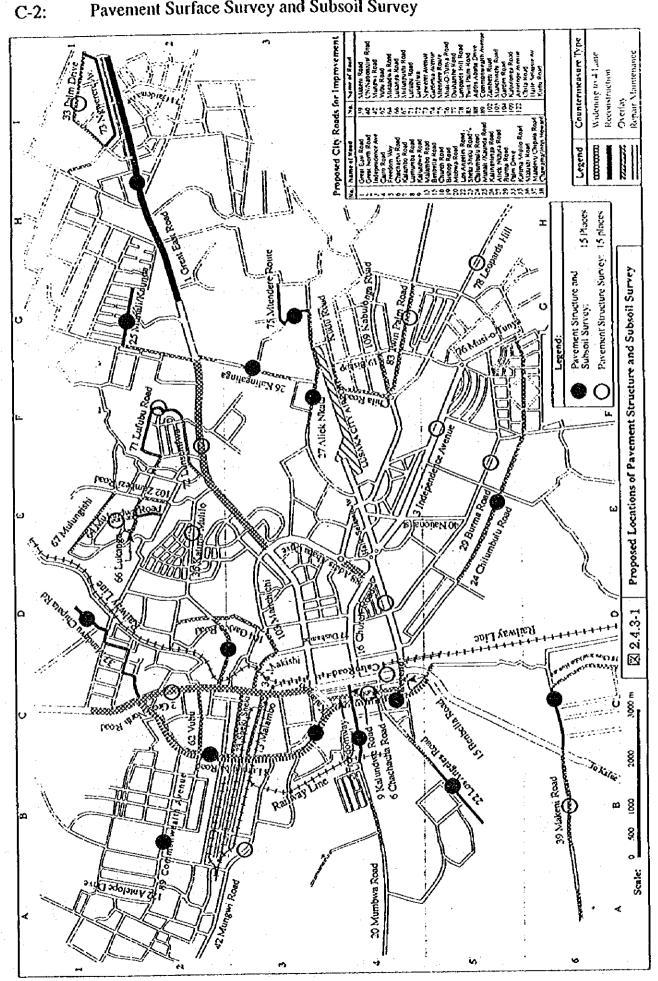




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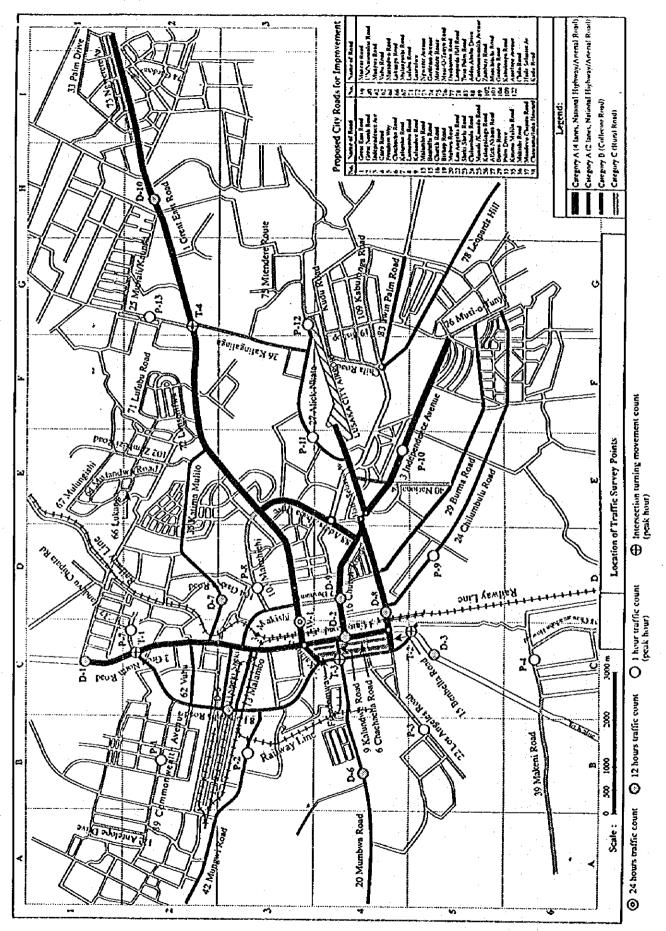


## Components and Thickness of Existing Pavement Structure

	-	Survey Point	Components and Thickness of Pavement Structu
TP No.	i	Chawama Rd	Depth 0 - 600mm Gravel
TP No.	2	Makeni Rd	Depth 0 - 300mm Gravel
TP No.	3	Kanyama Rd	Depth 0 - 300mm Gravel
TP No.	4	Lumumba Rd	Depth 0 - 500mm Gravel
TP No.	5	Cairo Rd	Depth 0 - 300mm Gravel 300 mm - 500 mm Silty Soil
TP No.	6	Freedom Rd	Depth 0 - 400mm Gravel 400 mm - 500 mm Silty Soil
TP No.	7	Mumbwa Rd	Depth 0 - 500mm Gravel
TP No.	8	Lumumbwa Rd	Depth 0 - 250mm Gravel
TP No.	9	Mungwi Rd	Depth 0 - 400mm Gravel
TP No.	10	Lumumba Rd	Depth 0 - 300mm Gravel
TP No.	11	Commonwealth Av	Depth 0 - 400mm Gravel
TP No.	12	Great North Rd	Depth 0 - 500mm Gravel
TP No.	13	Katima Mulilo Rd	Depth 0 - 500mm Gravel
TP No.	14	Mandevu - Chipata Rd	Depth 0 - 200mm Gravel 200 mm - 500 mm Silty Soil
TP No.	15	Mutandwe (Roma) Rd	Depth 0 - 300mm Gravel
TP No.	16	Kwacha Rd	Depth 0 - 500mm Gravel
TP No.	17	Great East Rd	Depth 0 - 300mm Gravel
TP No.	18	Lufubu Rd	Depth 0 - 500mm Gravel
TP No.	19	Munali Rd	Depth 0 - 500mm Gravel
TP No.	20	Great East Rd	Depth 0 - 500mm Gravel
TP No.	21	Palm Drive (Chelstone)	Depth 0 - 250mm Gravel
TP No.	22	Kalingalinga Rd	Depth 0 - 500mm Gravel
TP No.	23	Mutendere Rd	Depth 0 - 250mm Gravel
TP No.	24	Alick Nkhata Rd	Depth 0 - 500mm Gravel
TP No.	25	Twinn Palm Rd	Depth 0 - 500mm Gravel
TP No.	26	Lake Rd	Depth 0 - 250mm Gravel
TP No.	27	Independence Ave	Depth 0 - 250mm Gravel
TP No.	28	Burma Rd	Depth 0 - 400mm Gravel
TP No.	29	Chilumbulu Rd	Depth 0 - 300mm Gravel
TP No.	30	Independence Av	Depth 0 - 300mm Gravel

## CBR TEST RESULT

Project ZP280											1				Ş
Lab No.	1,67	897	1,69	170	17.1	1.72	1.74	1.74	1.82	3	1.73	1.76	177	2	83
Hole No.	TP No 1	TP No. 4	TP No. 7	TP No. 8	TP No. 9	TP No. 11	TP No. 12	TP No. 15	TPNo. 16	TP No. 19	TP No. 20	TP No. 23	TP No. 26	TP No. 28	TP No. 30
Depth mm	0-400 mm	0-300 mm	0-500 mm	0-250 mm	0-500 mm	0-400 mm	0-500 mm	0-350 mm	0-500 mm	0-250 mm	0-500 mm	0-250 mm	0-250 mm	0-400 mm	0-300 mm
Passing sieve					:										
% 1-1/2 in.		8						-	-		8				
- i		8	8			8								8	<b>~</b> :
3/4 in	81			8	8						٠.			8	
4i 5/1	8	85	8	25	8				86				\$	97	
3/8 in.	8	\$		*	22									8	
1/4 in	88	57	8	86	81									88	
3/16 in.	1			77	11									26	
7.67	38	-		58	49					•				57	
No. 14	67		64	47	36			57			×		¥	4	
20.25	7.4	49	45	43	33									4	
% 38	46			41	32			. •				•		41	
No. 52	3		4	35	8	57	31		51	22	٠	78	4	33	33
No. 100	37	4	28	26	•			39	39		77.			23	
No. 200	33	42	នា	23	17	;	8,3	35	33	39		14	31	18	
Natural Moisture														Č	
Content	7	1.9	3.8	1.4		2.2	1.8		١		1			2	١
Liquid Limit	26.4	S.P	ďS	21.8	S.P	SP	28.7		23.4	S.P	24.6	21.4	23.9	19.2	23.1
Plastic Index	3.7		•	4.1	•		7.6				4.0			2.3	
Shrinkage Limit	2.0	0.7	0.7	2.0	0.7		4.0							1.3	5
MOD Kg/m3	2118	2254	2236	3222	2282	2190	2180		2199	2170	2230	ន	~	2314	477
OMC %	11.6		8.8			80	7.2					8.4	8.6		0.6
BS 1377: 1975													-		
Test 12														,	
CBR	8.9	75	33	58	38	\$	33	15	62	89	76	18	33	4	70
100% MDD						:									
4 day Soak															



# (2) Result of Traffic Count Survey 24 Hours Traffic Volume (7:00-7:00)

	24 Hours Traffic Volume (7:00-7:00)	rathe ve	>cupe (	35.7-50:	,									
No.	Direction	(1).Car	(2)rev	(3)MGV	(1).Car(2)LGV(3)MGV(4)HGV(5)	. •	(6).Med Bus	(7).Hev Bus	(8).M/C	(9).Bicycle	Min Bus (6), Med Bus (7), Hey Bus (8), M/C (9), Bicycle (10), Others   Total	HV.(3)+(4)+(6)+(7 % of HV	780	主
W-1	To East	5720	2284	961	52	471	792	33	34	2	8656 6	1073		0.112
Daytime	To West	6570	2526	822	35	523	797	46	38	9	3 10849	1153	_	0.106
	Total	12290	4810	727	84	1024	1 589	62	72.	7. 13	12 20447	17 2226		0.10
W-1	To East	707	231	20	6	132	122	9	11	S	0 1243	157	l	0.126
Nighttime	To West	547	195	62	5	141	114	5	8	13	2501 0	153		0.145
	Total	1254	426	65	14	273	236	11	19	18	0 2300	310		0.135
W-1	To East	6427	2515	216	61	603	914	39	45	12	19841	1230		0.113
Whole Day	To West	7117			37	694	911	51	46	19	3 11906	1306		0.110
	Total	13544	5236	523	86	1297	1825	06	91	31	12 22747	5236		0.111

# (3) Result of Axle Load Survey

		:			Unit: Kg	
	First.Axle	First.Axig Second Axie Third Axie Fourth Axie Fifth Axie Total	Third Axle	Fourth Axie	Fifth Axle	Total
	6641	17211				23852
	6025	17926	26594		- 1	50545
Drabar Trailer(4 axle)	5937	17191	21146	24084		68358
Drabar Trailer(5 axle)	6222	17734	22467	8493		12114 67030

## Peak Hour Traffic Volume

No.	7	Direction	(1)Car	(S)Y'CA	(3)MGV	(4)HGV	(5)Min Bus	(6)Med Bus	(7)Hev Bus	(8)M/C	(9)8kytie	(10)Others	fotal	HV.(3)+(4)+(6)+(7	i oli iv
P-6	Peak Hour	To North	1	,		<u>`</u>	·		,				- 41		
Oneway		To South	289	68	15	1	14	8	2	3	3	5	405	56	0.064
· ·		Total	289	68	15	1	14	8	2	3	3	5	405	56	0.064
	Expansion F	actor 0.1													
	12 Hours	To North													
		To South	2890	680	150	10	140		20			20	4050		0.064
	<b>!</b> .	Total	2890	680	150	10	140	80	20	30		20	4050		
P-7	Peak Hour	To East	61	30	4	0	73	23	3	4	15	0	213		0.141
	1	To West	46	25	4	O	68	17	1	. 0		O	169		0.130
		Total	110	55	8	0	143	40	4	4	50	O	382	52	0.136
	Expansion F	actor 0.1												0	
	12 Hours	To Fast	640	300											0.141
		To West	460	250			680						1690		
		Total	1100	\$50			1410			40			3820		
P-8	Peak Hour	To East	94	57	12	1	38			1	28	0	271		0.198
}		To West	132	8	3		19 57	23	3	6					0.110
ł	1	Total	955	65	15	2	57	59	5	7	74	16	526	81	0.15
	Expansion I	actor 0.1										1 15			1
	12 Hours	To East	940				380								
		To West	1320												
		Total	5550			20	570	590	50	70	740	160			
P-9	Peak Hour	To East	230			1	74			1	0	0	449		0.13
ł		To West	143	44	5	8	68			0	<u> </u>	) 0	316		0.177
ĺ		Total	373	126	9	9	142	96	4	1	5	0	765	118	0.15
1	Expansion	actor 0.1													
ĺ	12 Hours	To East	2300	820				\$60			0	) 0			0.13
	ļ	To West	1430	440	50	80	680	400	30	0	50	0	3160	560	0.17
	1	Total :	3730	1260	90	90	1420	960	40	10	SO	0	7650	1180	0.15
P-10	Peak Hour	To East	258	77	1	0	16	4	0	2	8	0	369	8	0.02
		To West	627	167	15	2	23	11	5	1	0	0	848	30	0.03
		Total	885	244	19	2	39	15	2	3	8	0	1217	36	0.03
	Expansion	actor 0.1			•										· ·
	12 Hours	To East	2580	770	40	0	160	40	0	20	80	0	3690	80	0.02
	1	To West	6270			20	230	110	20	10	0	0	8480	300	0.03
1	1	Total	8850						20	30	80	0	12170	380	0.03

### Feak Hour Traffic Volume

		S	2230	7237 237	7337277	***********	#30 A 1	10111-10	43311	1038110	17030				
No.						(4)HGV			(7)Hev Bus	(B)M/C		(10)Others		HV (3)+(4)+(6)+(7	
P-11	Peak Hour	To East	221	161	30		77	99		<u>-</u>	32		631	138	
	i .	To West	238	225	49	8	101	111	5	12		0			
	لا	Total	459	386	79	12	178	210	10	13	81	<u> </u>	1429	311	0.518
	Expansion F			·		وحاسن	· · · · · · · · · · · · · · · · · · ·			,					
	12 Hours	To East	786		107	14	274	352	18		114	1 4	2246		0.219
		To West	847	801	174	28	359	395	18			0	2840		
		Total	1633	1374	281	43	633	747	36	46		4	5085	1107	0.218
P-12	Peak Hour	To East	211	192	25	3	, 77	48	7	5			605	83	0.137
	İ	To West	286	26	17	0	46	30		0				49	0.118
		Total	497	218	42	3	123	78	9	5	46	,	1055	132	0.125
	Expansion F	actor 0.32	16												
		To East	656	597	78	9	239	149	55	16	112	3	1881	258	0.117
,	1	To West	889	81	53	0	143	93	6	0	31	0	1297	152	0.118
	i	Total	1545	678	131	9	382	243	28	16	143	3	3178	410	0.129
P-13	Peak Hour	To North	112	97	4	0	23	51	1	4	15	. 0	307	56	0.182
		To South	103	9	3	0	14	25	1	7	4	C	164	27	0.16
		Total	215	106	5	0	37	76	2	11	19	C	471	83	0.176
	Expansion F	actor 0.15	38			•	· · . · · · · · · · · · · · · · · ·						1-		
1	12 Hours	To North	728	631	26	0	150	332	7	26	98	1 0	1996	364	0.182
1	1	To South	670		7	. 0	91	163	7	46		0	1066	176	0.165
İ	l	Total	1398		33	0		494	13	72	124	0	3062	540	0.176
L			1			·	<del></del>		·		-	<b></b>			
Lumumba	Peak Hour	Ta North	r				· ·		I	T	1	Γ	1	1	· ·
(market)	1.62%122	To South	<del>                                     </del>	<b>!</b> i					<b></b>	<del></del> -		<del> </del>	t		
8ased on		Total	<del> </del>			{·	<b></b>		ļ	<del>                                     </del>			<del> </del>		
Traffic	Expansion F		1	<u> </u>		s		L	ı	<u></u>	L	<del>'</del>			
Count	12 Hours	To North	т		···	γ			Γ		T	<b></b>	f		1
in 1992	1,5,1,00,1	To South	<b> </b>		<del> </del>	<del> </del>			ļ	l	<del> </del>	l	<del>[                                    </del>		
11335	1		6941	5936	1132	371	2472	1892	293	159	248	7,	19515	3688	0.189
i	1	Total	6941	2,320	1132	3/1	24/2	103%	293	1 133	240	<u> </u>	112213	3000	V.107

## 12 Hours Traffic Volume (7:00 - \$9:00)

No.	Orection	(1).Car	(2 X.GV	(3)MGV	(4)HGY	(5).Min Bus	(6).Med Bus	(7) Hev Bus	(8)M/C	(9).8 cycle	(10).Others	Total	HV.(3)+(4)+(6)+(7	% of HV
0-1	To North	985	854	249	110	139	79	29	16	14	7	2492	467	0.187
•	To South	1067	826	556	79	175	130	38	11	20	9	2581	473	0.183
	Total	2052	1690	475	189	314	209	67	27	34	16	5073	940	0.185
0-2	To North	9530	3722	234	6	265	242	75	93	33	14	14314	557	0.039
	To South	9715	3726	230	33	282	189	49	102	25	10	14361	501	0.035
	Total	19345	7448	464	39	547	431	124	195	58	24	28675	1058	0.037
0-3	To North	4373	3220	476	247	702	766	65	37		18	9906	1554	0.157
	To Scuth	4160	2674	510	193	758	684	36	18	5	16	9057	1429	0.158
	Total	8533	5894	986	446	3 460	1450	101	55	4	34	18963	2983	0.157
0-4	To North	3100	1570	170	15	752	919	14	33					0.169
	To South	3292	875	154	25	800	\$08		<u>-</u>		5	5722		0.124
	Total	6392	2445	324	40	1552	1427	38			21	12337		0.148
D-\$	To North	1870	1527	379	136		\$40		45		16		<u> </u>	0.216
	To South	1939	1728	391	109	680	498				<del></del> -			0.187
	Total	3809	3255	770	245	1355	1038	132			36			0.201
0-6	To East	715	543	105	55	57	25	<i></i>			8		J	0.123
	To West	679	614	130	45		38	5	19		19			0.131
	Total	1394	1157	235	100	130		13		1			109	0.127
D-7	To East	1114	527	128	26				15		<del></del>			0.096
	To West	1287	655	134	15	79		5	7	65	<del></del>			0.030
	Total	2401	1149	262	41	107	73	12	55	104	18	4189	388	0.093
0-8	To East	10366	3592	420	142	1726	961	73			18			0.092
	To West	7198	3750	500	87	1437	960	60			18	14093		0.114
Į.	Total	17564	7342	920	229	3163	1921	133	165	17	36	31490	3203	0.102
0-9	ToEast	7327	2146	139	6	201	74	24	56	6	8	9987	243	0.024
1	To West	8145	3405	255	16	210	100	45	52	19		12255	416	
	Total	15472	\$551	394	22	411	\$74	69	108	25	16	2224	659	0.030
0-10	To East	3678	2294	282	51	381	670	58	37	41	L 8	7500	1061	0.141
	To West	3670	1945	282	38	269	537	41	32	62		6878	898	
1	Total	7348	4239	564	89	646	1207	99	69	103	14	14378	1959	0.136

## Peak Hour Traffic Volume

No.	11	Drection	(1)Car If	2 X GY I	(3)MGV	(4)HGVI	(5)Min Bus	(6)Med Bus	(7)Hev Bus	(8)M/C	(9)Bicycle	(10)Others	Total	HV.(3)+(4)+(6)+(7	% ofHV
P-3		Tofast	170	78	10	0	75	58	10	2	0	0	<del></del>	78	
	7.22.11.02.	ToWest	108	52	9	o	72	71	6	0	· ·	0	316	86	0.270
		Total	278	130	19	o	147	129	16	2	0	0	721	164	0.227
	Expansion F								·			·			
	_	ToEast	1105	507	65	0	488	377	65	13	0	O	2620	507	0.194
	1	To West	702	338	59	Ō	468	462	39	0	0	0	2068	\$59	0.270
		Total	1808	845	124	O	956	839	104	13	0	Ö	4688	1066	
P-2	Peak Hour	To East	104	39	4	0	21	16	2	1	0	Ö		22	
	1 .	To West	96	51	0	0	28	25	3		0	O			0.137
		Total	200	90	4	0	49	41	5	5	0	C	391	so	0.128
	Expansion F	actor 0.3				1 1				<u> </u>			L	0	<u> </u>
	12 Hours	To East	1040	390	40	0	210	160				0			1
	I I	To West	960	510	0	0	280	250	30			C	1		
		Total	5000	900	40	0	490	410				0	4	<del></del>	1
p.3	Peak Hour	To East	209	95	. 1	4	30	42	3		3				
	l i	To West	237	74	. 7	1	30	32			3	<u> </u>	392		
<u> </u>	I i	Total	446	169	6	5	60	74	8	5	6	<u> </u>	787	95	0.121
<b>i</b> .	Expansion F	actor 0.17	38										<b>1</b>	ļ	ļ.,
	12 Hours	To East	1203	547	6		173	242			17	<u>.</u>			
		To West	1364	426	40		173	184			17		255	<del></del>	
l		Total	2566	972	46	29	345	426		29			4499		
P-4	Peak Hour	To East	49	55	4	1_1	16	52		11	2	<u> </u>			
1		To West	90	37	9		12	59		1	2	2	217		
		Total	139	59	13	5	28	114	5		4	3	369	131	0.359
	Expansion F											····	L	l	1-2-7-3
l	12 Hours	ToEast	490	550	40		160							+	<b></b>
ŀ		To West	900	370	90		120	590							
L		Total	1390	590	130		280	1110	50			20			
P-S	Peak Hour	To North	329	119	13		25	17	ļ	3	3	<del> </del>	516		
i		To South	306	150	8	1	69			2	0		\$90		
		Total	635	269	\$1	1 4	94	68	3	3	3	1	1100	¥	0.087
1	Expansión f							<del></del>	·	·	·····		1	346	0.066
l	12 Hours	To North	3290	1190	130										1
1		To South	3060	1500			690								
l		Total	6350	2690	210	40	940	680	30	50	30	1 40	11060	960	0.087



