

THE DETAILED DESIGN STUDY ON  
AREA TRAFFIC CONTROL PROJECT IN BANGKOK  
IN THE KINGDOM OF THAILAND

SUPPLEMENTARY VOLUME

PART 6

DRAFT DESIGN TRAFFIC VOLUME AND SIGNAL PHASING PLANS

FINAL REPORT

OCTOBER 1990

JAPAN INTERNATIONAL COOPERATION AGENCY

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International Development Cooperation Agency  
JICA  
1-1-1 Higashi-Shinjuku 4-chome, Shinjuku-ku, Tokyo 162-8601, Japan

国際協力事業団  
JICA

International Development Cooperation Agency  
JICA  
1-1-1 Higashi-Shinjuku 4-chome, Shinjuku-ku, Tokyo 162-8601, Japan



**PART I: SCHEDULE OF DRAWINGS**

**VOLUME 3**

**DESIGN TRAFFIC VOLUME AND SIGNAL PHASING PLANS**

This "Volume 3: Design Traffic Volume and Phasing Plan" contains all drawings indicating the design traffic volume at each of the intersections to be centrally controlled by the Bangkok ATC System in the Stage I Project. Exhibited on the drawings are also the signal phasing plans recommended for the signal control of the intersection in accordance with the design traffic volume and the existing/improved/designed intersection configuration.

(1) Design Traffic Volume

This design traffic volume was estimated by means of a simulation model using the 1989 intersection traffic movement data surveyed during the Feasibility Study conducted by JICA.

The numerical shown in these drawings indicate the hourly volume at each intersection:

- in Passenger Car Unit (PCU)
- in morning peak hour, off-peak hour and evening peak hour
- through-, left-turning and right-turning traffic volume

(2) Signal Phasing Plan

Two signal phasing plans are exhibited in each drawing:

- signal phasing sequence plan(s) in normal traffic situation
- signal phasing plans under manual control

\* Note: Tenderers should note that in some of the signal phasing plans, signal phase arrow(s) is/are provided inspite of the zero traffic volume in that particular direction. The signal phase is specifically provided for buses travelling on the exclusive bus lane.



## LIST OF INTERSECTIONS

No.	Intersection No.	Drawing No.	Intersection Name
1.	1	3001	RAMA VI-PHETCHABURI
2.	2	3002	KRUNG KASEM-BAMRUNG MUANG
3.	3	3003	RATCHADAMRI-RAMA I-PHLOEN CHIT
4.	4	3004	CHAROEN KRUNG-SI LOM
5.	8	3008	MAHA PHRUTTHARAM-RAMA IV-RONG MUANG
6.	9	3009	RATCHADAMNOEN KLANG-PHRA SUMEN-MAHA CHAI
7.	10	3010	LAN LUANG-RATCHADAMNOEN NOK-NAKHON SAWAN
8.	11	3011	RATCHADAMNOEN NOK-KRUNG KASEM
9.	12	3012	RATCHADAMNOEN NOK-WISUT KASAT
10.	13	3013	RATCHADAMNOEN KLANG-RATCHADAMNOEN NAI
11.	15	3015	RAMA V-SI AYUTTHAYA
12.	18	3018	PHAYA THAI-PHETCHABURI
13.	19	3019	RATCHAPRAROP-DIN DAENG-RATCHAWITHI
14.	20	3020	WITTHAYU-PHLOEN CHIT
15.	22	3022	RATCHAPRAROP-RATCHADAMRI-PHETCHABURI
16.	24	3024	PHAYA THAI-SOI CHULALONGKORN 12
17.	25	3025	PHAYA THAI-YOTHI-RANG NAM
18.	26	3026	NAKHON SAWAN-KRUNG KASEM-LUK LUANG
19.	29	3029	PHLAPPLA CHAI-LUANG-MAITRI CHIT
20.	30	3030	SUAPA-LUANG-YUKHOL 2
21.	32	3032	CHAKKAPHATDI PHONG-NAKHON SAWAN
22.	34	3034	NAKHON SAWAN-PHITSANULOK
23.	35	3035	SAWANKHALOK-SI AYUTTHAYA
24.	36	3036	MAHA CHAI-YAOWARAT-PHIRAPHONG
25.	37	3037	KRUNG KASEM-LAN LUANG-LUK LUANG
26.	39	3039	RAMA VI-RATCHAWITHI
27.	40	3040	SAWANKHALOK-PHETCHABURI-LAN LUANG-PHITSANULOK
28.	41	3041	HENRI DUNANT-RAMA I
29.	42	3042	PHLOEN CHIT-SOI LANG SUAN-SOI CHIT LOM
30.	43	3043	PHLOEN CHIT-DIN DAENG PORT EXPRESSWAY
31.	44	3044	WORACHAK-BAMRUNG MUANG
32.	46	3046	CHAROEN KRUNG-RAMA IV-MITTRAPHAN
33.	47	3047	YAOWARAT-MITTRAPHAN
34.	48	3048	CHAROEN KRUNG-LAMPHUN CHAI
35.	49	3049	RATCHAWONG-YAOWARAT
36.	50	3050	CHAKKRAWAT-YAOWARAT-WORACHAK
37.	51	3051	SI LOM-RATCHADAMRI-RAMA IV
38.	52	3052	SUAPA-CHAROEN KRUNG-RATCHAWONG
39.	53	3053	WORACHAK-CHAROEN KRUNG
40.	54	3054	SAWANKHALOK-RATCHAWITHI
41.	55	3055	TRI PHET-CHAROEN KRUNG-TI THONG
42.	56	3056	MAHA CHAI-CHAROEN KRUNG
43.	57	3057	CHAKKAPHATDI PHONG-LAN LUANG
44.	58	3058	SAMSEN-CHAKKRAPHONG-PHRA SUMEN
45.	59	3059	SAMSEN-WISUT KASAT
46.	63	3063	HENRI DUNANT-RAMA IV-SURAWONG
47.	64	3064	PHAYA THAI-CHULALONGKORN UNIVERSITY ENTRANCE
48.	67	3067	BANTHAT THONG-PHETCHABURI
49.	70	3070	MAHA CHAI-BAMRUNG MUANG
50.	71	3071	SAMSEN-SI AYUTTHAYA

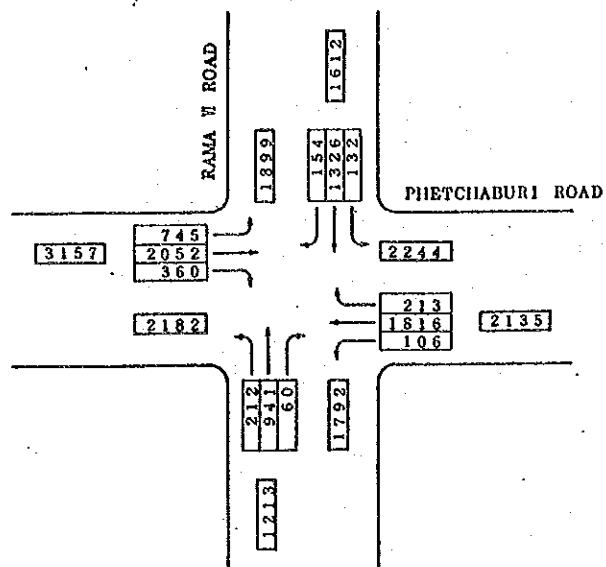
No.	Intersection No.	Drawing No.	Intersection Name
51.	72	3072	SAMSEN-KRUNG KASEM
52.	73	3073	BAMRUNG MUANG-BORIPHAT
53.	74	3074	PHITSANULOK-PRACHATHIPATAI
54.	75	3075	RATCHASIMA-SI AYUTTHAYA
55.	76	3076	RATCHADAMNOEN NOK-PHITSANULOK
56.	77	3077	PRACHATHIPATAI-WISUT KASAT
57.	78	3078	PRACHATHIPATAI-PHRA SUMEN
58.	79	3079	TANAO-RATCHADAMNOEN KLANG
59.	80	3080	WORACHAK-LUANG
60.	81	3081	ATSADANG-CHAROEN KRUNG
61.	82	3082	BANTHAT THONG-RAMA I
62.	83	3083	PRACHATHIPATAI-KRUNG KASEM
63.	84	3084	RATCHASIMA-UTHONG NOK
64.	87	3087	RAMA IV-BANTHAT THONG
65.	88	3088	PHAYA THAI-RAMA IV-SI PHRAYA
66.	89	3089	SI LOM-CONVENT
67.	93	3093	KRUNG KASEM-MAITRI CHIT-RAMA IV-TRAI MIT
68.	94	3094	TRI PHET-PHACHURAT
69.	96	3096	PHAYA THAI-RAMA I
70.	98	3098	SI LOM-SURASAK-MAHESAK
71.	99	3099	WITTHAYU-PHETCHABURI-DIN DAENG PORT EXPRESSWAY
72.	101	3101	RAMA V-PHITSANULOK
73.	102	3102	RAMA VI-YOTHI
74.	103	3103	SATHON-WITTHAYU-RAMA IV
75.	104	3104	CHARU MUANG-CHAROEN MUANG
76.	105	3105	SUKHUMVIT-SOI SUKHUMVIT 4 (NANA TAI)
77.	106	3106	NIKHOM MAKKASAN-PHETCHABURI-SOI SUKHUMVIT 3 (NANA NUA)
78.	109	3109	RAMA VI-SI AYUTTHAYA
79.	110	3110	PHAYA THAI-SI AYUTTHAYA
80.	112	3112	MAHA CHAI-LUANG
81.	114	3114	KRUNG KASEM-MITTRAPHAN-LUANG
82.	115	3115	SUKHUMVIT-SOI SUKHUMVIT 21 (ASOK)-RATCHADAPHISEK
83.	118	3118	SUNTHON KOSA-RAMA IV
84.	123	3123	RATCHADAPHISEK-RAMA IV
85.	130	3130	UNAKAN-CHAROEN KRUNG
86.	131	3131	PLAENG NAM-CHAROEN KRUNG
87.	134	3134	NEW PHETCHABURI-ASOK DIN DAENG
88.	137	3137	DECHO-SI LOM
89.	139	3139	RATCHADAMNOEN NOK-SI AYUTTHAYA
90.	140	3140	BANTHAT THONG-CHAROEN MUANG
91.	141	3141	SI PHRAYA-CHAROEN KRUNG
92.	142	3142	CHUA PHLOENG-RAMA IV-DIN DAENG PORT EXPRESSWAY
93.	143	3143	RATCHAPRAROP-SI AYUTTHAYA
94.	144	3144	NA PHRA LAN-LAK MUANG-SANAM CHAI
95.	147	3147	BAMRUNG MUANG-TI THONG
96.	148	3148	BAMRUNG MUANG-UNAKAN
97.	160	3160	YUKHOL 2-BAMRUNG MUANG
98.	161	3161	PHLAPPLA CHAI-BAMRUNG MUANG
99.	162	3162	SOI SUKHUMVIT 21 (ASOK)-SOI WATTHANA 1
100.	163	3163	VIBHAVADI RANGSIT-DIN DAENG

No.	Intersection No.	Drawing No.	Intersection Name
101.	164	3164	PRACHA SONGKHRO-ASOK DIN DAENG
102.	175	3175	SI LOM-SOI PHIPHAT (BANGKOK BANK)
103.	176	3176	FUANG NAKHON-CHAROEN KRUNG
104.	177	3177	TANAO-BAMRUNG MUANG-FUANG NAKHON
105.	184	3184	RAMA I-RAMA VI-CHARU MUANG
106.	185	3185	RAMA IV-CHARU MUANG-MAHA NAKHON
107.	188	3188	SURAWONG-DECHO
108.	189	3189	ATSADANG-BAMRUNG MUANG
109.	191	3191	ATSADANG-PHRA PHITHAK
110.	194	3194	RATCHADAPHISEK-ASOK DIN DAENG-RAMA IX
111.	196	3196	SARASIN-RATCHADAMRI
112.	197	3197	SARASIN-SOI LANG SUAN
113.	198	3198	SARASIN-WITTHAYU-SOI RUAM RUDI
114.	199	3199	RATCHADAPHISEK-SUNTHON KOSA-RAMA III-NA RANONG
115.	214	3214	SATHON-CHAROEN KRUNG
116.	215	3215	SATHON NUA-SURASAK
117.	217	3217	SATHON NUA-PAN
118.	219	3219	SATHON-SOI SUKSA WITTHAYA (BANG RAK HOSPITAL)
119.	221	3221	SATHON NUA-PHIPHAT
120.	222	3222	SATHON NUA-CONVENT
121.	224	3224	SATHON (U-TURN NEAR SOI ATTHAKAN PRASIT)
122.	227	3227	DEMOCRACY MONUMENT 1
123.	228	3228	DEMOCRACY MONUMENT 2
124.	232	3232	BANTHAT THONG-SOI CHULALONGKORN 16
125.	236	3236	PHETCHABURI-SOI CHIT LOM
126.	237	3237	SUKHUMVIT-SOI SUKHUMVIT 11
127.	238	3238	SUKHUMVIT-SOI SUKHUMVIT 19
128.	245	3245	CHARU MUANG-CHARAT MUANG
129.	254	3254	VICTORY MONUMENT-PHAHON YOTHIN
130.	255	3255	VICTORY MONUMENT-RATCHAWITHI (EAST)
131.	256	3256	VICTORY MONUMENT-PHAYA THAI
132.	257	3257	RATCHAWITHI (WEST)-VICTORY MONUMENT
133.	266	3266	SURAWONG-SAP
134.	904	3904	NIKHOM MAKKASAN-SOI PHETCHABURI 31
135.	905	3905	SI PHRAYA-SAP
136.	706	3706	HIGHWAY-PHAHON YOTHIN
137.	707	3707	HIGHWAY-ASOK-DIN DAENG
138.	708	3708	HIGHWAY-RAMA IX
139.	801	3801	U-TURN AT ASOK DIN DAENG (WEST)
140.	802	3802	U-TURN AT ASOK DIN DAENG (EAST)
141.	803	3803	U-TURN AT PHAYA THAI (ASIA HOTEL)
142.	804	3804	U-TURN AT SUKHUMVIT (NEAR SOI SUKHUMVIT 18)
143.	805	3805	U-TURN AT RAMA IV
144.	P 1	3094	TRIPHET (TRAFFIC POLICE DIVISION)
145.	P 2	3094	TRIPHET (NEAR SOI WATLEAP)
146.	P 3	3052	CHAROENKRUNG (SOI CHAROENKRUNG 21)

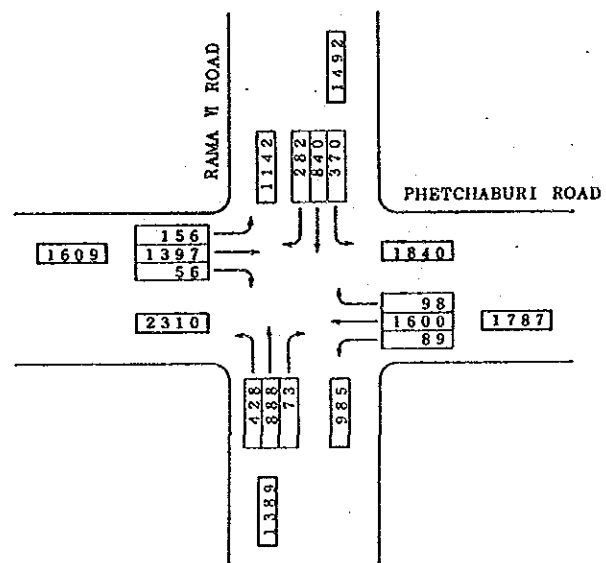
Note:   Newly signalised Intersection  
 "Highway" at Int.No.706,707,708 means highway yet to be constructed  
 INT. No. P1, P2, P3 are Pedestrian crossing signals.  
 INT. No. 35, 40, 43, 54, 99, 142, 143 are Railroad Pre-emption Control signals.  
 INT. No. 227, 228 are controlled by one local controller.  
 INT. No. 254, 255, 256, 257 are controlled by one local controller.

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

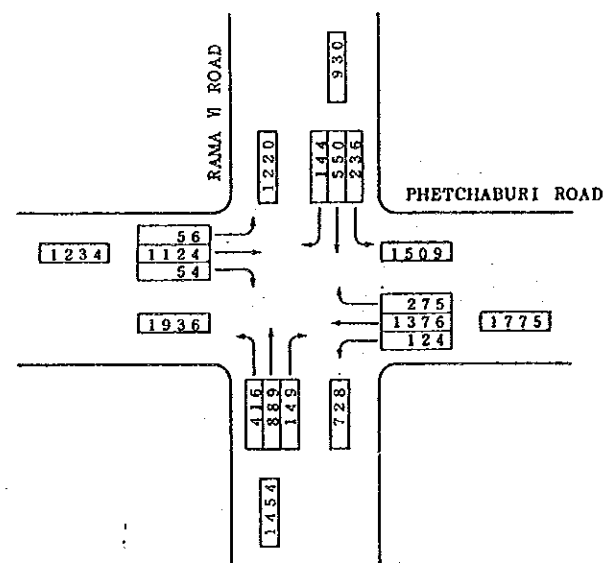
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

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II								
III								
PRE EMPTION								

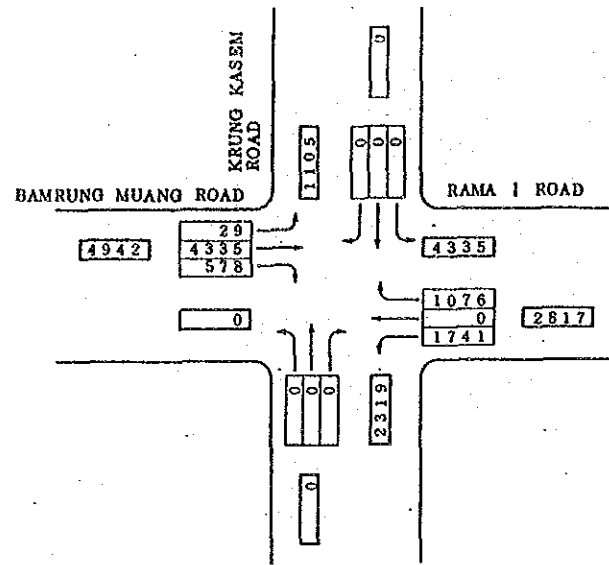
**MANUAL PHASE**


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN RAMA VI-PHETCHABURI		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonswat Tiplan BMA Study Team Leader
Intersection No. 1		Designed By : Yasu Kobayashi JICA Study Member	Designed By : TEO, BMA
Code	Revision	Date	Initial
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing NR 3001
		Date SEPTEMBER '80	Total 1 / 139

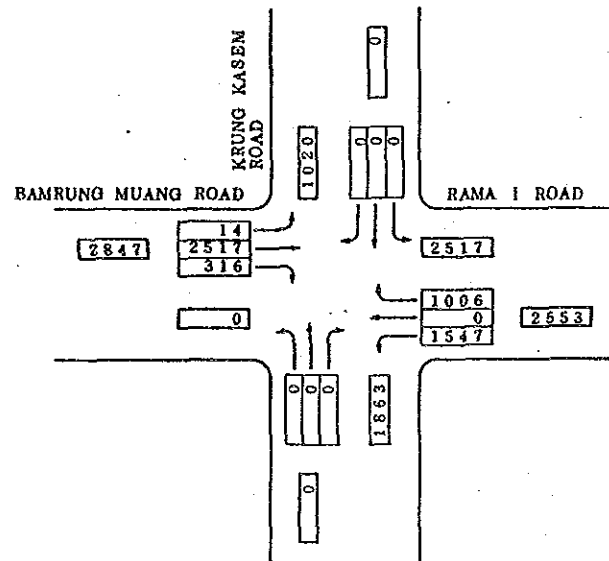


**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

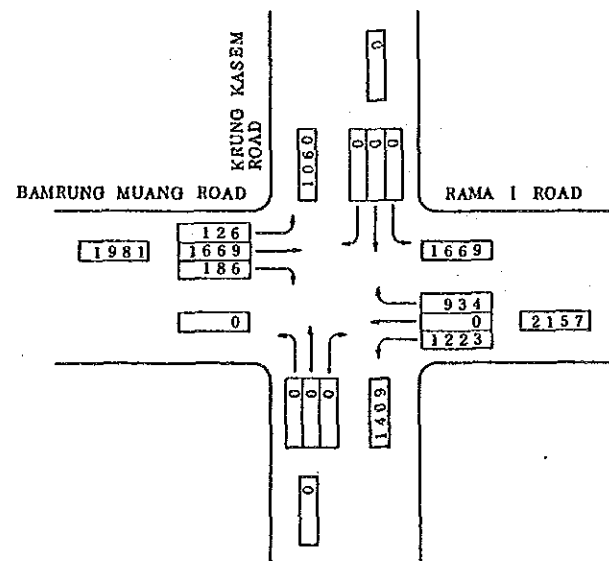
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**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

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III								
PRE EMPTION								

**MANUAL PHASE**

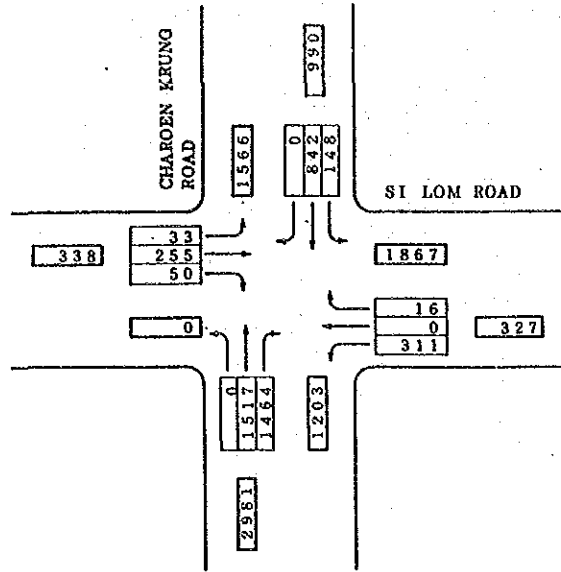
←→	↕				
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BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN		Submitted By :	Approved By :
KRUNG KASEM		Jiro Kadera	Boonwatt Thiru
-BAMRUNG MUANG		JICA Study Team Leader	BMA Study Team Leader
Intersection No. 2		Designed By :	Designed By :
		Yasuo Kobayashi	TED, BMA
		JICA Study Member	
Code	Revised	Date	Initial
Associated Plan No. 1			
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	Scale Drawing No. 3002
		Date SEPTEMBER '90	Total 2 / 139

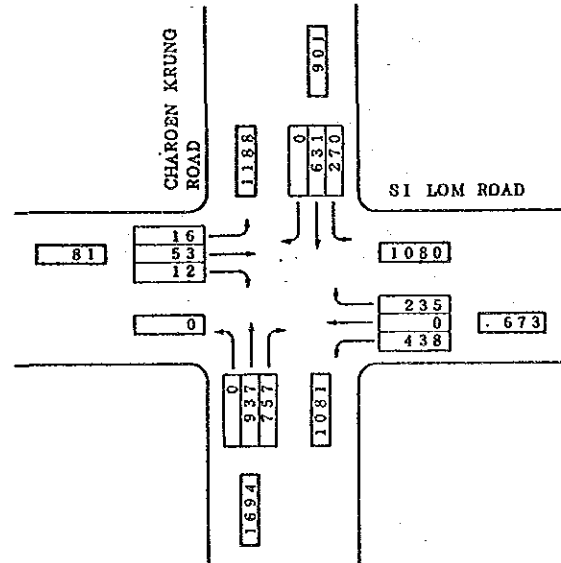


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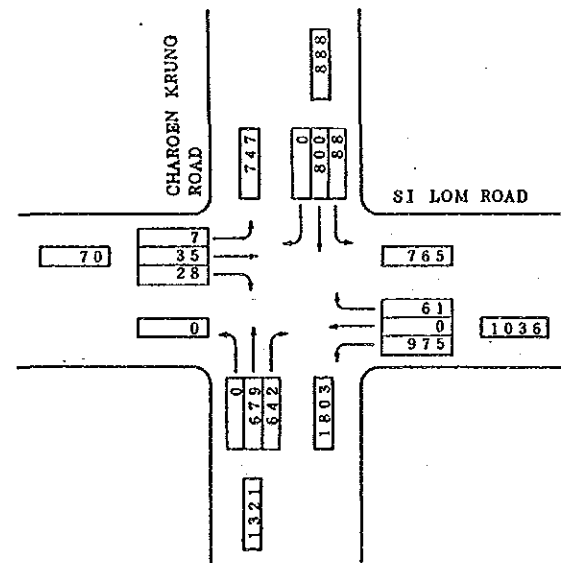
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NOON



EVENING



**NORMAL PHASE SEQUENCE**

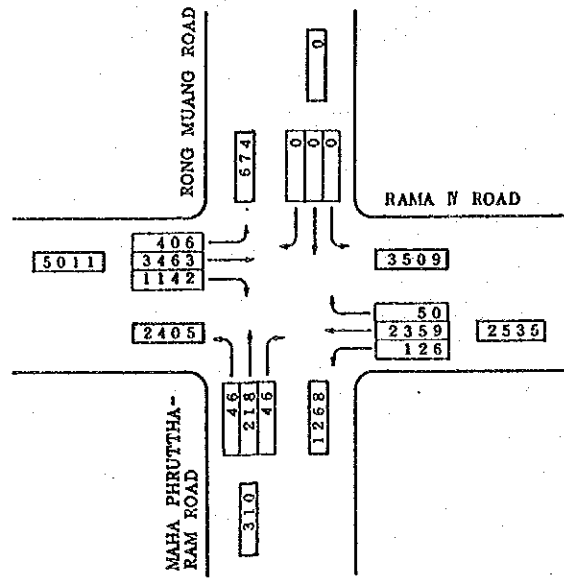
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II								
III								
PRE EMPTION								

**MANUAL PHASE**

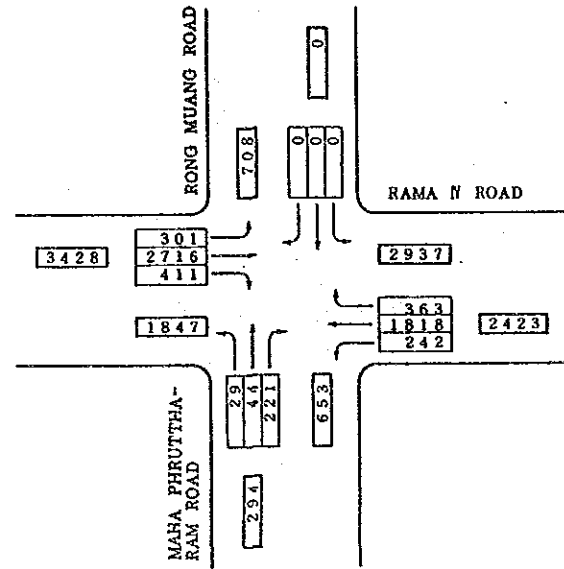

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
				DESIGN VOLUME AND PHASE PLAN CHAROEN KRUNG-SI LOM		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Seoyoung Tipton BMA Study Team Leader
				Intersection No. 4		Designed By : Yama Nobuhiko JICA Study Member	Designed By : TEO, BMA
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing No. 3004
Associated Plan No. 1						Date SEPTEMBER '00	Total 4 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

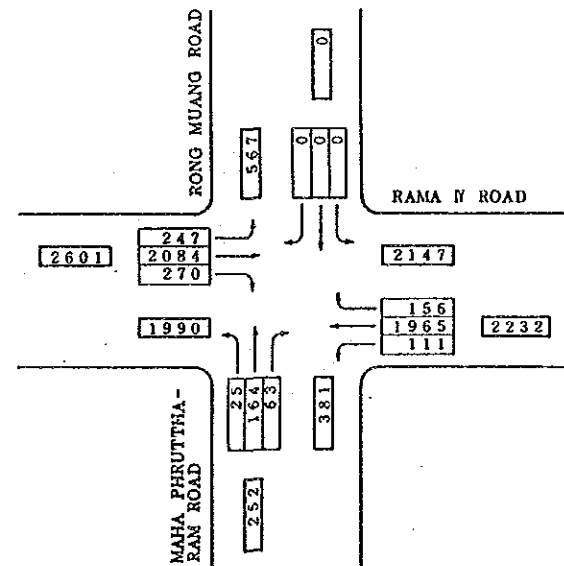
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**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

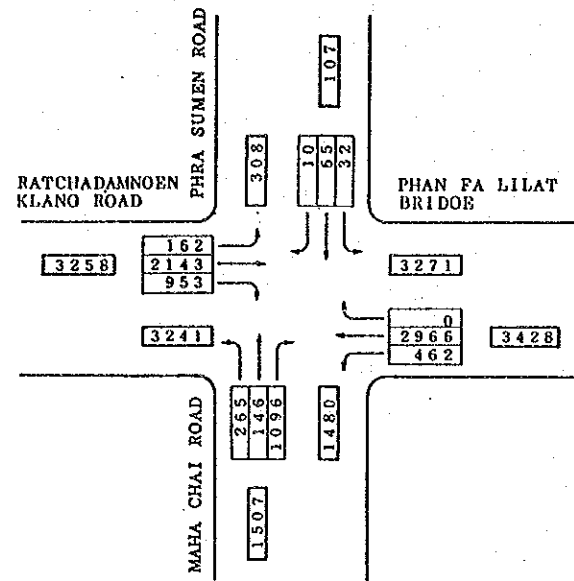
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II								
III								
PRE EMPTION								

**MANUAL PHASE**

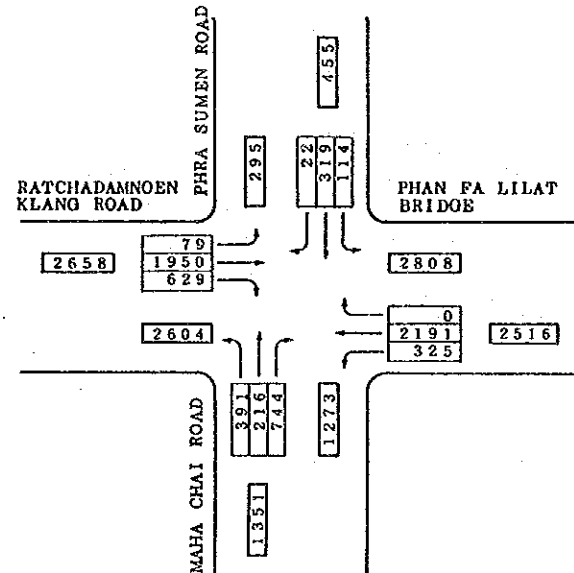

Code	Revision	Date	Initial	BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
				<b>DESIGN VOLUME AND PHASE PLAN</b>			
				<b>MAHA PHRUTTHARAM - RAMA IV-RONG MUANG</b>			
				Submitted By : Jiro Kodera JICA Study Team Leader		Approved By : Boonjart Tiptua BMA Study Team Leader	
				Designed By : Yozo Masushima JICA Study Member		Designed By : YEN.BMA	
				Intersection No. 8			
				JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing No. 3008
				Associated Plan No. 1		Date	Total 5 / 139
				SEPTEMBER '90			

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

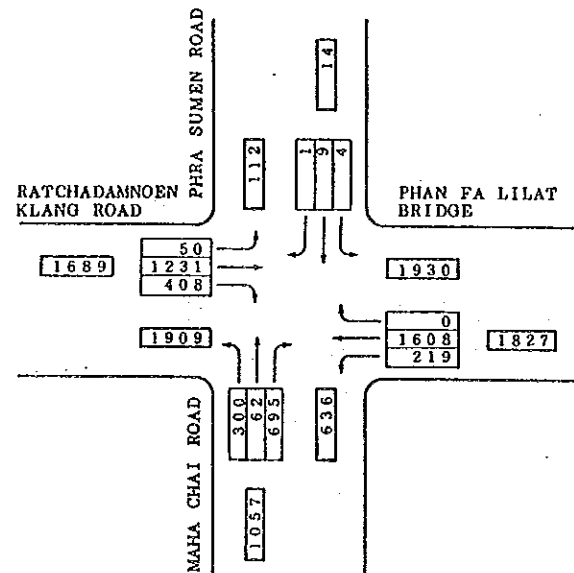
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**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

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III								
PRE EMPTION								

**MANUAL PHASE**

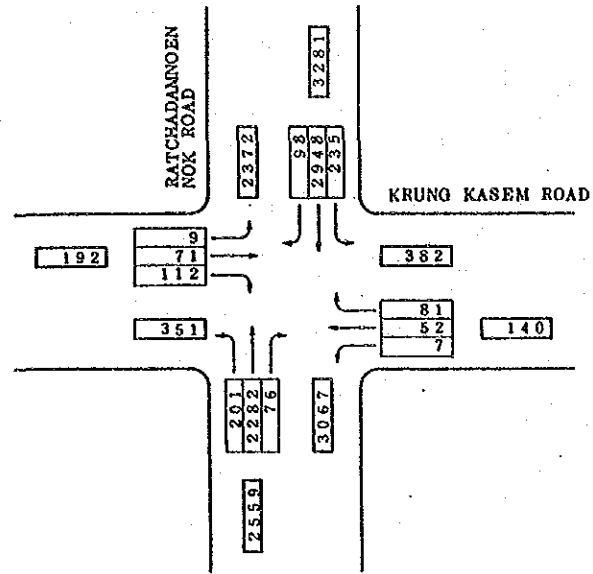
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BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
DESIGN VOLUME AND PHASE PLAN RATCHADAMNOEN KLANG -PHRA SUMEN-MAHA CHAI		Submitted By : Jorn Kodara JICA Study Team Leader	Approved By : Boonprut Tipton BMA Study Team Leader
Intersection No. 9		Designed By : Yasuo Nakashima JICA Study Member	Designed By : TOD_BMA
Code	Revision	Date	Initial
Associated Plan No. 1		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale	Drawing No. 3009
		Date SEPTEMBER '90	Total 6 / 139

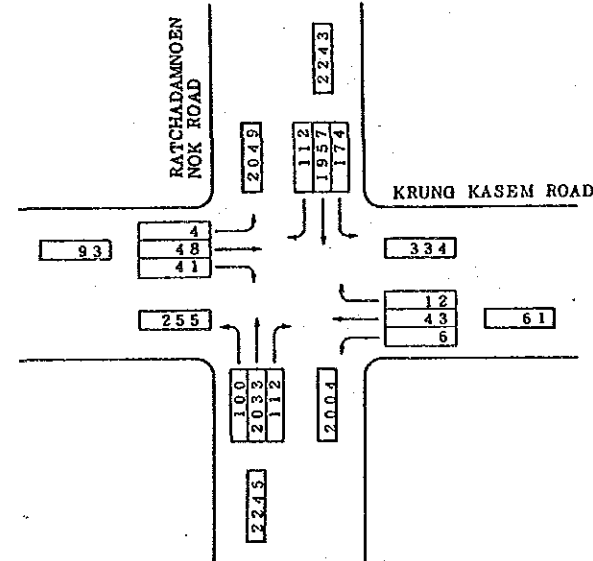


**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

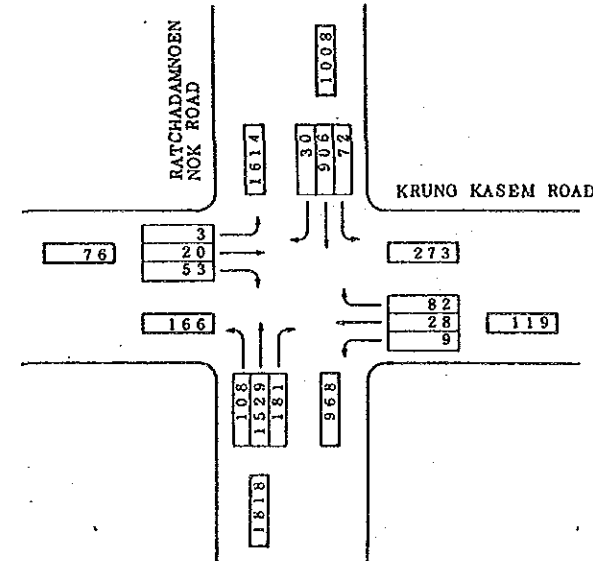
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EVENING



**NORMAL PHASE SEQUENCE**

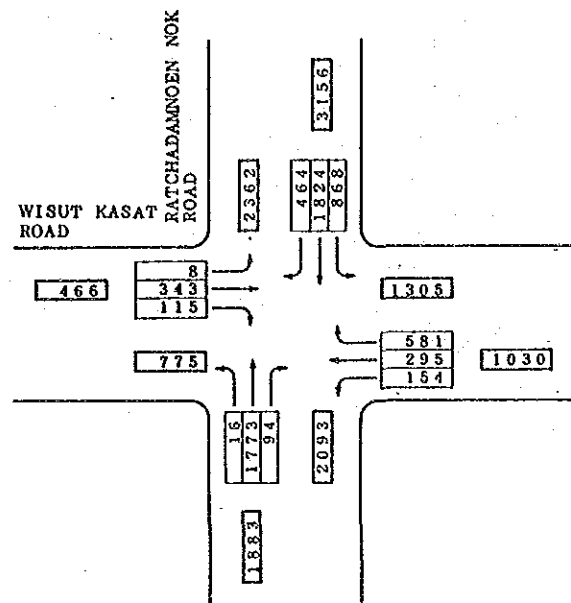
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II								
III								
PRE EMPTION								

**MANUAL PHASE**

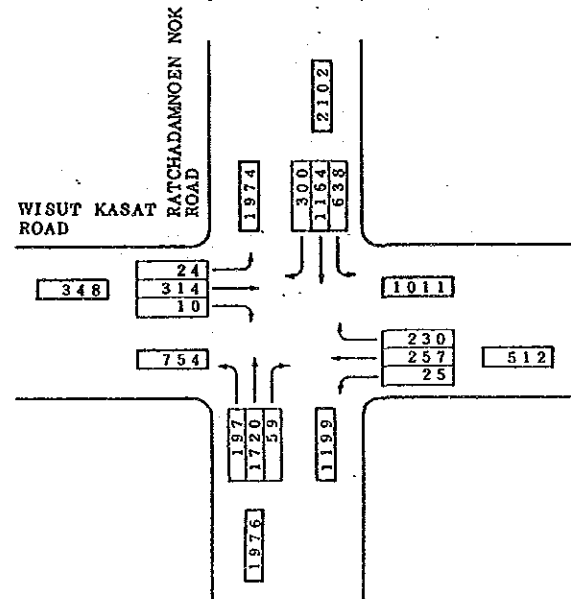

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
DESIGN VOLUME AND PHASE PLAN		Submitted By :	Approved By :
RATCHADAMNOEN NOK		Jiro Kadera JICA Study Team Leader	Boonyawat Titus BMA Study Team Leader
-KRUNG KASEM		Designed By :	Designed By :
Intersection No. 11		Yasuo Hoshizima JICA Study Member	TED, BMA
Assoc. Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Date SEPTEMBER '90
			Drawing No. 3011 Total 8 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

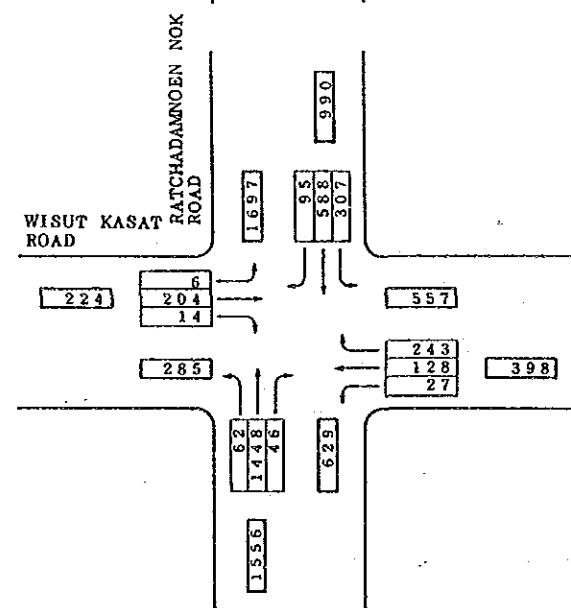
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
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II								
III								
PRE EMPTION								

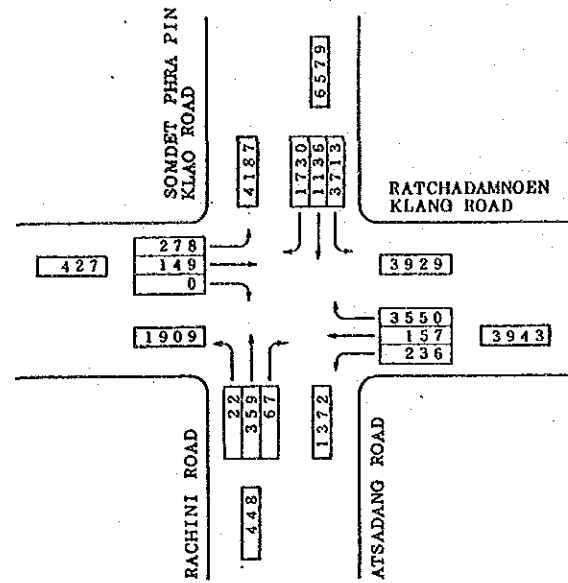
**MANUAL PHASE**


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
DESIGN VOLUME AND PHASE PLAN		Submitted By :	Approved By :
RATCHADAMNOEN NOK		Jorn Kudata JICA Study Team Leader	Boonwatt Tipton BMA Study Team Leader
-WISUT KASAT		Designed By :	Designed By :
Intersection No. 12		Yasu Hoshino JICA Study Member	TEO, BMA
Code	Revision	Date	Initial
Associated Plan No. 1		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale	Drawing NR 3012
		Date SEPTEMBER '00	Total 9 / 139

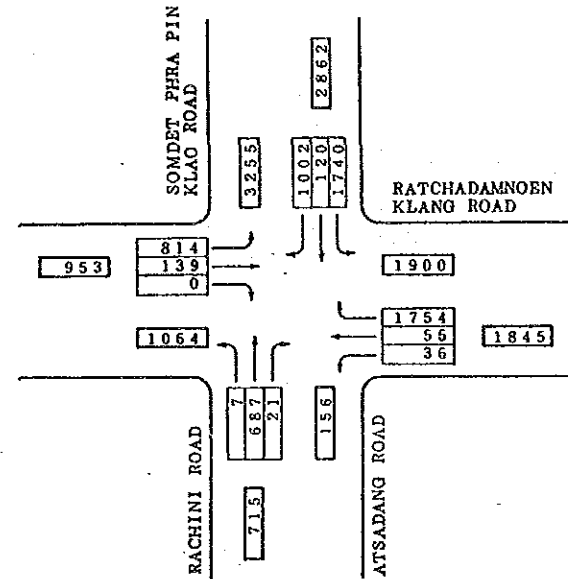


**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

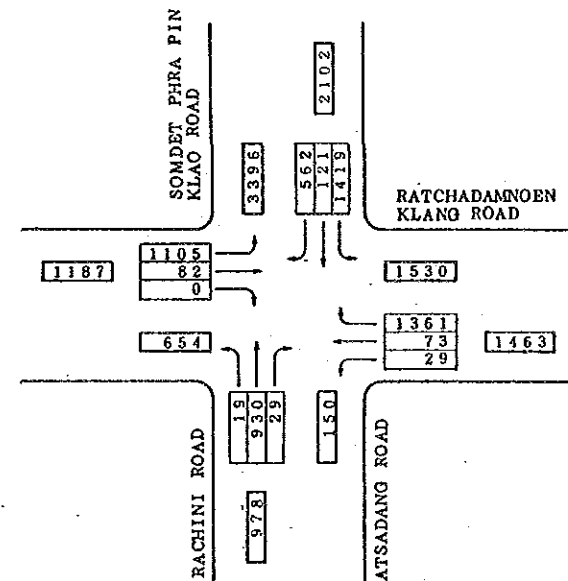
**MORNING**



**NOON**



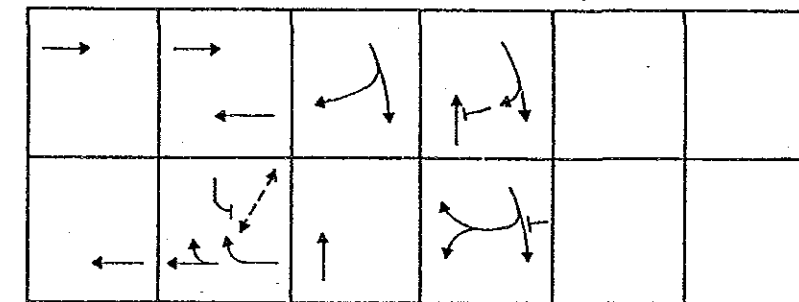
**EVENING**



**NORMAL PHASE SEQUENCE**

PHASE	10	20	30	40	50	60	70	80
PATTERN								
I								
II								
III								
PRE EMPTION								

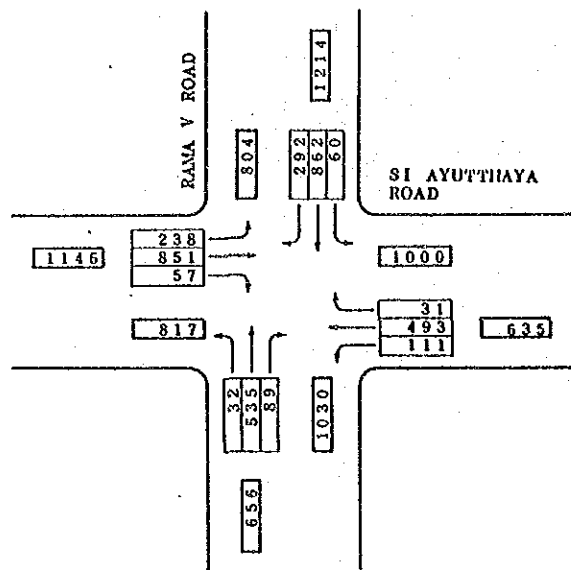
**MANUAL PHASE**



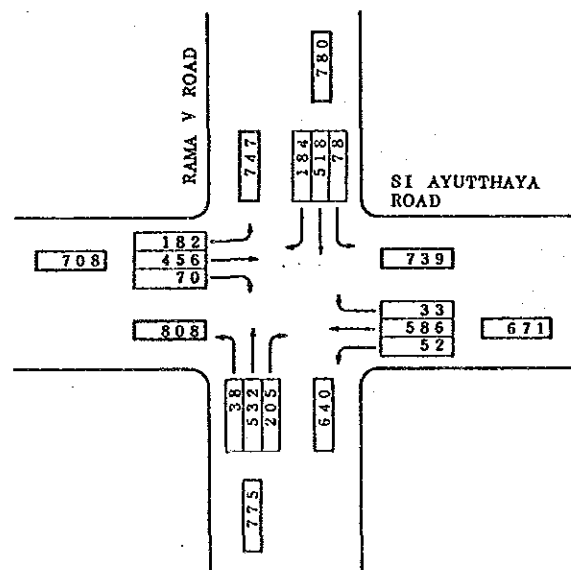
				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
				DESIGN VOLUME AND PHASE PLAN RATCHADAMNOEN KLANG -RATCHADAMNOEN NAI		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonwut Titiw BMA Study Team Leader
				Intersection No. 13		Designed By : Yasu Nabeshima JICA Study Member	Designed By : TEO.BMA
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing No. 3013
Associated Plan No. 1						Date SEPTEMBER '90	Total 10 / 139

**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

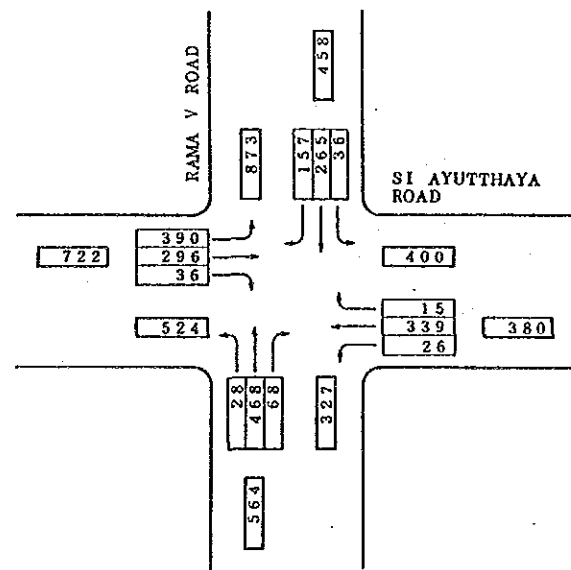
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

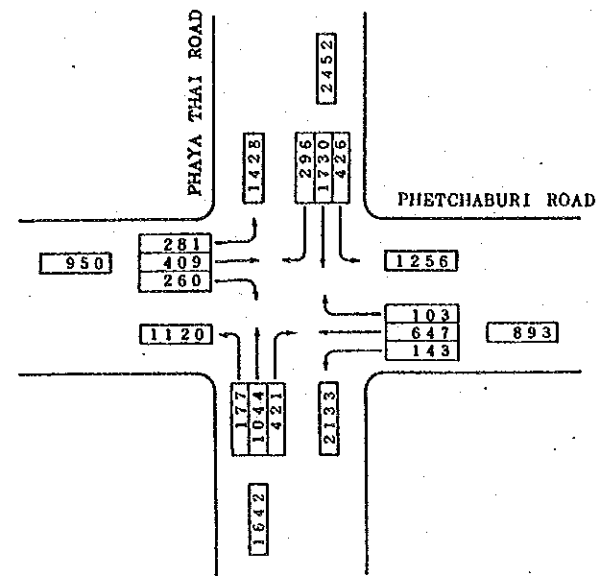
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I (MORNING PEAK HOUR)								
II (DAYTIME EVENING PEAK HOUR)								
III								
PRE EMPTION								

**MANUAL PHASE**

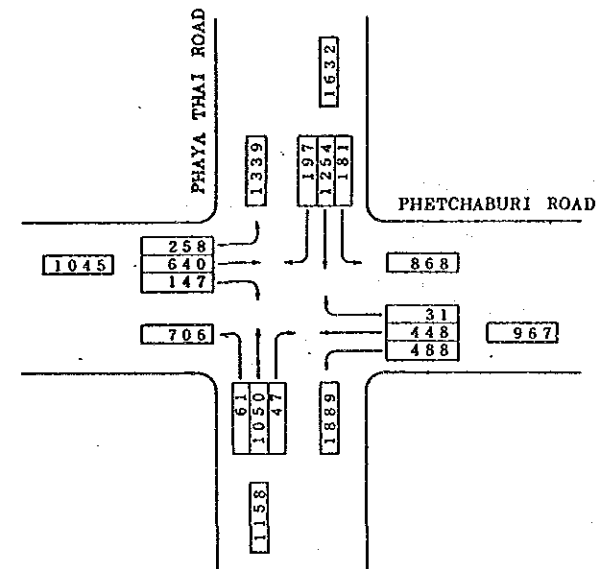

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
DESIGN VOLUME AND PHASE PLAN RAMA V-SI AYUTTHAYA		Submitted By : Jun Kadera JICA Study Team Leader	Approved By : Manopwat Titico BMA Study Team Leader
Intersection No. 15		Designed By : Yasuo Masachika JICA Study Member	Designed By : YEO, BMA
Code	Revision	Date	Initial
Associated Plan No. :	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Date SEPTEMBER '90
		Drawing NR 3015 Total 11 / 139	

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

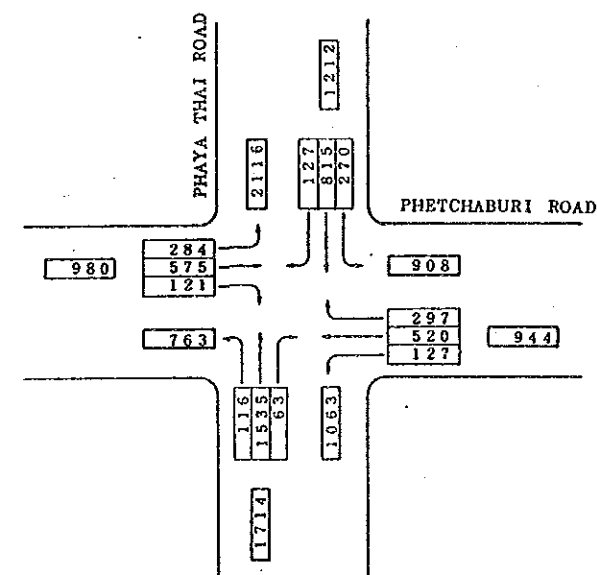
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

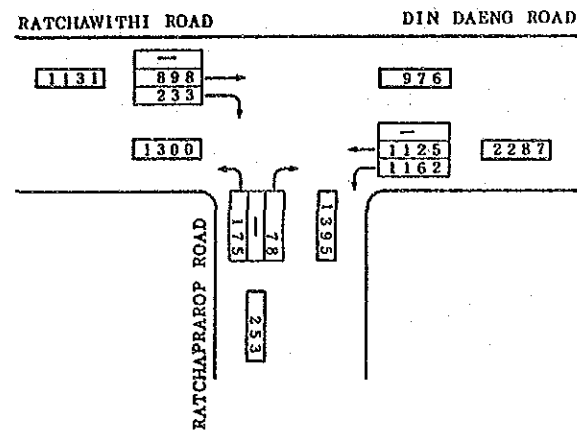
PHASE	10	20	30	40	50	60	70	80
PATTERN								
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

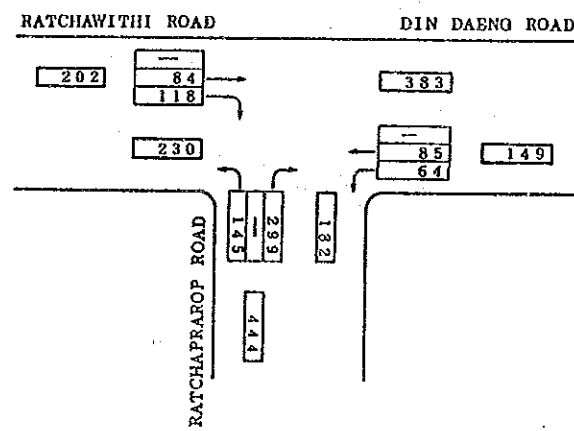

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
				DESIGN VOLUME AND PHASE PLAN PHAYA THAI-PHETCHABURI		Submitted By : Jun Kadera JICA Study Team Leader	Approved By : Boonyarat Tiptra SMA Study Team Leader
				Intersection No. 18		Designed By : Yasu Nakashima JICA Study Member	Designed By : TED, SMA
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	SMA Bangkok Metropolitan Administration	Scale	Drawing No. 3018
Associated Plan No. :						Date SEPTEMBER '90	Total 12 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

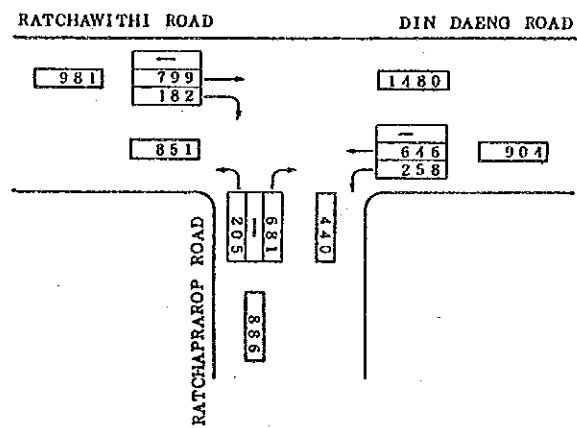
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

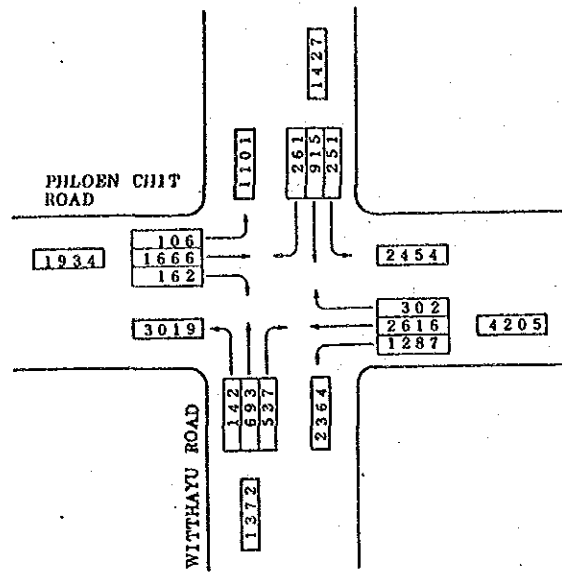
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I (MORNING PEAK HOUR)								
II (DAYTIME EVENING PEAK HOUR)								
III								
PRE EMPTION								

**MANUAL PHASE**

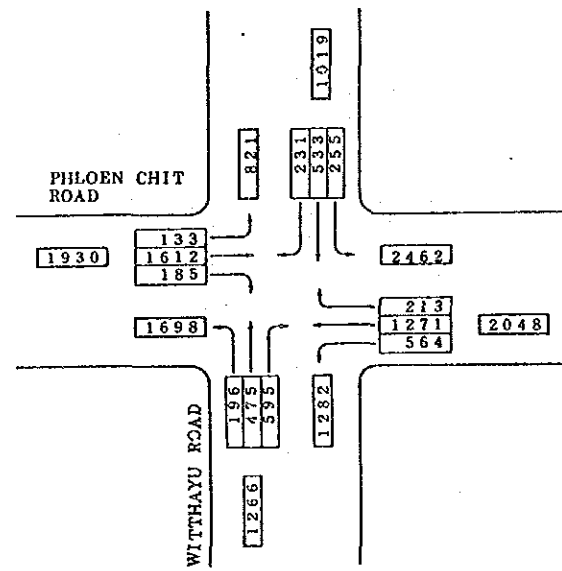

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
				DESIGN VOLUME AND PHASE PLAN RATCHAPRAROP -DIN DAENG-RATCHAWITHI		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Eenaywat Tipasa BMA Study Team Leader
				Intersection No. 19		Designed By : Tosho Kobayashi JICA Study Member	Designed By : TEN, BMA
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing No. 3019
Associated Plan No. :						Date SEPTEMBER '90	Total 13 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

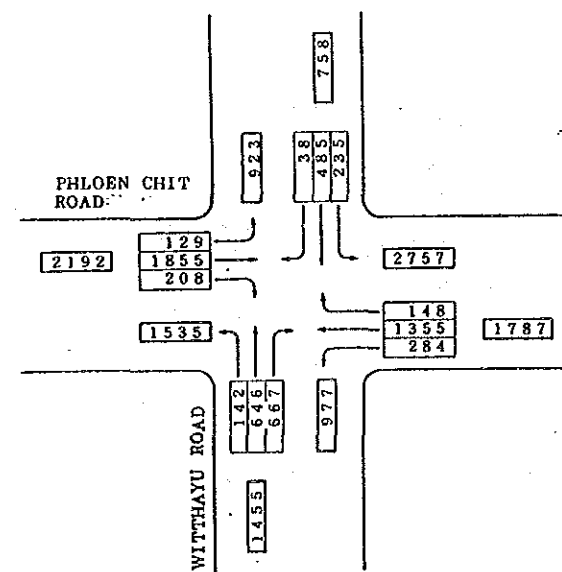
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

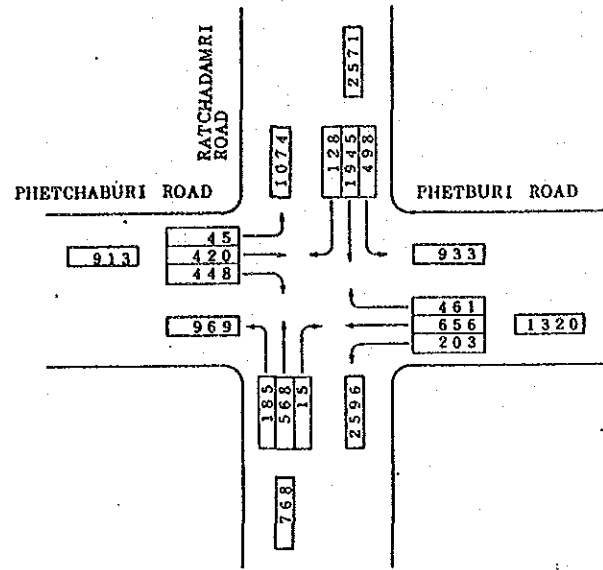
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

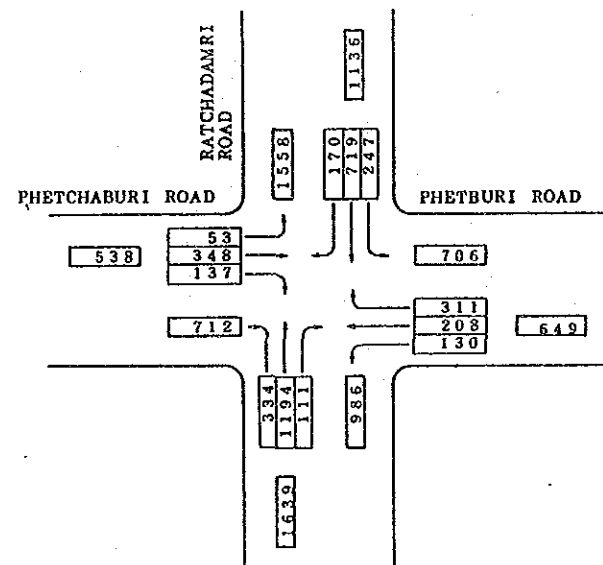

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN WITTHAYU-PHLOEN CHIT		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonjorn Tipton BMA Study Team Leader
Intersection No. 20		Designed By : Yasuo Hoshino JICA Study Member	Designed By : TEO, BMA
Scale	Date	Scale	Drawing No. 3020
Associated Plan No. 1	Date	Date	Total 14 / 139
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

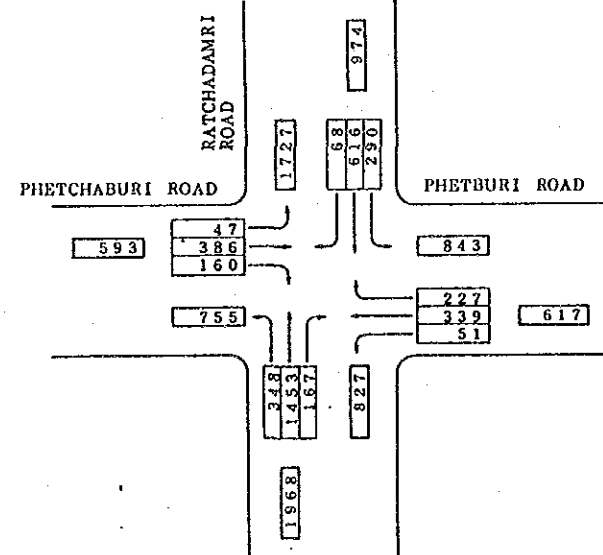
**MORNING**



**NOON**



**EVENING**



**NORMAL. PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

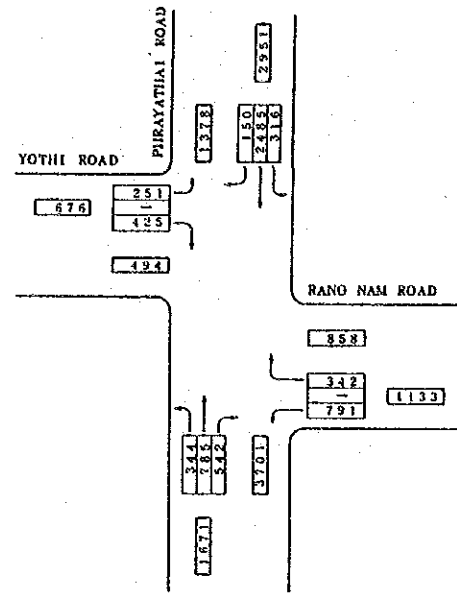
**MANUAL PHASE**


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN RATCHAPROROP-RATCHADAMRI -PHETCHABURI		Submitted By : Jira Kedara JICA Study Team Leader	Approved By : Boonyawat Tiptan BMA Study Team Leader
Intersection No. 22		Designed By : Yasuo Nakashima JICA Study Member	Designed By : JIB, BMA
Code	Revision	Date	Initial
Associated Plan No. 1			
JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing NR 3022
		Date SEPTEMBER '90	Total 15 / 139

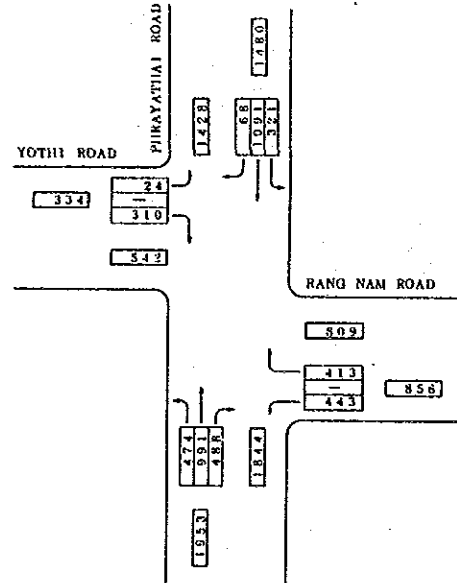


DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)

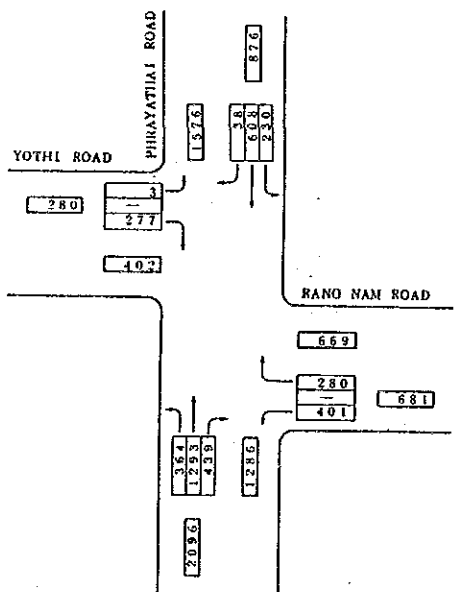
MORNING



NOON



EVENING



NORMAL PHASE SEQUENCE

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

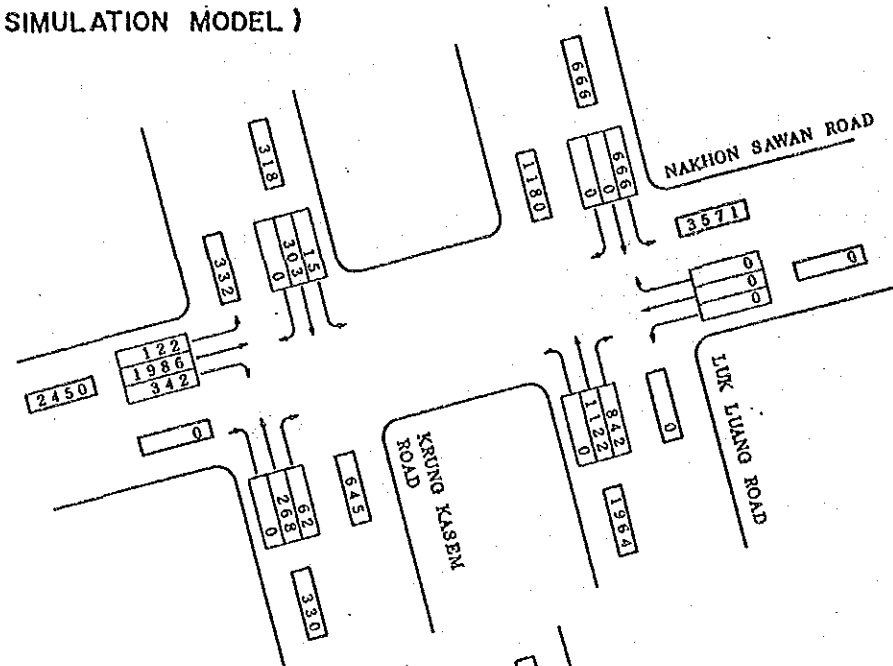
MANUAL PHASE


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
DESIGN VOLUME AND PHASE PLAN PHAYA THAI-YOTHI-RANG NAM		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonyawat Tipras BMA Study Team Leader
Intersection No. 25		Designed By : Taro Kishimoto JICA Study Member	Designed By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale	Drawing No. 3025
		Date SEPTEMBER '90	Total 17 / 139

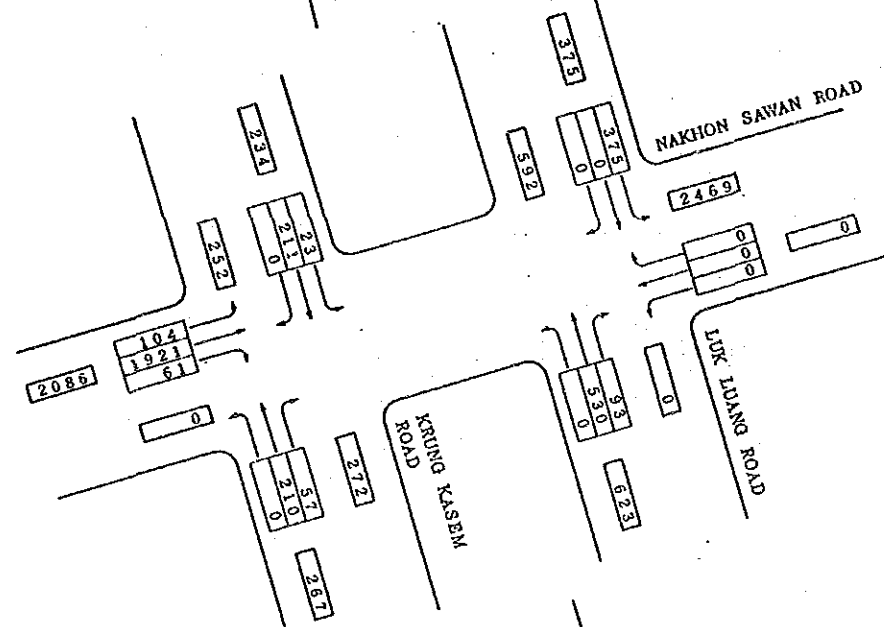


**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

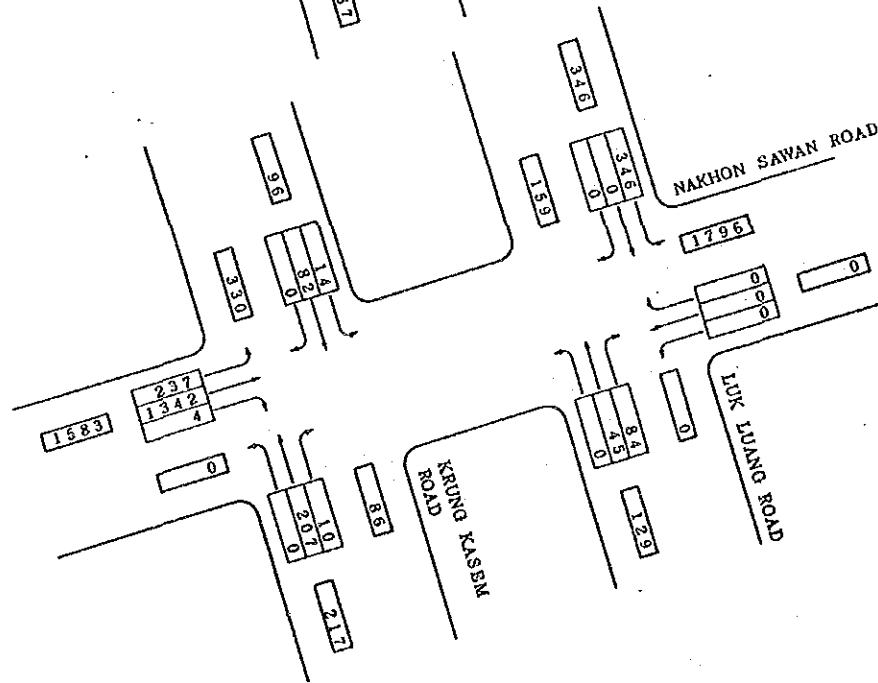
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

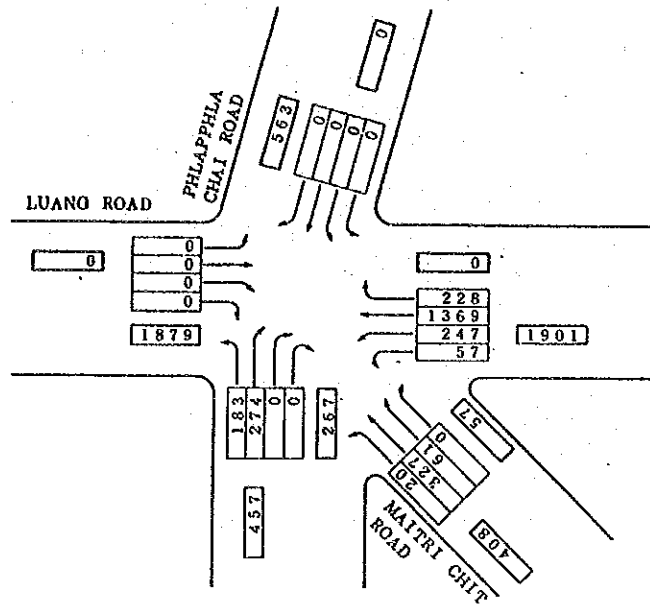
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

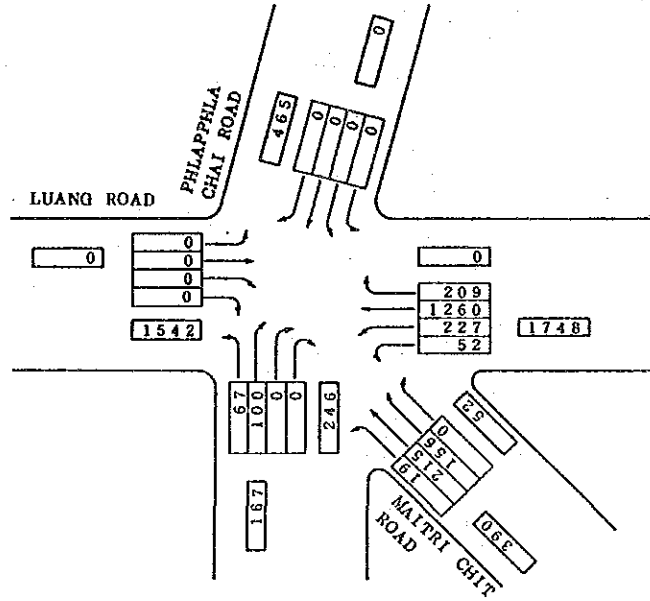

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				DESIGN VOLUME AND PHASE PLAN NAKHON SAWAN-KRUNG KASEM -LUK LUANG		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonwatt Tipton BMA Study Team Leader
				Intersection No. 26		Designed By : Yasuo Mikashima JICA Study Member	Designed By : TTO, BMA
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing No. 3026
Associated Plan No. 1						Date SEPTEMBER '90	Total 18 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

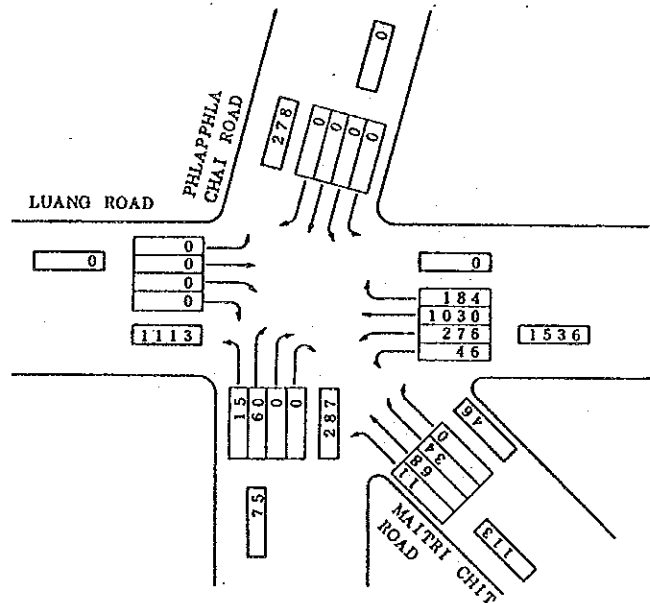
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

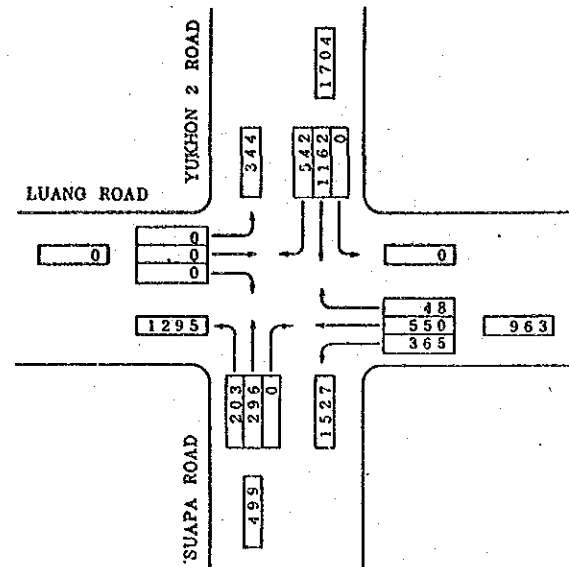
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

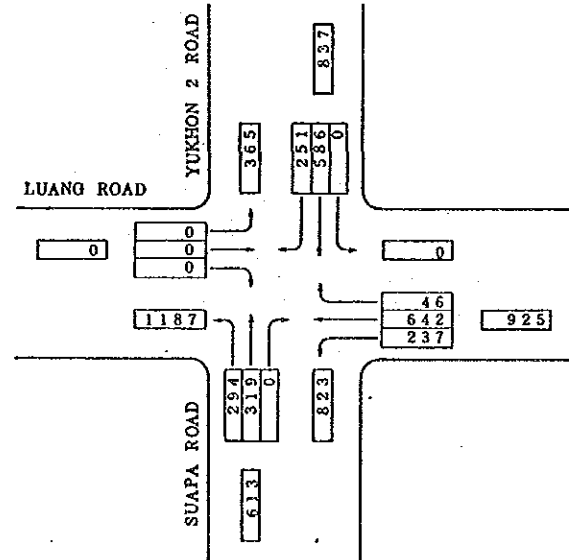

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
				DESIGN VOLUME AND PHASE PLAN PHLAPHLA CHAI-LUANG -MAITRI CHIT		Submitted By : JICA Study Team Leader	
				Intersection No. 29		Approved By : BMA Study Team Leader	
						Designed By : JICA Study Member	
						Designed By : BMA	
Code	Revision	Date	Initial	JICA	BMA	Scale	Drawing NR 3029
Associated Plan No. 1				Japan International Cooperation Agency	Bangkok Metropolitan Administration	Date	Total 19 / 139
						SEPTEMBER '90	

**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

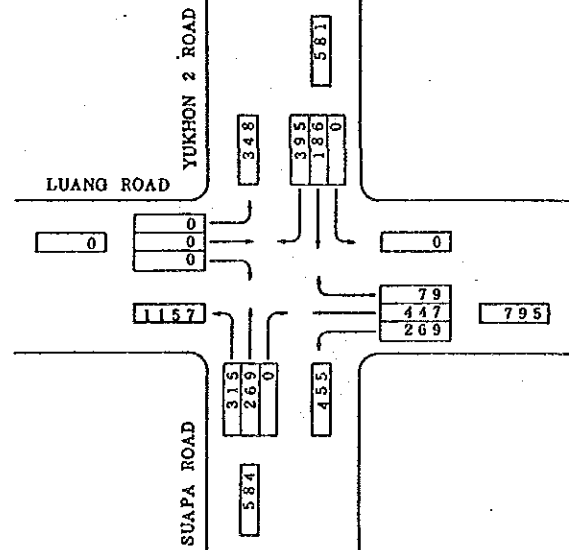
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

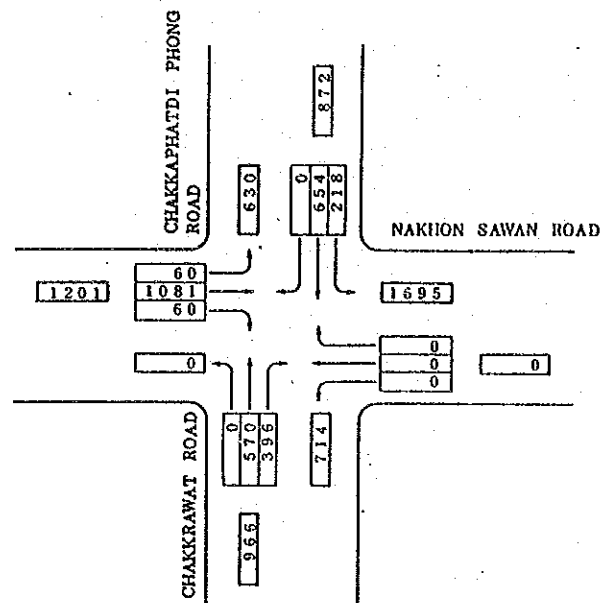
PHASE	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

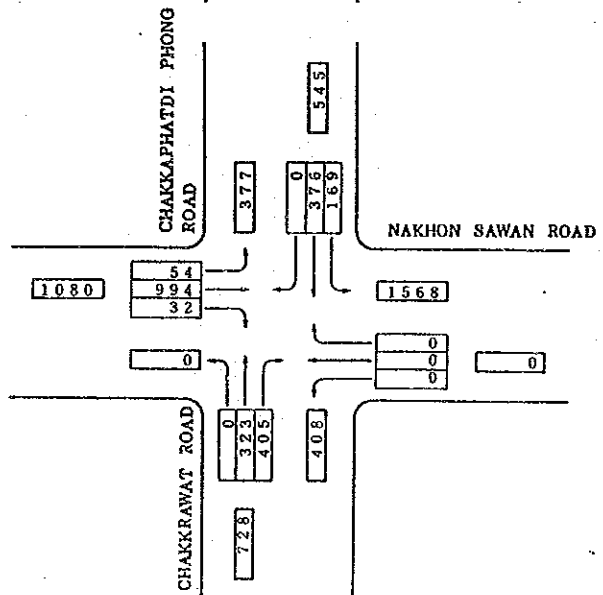

Code	Revision	Date	Initial	BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
				DESIGN VOLUME AND PHASE PLAN			
				SUAPA-LUANG-YUKHON 2			
				Submitted By : Jum Kudara JICA Study Team Leader		Approved By : Boonwut Tiptua BMA Study Team Leader	
				Designed By : Yasuo Urushino JICA Study Member		Designed By : TEO, BMA	
				Intersection No. 30			
				Associated Plan No. :		Scale Drawing No. - 3030	
				JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	
				Date SEPTEMBER '90		Total 20 / 139	

**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

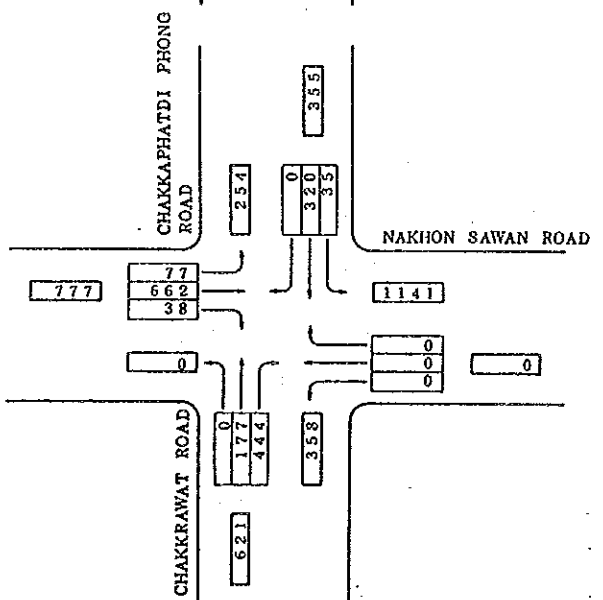
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

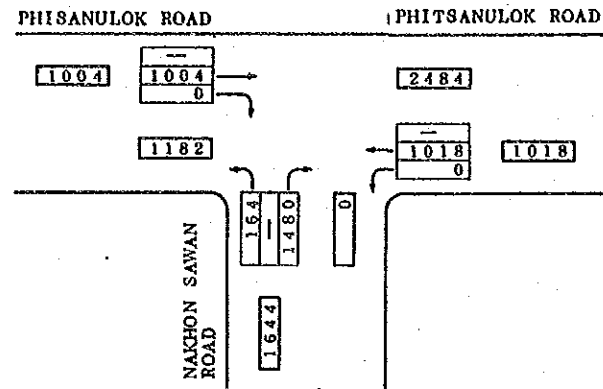
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

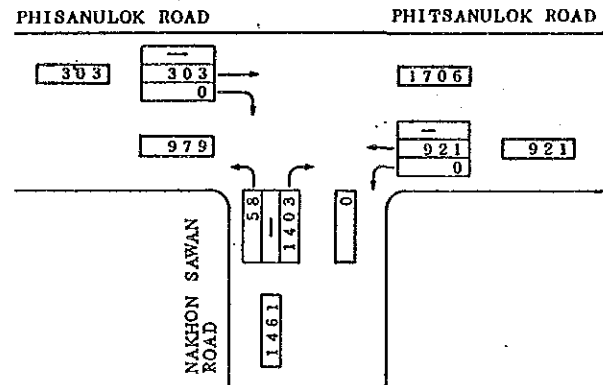

Code	Revision	Date	Initial	BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
				<b>DESIGN VOLUME AND PHASE PLAN</b>			
				CHAKKAPHATDI PHONG			
				-NAKHON SAWAN			
				Intersection No. 32			
				Submitted By : Jorn Kudara JICA Study Team Leader		Approved By : Sungwan Tiptua BMA Study Team Leader	
				Designed By : Yasuo Hoshikawa JICA Study Member		Designed By : TEO, BMA	
Associated Plan No. 1				JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing NR 3032
				Date SEPTEMBER '90		Total 21 / 139	

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

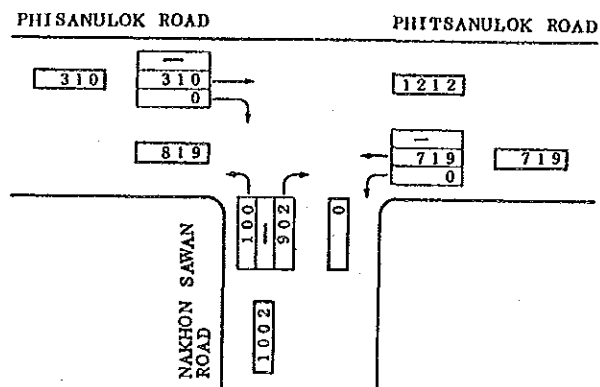
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I	↶	↷						
II								
III								
PRE EMPTION								

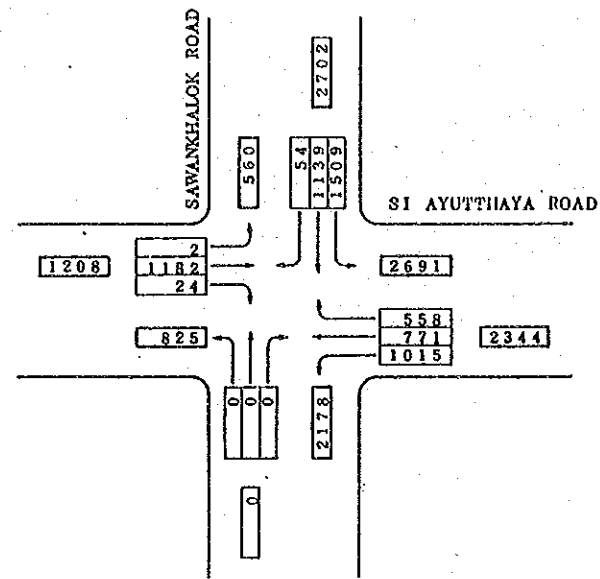
**MANUAL PHASE**

↶	↷				
→	→	↶			

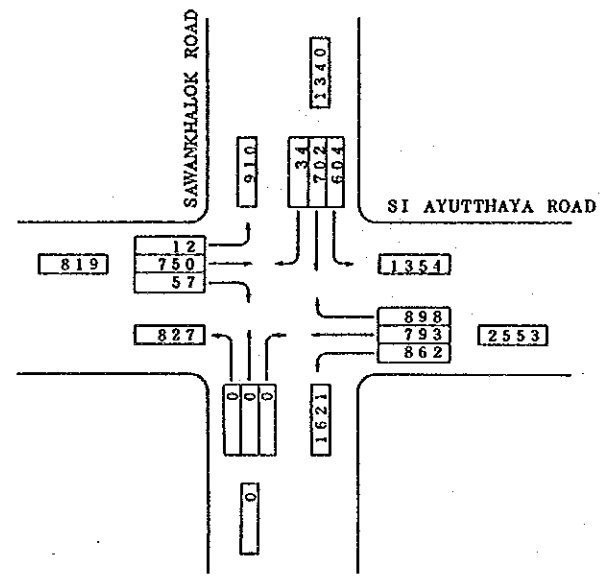
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN NAKHON SAWAN-PHITSANULOK		Submitted By : Jun Kadoh JICA Study Team Leader	Approved By : Sangwan Tiptua BMA Study Team Leader
Intersection No. 34		Designed By : Yasu Nobuhiko JICA Study Member	Designed By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. 1			
JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing No 3034
		Date SEPTEMBER '90	Total 22 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

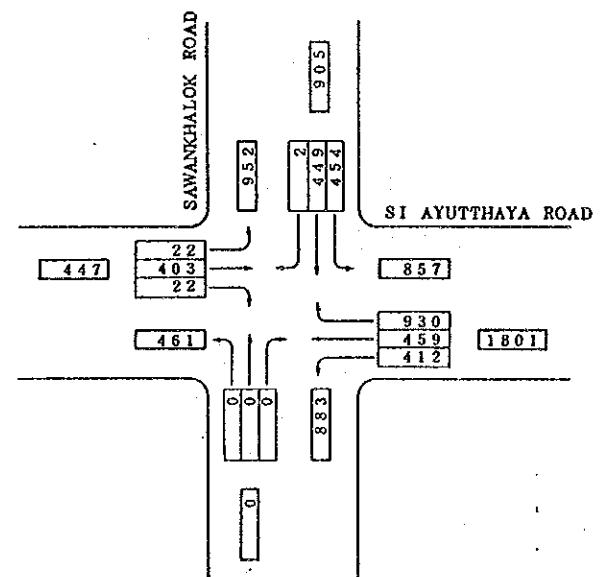
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

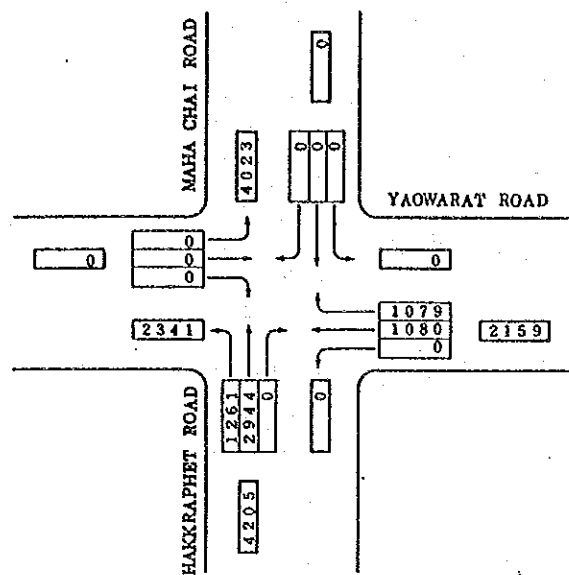
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

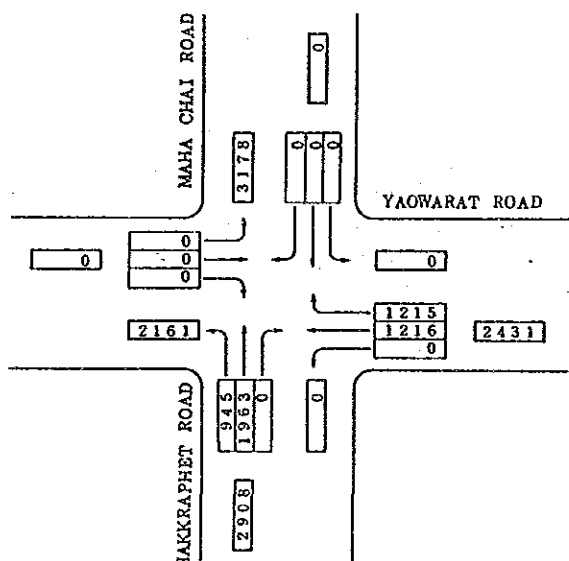

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
DESIGN VOLUME AND PHASE PLAN SAWANKHALOK-SI AYUTTHAYA		Submitted By : JWA Kodera JICA Study Team Leader	Approved By : Boonpaat Tiptee BMA Study Team Leader
Intersection No. 35		Designed By : Yasu Nakashima JICA Study Member	Designed By : TIG, BMA
Code	Revision	Date	Initial
Associated Plan No. 1		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale	Drawing No. 3035
		Date	SEPTEMBER '90
		Total 23 / 139	

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

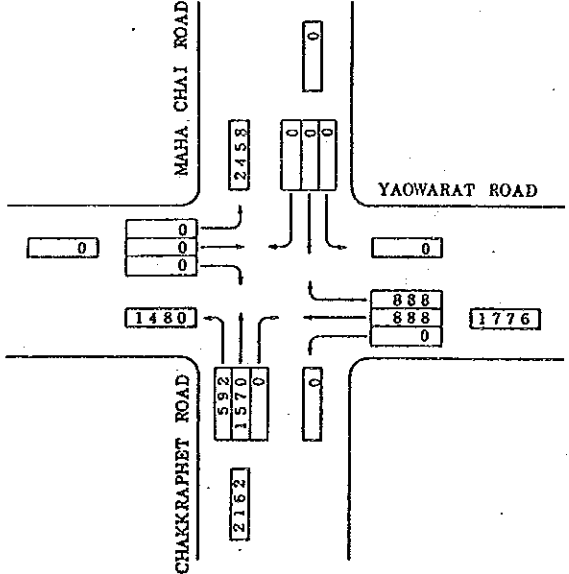
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I	←	↑						
II								
III								
PRE EMPTION								

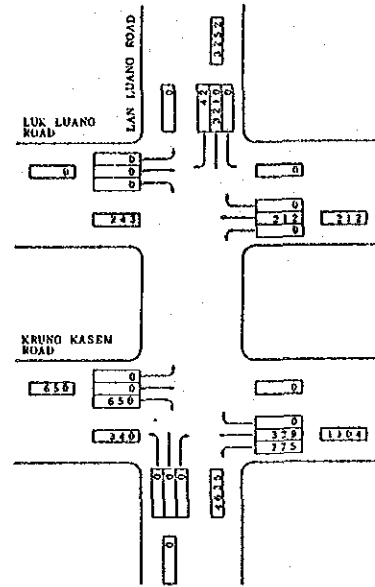
**MANUAL PHASE**

↑							
←							

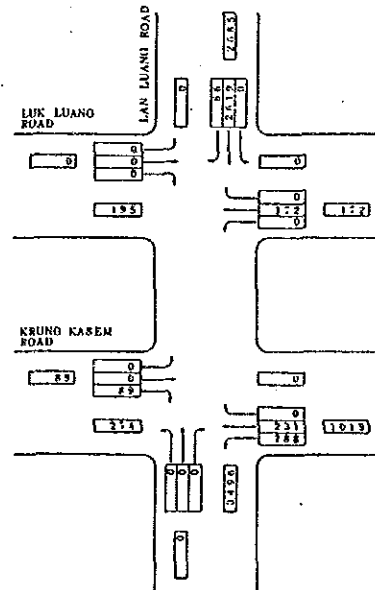
				<b>BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I</b>			
				<b>DESIGN VOLUME AND PHASE PLAN MAHA CHAI-YAOWARAT -PHIRAPHONG</b>		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Boonyawat Tiptua BMA Study Team Leader
				Intersection No. 36		Designed By : Yasu Nobushima JICA Study Member	Designed By : TFO, BMA
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing No. 3038
Associated Plan No. 1						Date SEPTEMBER '90	Total 24 / 130

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

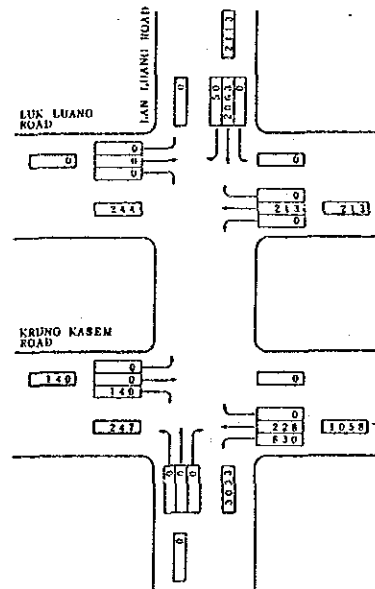
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I	↑↓ ↑↓	↑ ↓	← →					
II								
III								
PRE EMPTION								

**MANUAL PHASE**

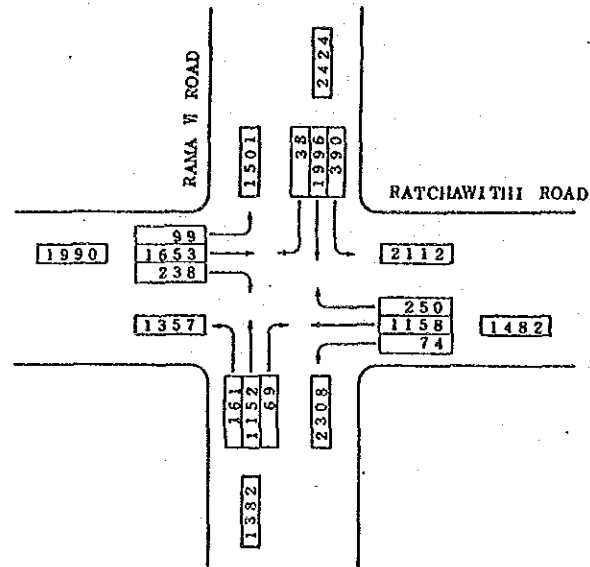
↓	↑	←			
↓	↑	←			
↑	←	←			
↑	←	←			

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
				DESIGN VOLUME AND PHASE PLAN		Submitted By :	
				KRUNG KASEM-LAN LUANG		Jiro Endoh JICA Study Team Leader	
				-LUK LUANG		Seangwan Tiptua BMA Study Team Leader	
				Intersection No. 37		Designed By :	
						Yasuo Hasehime JICA Study Member	
						TED, BMA	
Code		Revision		Date		Scale	
Associated Plan No. :		JICA		BMA		Drawing No. 3037	
		Japan International Cooperation Agency		Bangkok Metropolitan Administration		Date SEPTEMBER '90	
						Total 25 / 130	

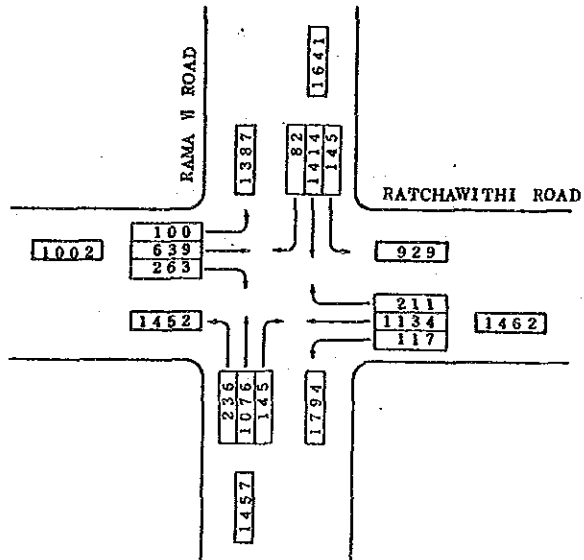


**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

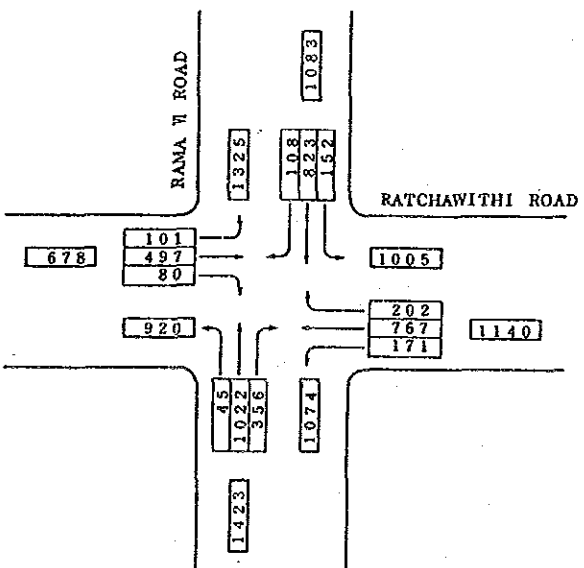
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

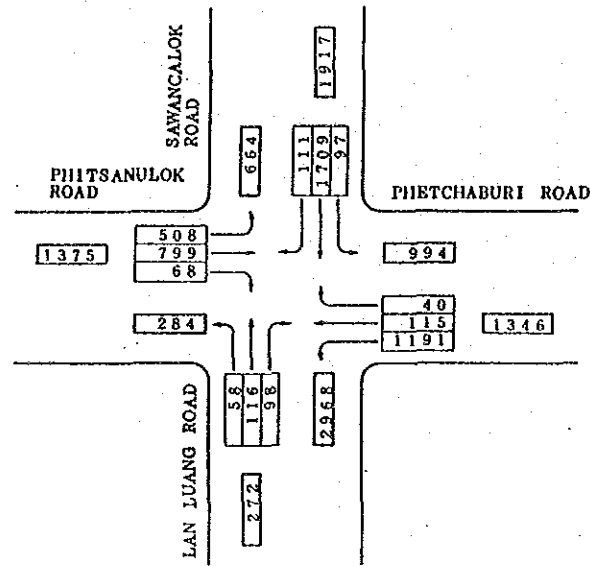
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

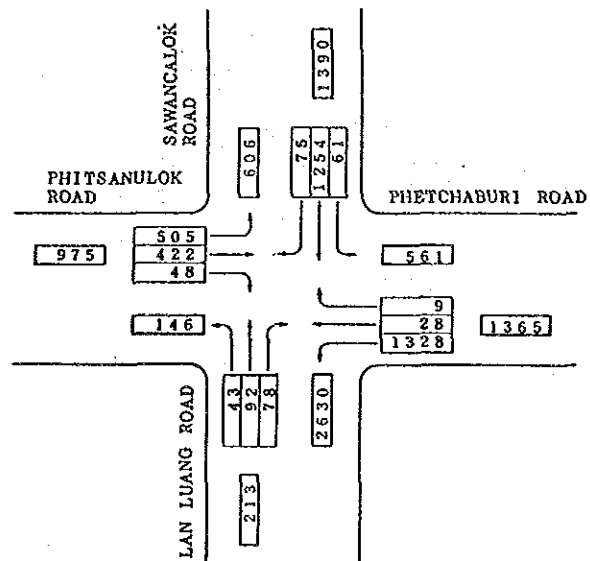

Code	Revision	Date	Initial	BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I	
				<b>DESIGN VOLUME AND PHASE PLAN</b>	
				<b>RAMA VI-RATCHAWITHI</b>	
				Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boongrat Tiptua BMA Study Team Leader
				Designed By : Yano Nabeshima JICA Study Member	Designed By : TED, BMA
				Intersection No. 39	
Associated Plan No. 1				JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
				Scale	Drawing NR 3039
				Date SEPTEMBER '99	Total 28 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

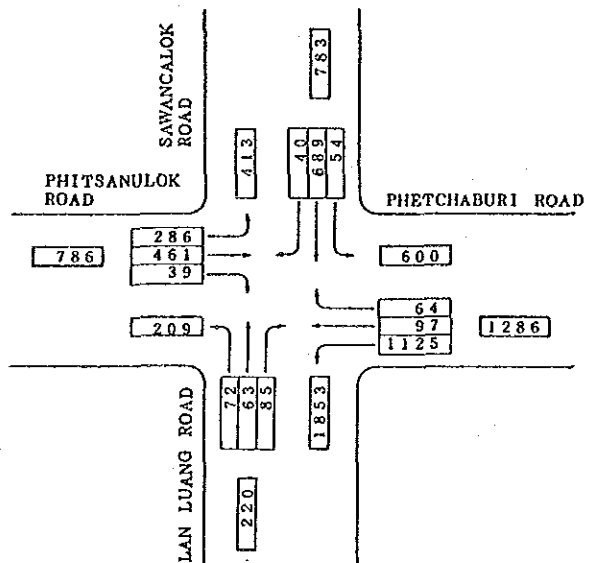
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

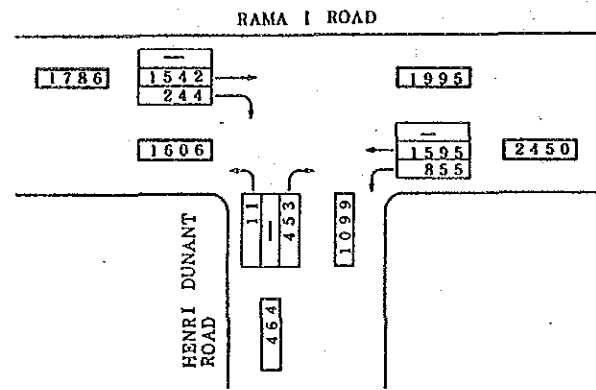
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

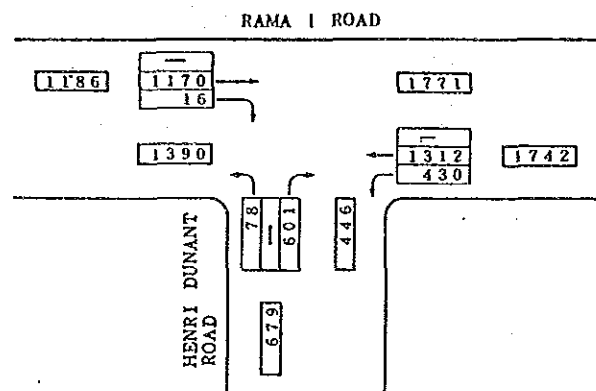

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN SAWANKHALOK-PHETCHABURI -LAN LUANG-PHITSANULOK		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonswat Titus BMA Study Team Leader
Intersection No. 40		Designed By : Yasuo Hasehime JICA Study Member	Designed By : TED_BMA
Scale	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Drawing No. 3040
Associated Plan No. 1	Date	SEPTMBER '90	Total 27 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

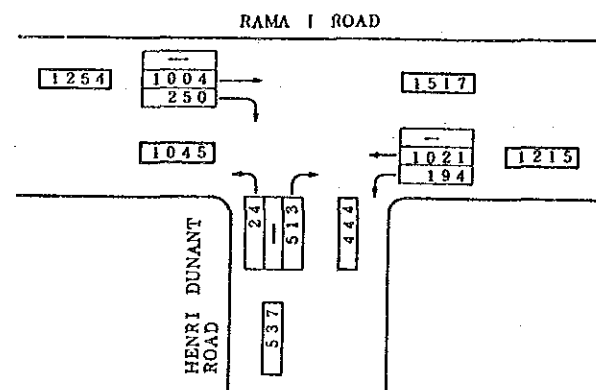
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

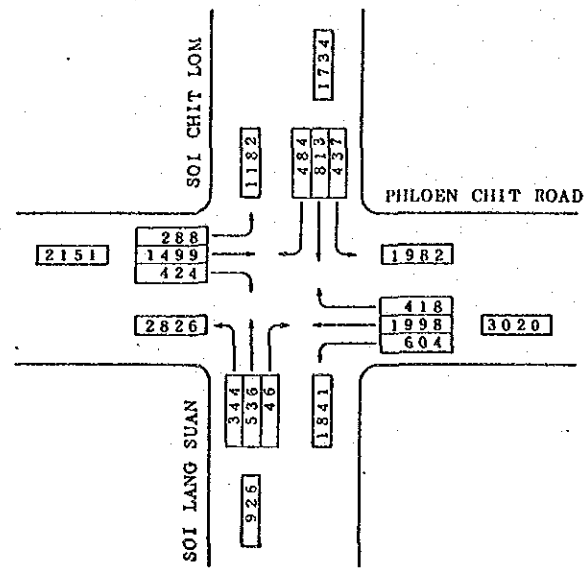
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I (MORNING PEAK HOUR, EVENING PEAK HOUR)								
II (DAYTIME)								
III								
PRE EMPTION								

**MANUAL PHASE**

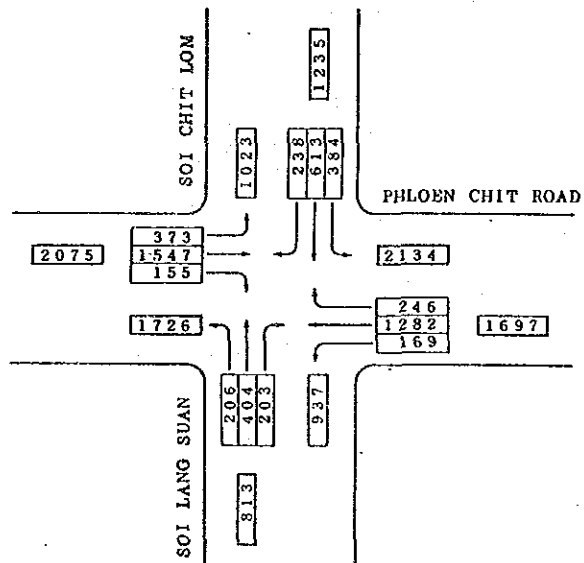

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				DESIGN VOLUME AND PHASE PLAN HENRI DUNANT-RAMA I			
				Submitted By : Jiro Kodera JICA Study Team Leader		Approved By : Boonywet Tipton BMA Study Team Leader	
				Designed By : Yasuo Hasekawa JICA Study Member		Designed By : TED, BMA	
				Intersection No. 41			
Code				JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	
Associated Plan No. 1				Scale		Drawing NR 3041	
				Date SEPTEMBER '90		Total 28 / 139	

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

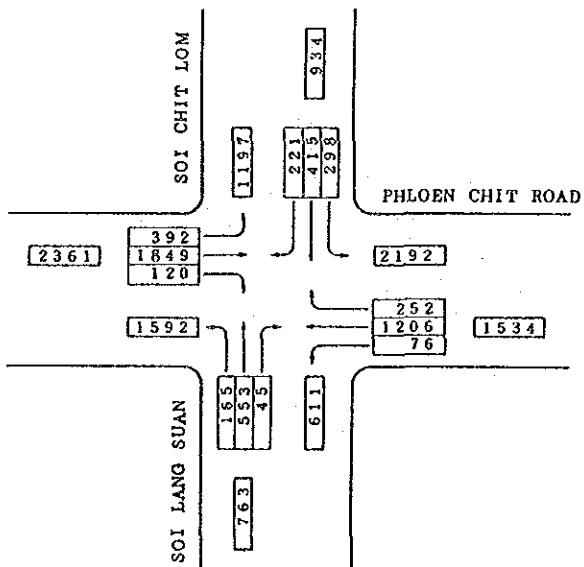
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

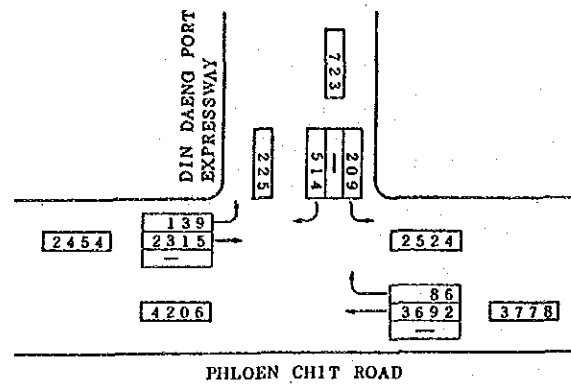
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

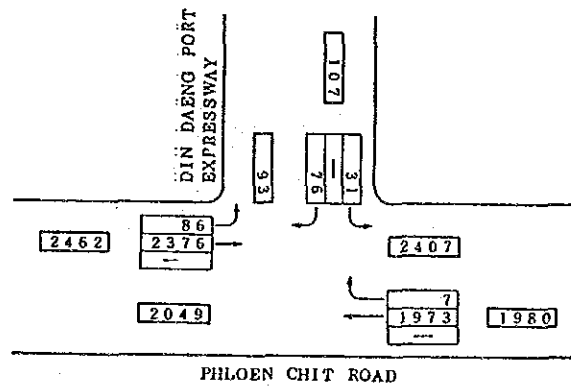

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
DESIGN VOLUME AND PHASE PLAN PHLOEN CHIT-SOI LANG SUAN -SOI CHIT LOM		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonyawat Tipton BMA Study Team Leader
Intersection No. 42		Designed By : Yasu Hashizume JICA Study Member	Designed By : TED_BMA
Code	Revision	Date	Initial
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing NR 3042
		Date SEPTEMBER '90	Total 29 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

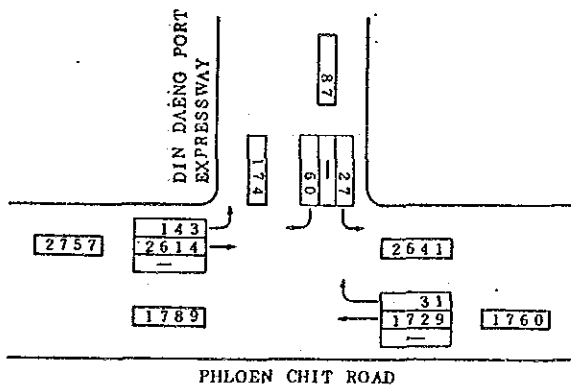
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

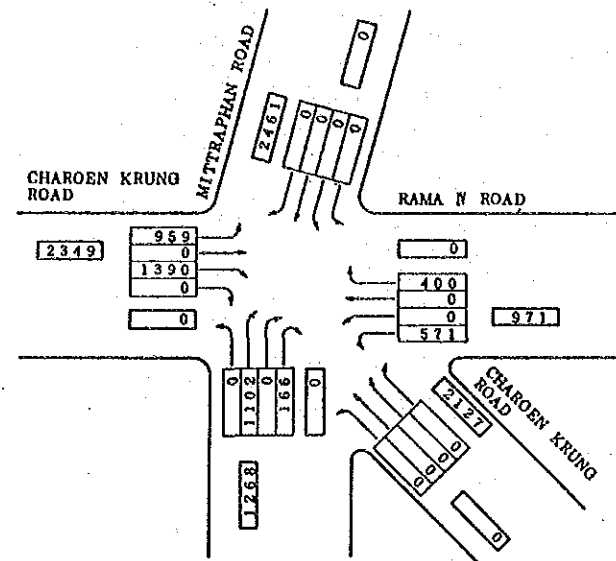
**MANUAL PHASE**


				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				DESIGN VOLUME AND PHASE PLAN PHLOEN CHIT -DIN DAENG PORT EXPRESSWAY		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonyawat Tiptua BMA Study Team Leader
				Intersection No. 43		Designed By : Yasuo Mochizuki JICA Study Member	Designed By : TEO, BMA
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing No. 3043
Associated Plan No. :						Date	SEPTEMBER '90
						Total	30 / 139

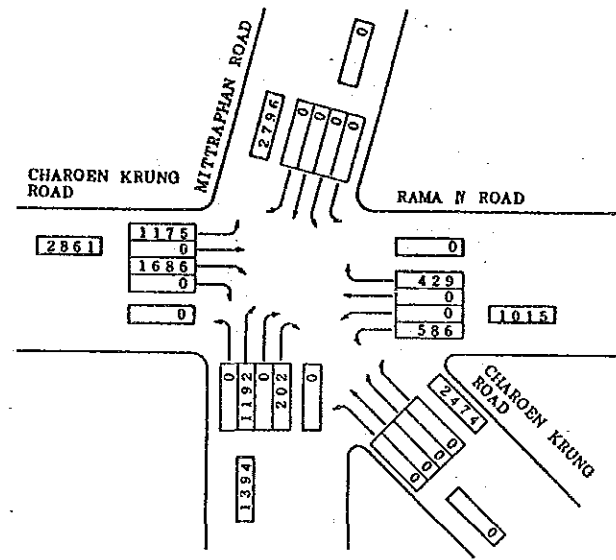


**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

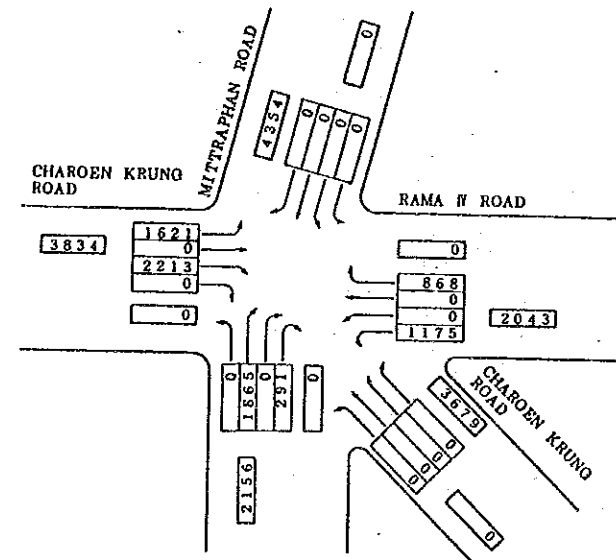
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I	↗	↘	↙					
II								
III								
PRE EMPTION								

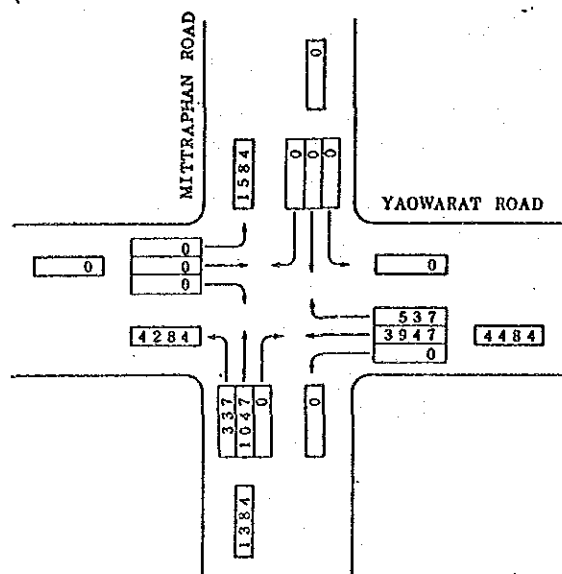
**MANUAL PHASE**

↗	↘				
↘					

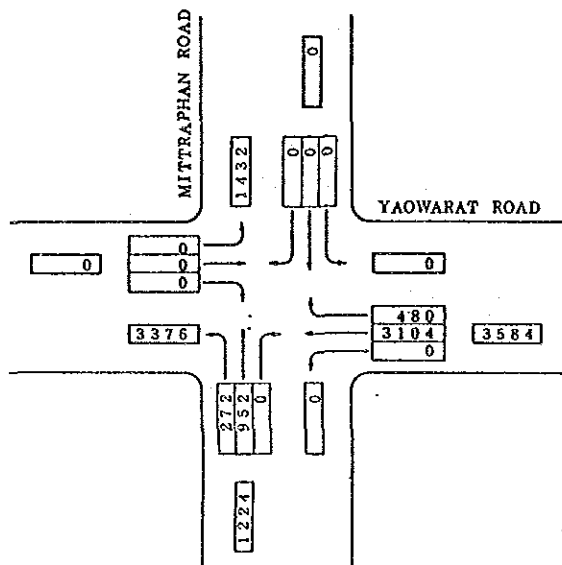
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN CHAROEN KRUNG-RAMA IV -MITTRAPHAN		Submitted By : Juro Kudoh JICA Study Team Leader	Approved By : Boonyawat Tiptua BMA Study Team Leader
Intersection No. 46		Designed By : Yasu Nobuhiko JICA Study Member	Designed By : YED,BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale	Drawing NR 3048
		Date SEPTEMBER '90	Total 32 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

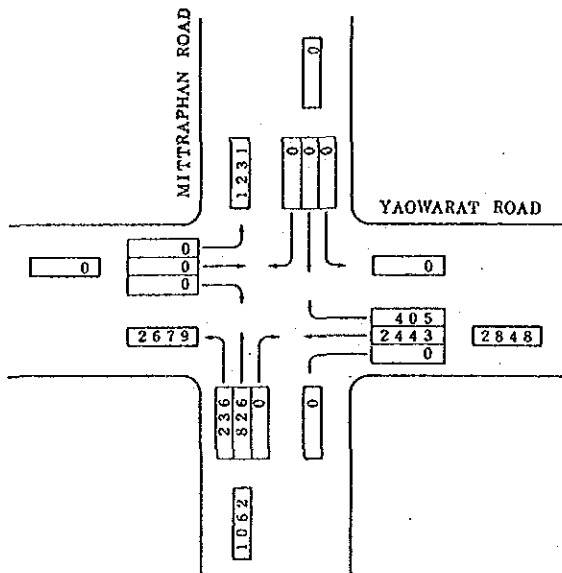
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I	←	↑						
II								
III								
PRE EMPTION								

**MANUAL PHASE**

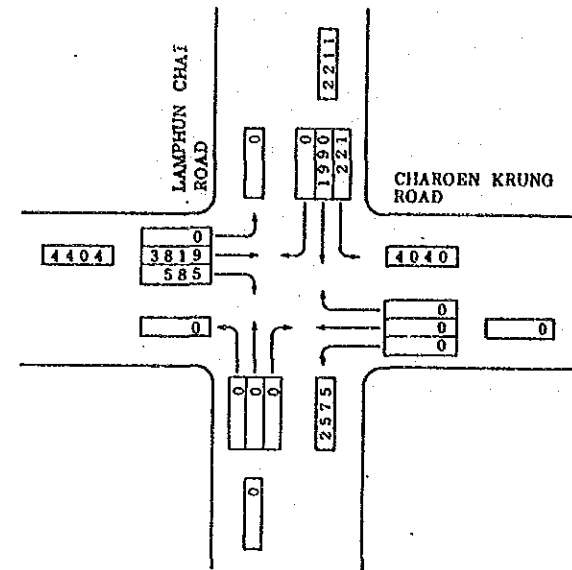
←					
↑					

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				DESIGN VOLUME AND PHASE PLAN YAOWARAT-MITTRAPHAN		Submitted By : Jun Kodera JICA Study Team Leader	Approved By : Boonyawat Tipton BMA Study Team Leader
				Intersection No. 47		Designed By : Yasu Kobayashi JICA Study Member	Designed By : TED, BMA
Code	Revision	Date	Issued	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing No. 3047
Associated Plan No. 1						Date SEPTEMBER '00	Total 33 / 139

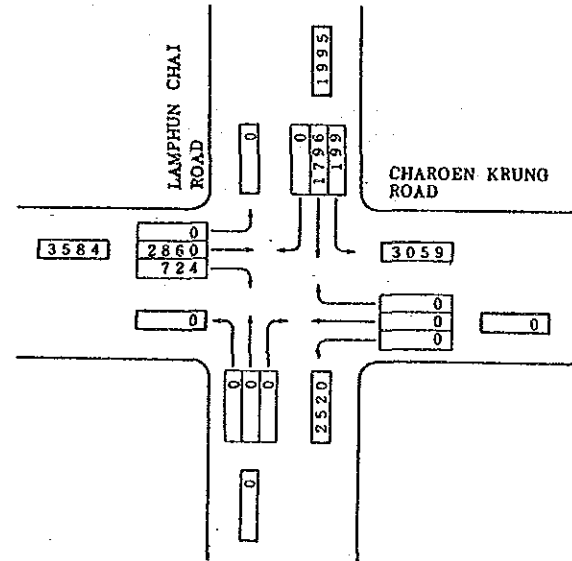


**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

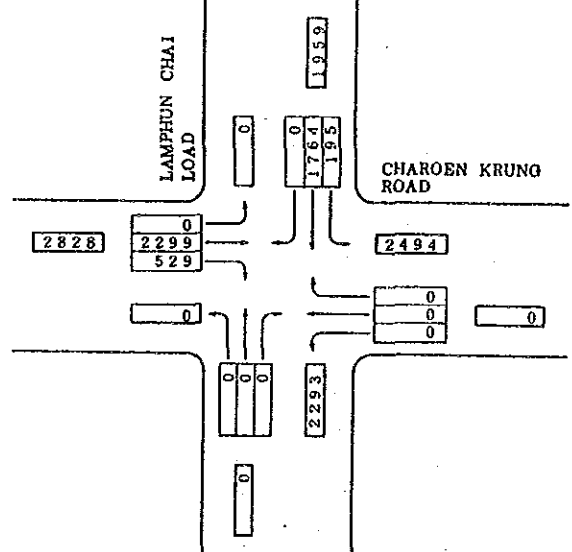
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I	↖	↗						
II								
III								
PRE EMPTION								

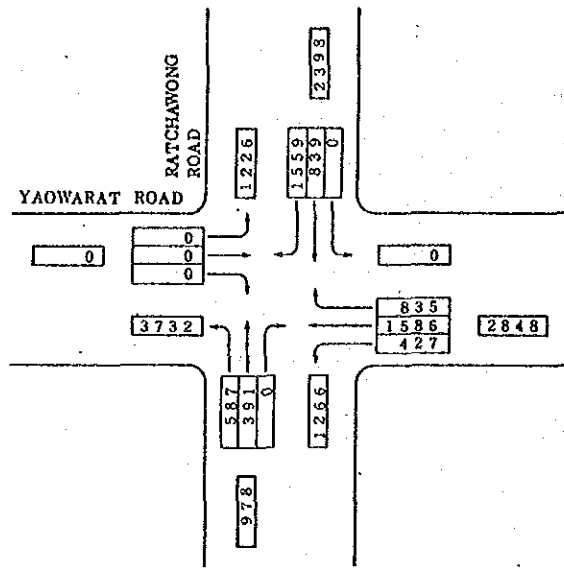
**MANUAL PHASE**

↖					
↗					

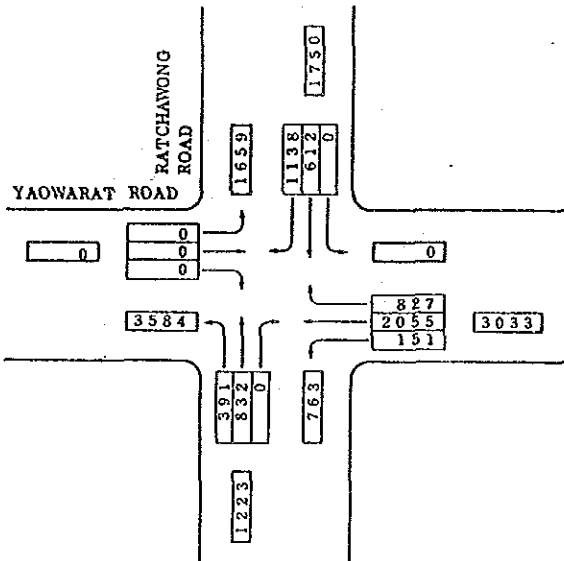
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN CHAROEN KRUNG -LAMPHUN CHAI		Submitted By : Jiro Hasegawa JICA Study Team Leader	Approved By : Boonyawat Tiptua BMA Study Team Leader
Intersection No. 48		Designed By : Yasuo Kobayashi JICA Study Member	Designed By : TEO, BMA
Associated Plan No. :	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Date SEPTEMBER '90
		Drawing NR 3048 Total 34 / 139	

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

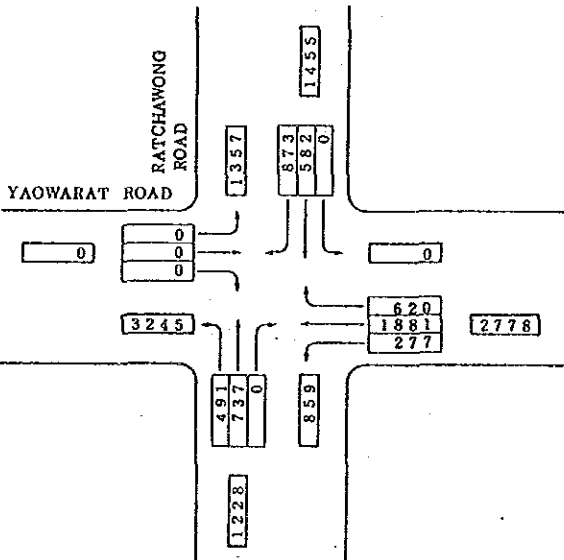
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

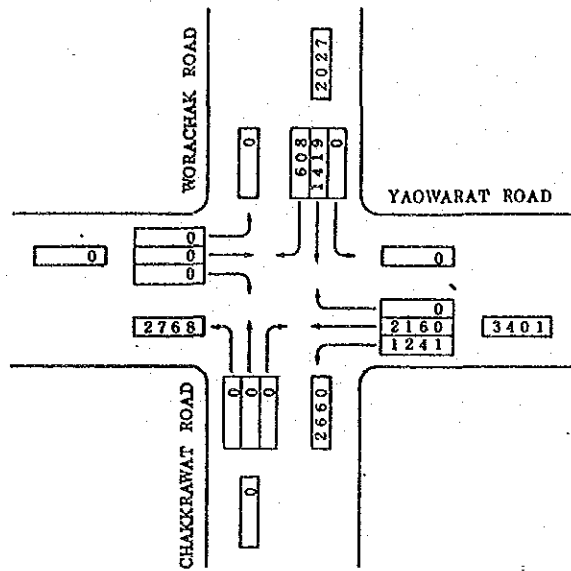
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

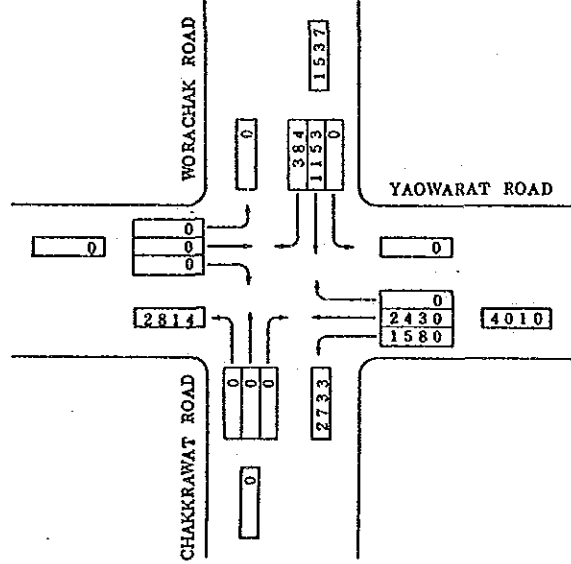

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				DESIGN VOLUME AND PHASE PLAN		Submitted By : Jun Kawanaka JICA Study Team Leader	
				RATCHAWONG-YAOWARAT		Approved By : Boonchai Tipkao BMA Study Team Leader	
				Intersection No. 49		Designed By : Yasuo Nishizima JICA Study Member	
						YED, BMA	
Code	Revision	Date	Initial	JICA	BMA	Scale	Drawing NR 3049
Associated Plan No. :				Japan International Cooperation Agency	Bangkok Metropolitan Administration	Date	SEPTEMBER '90
						Total 35 / 139	

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

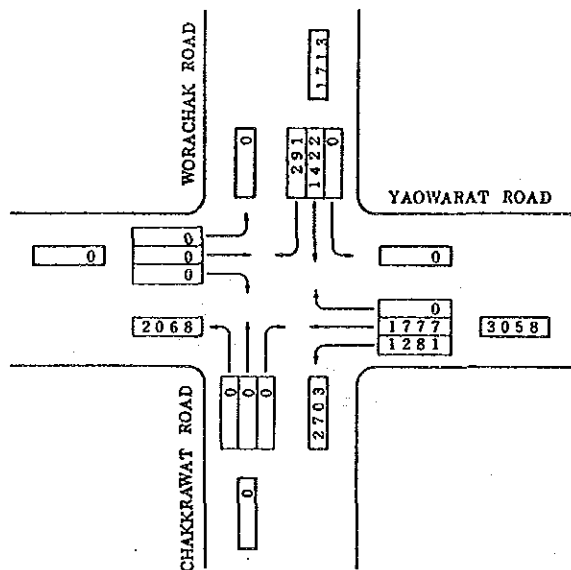
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I	←	↓						
II								
III								
PRE EMPTION								

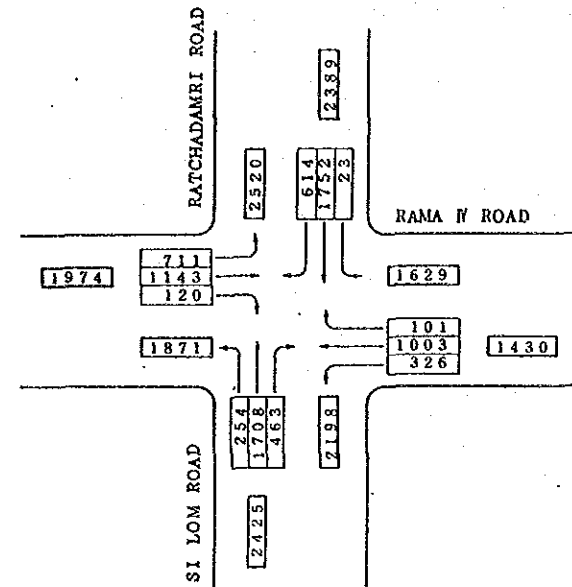
**MANUAL PHASE**

←					
↓					

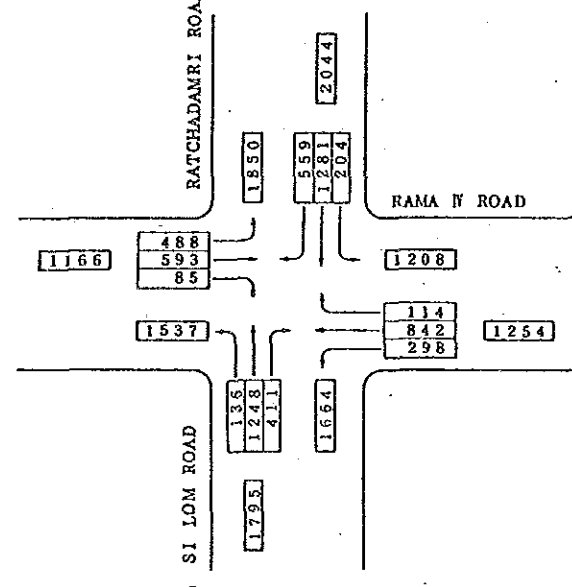
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I									
DESIGN VOLUME AND PHASE PLAN CHAKKRAWAT-YAOWARAT -WORACHAK					Submitted By : Jiro Kodera JICA Study Team Leader		Approved By : Boonwut Thirak BMA Study Team Leader		
Interaction No. 50					Designed By : Yasuo Hasekuma JICA Study Member		Designed By : TED, BMA		
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing No. 3050		
Associated Plan No. 1					Date		SEPTMBER '90		
					Total		36 / 138		

DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)

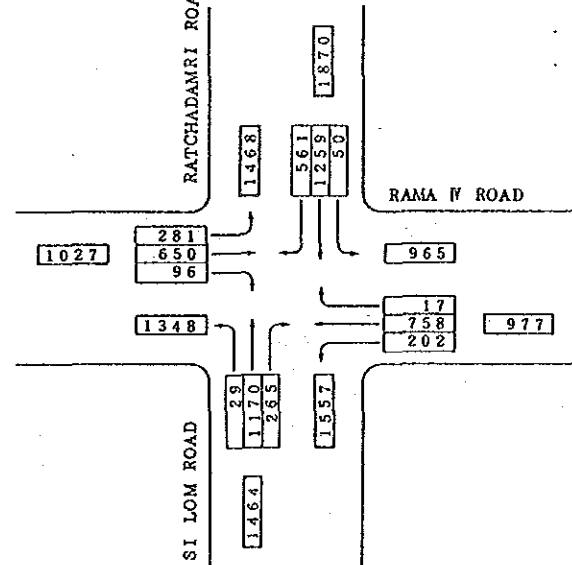
MORNING



NOON



EVENING



NORMAL PHASE SEQUENCE

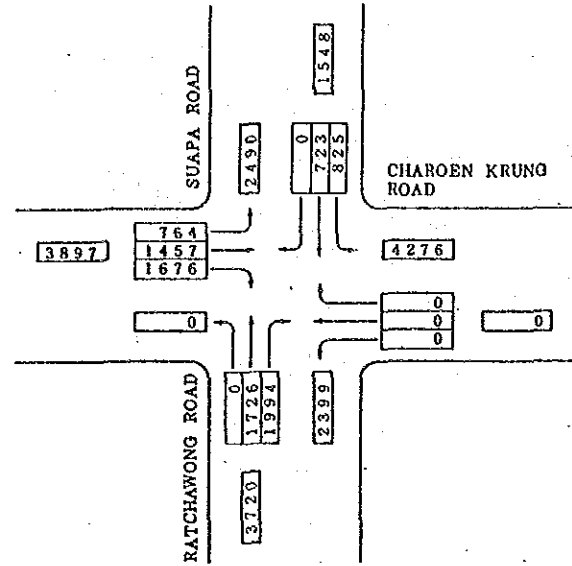
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

MANUAL PHASE

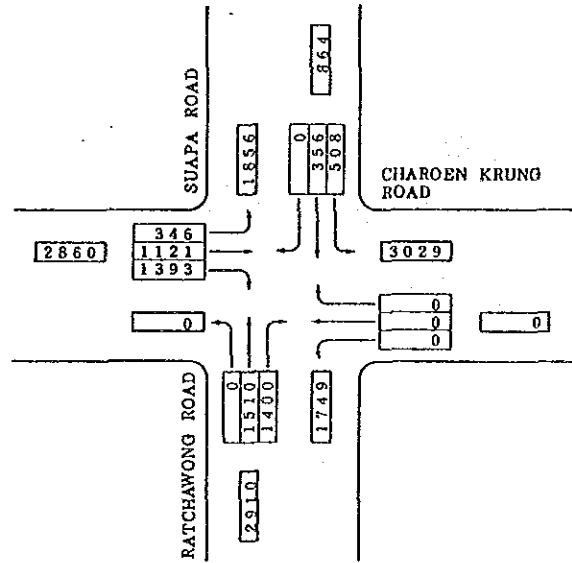

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN SILOM-RATCHADAMRI-RAMA IV		Submitted By : Jun Kadera JICA Study Team Leader	Approved By : Somyawat Tiptua BMA Study Team Leader
Intersection No. 51		Designed By : Yasuo Kobayashi JICA Study Member	Designed By : TEO, BMA
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing No. 3051
		Date SEPTEMBER '90	Total 37 / 139

**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

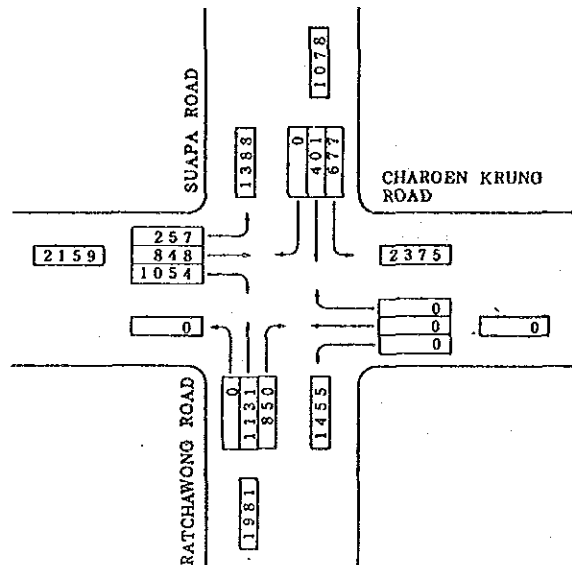
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

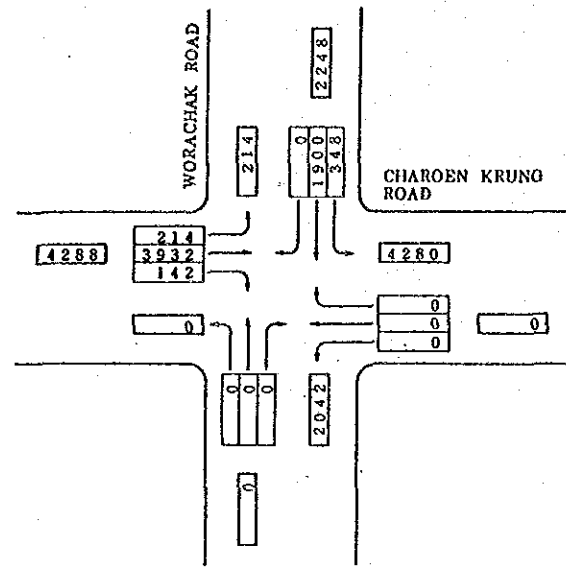
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

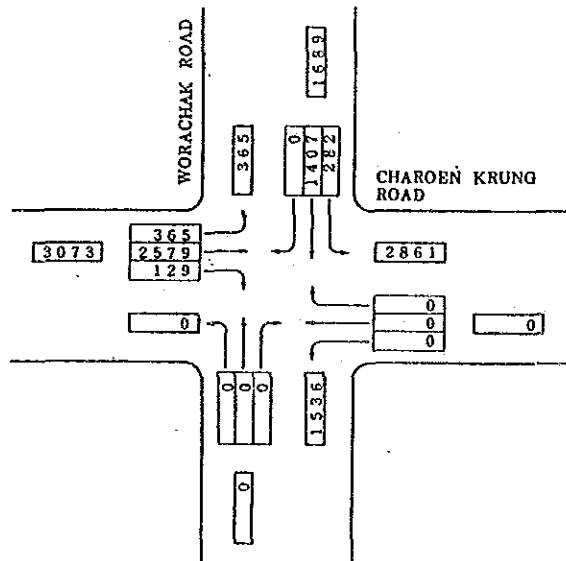

Code	Revision	Date	Initial	BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
Associated Plan No. 1				DESIGN VOLUME AND PHASE PLAN SUAPA-CHAROEN KRUNG -RATCHAWONG		Submitted By : Jun Kudara JICA Study Team Leader	Approved By : Boonawat Tiptua BMA Study Team Leader
				Intersection No. 52		Designed By : Yasu Kobayashi JICA Study Member	Designed By : TEO, BMA
				JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing NR 3052
						Date SEPTEMBER '90	Total 38 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

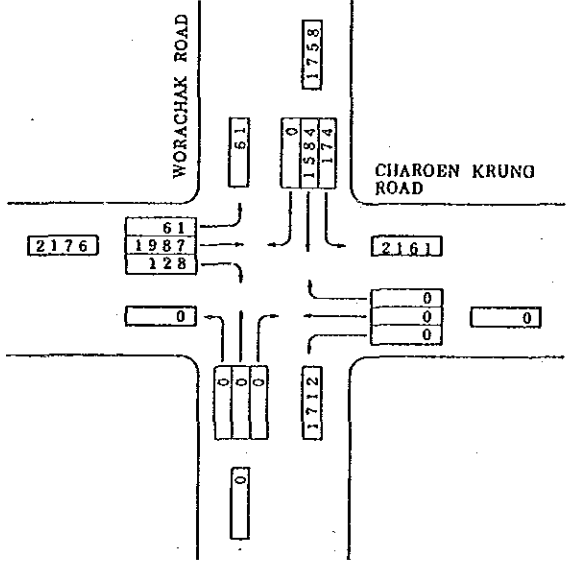
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

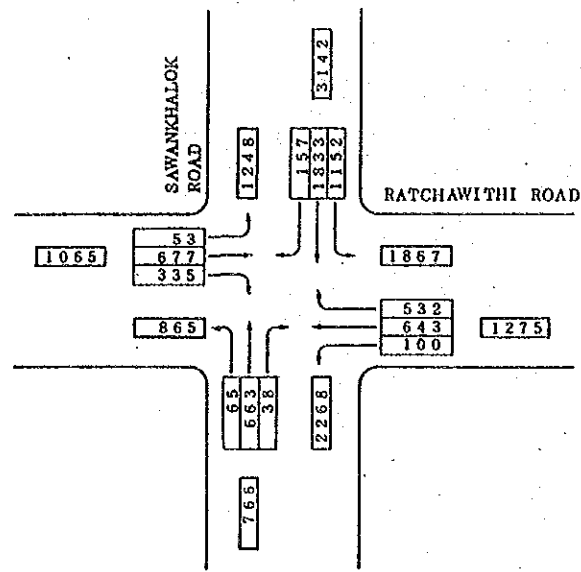
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

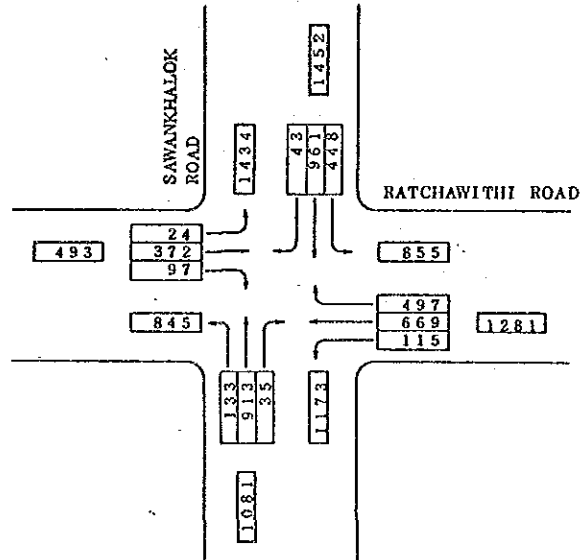

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				DESIGN VOLUME AND PHASE PLAN WORA CHAK-CHAROEN KRUNG		Submitted By : Jira Kodera JICA Study Team Leader	Approved By : Manasawat Tiptoo BMA Study Team Leader
				Intersection No. 53		Designed By : Yasu Nakashima JICA Study Member	Designed By : TED_BMA
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing No. 3053
Associated Plan No. 1						Date SEPTEMBER '90	Total 39 / 139

DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)

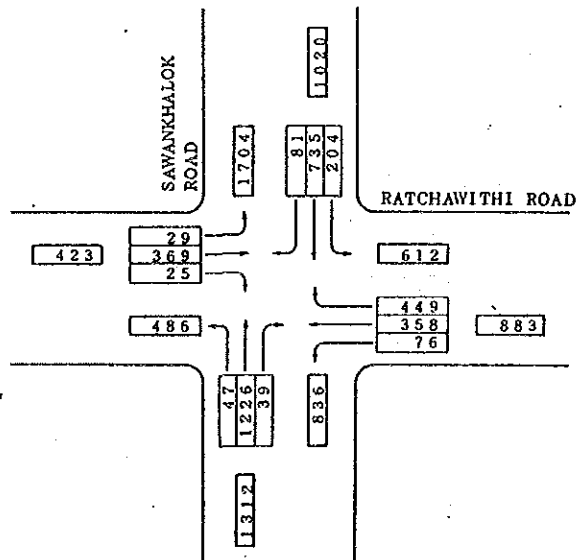
MORNING



NOON



EVENING



NORMAL PHASE SEQUENCE

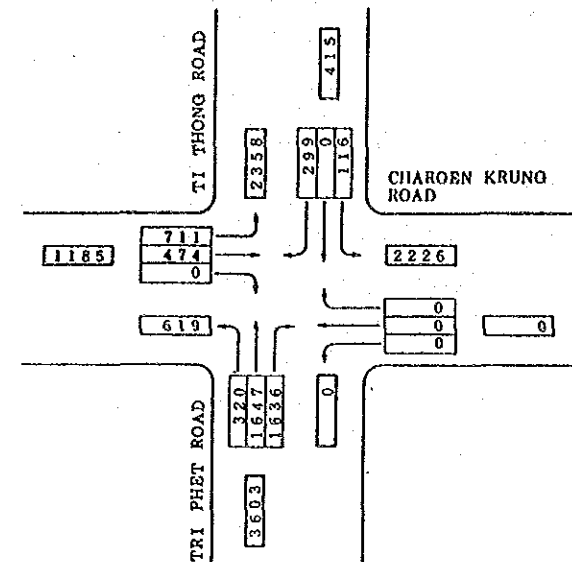
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

MANUAL PHASE

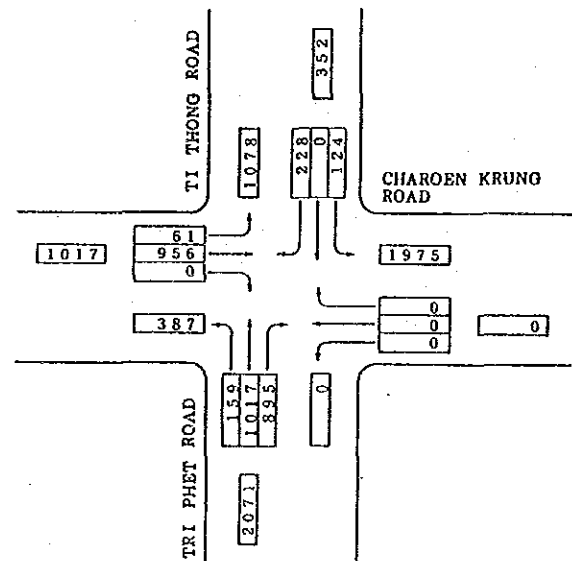

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN SAWANKHALOK-RATCHAWITHI		Submitted By : Jaro Kodera JICA Study Team Leader	Approved By : Banyawat Tiptua BMA Study Team Leader
Intersection No. 54		Designed By : Yasuo Heberhohn JICA Study Member	Designed By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing NR 3054
		Date SEPTEMBER '00	Total 40 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

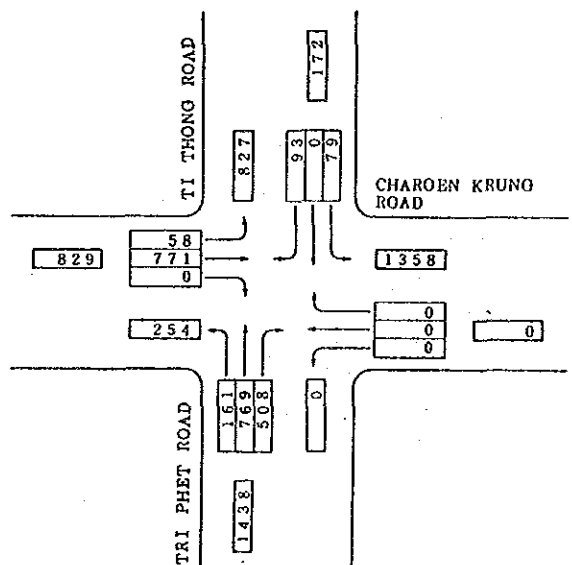
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

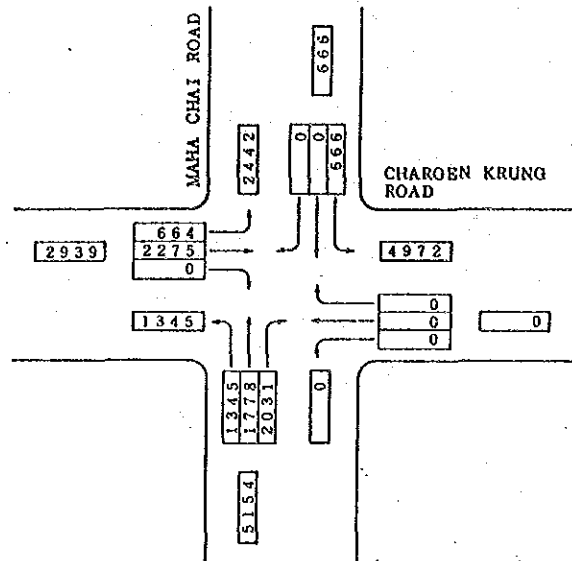
**MANUAL PHASE**


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN TRI PHET-CHAROEN KRUNG -TI THONG		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonwatt Tiptua BMA Study Team Leader
Intersection No. 55		Designed By : Tasuo Kobayashi JICA Study Member	Designed By : TEO, BMA
Code	Revision	Date	Initial
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Date SEPTEMBER '90
		Drawing No. 3055	Total 41 / 139

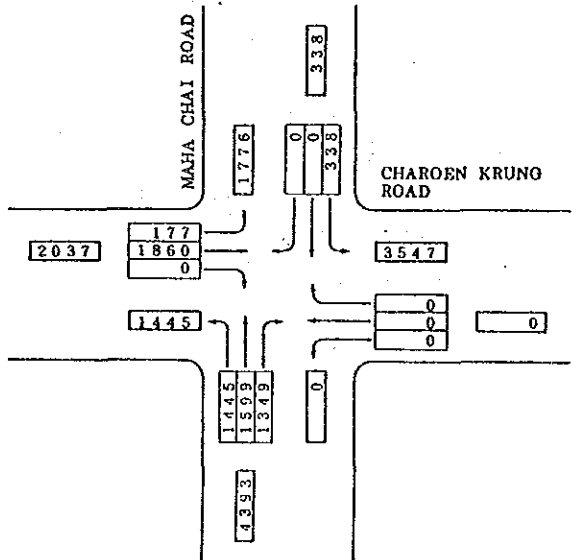


**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

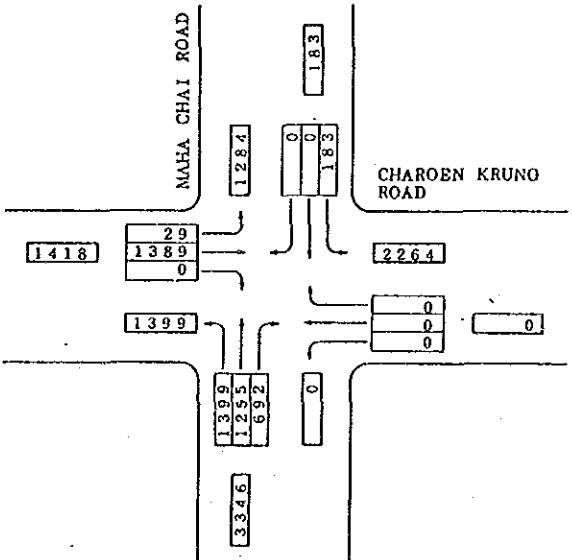
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

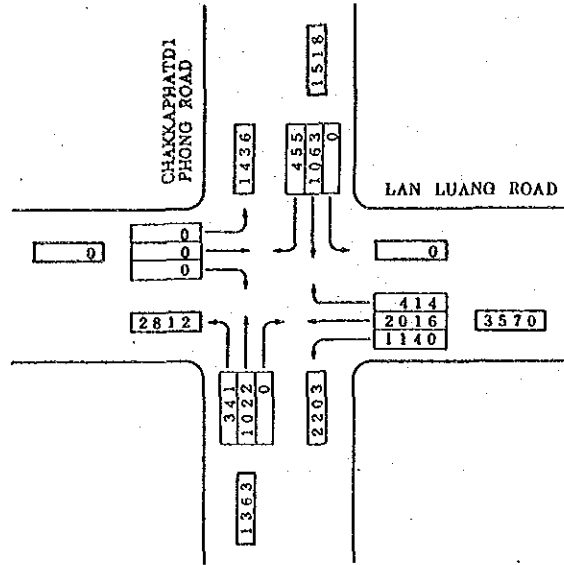
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

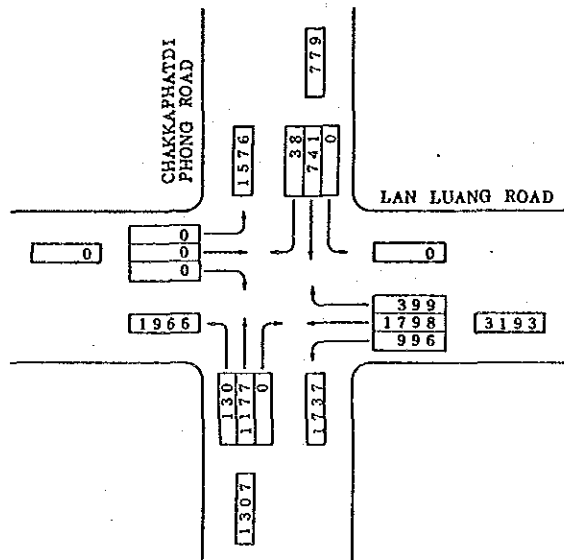

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
DESIGN VOLUME AND PHASE PLAN MAHA CHAI-CHAROEN KRUNG		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonswat Tipton BMA Study Team Leader
Interaction No. 56		Designed By : Yasuo Kobayashi JICA Study Member	Designed By : TTO, BMA
Code	Revision	Date	Sheet
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Date SEPTEMBER '90 Drawing No. 3058 Total 42 / 130

DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)

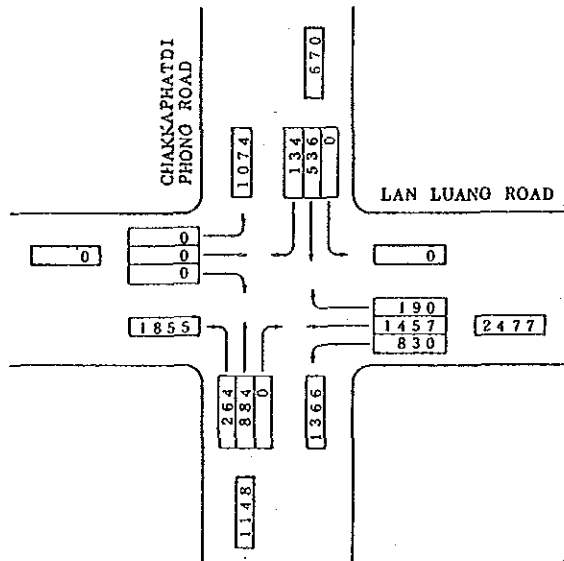
MORNING



NOON



EVENING



NORMAL PHASE SEQUENCE

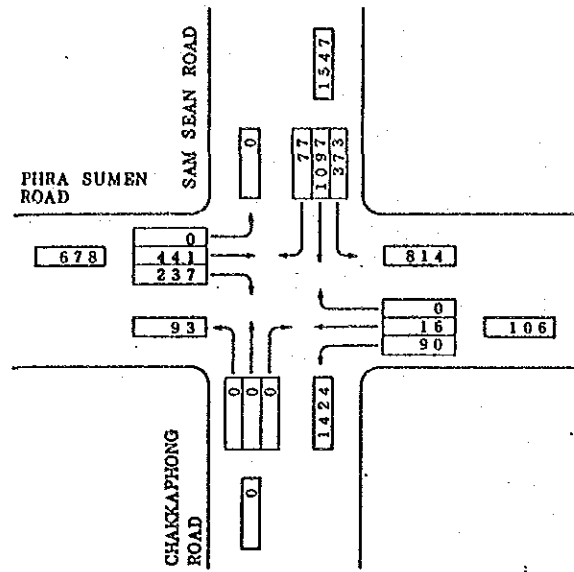
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

MANUAL PHASE

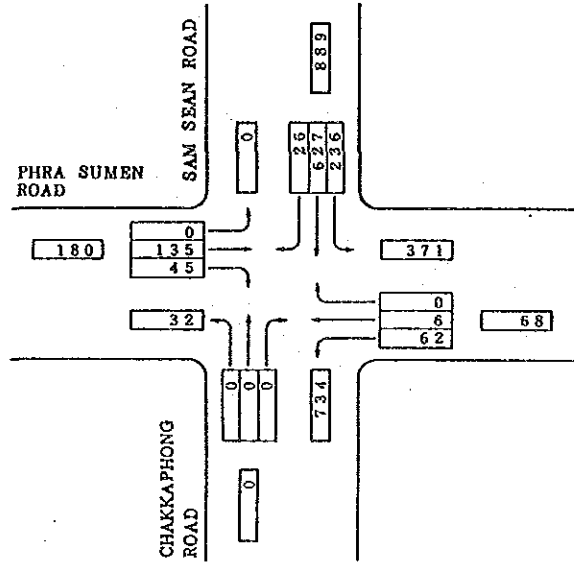

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
DESIGN VOLUME AND PHASE PLAN CHAKKAPHATDI PHONG -LAN LUANG		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonpradit Tipton BMA Study Team Leader
Intersection No. 57		Designed By : Yasuo Nabeshima JICA Study Member	Designed By : YEO, BMA
Code	Revision	Date	Initial
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing No. 3057
		Date	SEPTEMBER '90
		Total	43 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

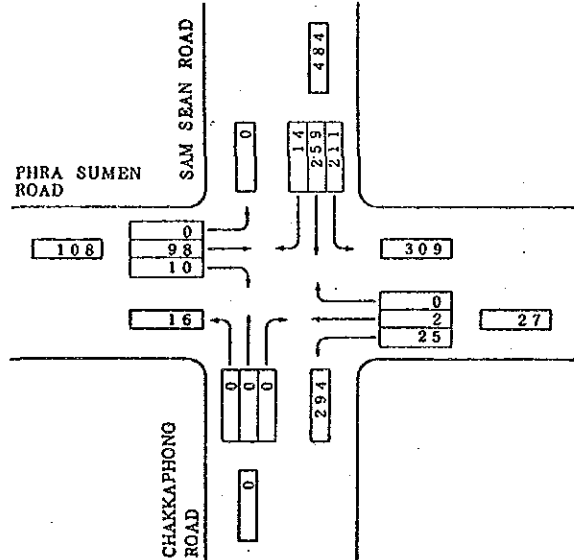
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

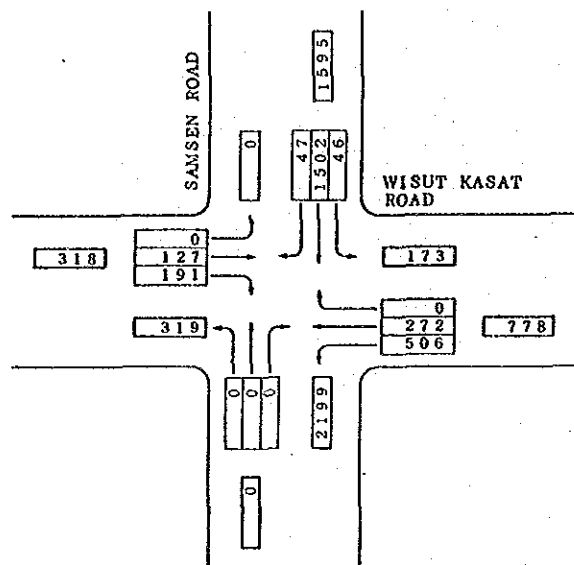
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

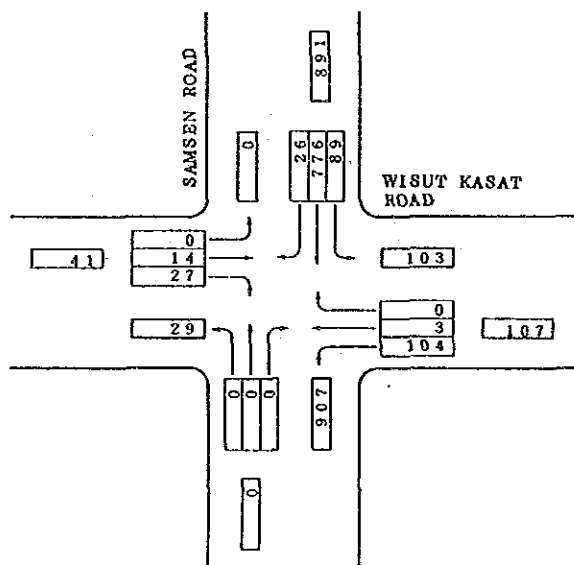

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN SAMSSEN-CHAKKAPHONG -PHRA SUMEN		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Boonyawat Tiptua BMA Study Team Leader
Intersection No. 58		Designed By : Yasuo Makishima JICA Study Member	Designed By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. 1			
JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing No. 3058
		Date SEPTEMBER '90	Total 44 / 139

**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

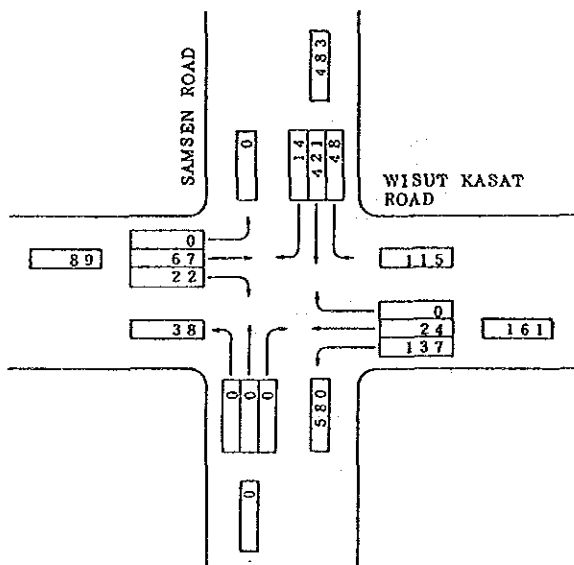
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

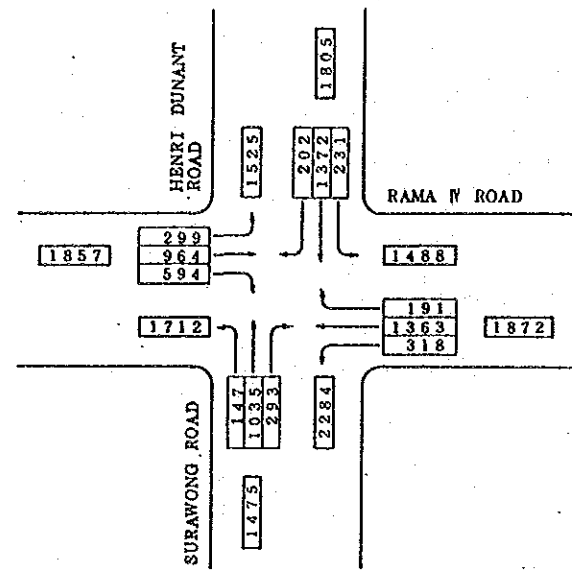
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

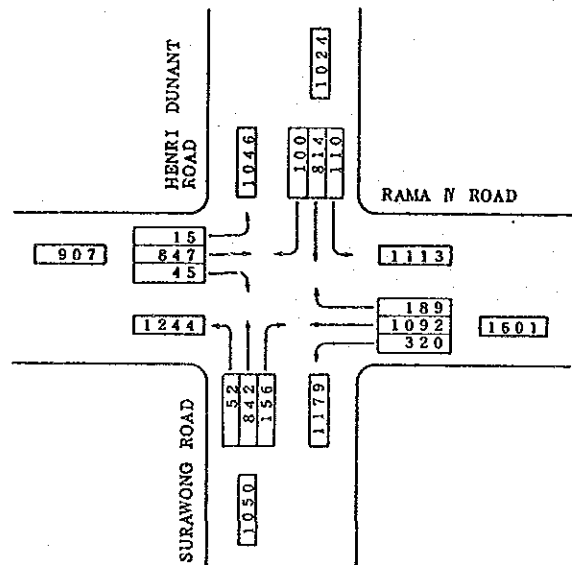

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN SAMSSEN-WISUT KASAT		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonyawat Tiptua BMA Study Team Leader
Intersection No. 59		Designed By : Yasuo Kobayashi JICA Study Member	Designed By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing No. 3059
		Date SEPTEMBER '90	Total 45 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL.)**

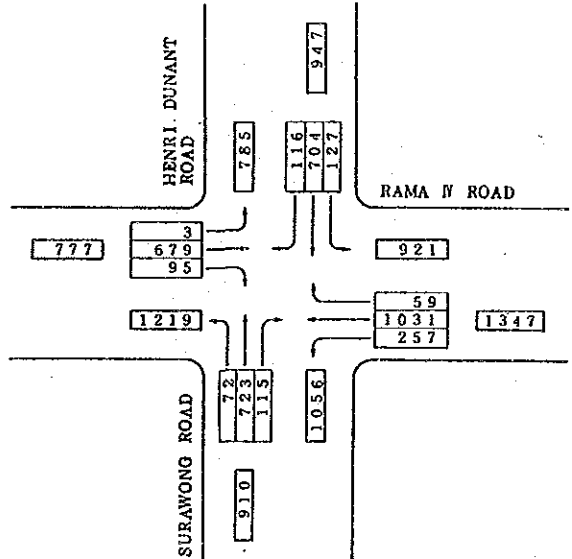
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

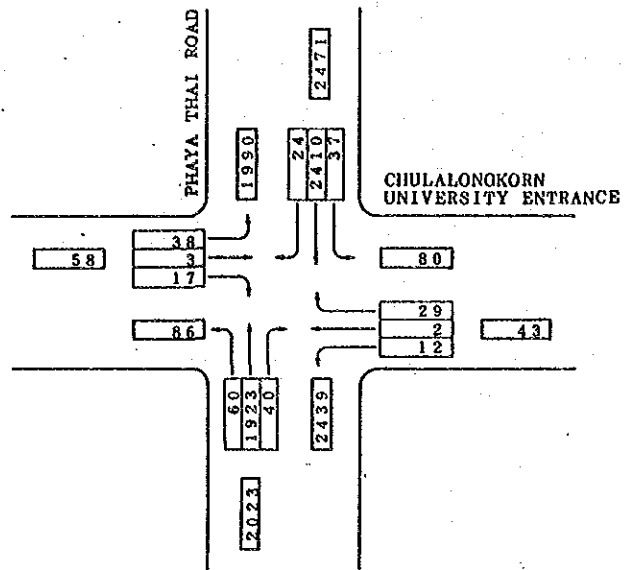
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

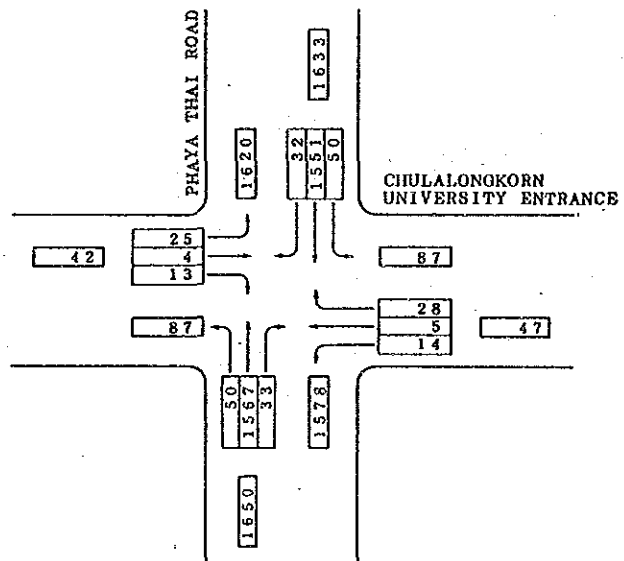

Code	Revision	Date	Initial	BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I					
Assestled Plan No. 1				<b>DESIGN VOLUME AND PHASE PLAN HENRI DUNANT-RAMA IV -SURAWONG</b>		Submitted By :	Approved By :		
						JICA Study Team Leader		BMA Study Team Leader	
						Designed By :		Designed By :	
				Intersection No. 63		Taro Nakashima JICA Study Member			
				JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration			
				Scale		Drawing No. 3003			
				Date		Total 48 / 139			
				SEPTEMBER '00					

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

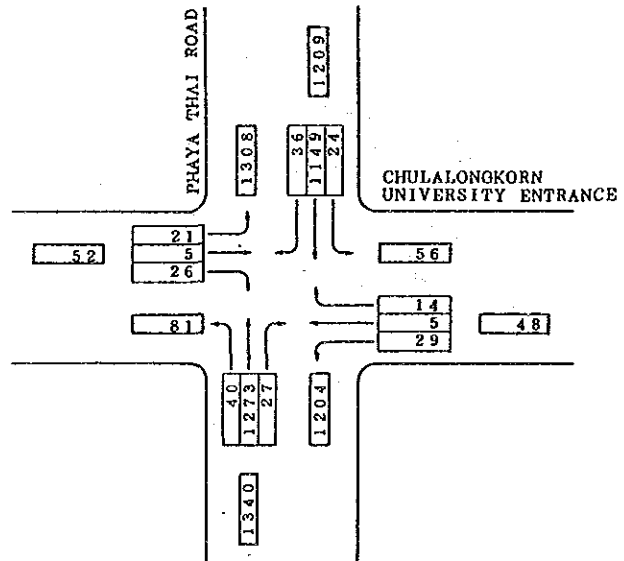
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

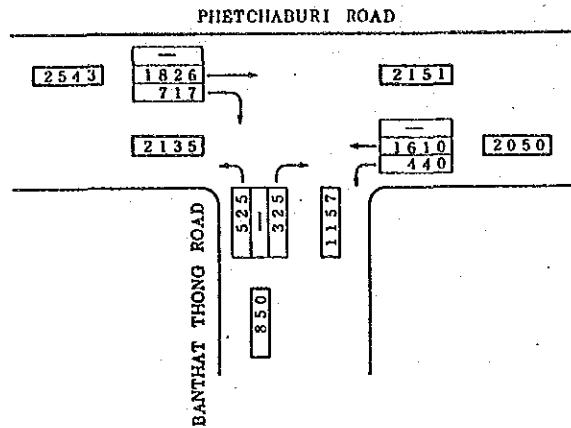
PHASE	10	20	30	40	50	60	70	80
PATTERN								
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

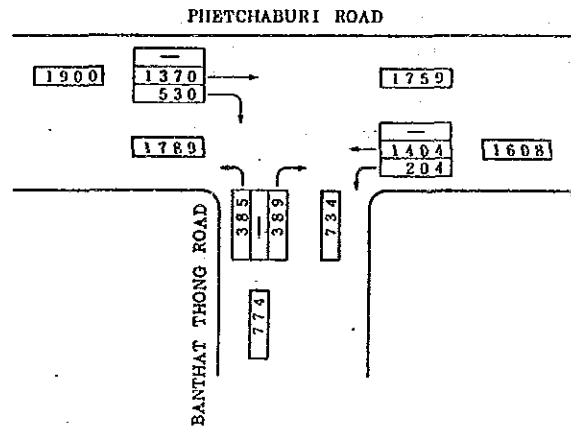

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				DESIGN VOLUME AND PHASE PLAN PHAYA THAI-CHULALONGKORN UNIVERSITY ENTRANCE		Submitted By : Jum Kodate JICA Study Team Leader	Approved By : Manayawal Tipiso BMA Study Team Leader
				Intersection No. 64		Designed By : Yasuo Nabeshima JICA Study Member	Designed By : TED, BMA
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing NR 3064
Associated Plan No. 1						Date SEPTEMBER '90	Total 47 / 139

DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)

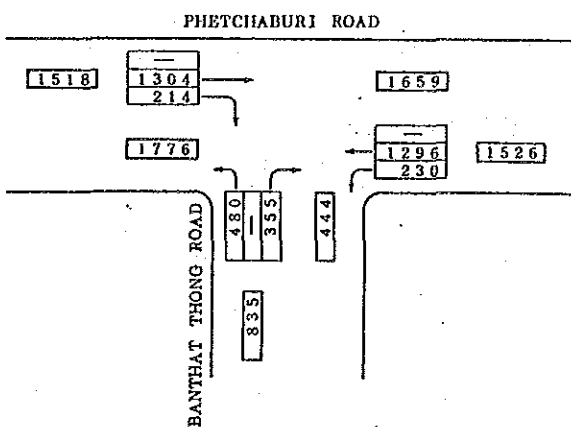
MORNING



NOON



EVENING



NORMAL PHASE SEQUENCE

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I	→ ↘	↘ ↙	↙					
II								
III								
PRE EMPTION								

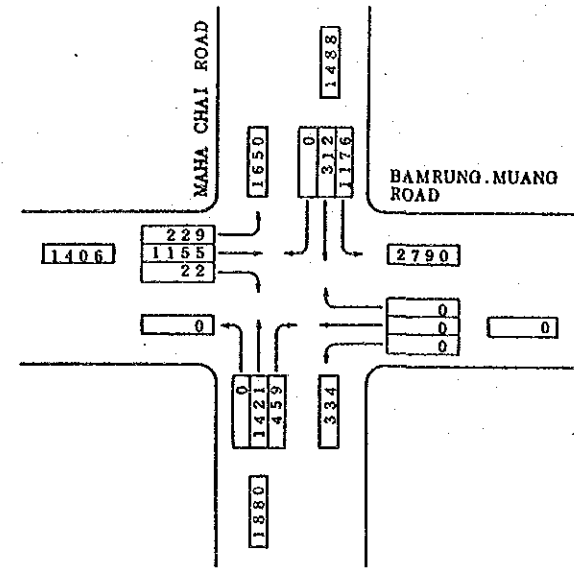
MANUAL PHASE

↘ ↙	→ ↘				
↙	↙				

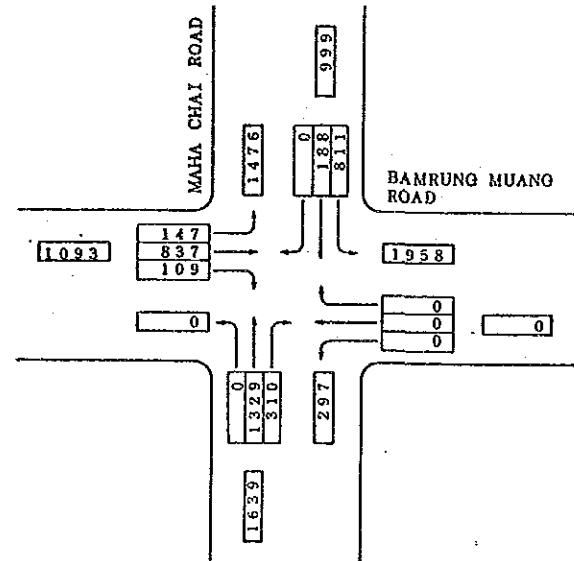
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN BANTHAT THONG-PHETCHABURI		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Wangswat Tipton BMA Study Team Leader
Intersection No. 67		Designed By : Yasuo Nakashima JICA Study Member	Designed By : YED,BMA
Associated Plan No. :	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing No 3067
		Date SEPTEMBER '90	Total 48 / 139

**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

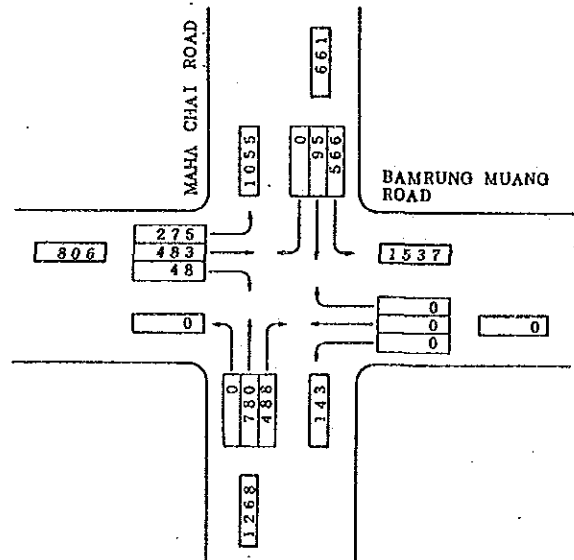
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I	↔	↑↓	↗					
II								
III								
PRE EMPTION								

**MANUAL PHASE**

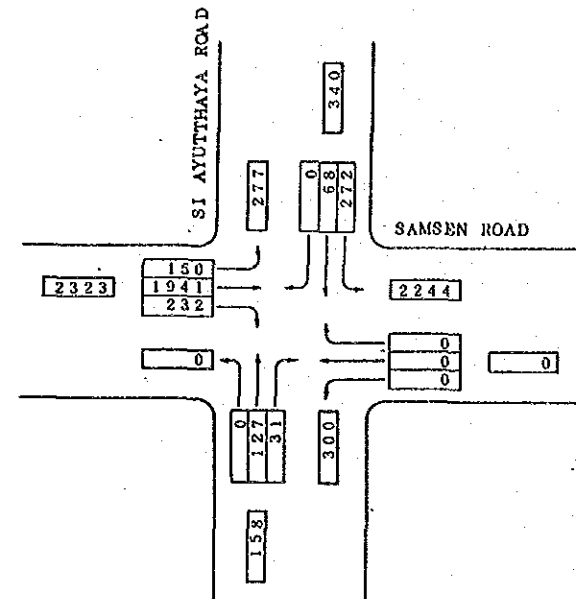
↔	↗				
↓	↘				

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN - MAHA CHAI-BAMRUNG MUANG		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonyawat Tiptua BMA Study Team Leader
Intersection No. 70		Designed By : Yasuo Nakashima JICA Study Member	Designed By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :	JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration
Scale		Date	Drawing No. 3070
		SEPTEMBER '90	Total 49 / 139

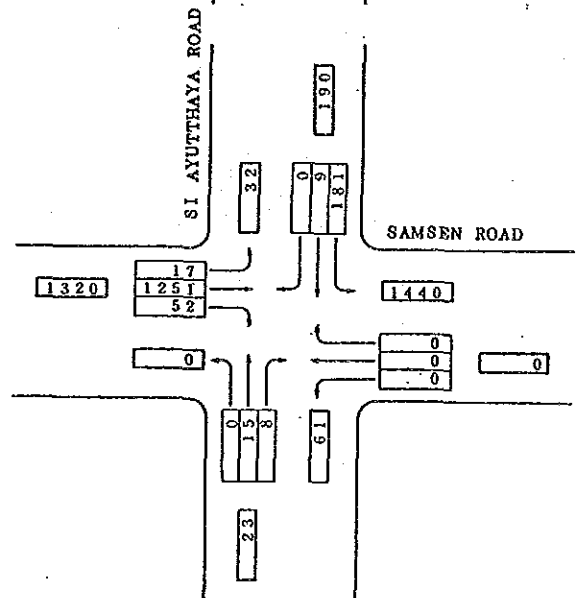


**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

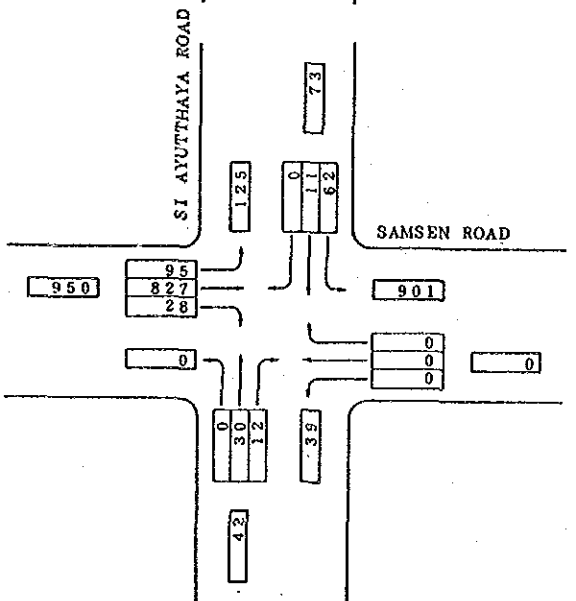
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

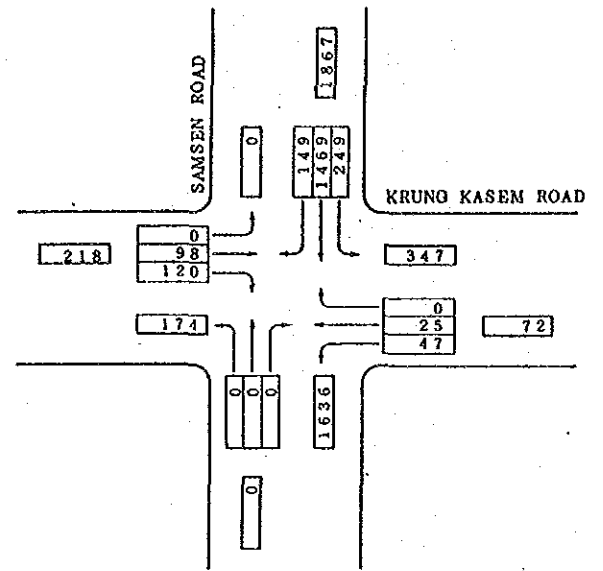
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

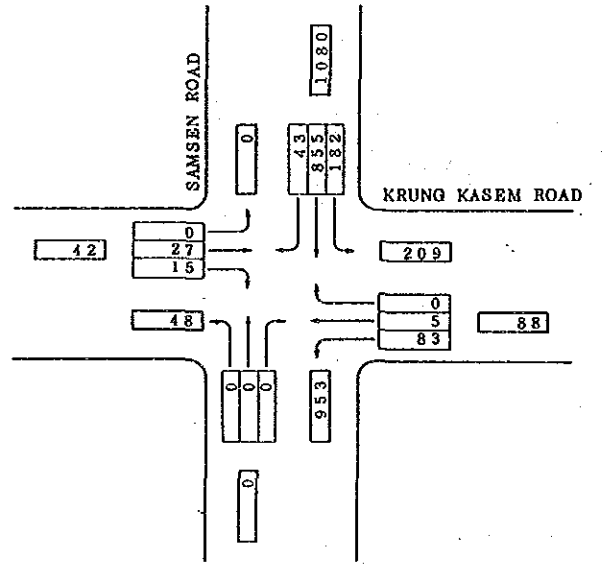

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN SAMSEN-SI AYUTTHAYA		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Manoosart Tiptua BMA Study Team Leader
Intersection No. 71		Designed By : Yasuo Kobeshima JICA Study Member	Designed By : YED, BMA
Code	Revision	Date	Initial
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing No 3071
		Date SEPTEMBER '90	Total 50 / 139

**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

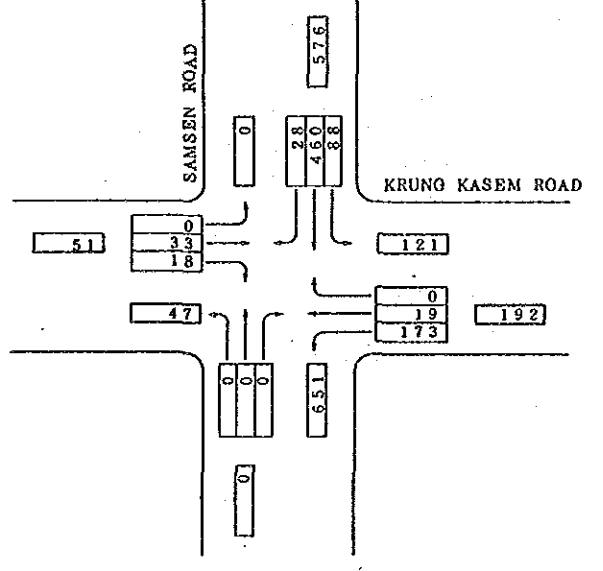
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

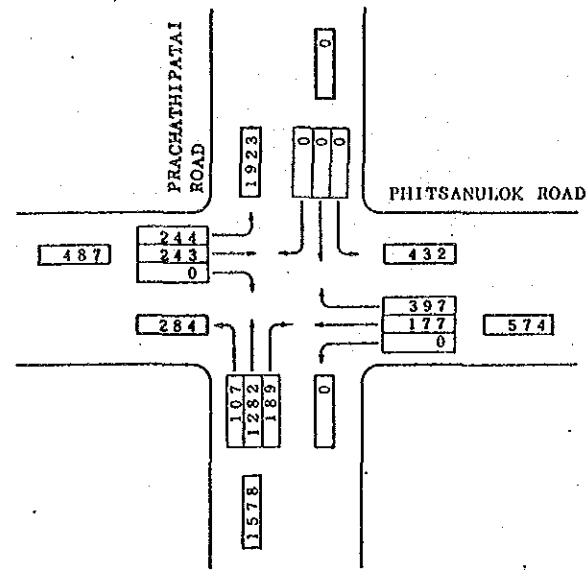
**MANUAL PHASE**


				<b>BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I</b>			
				<b>DESIGN VOLUME AND PHASE PLAN</b>		Submitted By : <i>Juro Kadera</i>	
				<b>SAMSEN-KRUNG KASEM</b>		Approved By : <i>Seangwat Tipta</i>	
				Intersection No. <b>72</b>		Designed By : <i>Yasuo Hasehima</i>	
				JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	
Associated Plan No. 1				Scale		Drawing No. 3072	
				Date		Total 51 / 139	

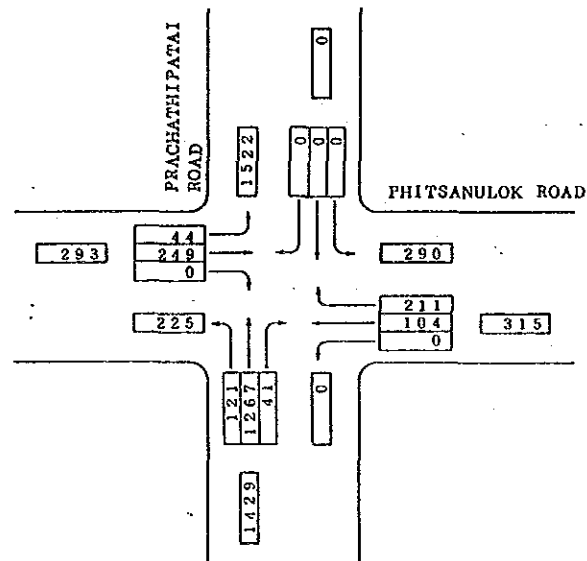


**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

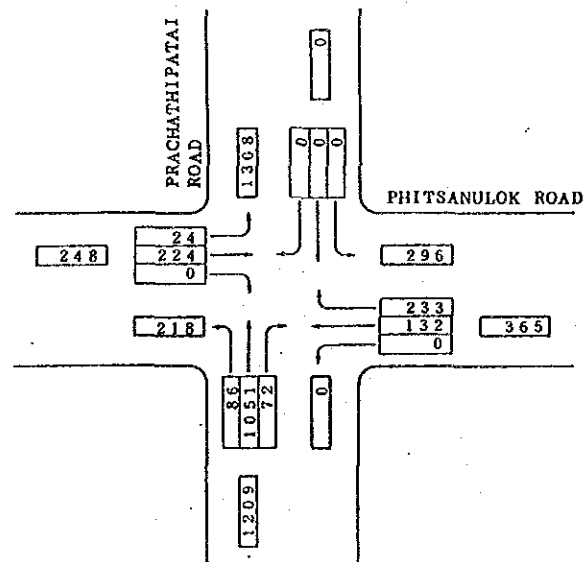
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

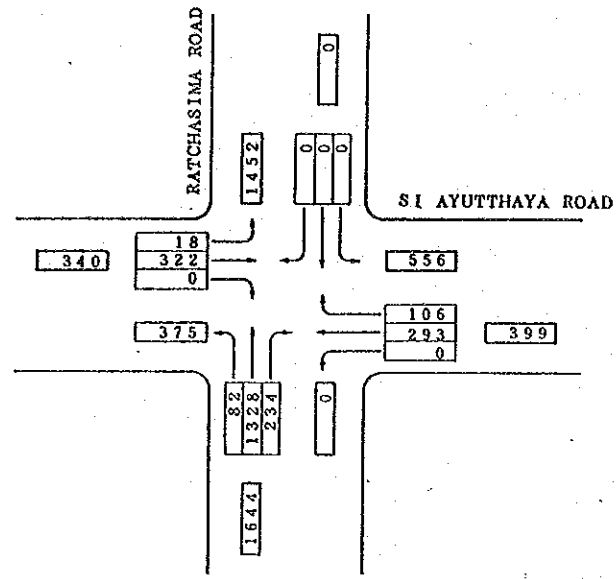
PHASE	10	20	30	40	50	60	70	80
PATTERN								
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

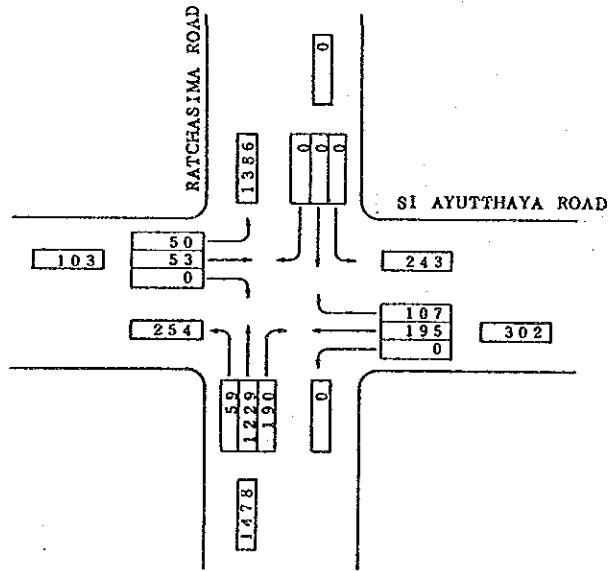

				<b>BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I</b>			
				<b>DESIGN VOLUME AND PHASE PLAN</b>			
				<b>PHITSANULOK-PRACHATHIPATAI</b>			
				Submitted By : Jira Kudara JICA Study Team Leader		Approved By : Bassawat Titler BMA Study Team Leader	
				Designed By : Yasuo Hoshizumi JICA Study Member		Designed By : TSD,BMA	
				Intersection No. 74			
Code	Revision	Date	Initial	JICA	BMA	Scale	Drawing NR 3074
Associated Plan No. :				Japan International Cooperation Agency	Bangkok Metropolitan Administration	Date	SEPTEMBER '90
				Total 53 / 139			

**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

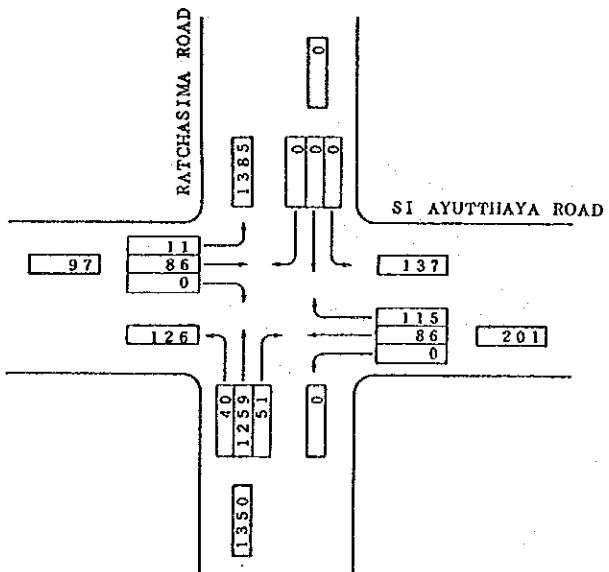
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

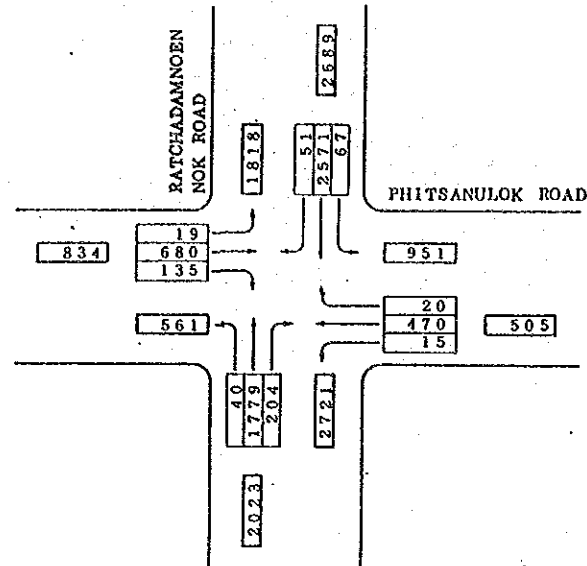
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

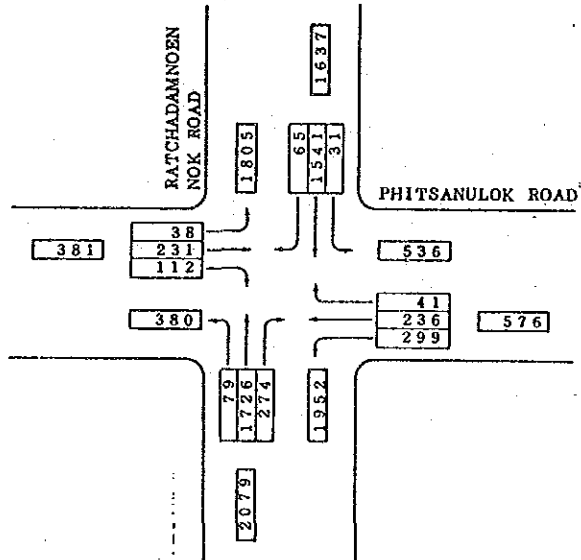

				<b>BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I</b>			
				<b>DESIGN VOLUME AND PHASE PLAN</b>		Submitted By : Jiro Kodera JICA Study Team Leader	
				<b>RATCHASIMA-SI AYUTTHAYA</b>		Approved By : Sanyasat Tulin BMA Study Team Leader	
				Intersection No. 75		Designed By : Yuta Kobayashi JICA Study Member	
						Designed By : TED, BMA	
Code				JICA		BMA	
Associated Plan No. 1				Japan International Cooperation Agency		Bangkok Metropolitan Administration	
				Scale		Drawing No. 3075	
				Date		Total 54 / 139	
				SEPTEMBER '00			

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

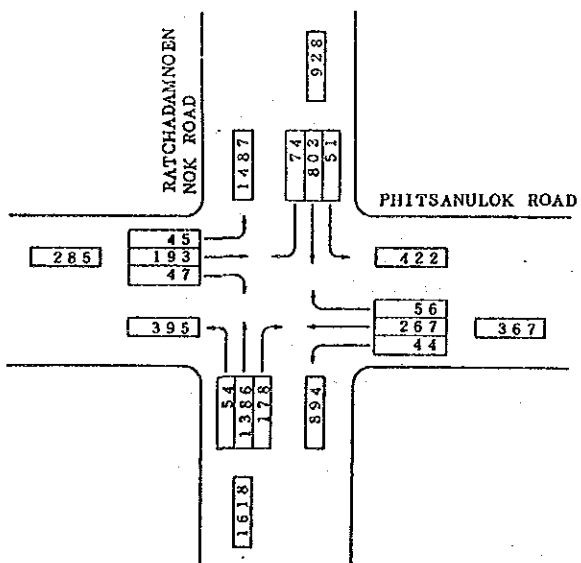
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

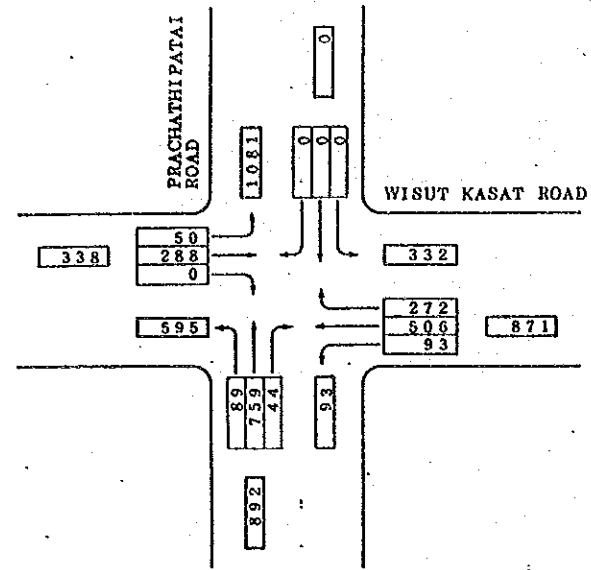
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

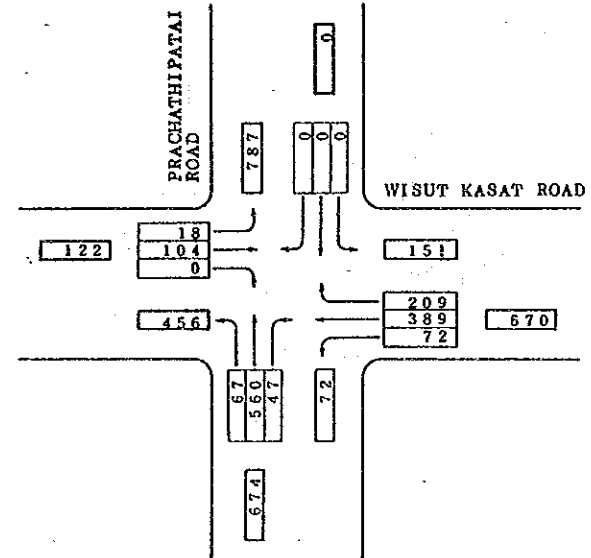

				<b>BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I</b>			
				<b>DESIGN VOLUME AND PHASE PLAN</b>		Submitted By : Jun Kodera JICA Study Team Leader	
				<b>RATCHADAMNOEN NOK -PHITSANULOK</b>		Approved By : Sasayoshi Tiptua BMA Study Team Leader	
				Interaction No. 76		Designed By : Yeeou Mekashim JICA Study Member	
				JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	
Code				Scale		Date	
Associated Plan No. :				Drawing No. 3076		Total 55 / 139	
				SEPTMBER '80			

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL.)**

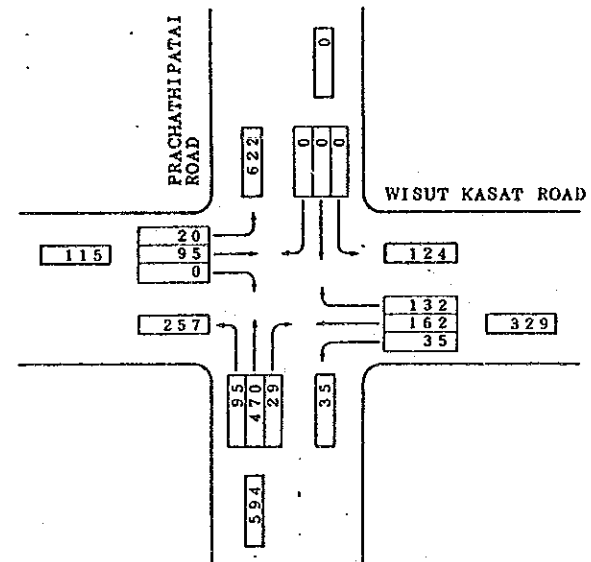
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

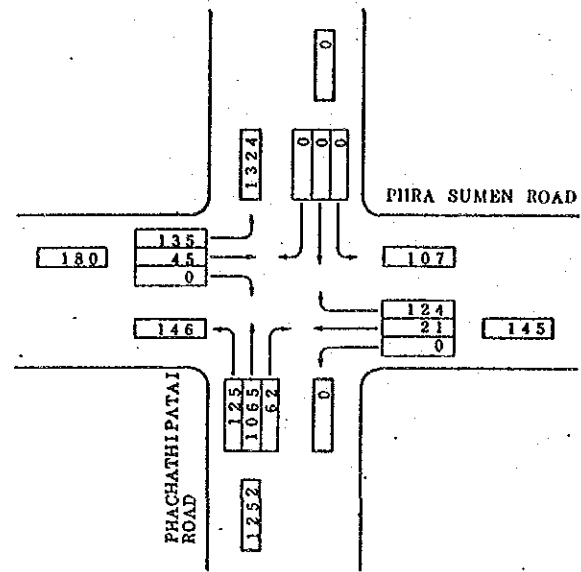
PHASE / PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

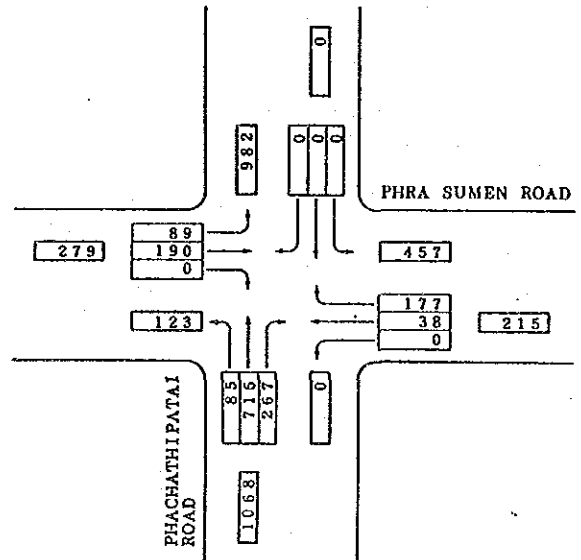

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN PRACHATHIPATAI-WISUT KASAT		Submitted By : Juro Kadera JICA Study Team Leader	Approved By : Manaywat Tiplua BMA Study Team Leader
Intersection No. 77		Designed By : Yasuo Kobayashi JICA Study Member	Designed By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Date SEPTEMBER '90
		Total 56 / 139	Drawing No 3077

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

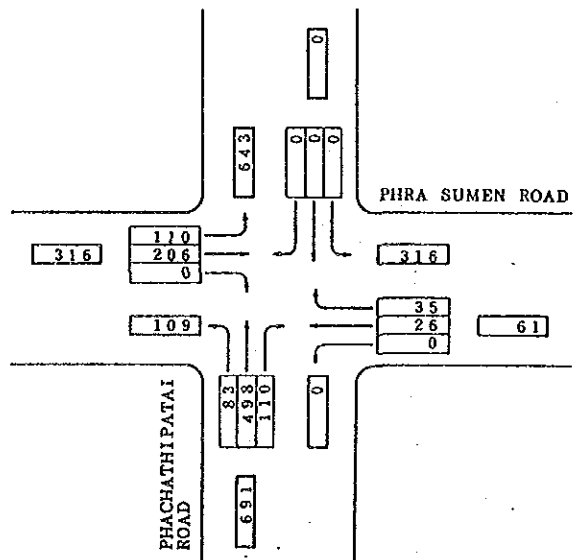
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

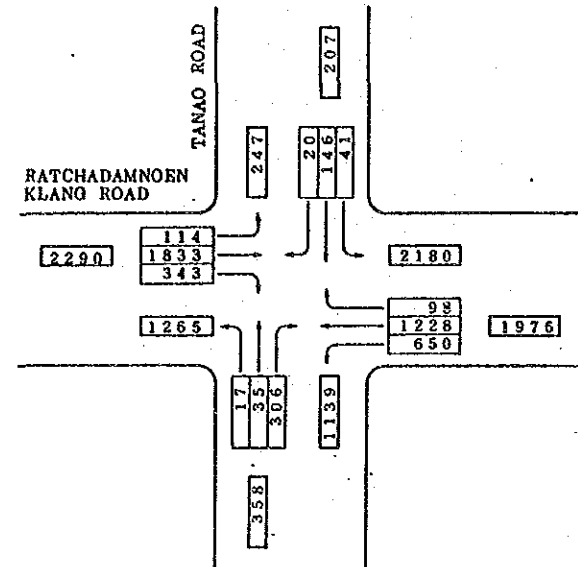
**MANUAL PHASE**


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN PRACHATHIPATAI-PHRA SUMEN		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Benyawan Tiptue BMA Study Team Leader
Intersection No. 78		Designed By : Yasuo Hasehime JICA Study Member	Designed By : TED_BMA
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Date SEPTEMBER '90
			Drawing No 3078 Total 57 / 139

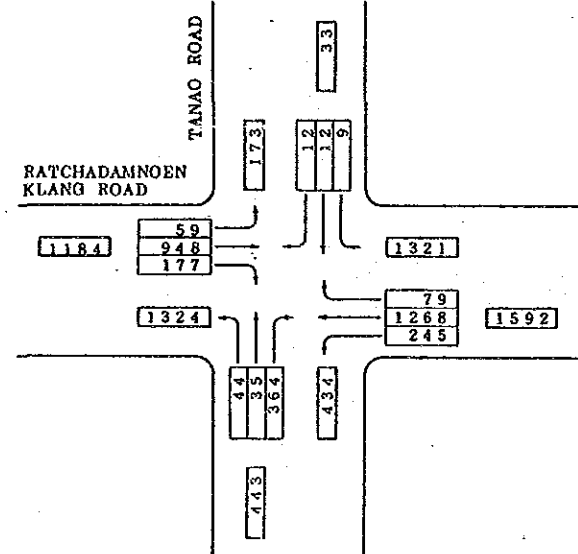


**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

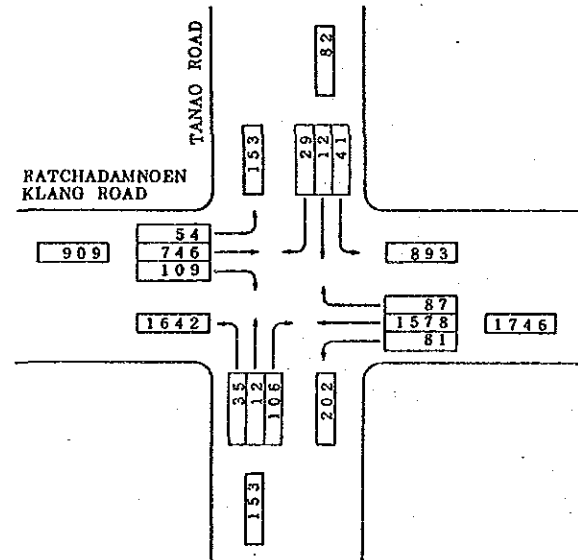
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

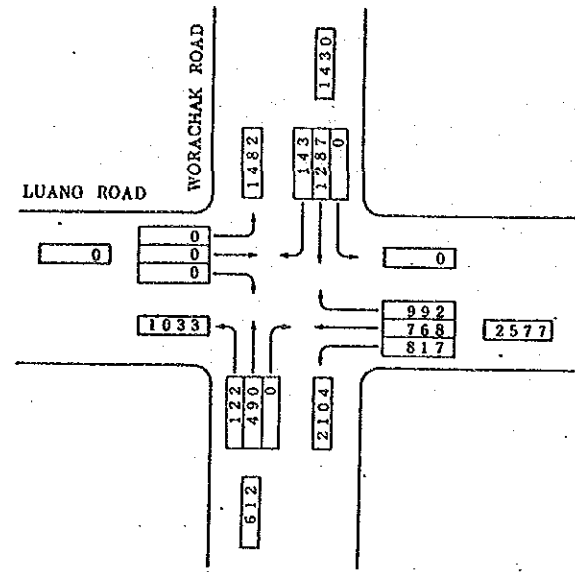
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I (MORNING PEAK HOUR, DAYTIME)								
II (EVENING PEAK HOUR)								
III								
PRE EMPTION								

**MANUAL PHASE**

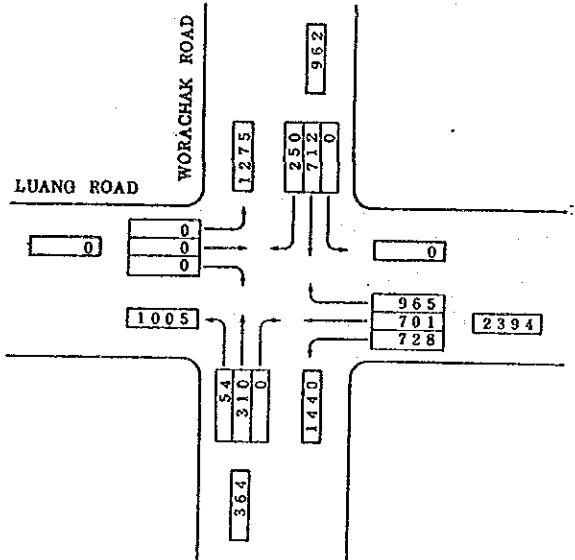

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
DESIGN VOLUME AND PHASE PLAN TANAO -RATCHADAMNOEN KLANG		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Rungyavit Tiptua BMA Study Team Leader
Intersection No. 79		Designed By : Yasuo Kobayashi JICA Study Member	Designed By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing No. 3079 Date SEPTEMBER '00 Total 58 / 139

**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

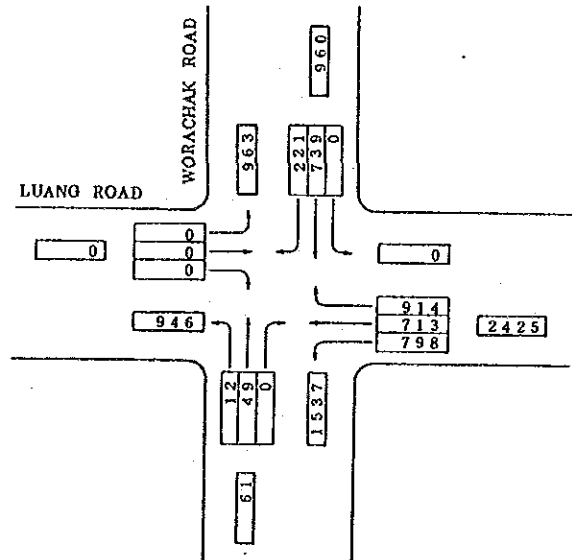
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

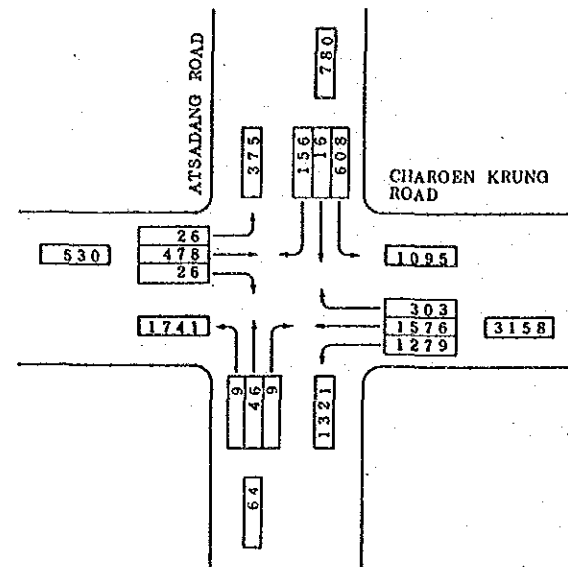
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

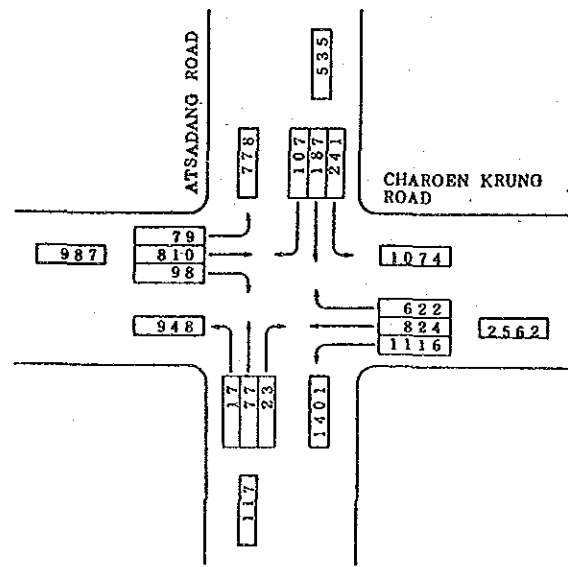

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I.			
DESIGN VOLUME AND PHASE PLAN WORACHAK-LUANG		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonwut Tiptua BMA Study Team Leader
Intersection No. 80		Designed By : Yasu Nakashima JICA Study Member	Designed By : TEO.BMA
Code	Revision	Date	Initial
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Date SEPTEMBER '90
		Drawing NR 3080	Total 59 / 139

**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

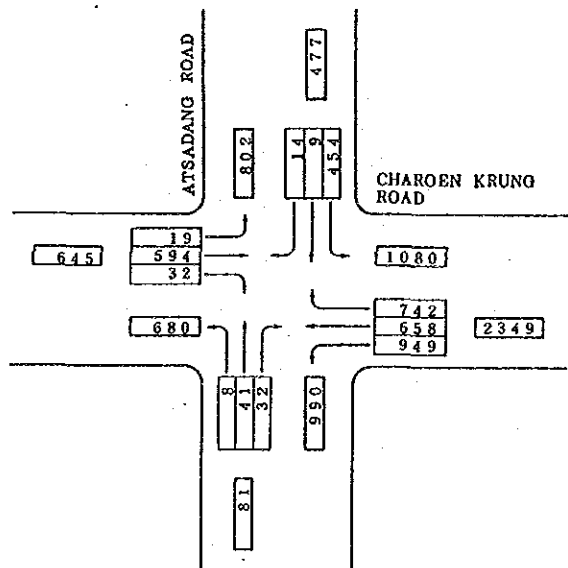
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

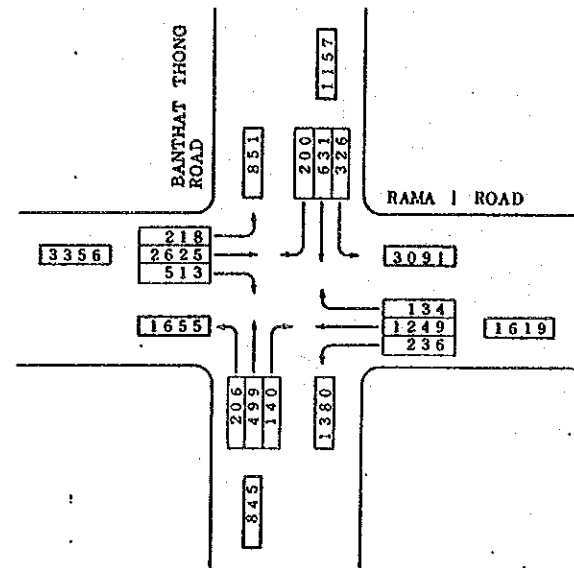
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

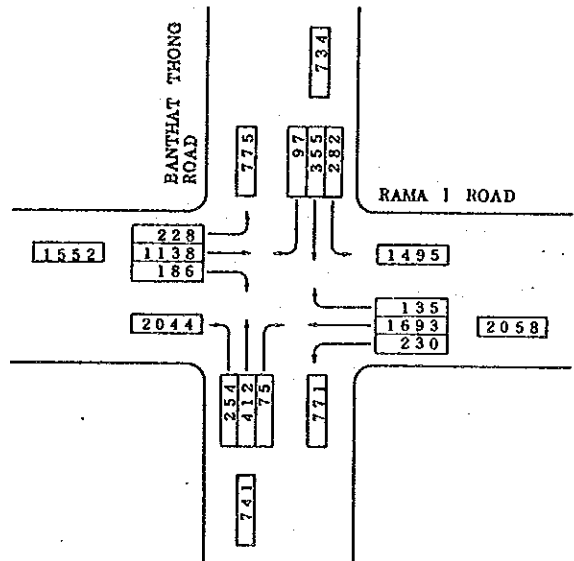

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN ATSADANG-CHAROEN KRUNG		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonwut Tiglut BMA Study Team Leader
Intersection No. 81		Designed By : Yosha Nishikawa JICA Study Member	Designed By : TEO, BMA
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing No 3081
		Date SEPTEMBER '90	Total 80 / 139

**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

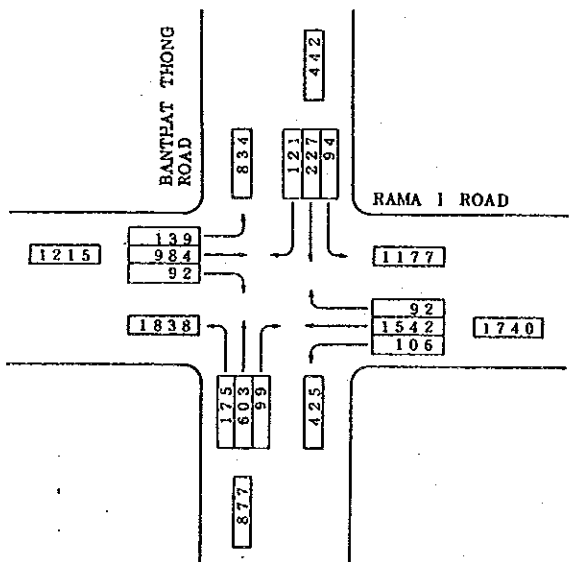
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I	←→	↘↙	↕↔↕	↘↙				
II								
III								
PRE EMPTION								

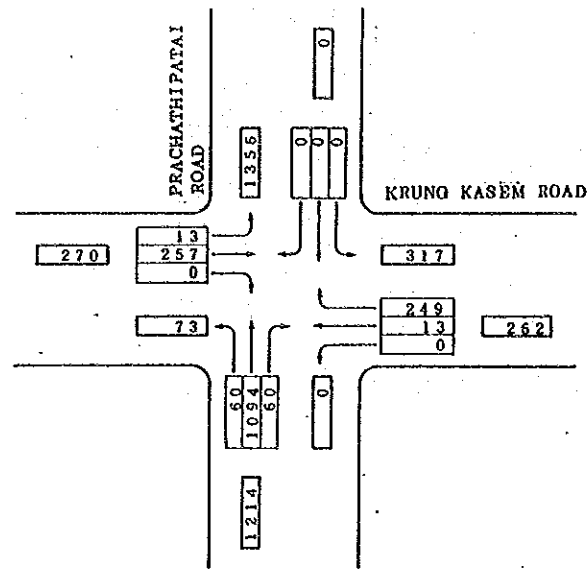
**MANUAL PHASE**

↔	↔	↕↔↕	↘↙		
↔	↘↙	↕↔↕	↘↙		

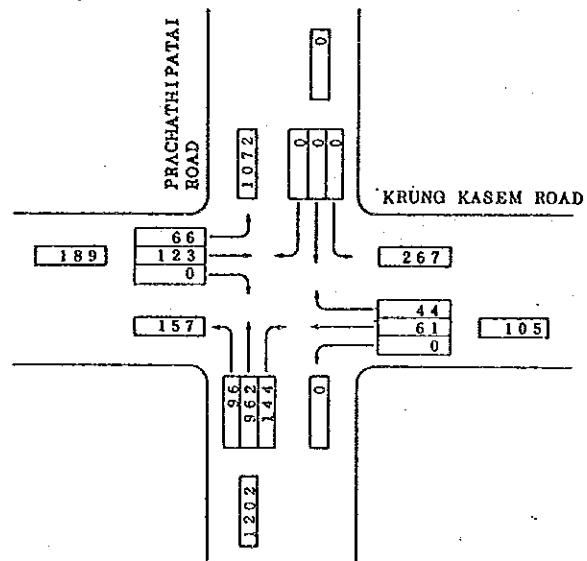
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN BANTHAT THONG-RAMA I		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Sompawat Tipton BMA Study Team Leader
Intersection No. 82		Designed By : Yasu Nabeshima JICA Study Member	Designed By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. 1			
JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing No. 3082
		Date SEPTEMBER '00	Total 81 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

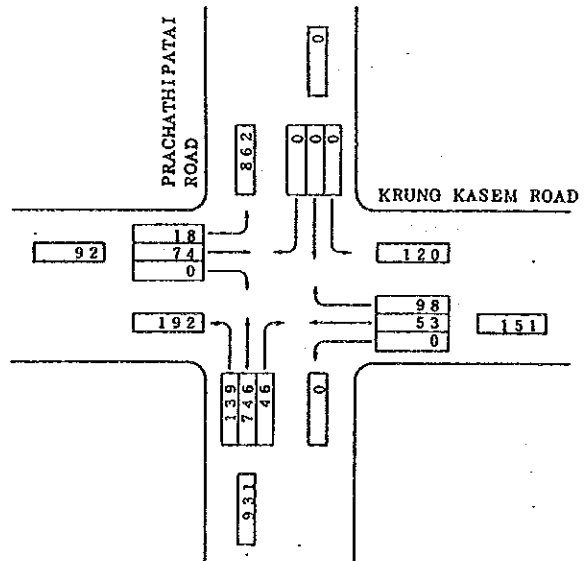
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

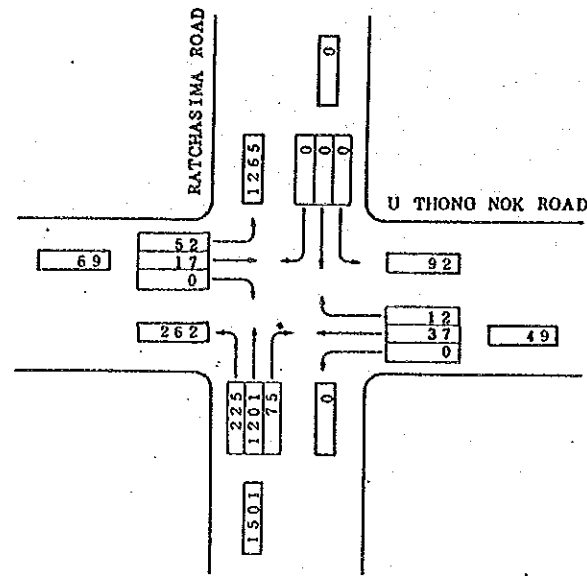
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

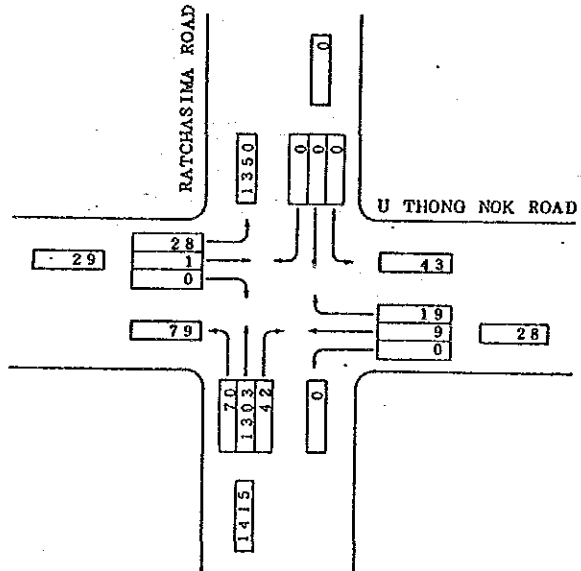

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN PRACHATHIPATAI-KRUNG KASEM		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Sanyawat Tipton BMA Study Team Leader
Intersection No. 83		Designed By : Yasuo Hasekawa JICA Study Member	Designed By : TEO, BMA
Code	Revision	Date	Initial
Associated Plan No. :	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Date SEPTEMBER '90
		Drawing No 3083 Total 62 / 130	

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

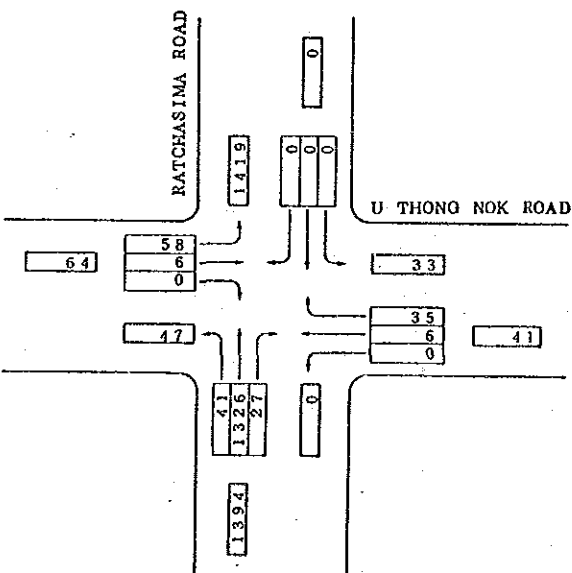
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

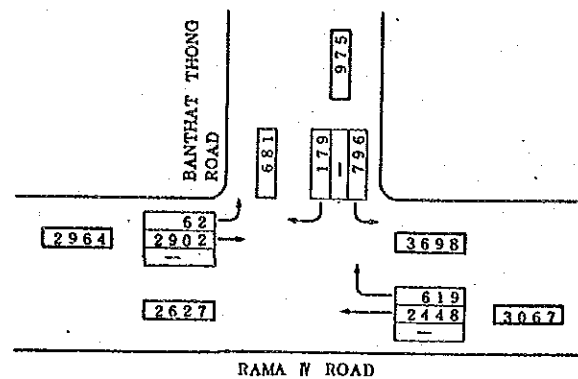
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

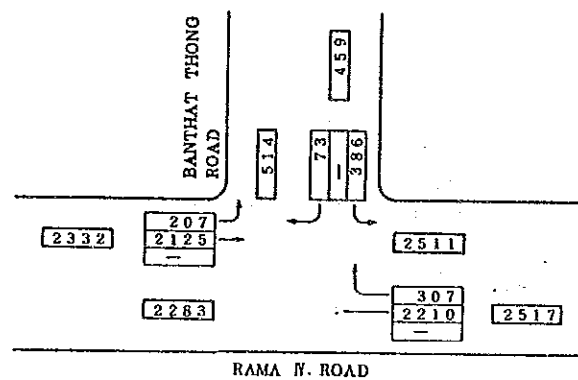

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				DESIGN VOLUME AND PHASE PLAN RATCHASIMA-UTHONG NOK		Submitted By : Jura Kodera JICA Study Team Leader	
				Intersection No. 84		Approved By : Boonsawat Tiptus BMA Study Team Leader	
						Designed By : Yasuo Hasekuma JICA Study Member	
						Designed By : YEB, BMA	
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing NR 3084
Associated Plan No. 1						Date SEPTEMBER '90	Total 63 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

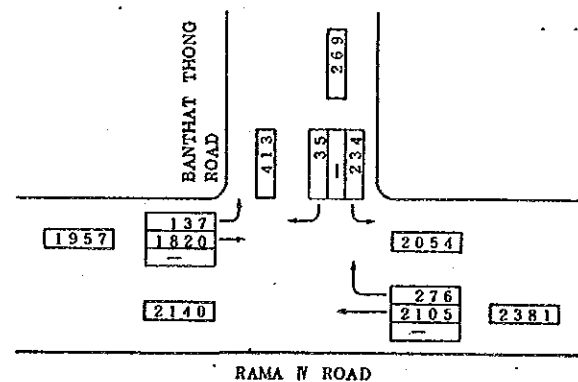
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

PHASE	10	20	30	40	50	60	70	80
PATTERN								
I	↗ ←	↖ ↗	↘ ↗					
II								
III								
PRE EMPTION								

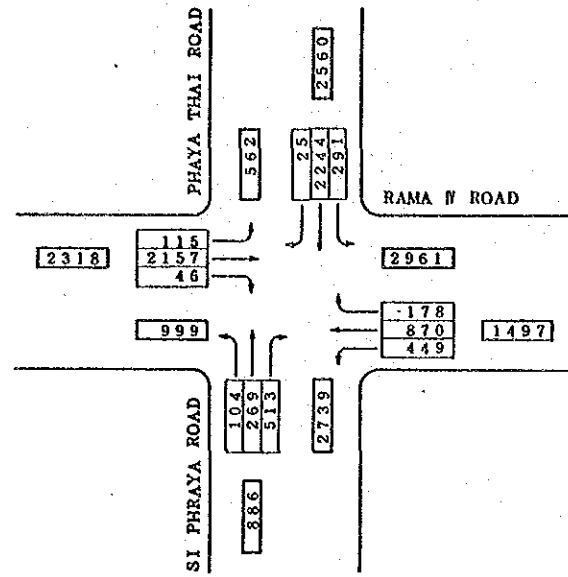
**MANUAL PHASE**

↗	↖				
↖	↗				

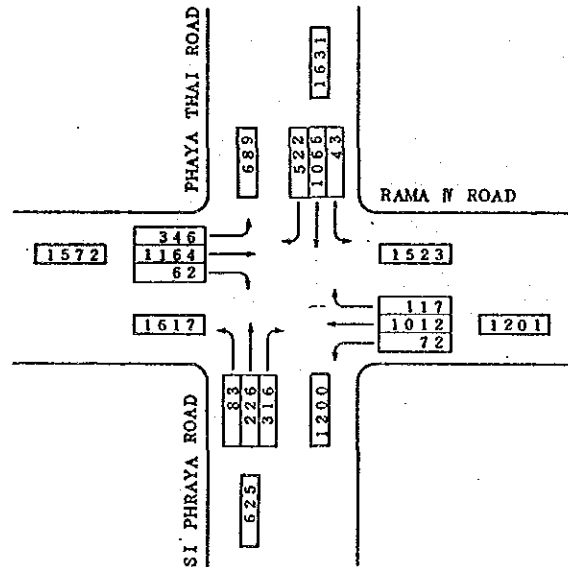
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
DESIGN VOLUME AND PHASE PLAN RAMA IV-BANTHAT THONG		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Bangwanat Tiptua BMA Study Team Leader
Intersection No. 87		Designed By : Yasuo Nishizawa JICA Study Member	Designed By : TEN, BMA
Associated Plan No. :	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing No 3087
		Date SEPTEMBER '90	Total 64 / 139

**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

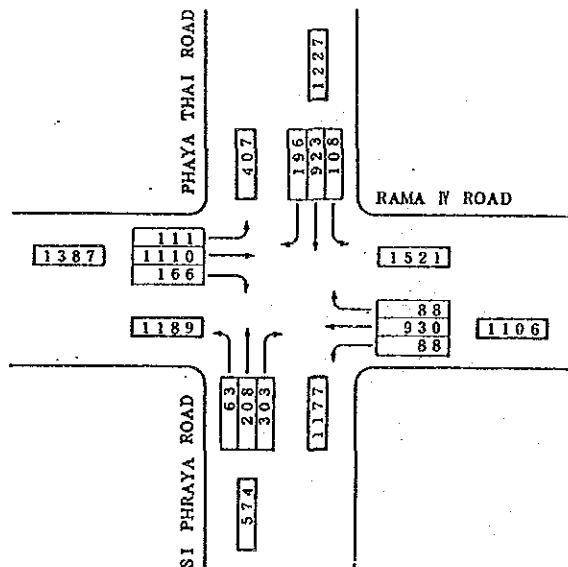
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I	→ → → ← ← ←	↘ ↘ ↘ ↙ ↙ ↙	↑ ↑ ↑ ↓ ↓ ↓	↘ ↘ ↘ ↙ ↙ ↙				
II								
III								
PRE EMPTION								

**MANUAL PHASE**

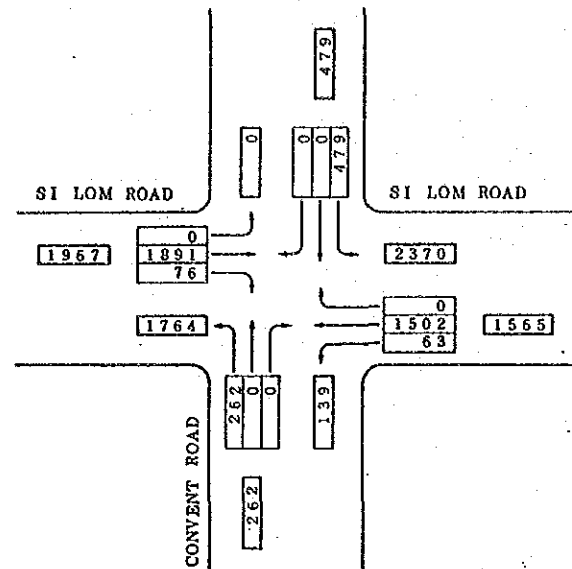
↘ ↘ ↘	→ → →	↙ ↙ ↙	↑ ↑ ↑		
↙ ↙ ↙	↘ ↘ ↘	→ → →	↘ ↘ ↘		

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN PHAYA THAI-RAMA IV-SI PHRAYA		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Rongwut Tiptan BMA Study Team Leader
Intersection No. 88		Designed By : Yasuo Hoshizima JICA Study Member	Designed By : TSC, BMA
Code	Revision	Date	Initial
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing No. 3088
		Date SEPTEMBER '90	Total 65 / 139

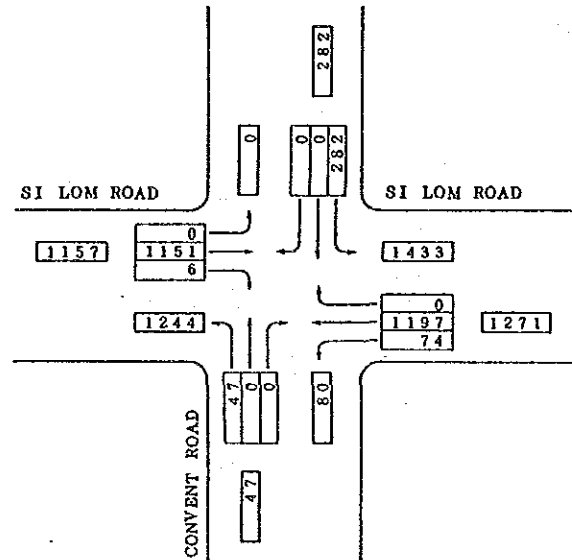


**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

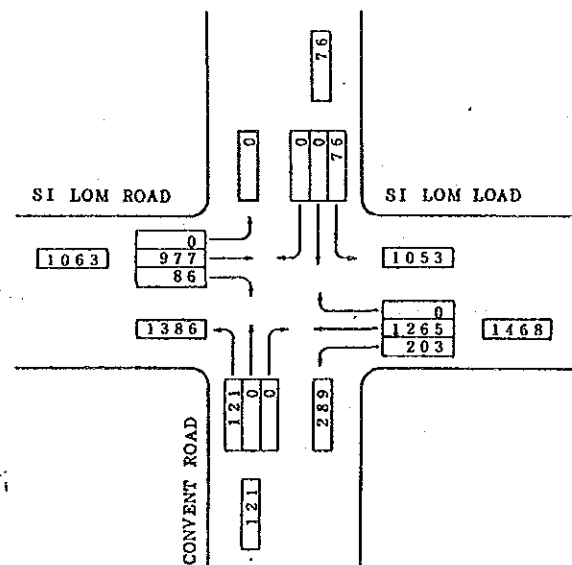
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

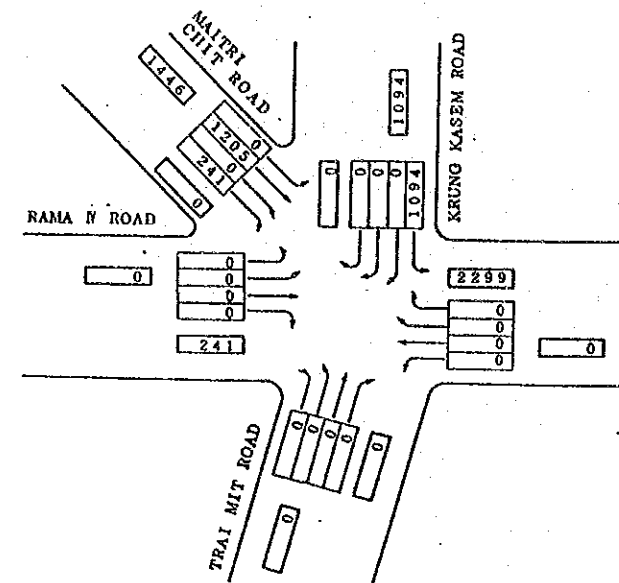
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

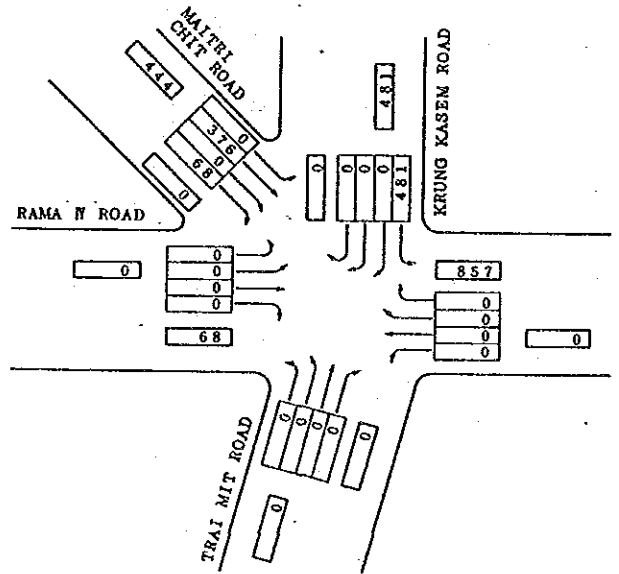

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN		Submitted By :	Approved By :
SILOM-CONVENT		Jiro Kofara JICA Study Team Leader	Boonaywal Tiptua BMA Study Team Leader
Intersection No. 89		Designed By :	Designed By :
		Tsunu Nabeshima JICA Study Member	TEO, BMA
Code	Revision	Date	Initial
Associated Plan No. 1			
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	Scale
		Date SEPTEMBER '90	Drawing NR 3089
		Total 06 / 139	

**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

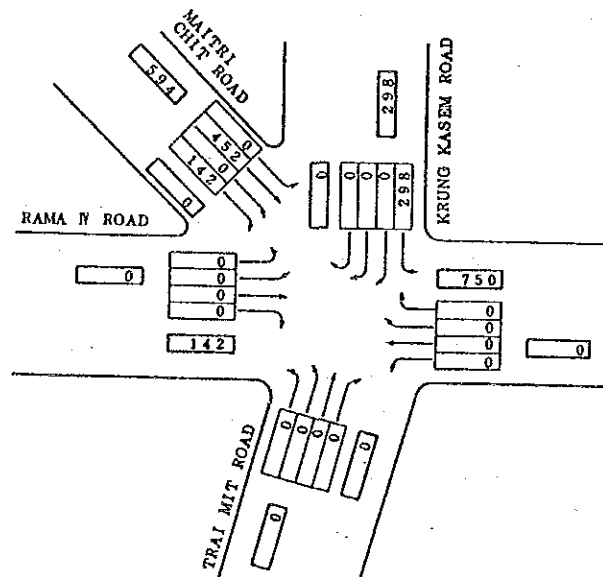
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

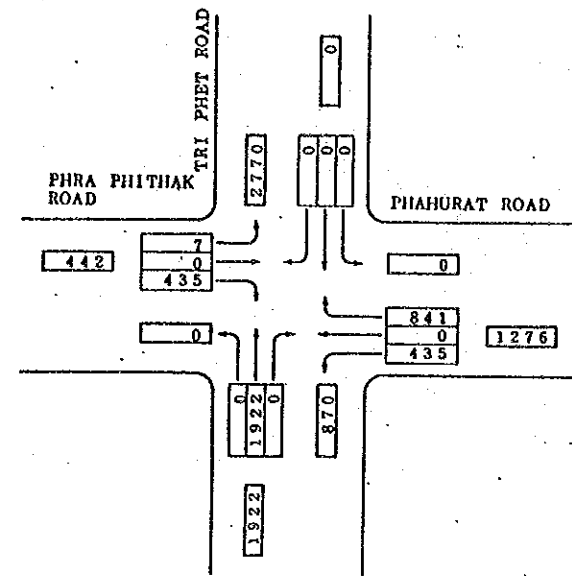
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

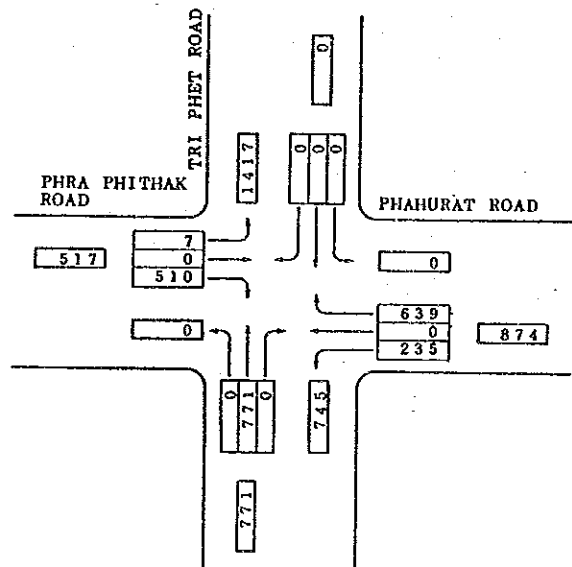

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN		Submitted By :	Approved By :
KRUNG KASEM-MAITRI CHIT		Jiro Kodera JICA Study Team Leader	Boonpawal Titano BMA Study Team Leader
-RAMA IV-TRAI MIT		Designed By :	Designed By :
Intersection No. 93		Yasue Masahiko JICA Study Member	TEB,BMA
Code	Revision	Date	Initial
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing NR 3093
Date		SEPTEMBER '90	Total 67 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

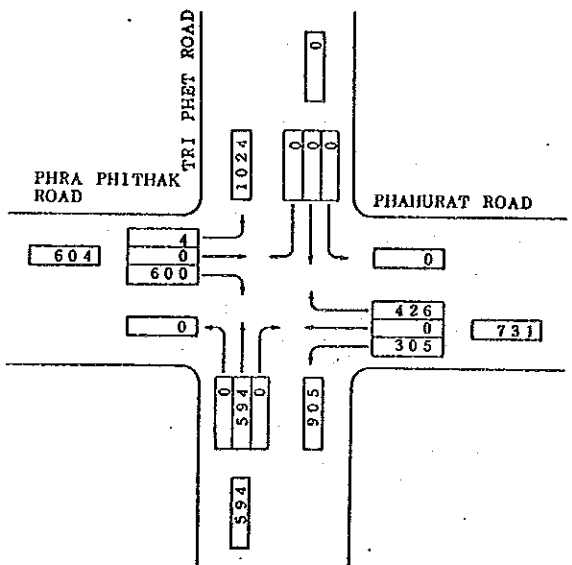
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I	↙ ↘ ↕	↕ ↙ ↘						
II								
III								
PRE EMPTION								

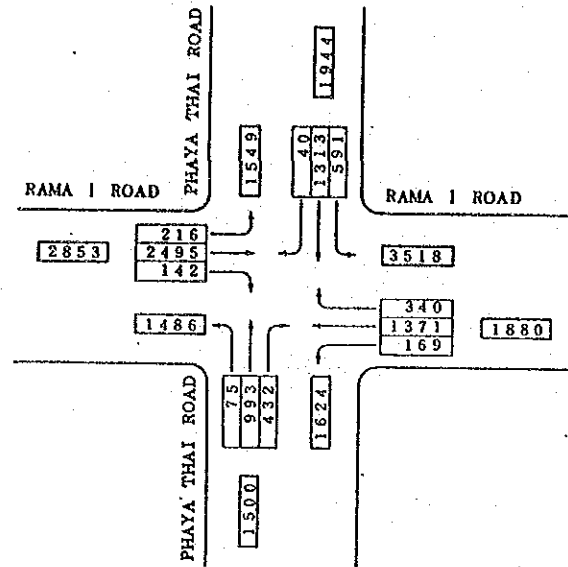
**MANUAL PHASE**

↙ ↘ ↕					
↕ ↙ ↘					

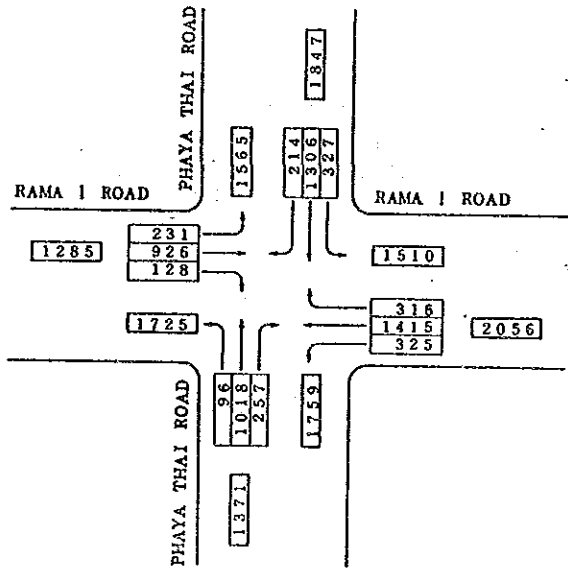
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN		Submitted By :	Approved By :
TRI PHET-PHAHURAT		Jiro Kodera JICA Study Team Leader	Manjornal Tipton BMA Study Team Leader
Intersection No. 94		Designed By :	Designed By :
		Yasuo Nishishima JICA Study Member	TEC, BMA
Code	Revision	Date	Initial
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing No. 3094
		Date	Total
		SEPTEMBER '90	88 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

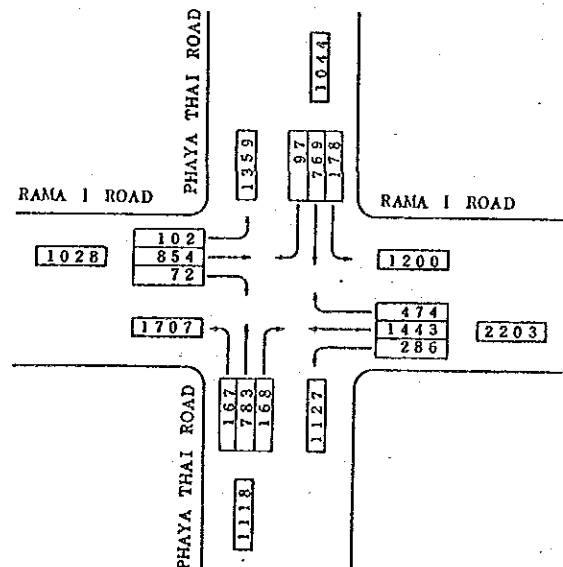
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

PHASE \ PATTERN	10	20	30	40	50	60	70	80
I	←→	↶↷	↑↓	↷↶				
II								
III								
PRE EMPTION								

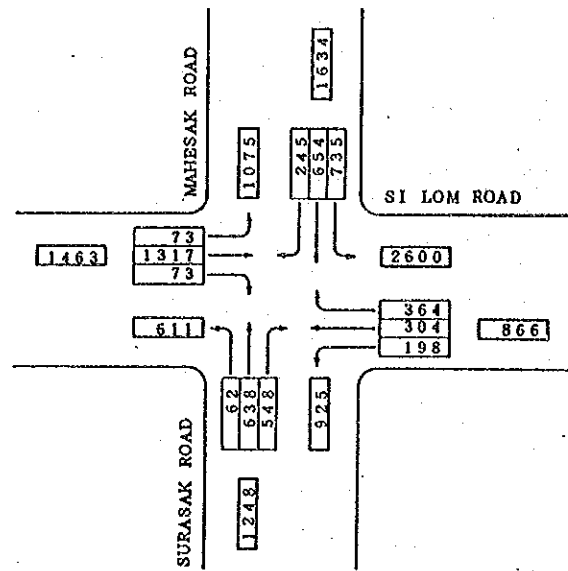
**MANUAL PHASE**

↶	→	↷	↑↓		
↷	↶	↶	↷		

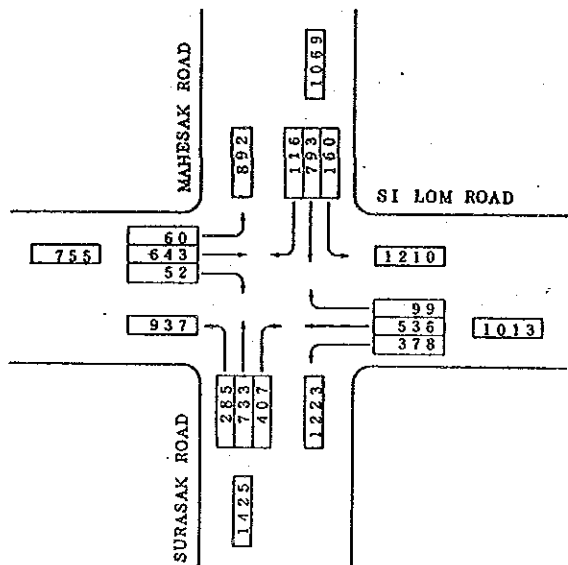
Code	Revision	Date	Initial	BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
Associated Plan No. 1				DESIGN VOLUME AND PHASE PLAN PHAYA THAI-RAMA I		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Keenapol Tiplua BMA Study Team Leader
						Designed By : Yasu Hasehima JICA Study Member	Designed By : TED.BMA
				Intersection No. 96		Scale	Drawing NR 3096
				JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	Date SEPTEMBER '90 Total 69 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

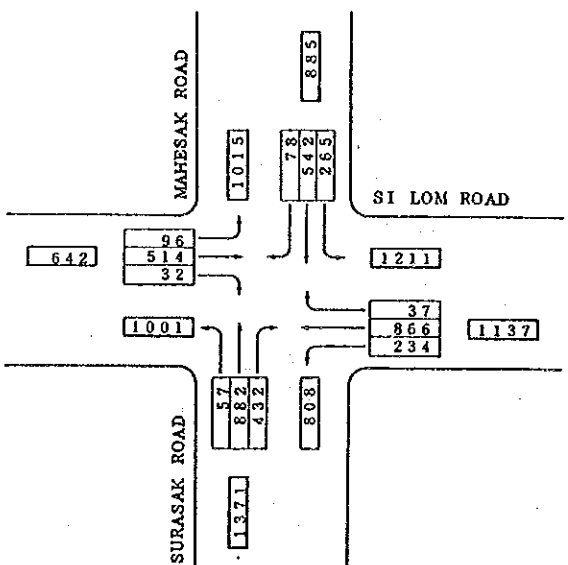
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

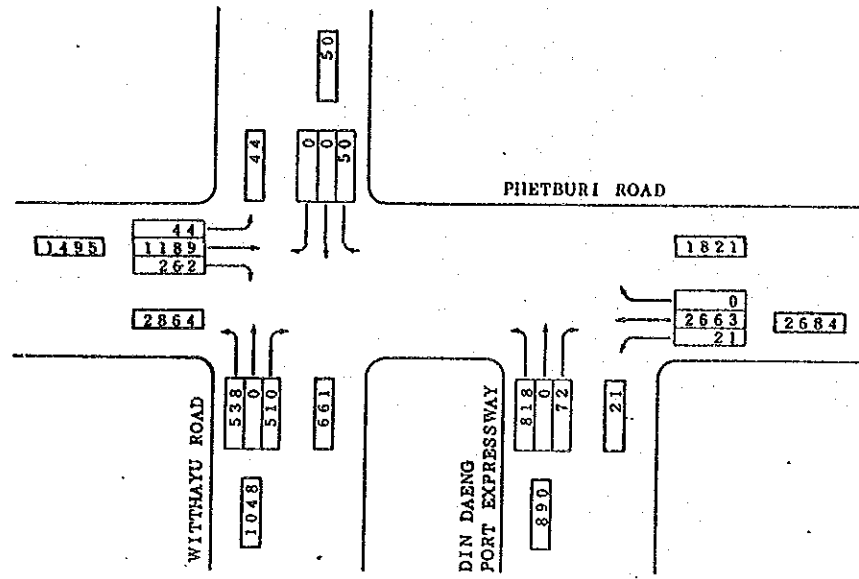
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I (MORNING PEAK HOUR)								
II (DAYTIME/EVENING PEAK HOUR)								
III								
PRE EMPTION								

**MANUAL PHASE**

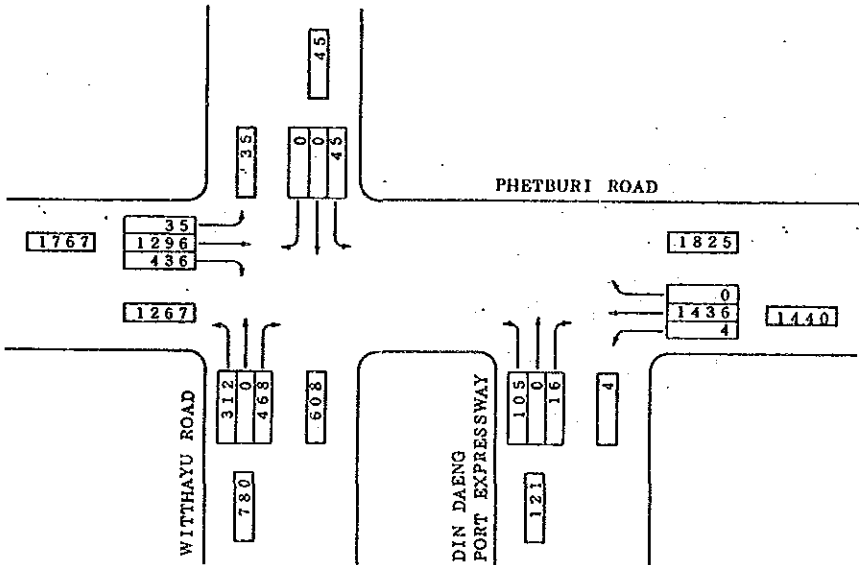

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN SILOM-SURASAK-MAHESAK		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Keenawal Tiptar BMA Study Team Leader
Intersection No. 98		Designed By : Yasuo Nabeshima JICA Study Member	Designed By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing No 3098
		Date SEPTEMBER '90	Total 70 / 130

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

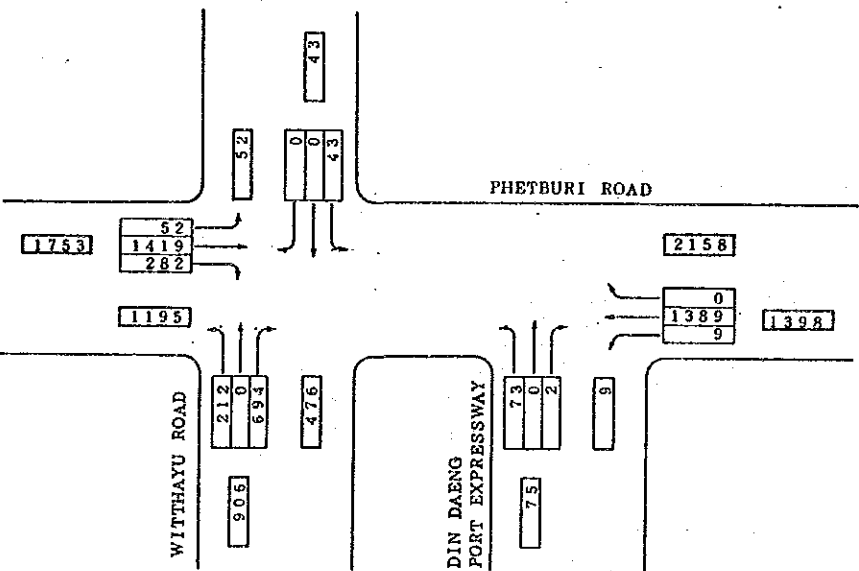
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

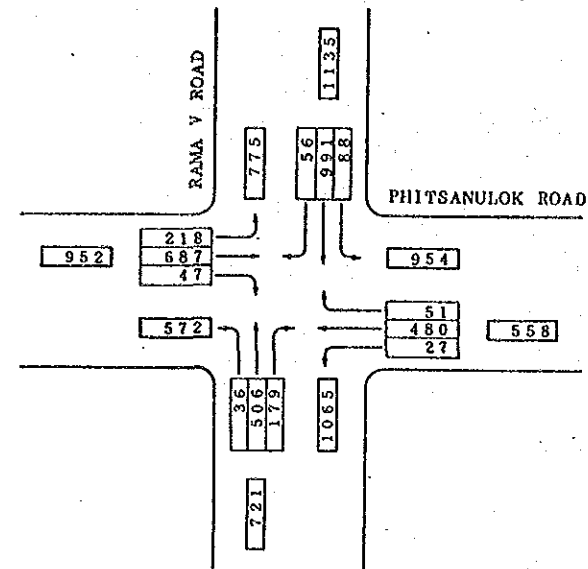
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

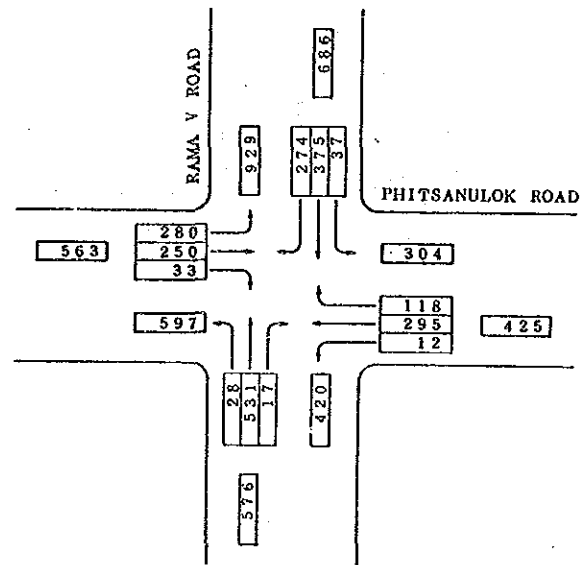

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
DESIGN VOLUME AND PHASE PLAN WITTHAYU-PHETCHABURI -DIN DAENG PORT EXPRESSWAY		Submitted By : Jiro Kodate JICA Study Team Leader	Approved By : Geonwan Thitoo BMA Study Team Leader
Intersection No. 99		Designed By : Yasuo Matsushima JICA Study Member	Designed By : TEB_BMA
Code	Revision	Date	Initial
Associated Plan No. 1	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale Drawing NR 3089
		Date SEPTEMBER '90	Total 71 / 139

**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

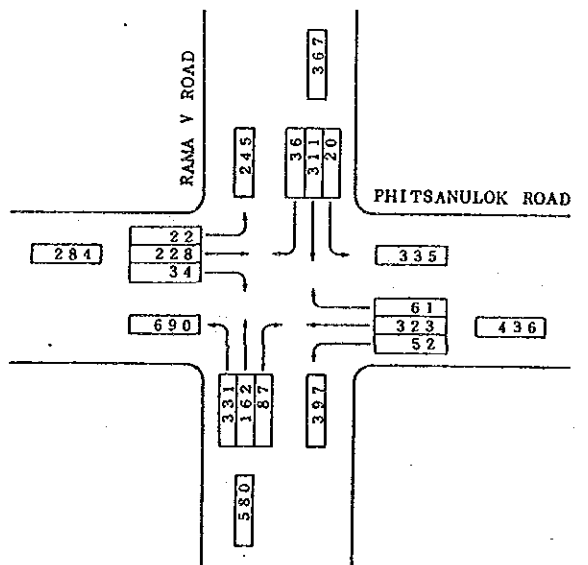
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

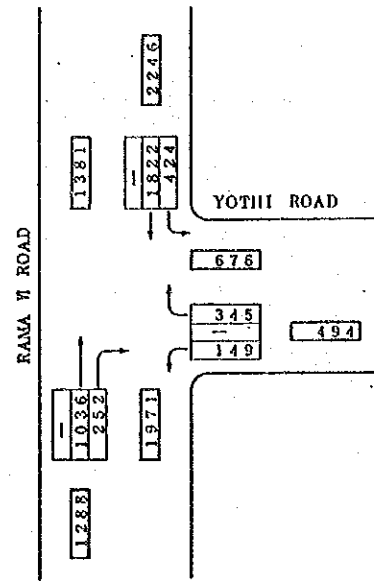
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

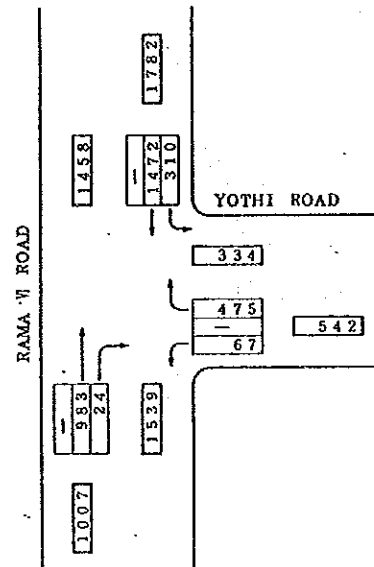

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				DESIGN VOLUME AND PHASE PLAN RAMA V-PHITSANULOK		Submitted By : Jaru Kudara JICA Study Team Leader	
				Intersection No. 101		Approved By : Sasawat Tiptua BMA Study Team Leader	
						Designed By : Yasu Matsushita JICA Study Member	
						TED, BMA	
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing No. 3101
Associated Plan No. 1						Date	SEPTEMBER '90
						Total 72 / 139	

DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL.)

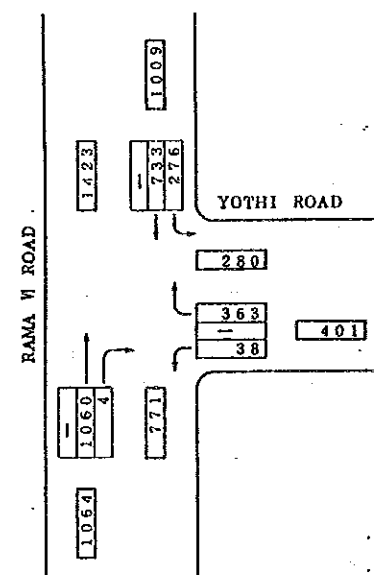
MORNING



NOON



EVENING



NORMAL PHASE SEQUENCE

PHASE	10	20	30	40	50	60	70	80
PATTERN								
I	↑	↑	↑					
II								
III								
PRE EMPTION								

MANUAL PHASE

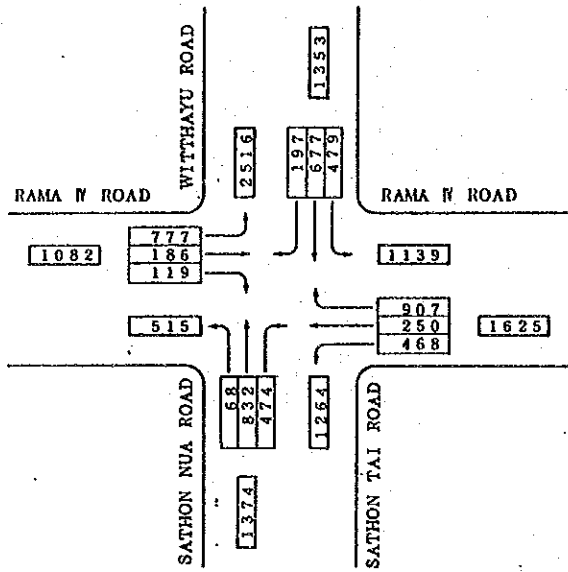
↑	↑	↑			
↑	↑				

				<b>BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I</b>			
				<b>DESIGN VOLUME AND PHASE PLAN</b>			
				<b>RAMA VI-YOTHI</b>			
				Intersection No. 102			
Scale		Drawing No. 3102		Scale		Drawing No. 3102	
Date		SEPTEMBER '90		Date		SEPTEMBER '90	
Total		73 / 139		Total		73 / 139	

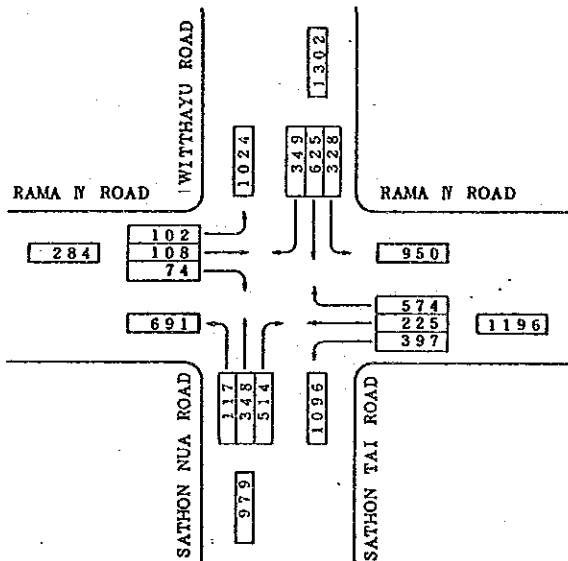


**DESIGN TRAFFIC VOLUME  
(ESTIMATED BY SIMULATION MODEL)**

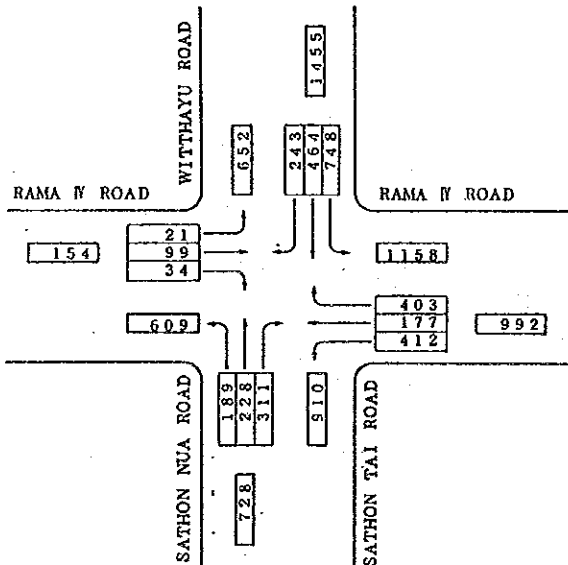
**MORNING**



**NOON**



**EVENING**



**NORMAL PHASE SEQUENCE**

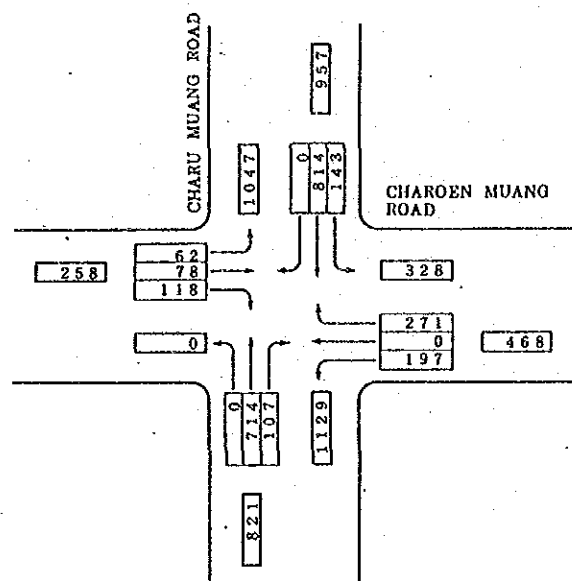
PHASE \ PATTERN	10	20	30	40	50	60	70	80
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**

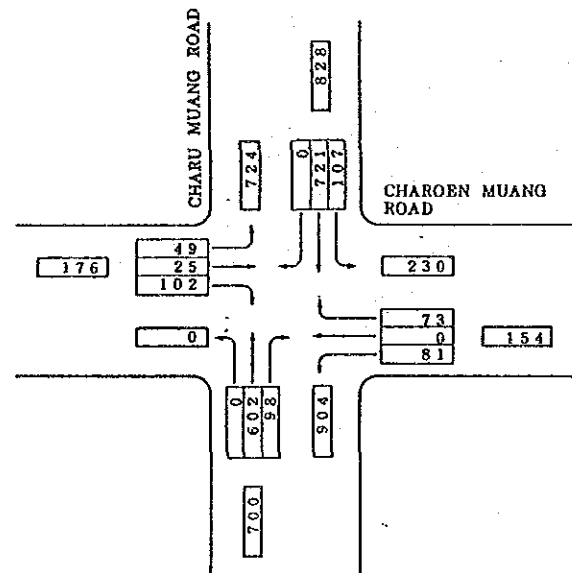

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I					
DESIGN VOLUME AND PHASE PLAN SATHON-WITTHAYU-RAMA IV			Submitted By : Jun Kodera JICA Study Team Leader	Approved By : Boonwatt Tiptua BMA Study Team Leader	
Intersection No. 103			Designed By : Yasu Hashima JICA Study Member	Designed By : TED, BMA	
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
Associated Plan No. 1				Scale	Drawing No 3103
				Date SEPTEMBER '90	Total 74 / 139

**DESIGN TRAFFIC VOLUME**  
(ESTIMATED BY SIMULATION MODEL)

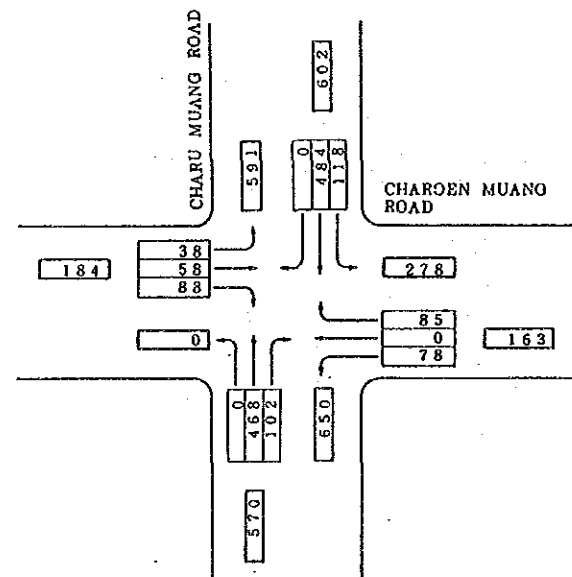
MORNING



NOON



EVENING



**NORMAL PHASE SEQUENCE**

PHASE	10	20	30	40	50	60	70	80
PATTERN								
I								
II								
III								
PRE EMPTION								

**MANUAL PHASE**


				<b>BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I</b>			
				<b>DESIGN VOLUME AND PHASE PLAN</b>		Submitted By : Juno Kudo JICA Study Team Leader	
				<b>CHARU MUANG-CHAROEN MUANG</b>		Approved By : Boonyawat Tiptua BMA Study Team Leader	
				Intersection No. 104		Designed By : Yusuo Hasehino JICA Study Member	
						Designed By : YEO, BMA	
Code				Revision		Date	
Associated Plan No. 1				JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	
				Scale		Drawing No 3104	
				Date		Total 75 / 130	
				SEPTEMBER '90			