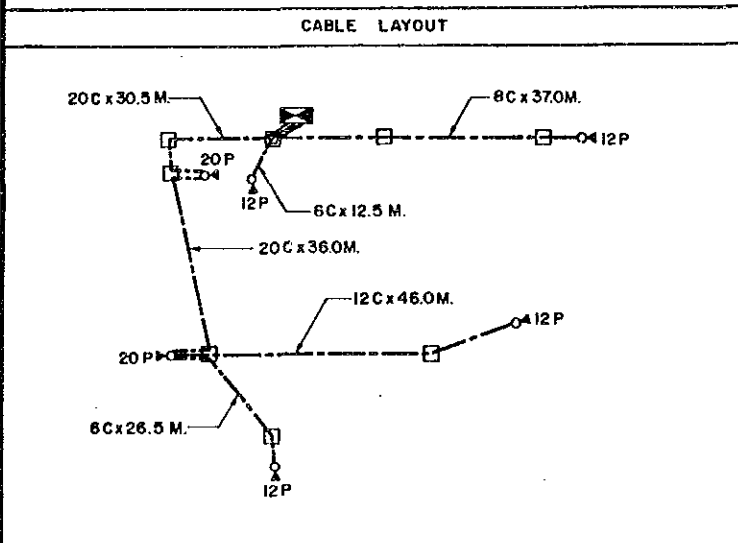
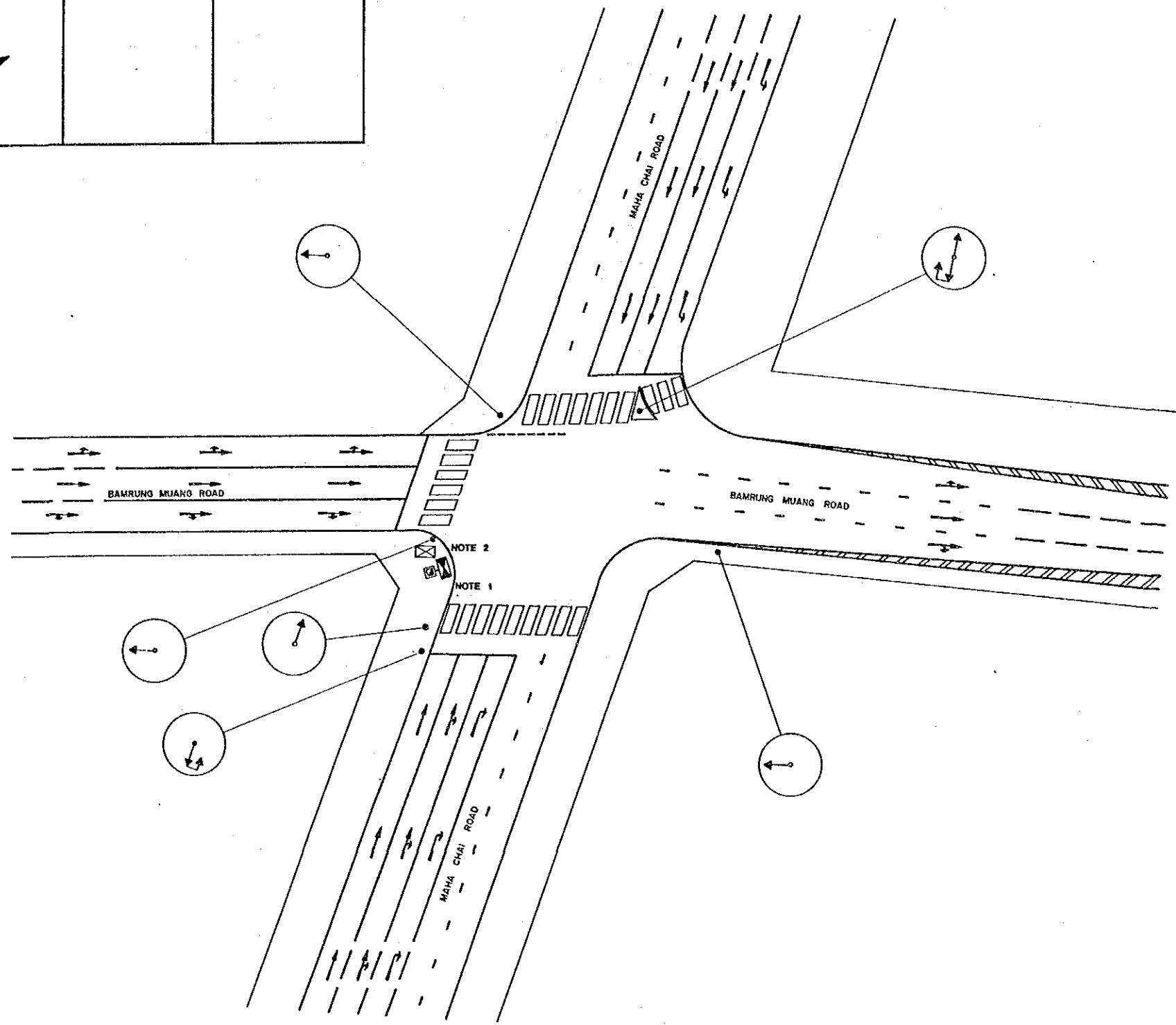


Intersection Equipments List		
Intersection No. 67		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	3
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	-
9	Signal Pole Type A	3
10	Signal Pole Type B	3
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	4
14	Terminal 20 p	2
15	Signal Head 3 Aspects (200mm x 3)	1
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	1
17	Signal Head 3 Aspects (300mm x 3)	1
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	1
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	1
22	Signal Head 6 Aspects (300mm x 6)	1
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	8
25	Target Board for 3 Aspects	2
26	Target Board for 4 Aspects	1
27	Target Board for 6 Aspects	1
28	PVC Conduit 100 mm (4")	130
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	8
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	130
34	Install Conduit under Road	-
35	Install Conduit on River Support Pole	5
36	Handhole Type C	2
37	Handhole Type D	1
38	Signal Cable 6c (2 sq. mm)	59
39	Signal Cable 6c (2 sq. mm)	37
40	Signal Cable 12c (2 sq. mm)	46
41	Signal Cable 20c (2 sq. mm)	665
42	Power Cable	5
43	Cable Splicing Kit	-
44	Remove Existing Signal Post and Heads (Old-style Type)	5
45	Remove Existing Signal Post and Heads (Pedestrian Type)	1
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (V 5.5 sq. mm x 1c)	5



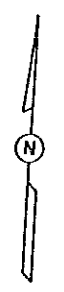
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
BANTHAT THONG - PHETCHABURI		Jiro Kudara JICA Study Team Leader	Boonyawat Tipton BMA Study Team Leader
INTERSECTION NO 67		Designed By :	Checked By :
		Yasuo Nishishige JICA Study Member	YED, BMA
Code	Revision	Date	Initial
Associated Plan No. :	JICA	BMA	
	Japan International Cooperation Agency	Bangkok Metropolitan Administration	
Scale	1 / 250	Drawing No	2067
Date	SEPTEMBER '90	Total	48 / 139

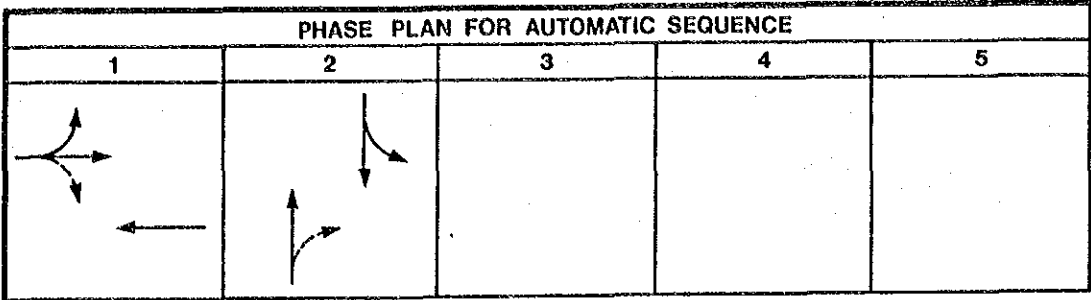
PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5



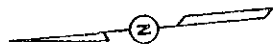
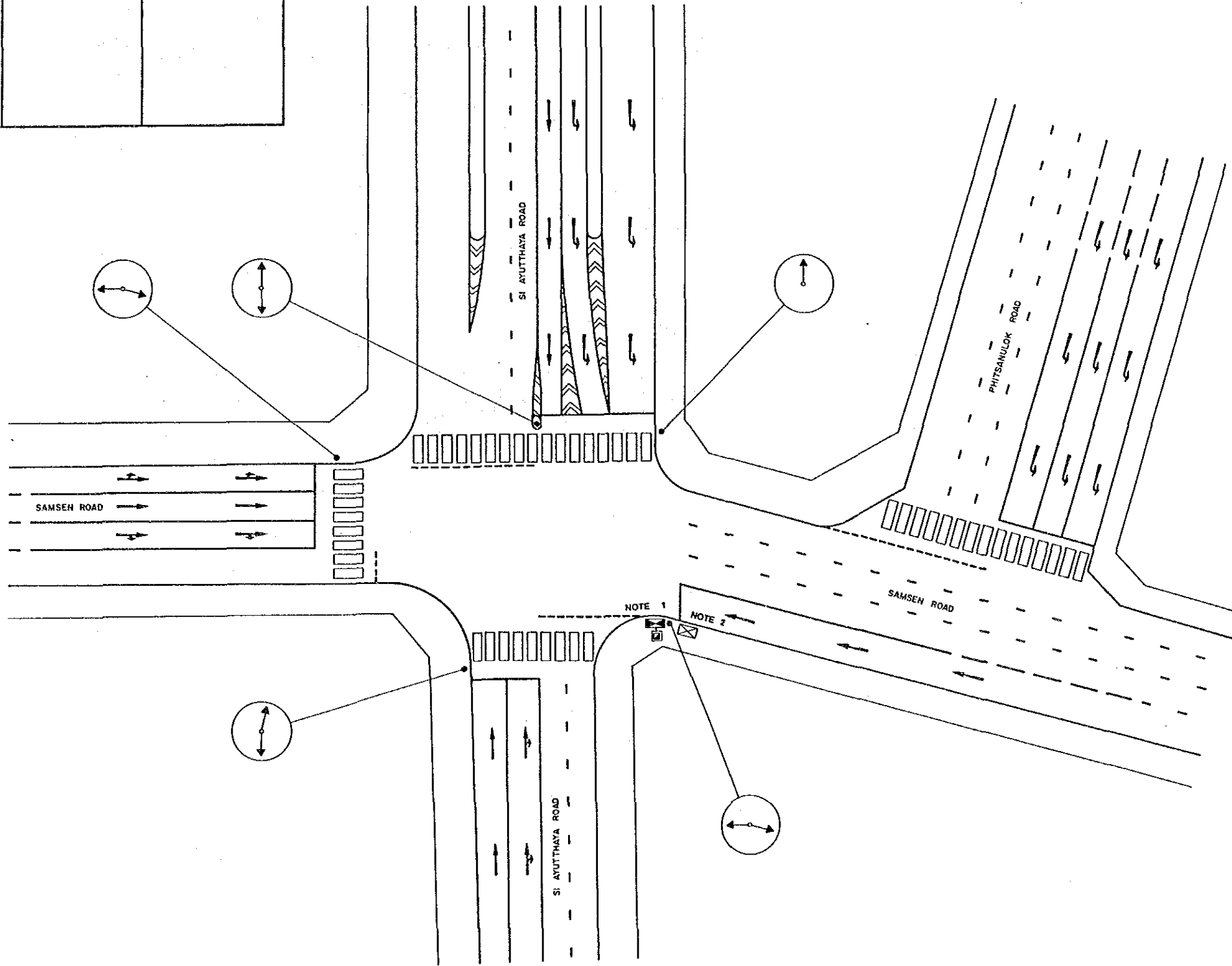
Intersection Equipments List		
Intersection No. 70		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	-
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 2, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	6
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 33 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	6
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6C (2 sq mm)	-
39	Signal Cable 8C (2 sq mm)	-
40	Signal Cable 12C (2 sq mm)	8
41	Signal Cable 20C (2 sq mm)	-
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Pole and Heads (Mid-arm Type)	-
45	Remove Existing Signal Pole and Heads (Pedestal Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq mm x 1c)	5

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By : Juno Kodera JICA Study Team Leader	Approved By : Boonyawat Tiptua BMA Study Team Leader
MAHA CHAI - BAMRUNG MUANG		Designed By : Yasuo Kobayashi JICA Study Member	Checked By : TED, BMA
INTERSECTION NO 70		Scale 1 / 250	Drawing No 2070
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Date SEPTEMBER '90	Total 49 / 139



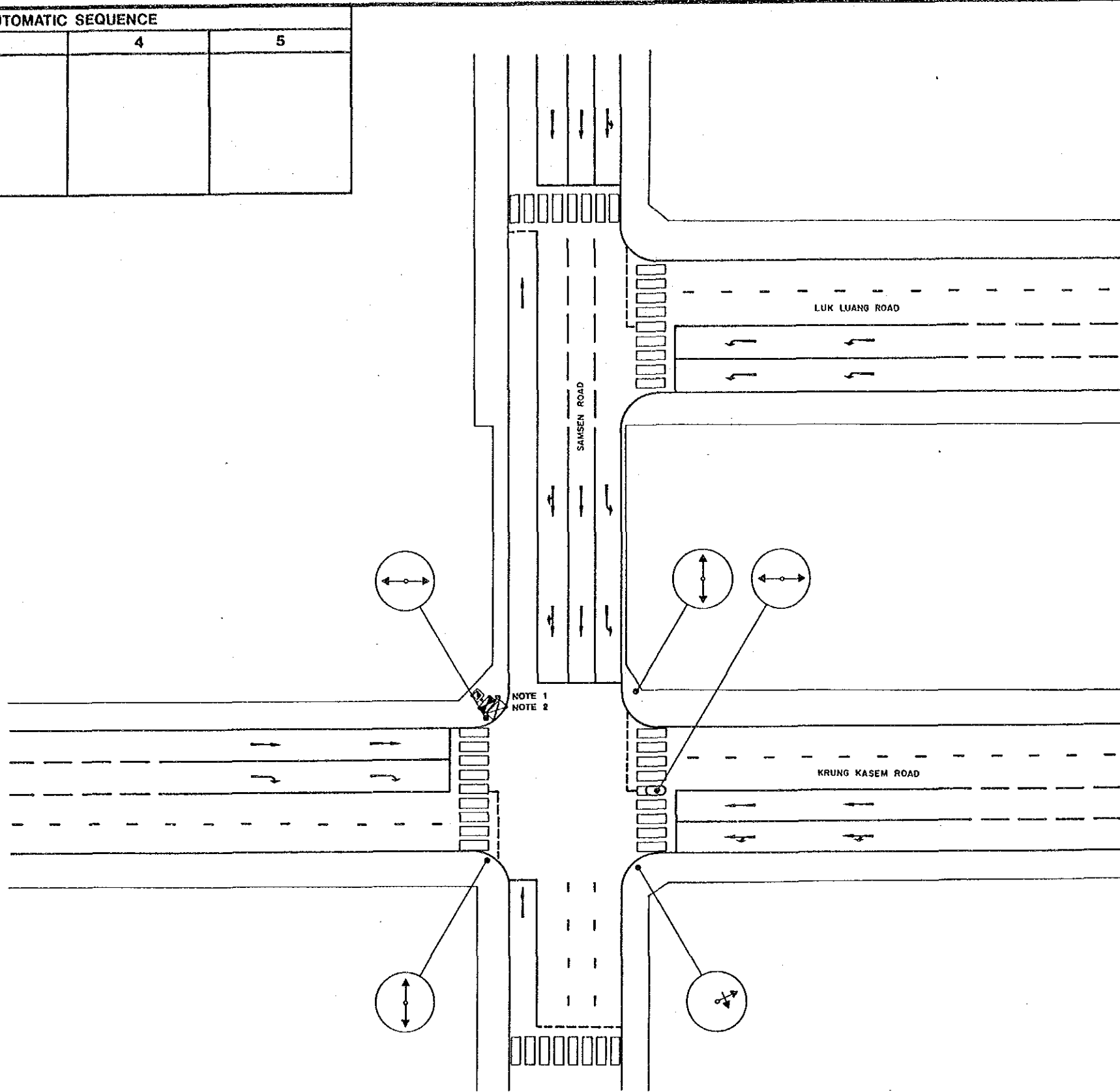


Intersection Equipments List		
Intersection No. 71		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	-
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4')	8
29	Steel Conduit 100 mm (4')	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	8
34	Install Conduit under Flag	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq. mm)	-
39	Signal Cable 8c (2 sq. mm)	-
40	Signal Cable 12c (2 sq. mm)	-
41	Signal Cable 20c (2 sq. mm)	8
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Head (Blot-rod Type)	-
45	Remove Existing Signal Post and Head (Prestal Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1F)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq. mm x 1c)	5



BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Keanyawit Tiplus BMA Study Team Leader
SAMSEN - SI AYUTTHAYA		Designed By : Yasuo Nabeshima JICA Study Member	Checked By : TBD, BMA
INTERSECTION NO. 71		Scale 1 / 250	Drawing No. 2071
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Date SEPTEMBER '90	Total 50 / 139

PHASE PLAN FOR AUTOMATIC SEQUENCE				
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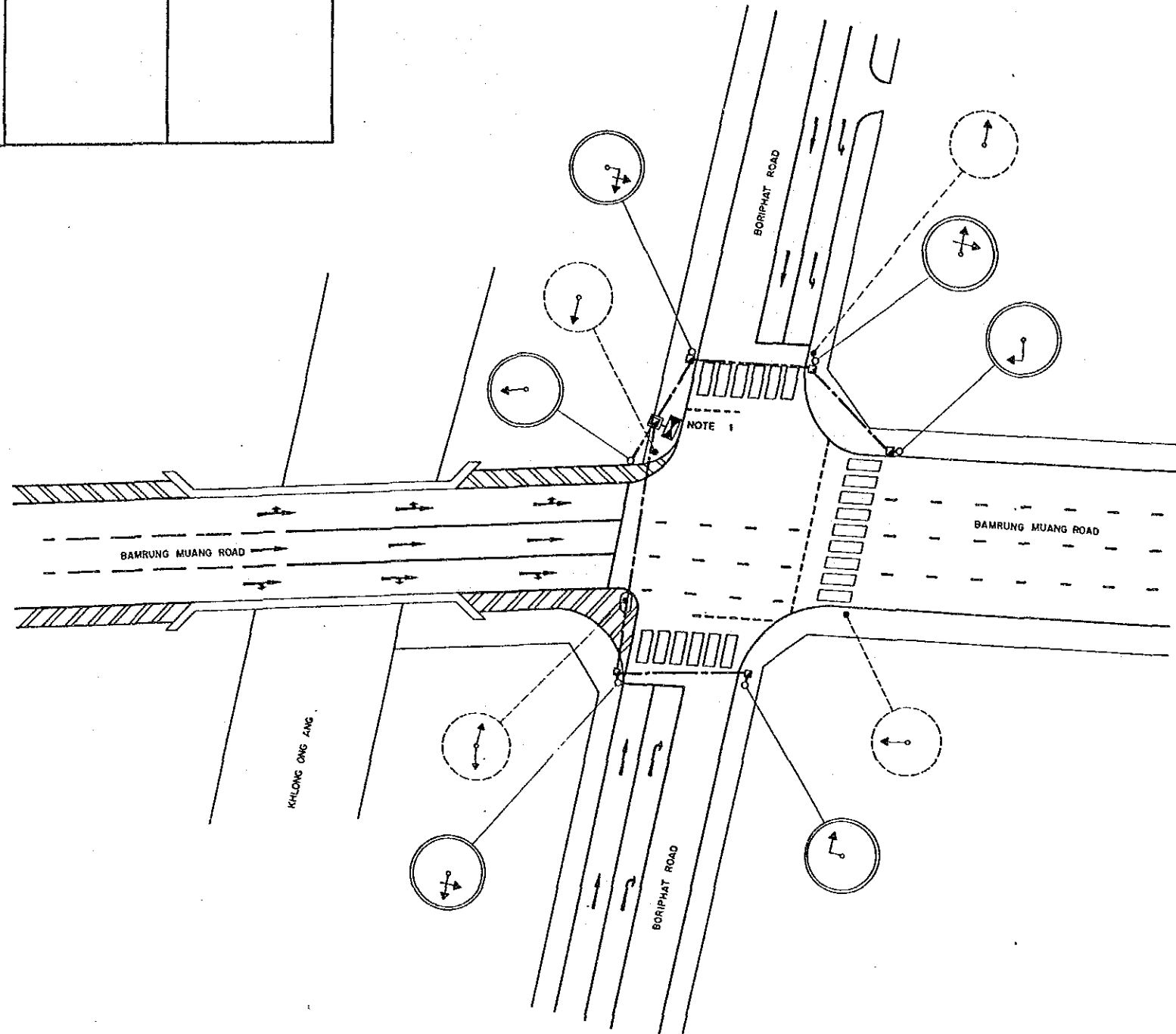


NOTE 1
NOTE 2

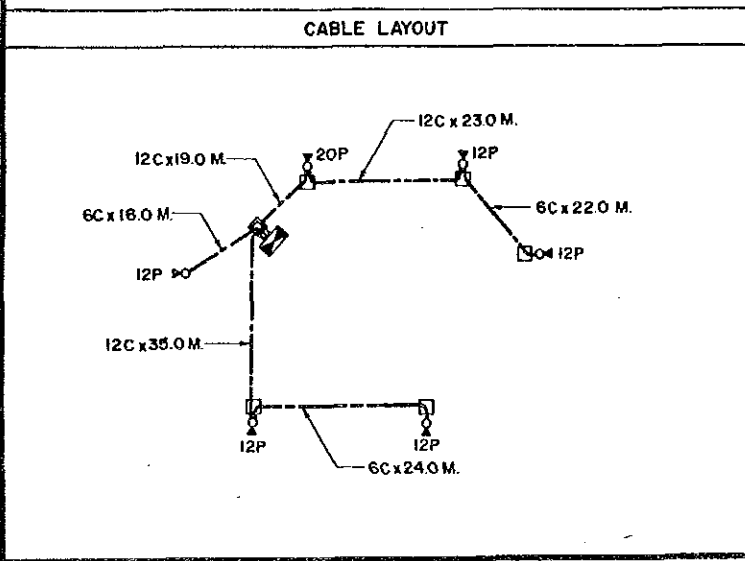
Intersection Equipments List		
Intersection No. 72		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Katakata Unit	-
4	Solid State Flasher Unit	2
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	6
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	6
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 8c (2 sq. mm)	-
39	Signal Cable 8c (2 sq. mm)	-
40	Signal Cable 12c (2 sq. mm)	-
41	Signal Cable 20c (2 sq. mm)	6
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Post-arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestal Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, Ø 85mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (RV 5.5 sq. mm x 1c)	5

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Boonyawat Tipus BMA Study Team Leader
SAMSSEN-KRUNG KASEM		Designed By : Yusuo Nobeshima JICA Study Member	Checked By : TED, BMA
INTERSECTION N ^o 72		Scale 1 / 250	Drawing N ^o 2072
Associated Plan No. :		Date SEPTEMBER '90	Total 51 / 139
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	

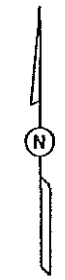
PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5

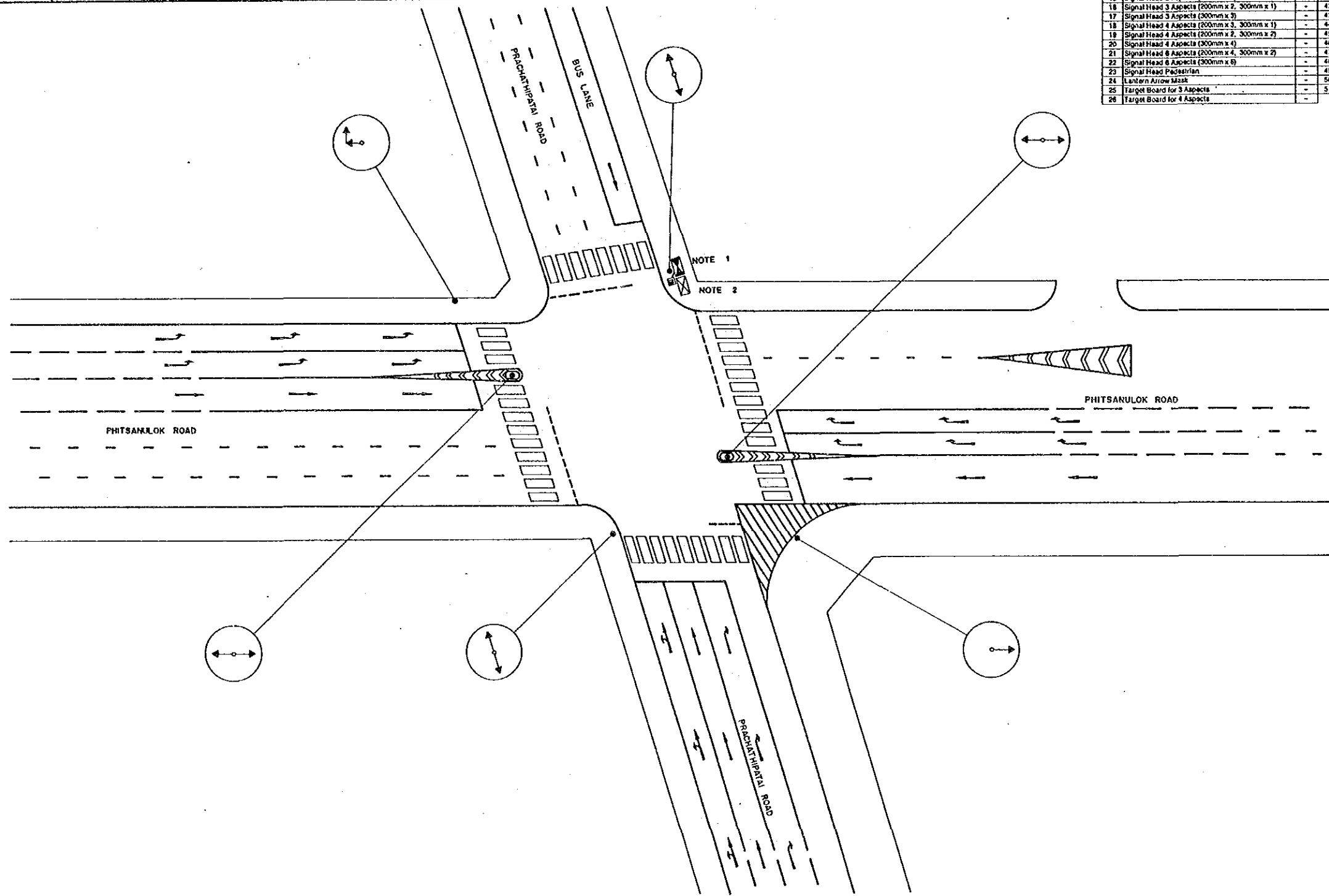
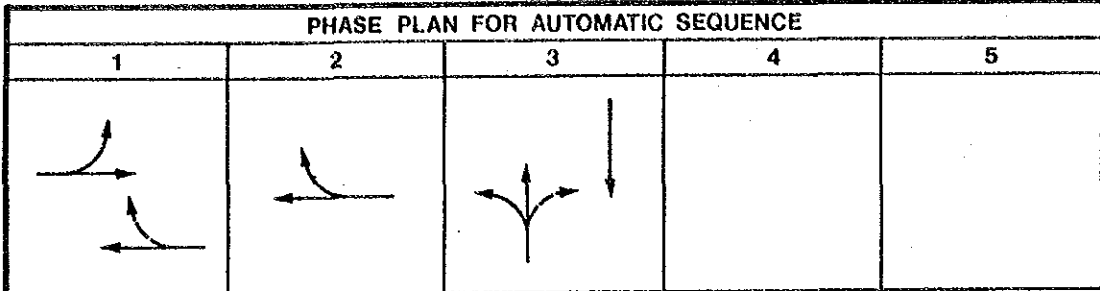


Intersection Equipments List		
Intersection No. 73		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	3
5	Pre-Processor of Detector Pulse	-
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	3
10	Signal Pole Type B	3
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	5
14	Terminal 20 p	1
15	Signal Head 3 Aspects (200mm x 3)	1
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (200mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	2
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	1
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	3
25	Target Board for 3 Aspects	1
26	Target Board for 4 Aspects	2
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	105
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	36.5
33	Install Conduit under Concrete Pavement or Sidewalk	68.5
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	5
37	Handhole Type D	1
38	Signal Cable 6c (2 sq. mm)	62
39	Signal Cable 8c (2 sq. mm)	-
40	Signal Cable 12c (2 sq. mm)	77
41	Signal Cable 20c (2 sq. mm)	-
42	Power Cable	-
43	Cable Splicing Kit	5
44	Remove Existing Signal Post and Heads (Max. arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestal Type)	4
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq. mm x 1c)	5



BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
BAMRUNG MUANG - BORIPHAT		Juro Kodera JICA Study Team Leader	Wongwanat Tiplus BMA Study Team Leader
INTERSECTION NO 73		Designed By :	Checked By :
		Yasuo Nabeshima JICA Study Member	TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale 1 / 250	Drawing No 2073
		Date - SEPTEMBER '90	Total 52 / 139



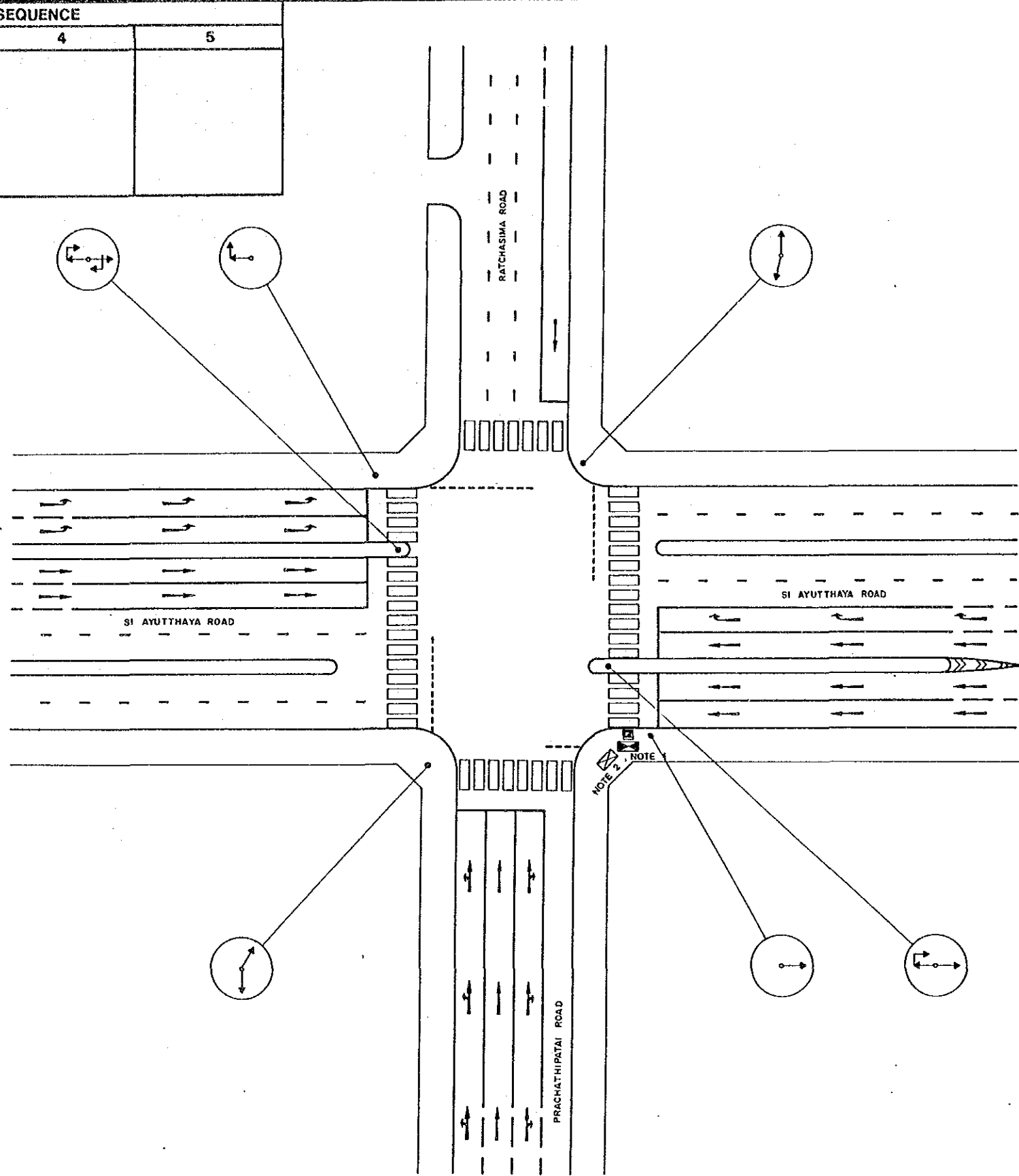


Intersection Equipments List				
Intersection No. 74				
ITEM	Name of Equipment	Qty.	ITEM	Name of Equipment
1	Local Controller	1	27	Target Board for 8 Aspects
2	Railroad Pre-emption Control Unit	-	28	PVC Conduit 100 mm (4")
3	Pedestrian Push Button Interface Unit	-	29	Steel Conduit 100 mm (4")
4	Soft Start Relay Unit	-	30	Steel Conduit 39 mm
5	Pre-Processor of Detector Pulse	-	31	Steel Conduit 28 mm
6	Supply Power Switch Box with Power Breaker	-	32	Install Conduit under Asphalt Pavement
7	TOT Line Box	1	33	Install Conduit under Concrete Pavement or Sidewalk
8	Remove Existing Controller	1	34	Install Conduit under Rail
9	Signal Pole Type A	-	35	Install Conduit on Riser Support Pole
10	Signal Pole Type B	-	36	Handhole Type D
11	Signal Pole Type C	-	37	Handhole Type D
12	Signal Pole Type D	-	38	Signal Cable 6c (2 sq mm)
13	Terminal 12 p	-	39	Signal Cable 6c (2 sq mm)
14	Terminal 20 p	-	40	Signal Cable 12c (2 sq mm)
15	Signal Head 3 Aspects (200mm x 3)	-	41	Signal Cable 20c (2 sq mm)
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-	42	Power Cable
17	Signal Head 3 Aspects (300mm x 3)	-	43	Cable Splicing Kit
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-	44	Remove Existing Signal Post and Heads (Blue-arm Type)
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-	45	Remove Existing Signal Post and Heads (Pedestrian Type)
20	Signal Head 4 Aspects (300mm x 4)	-	46	Remove Existing Signal Head
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-	47	Remove Existing Arrow Mask
22	Signal Head 6 Aspects (300mm x 6)	-	48	Remove Pedestrian Push Button
23	Signal Head Pedestrian	-	49	TOT Line (CPV, 0.65mm, 1P)
24	Lantern Arrow Mask	-	50	Grounding Rod
25	Target Board for 3 Aspects	-	51	Grounding Cable (IV 5.5 sq mm x 1c)
26	Target Board for 4 Aspects	-	-	-

Code				Revision				Date				Initial			

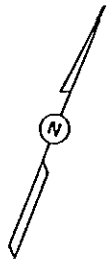
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
PHITSANULOK-PRACHATHIPATAI		Juro Kodera JICA Study Team Leader	Boonyawat Titavee BMA Study Team Leader
INTERSECTION NO 74		Designed By :	Checked By :
74		Yasuo Nabeshima JICA Study Member	TED, BMA
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale 1 / 250	Drawing No 2074
		Date SEPTEMBER '90	Total 53 / 139

PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5

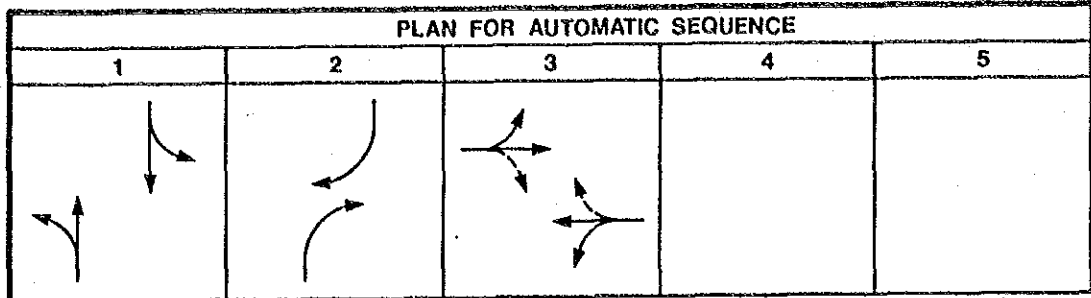


Intersection Equipments List		
Intersection No. 75		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pig-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Soft State Relay Unit	2
5	Pre-Processor of Detector Pulse	-
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal T2 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	6
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	6
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq. mm)	-
39	Signal Cable 8c (2 sq. mm)	-
40	Signal Cable 12c (2 sq. mm)	-
41	Signal Cable 20c (2 sq. mm)	8
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Metal-rod Type)	-
45	Remove Existing Signal Post and Heads (Pedestrian Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (BV 5.5 sq. mm x 1c)	5

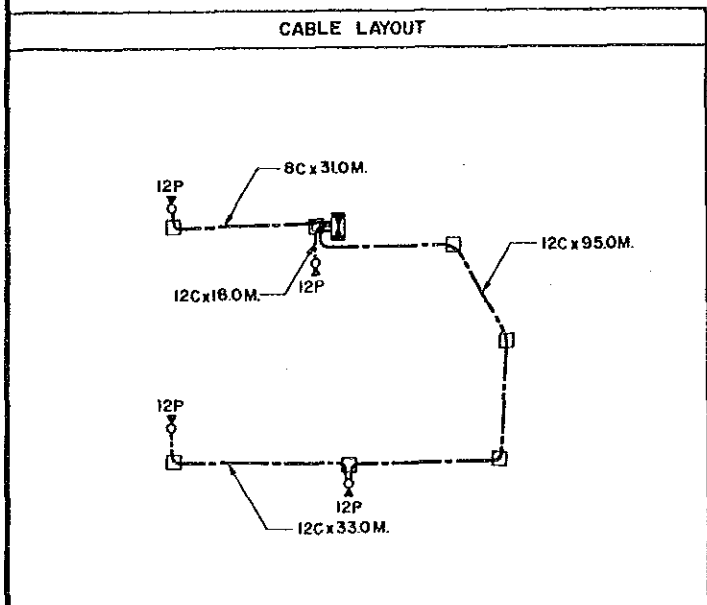
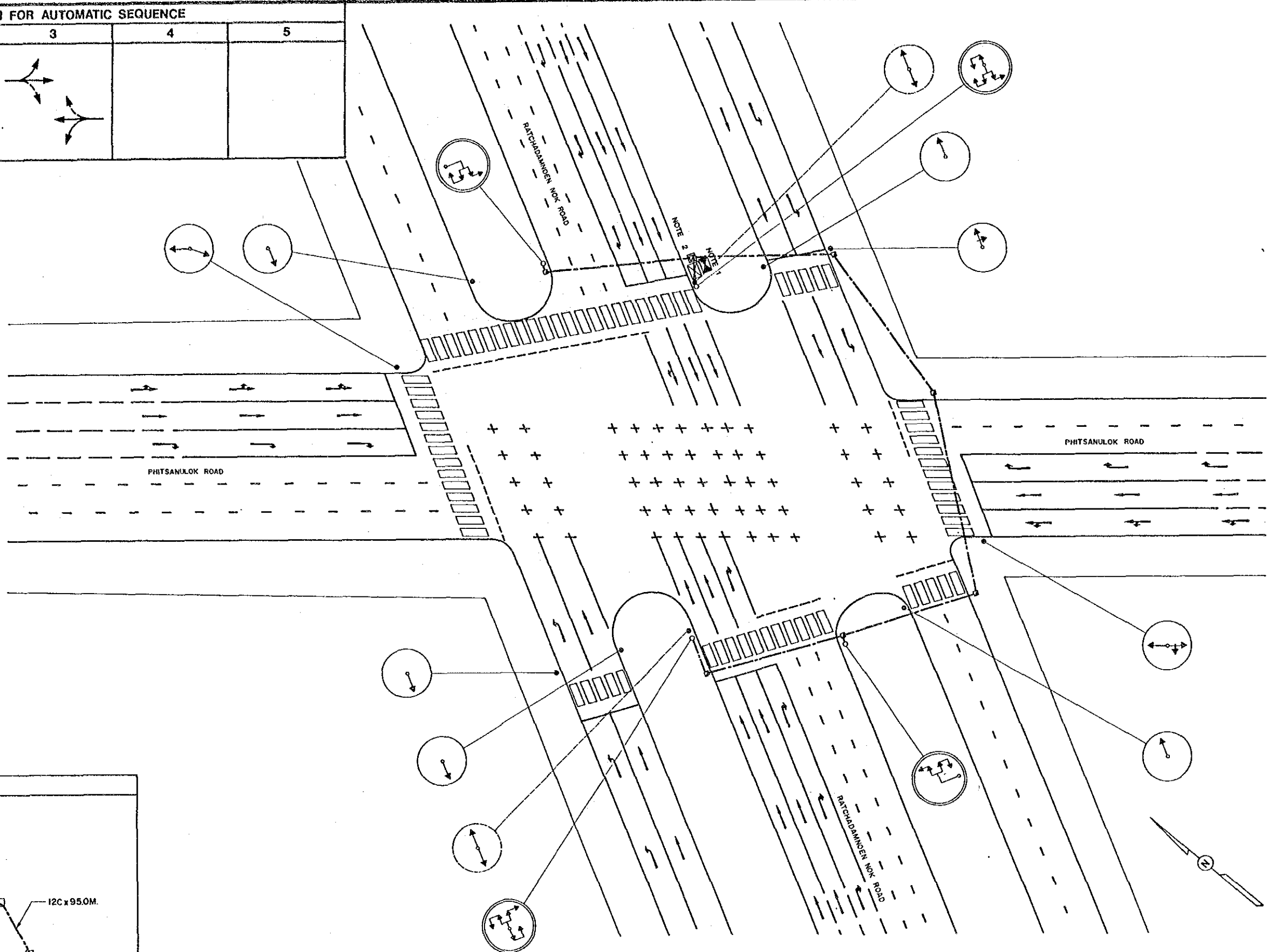
NOTE 1
NOTE 2



BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Boonyawat Tiplua BMA Study Team Leader
RATCHASIMA - SI AYUTTHAYA		Designed By : Yasuo Nishishimizu JICA Study Member	Checked By : TED, BMA
INTERSECTION NO 75		Scale 1 / 250	Drawing No 2075
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Date SEPTEMBER '90	Total 54 / 139

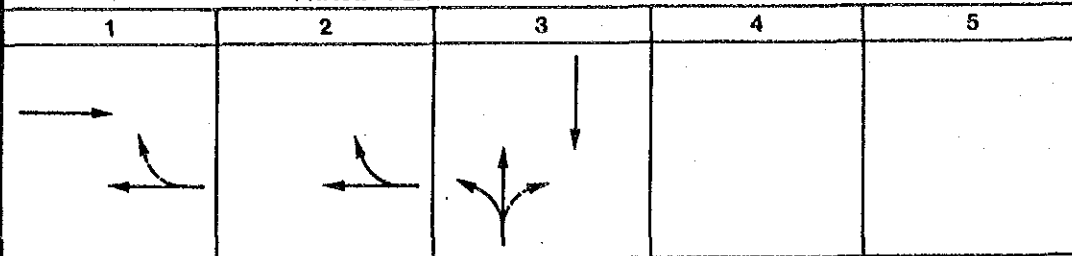


Intersection Equipments List		
Intersection No. 76		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interlace Unit	-
4	Scot's Scissors Relay Unit	3
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	2
10	Signal Pole Type B	2
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12p	4
14	Terminal 20p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	2
17	Signal Head 3 Aspects (300mm x 2)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	2
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 8 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	2
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	10
25	Target Board for 3 Aspects	2
26	Target Board for 4 Aspects	2
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	134
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	3
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	134
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	6
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	-
39	Signal Cable 6c (2 sq mm)	31
40	Signal Cable 12c (2 sq mm)	144
41	Signal Cable 20c (2 sq mm)	-
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Mast-arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestal Type)	2
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, Ø 85mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq mm x 1c)	5

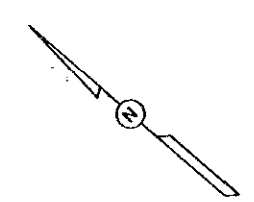
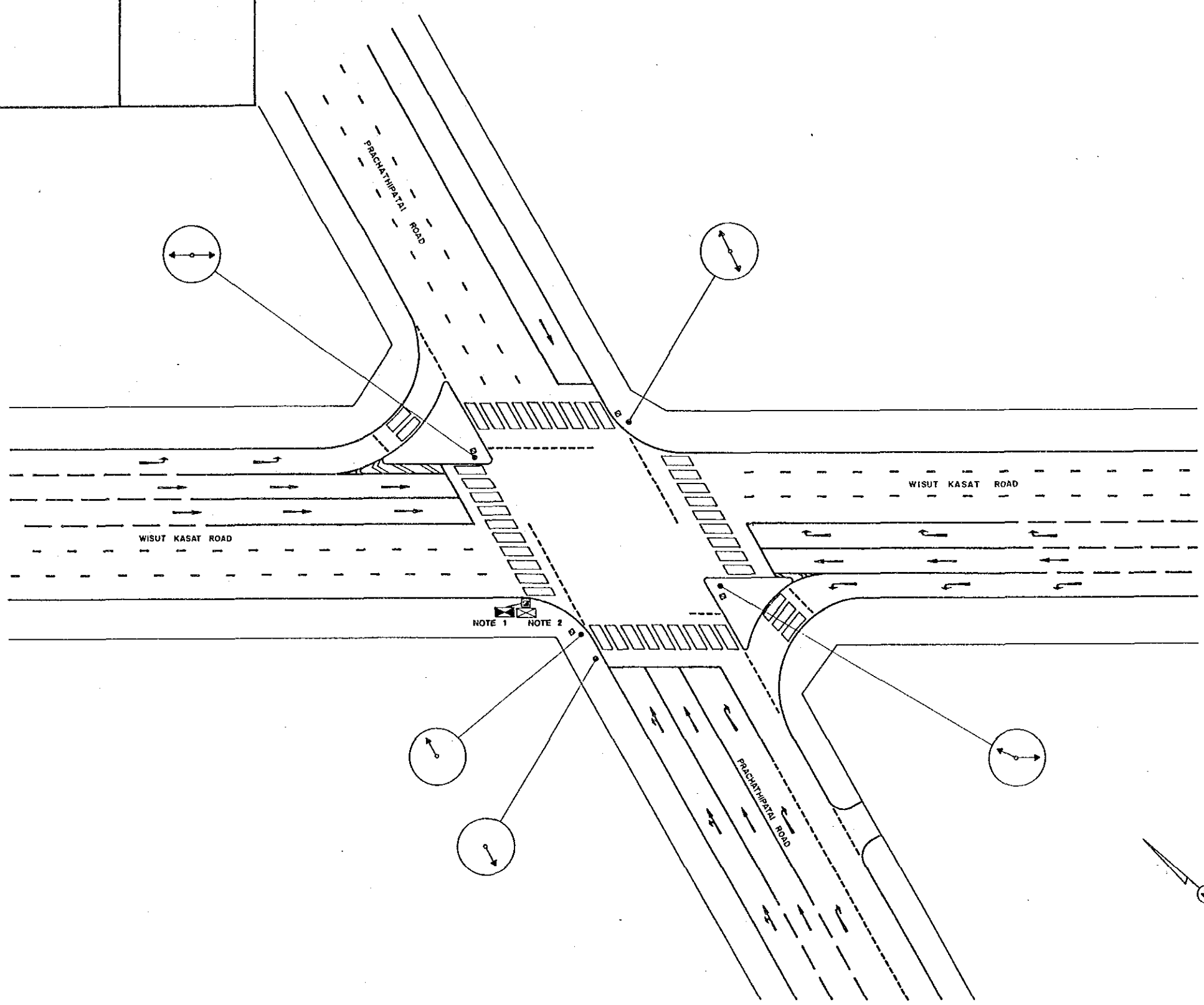


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
RATCHADAMNOEN NOK-PHITSANULOK		JICA Study Team Leader	BMA Study Team Leader
INTERSECTION NO 76		Designed By :	Checked By :
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	Scale 1 / 250
Associated Plan No. :		Date SEPTEMBER '90	Drawing NR 2076
		Total	55 / 139

PHASE PLAN FOR AUTOMATIC SEQUENCE

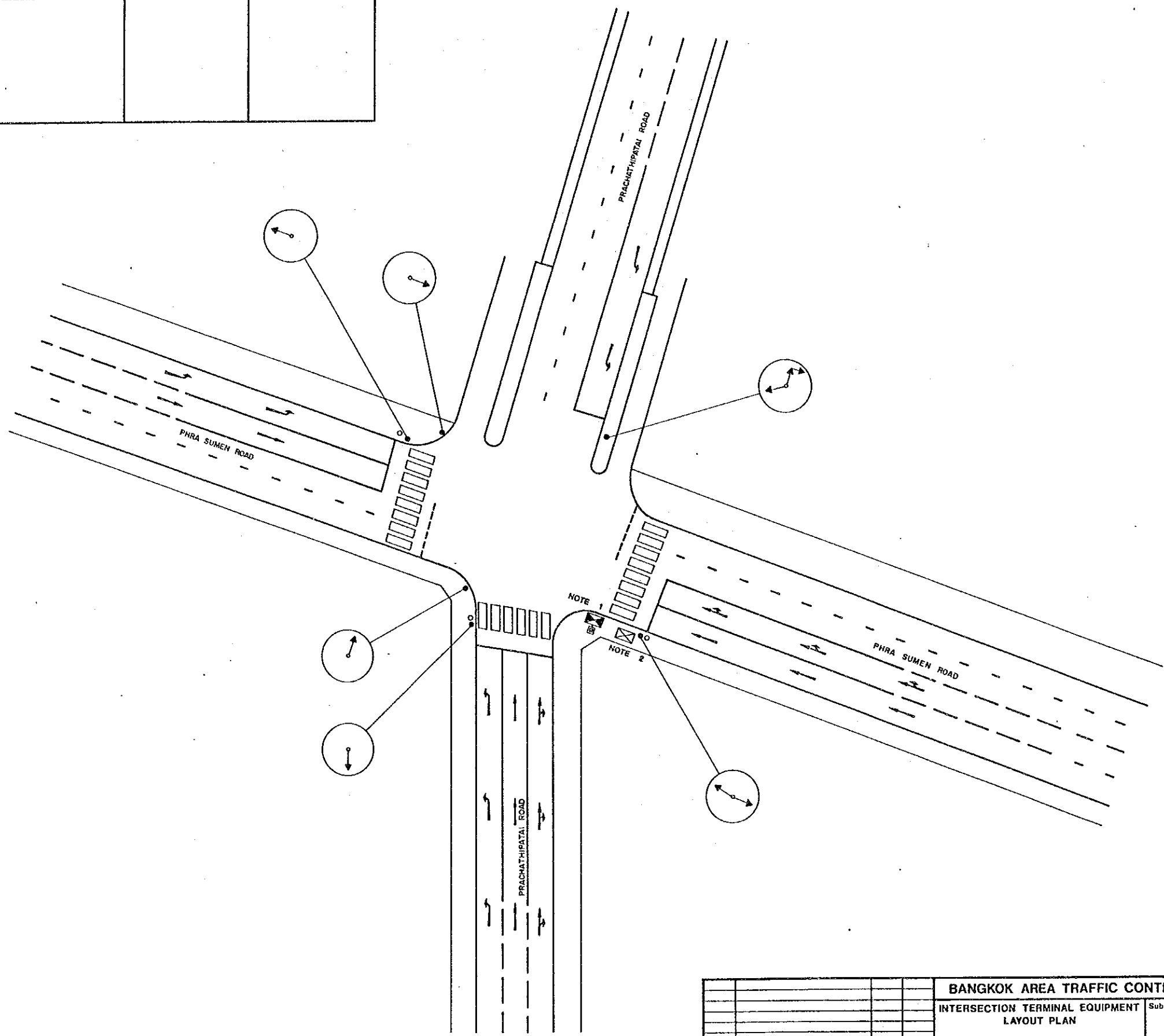


Intersection Equipments List		
Intersection No. 77		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 22 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 3 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mast	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	6
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 75 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	4
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	-
39	Signal Cable 8c (2 sq mm)	-
40	Signal Cable 12c (2 sq mm)	-
41	Signal Cable 20c (2 sq mm)	2
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (21st-arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestal Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mast	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, Ø 85mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq mm x 1c)	5



BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
PRACHATHIPATAI - WISUT KASAT		Jure Kodera JICA Study Team Leader	Boonyawat Tiptua BMA Study Team Leader
INTERSECTION NO 77		Designed By :	Checked By :
		Yasuo Nabeshima JICA Study Member	TEO, BMA
Code	Revision	Date	Initial
Associated Plan No. :	JICA	BMA	Scale 1 / 250
	Japan International Cooperation Agency	Bangkok Metropolitan Administration	Drawing NO 2077
			Date SEPTEMBER '90
			Total 56 / 139

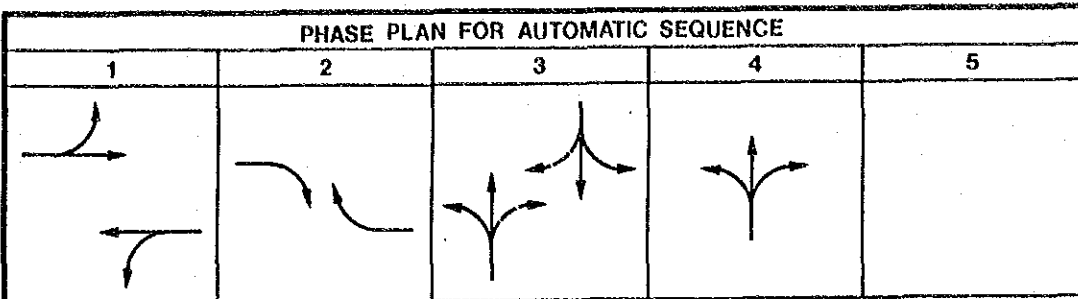
PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5



Intersection Equipments List		
Intersection No. 78		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern, Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4')	6
29	Steel Conduit 100 mm (4')	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	6
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	6
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	6
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq. mm)	-
39	Signal Cable 8c (2 sq. mm)	-
40	Signal Cable 12c (2 sq. mm)	-
41	Signal Cable 20c (2 sq. mm)	6
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Mast-arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestal Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq. mm x 1c)	5

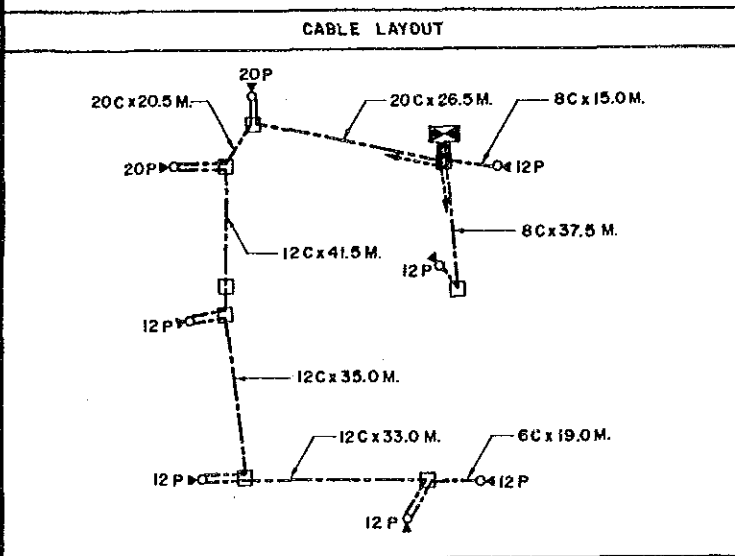
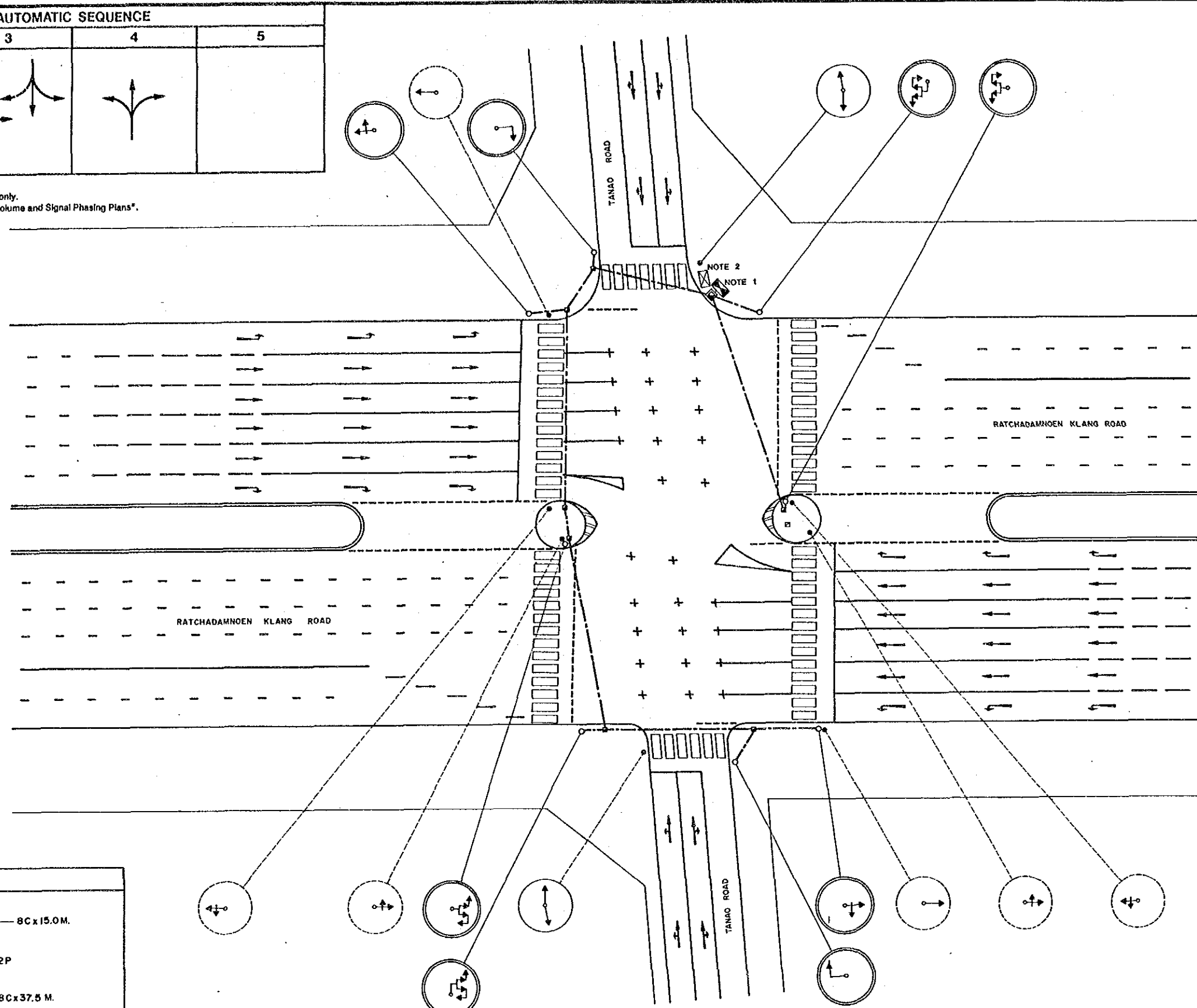
NOTE 1
NOTE 2

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By : Jure Kodera JICA Study Team Leader	Approved By : Boonswat Tiptan BMA Study Team Leader
PRACHATHIPATAI--PHRA SUMEN		Designed By : Yasuo Hasehima JICA Study Member	Checked By : TED, BMA
INTERSECTION NO 78		Scale 1 / 250	Drawing No 2078
Code	Revision	Date	Initial
Associated Plan No. :	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Date SEPTEMBER '90 Total 57 / 139



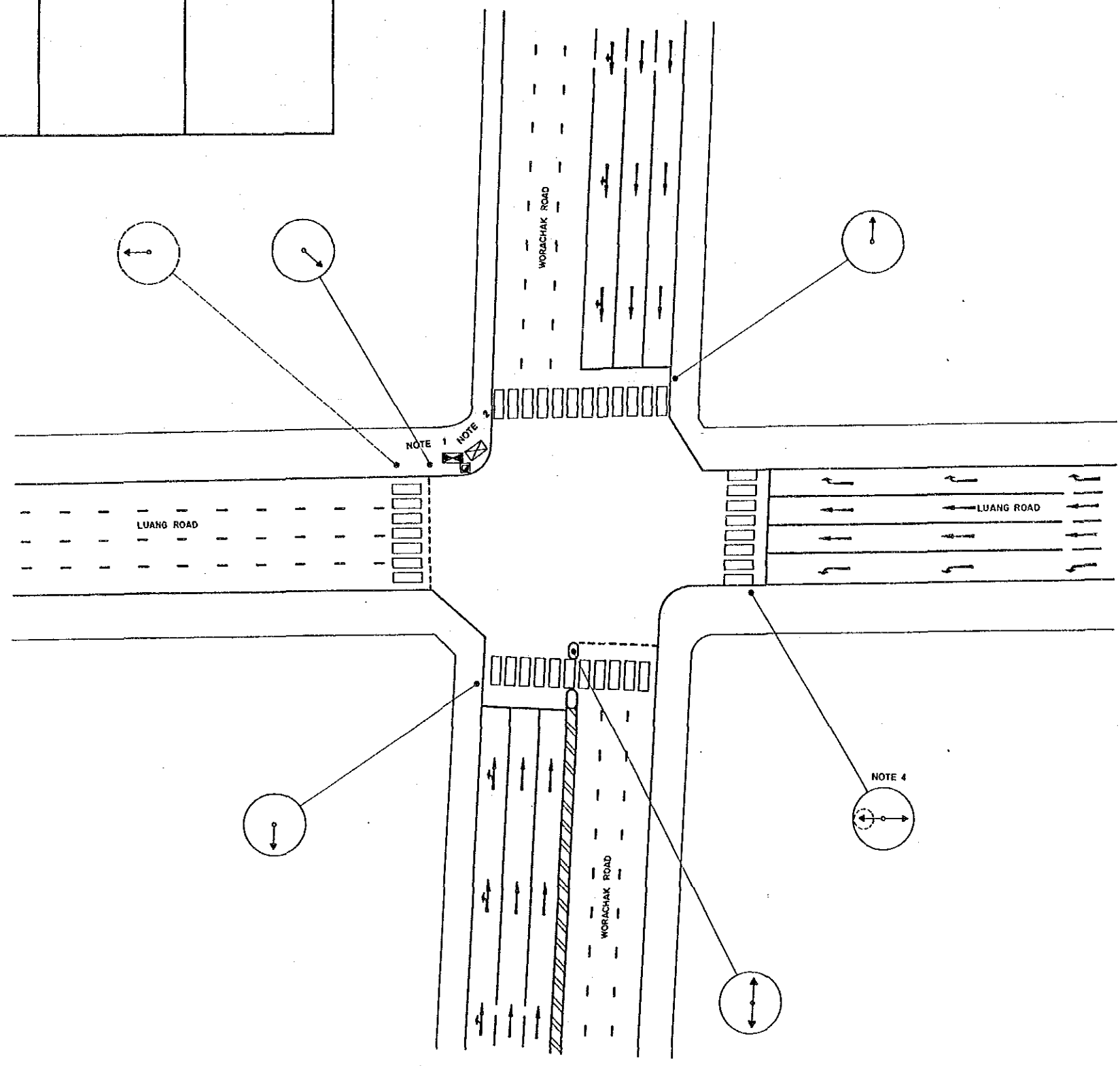
NOTE: Signal Phasing shown here is for the Morning Peak only.
For evening peak and off-peak, please refer to "Design Volume and Signal Phasing Plans".

Intersection Equipments List		
Intersection No. 79		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	3
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	4
10	Signal Pole Type B	4
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12p	5
14	Terminal 20p	2
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	2
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	2
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	2
22	Signal Head 6 Aspects (300mm x 6)	2
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	10
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	2
27	Target Board for 6 Aspects	2
28	PVC Conduit 100 mm (4")	122.5
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement of Sidewalk	122.5
34	Install Conduit under Hall	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	3
37	Handhole Type D	1
38	Signal Cable 6C (2 sq.mm)	19
39	Signal Cable 8C (2 sq.mm)	58.5
40	Signal Cable 12C (2 sq.mm)	109.5
41	Signal Cable 20C (2 sq.mm)	47
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Blue-arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestrian Type)	-
46	Remove Existing Signal Head	5
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq.mm x 1c)	5



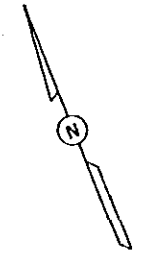
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
TANAO - RATCHADAMNOEN KLANG		Juro Kodera JICA Study Team Leader	Boonyawat Tiptua BMA Study Team Leader
INTERSECTION NO 79		Designed By :	Checked By :
		Yasuo Nabeshima JICA Study Member	TEO.BMA
Code	Revision	Date	Initial
Associated Plan No. :	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale 1 / 250 Date SEPTEMBER '90
		Drawing No 2079	Total 58 / 139

PHASE PLAN FOR AUTOMATIC SEQUENCE				
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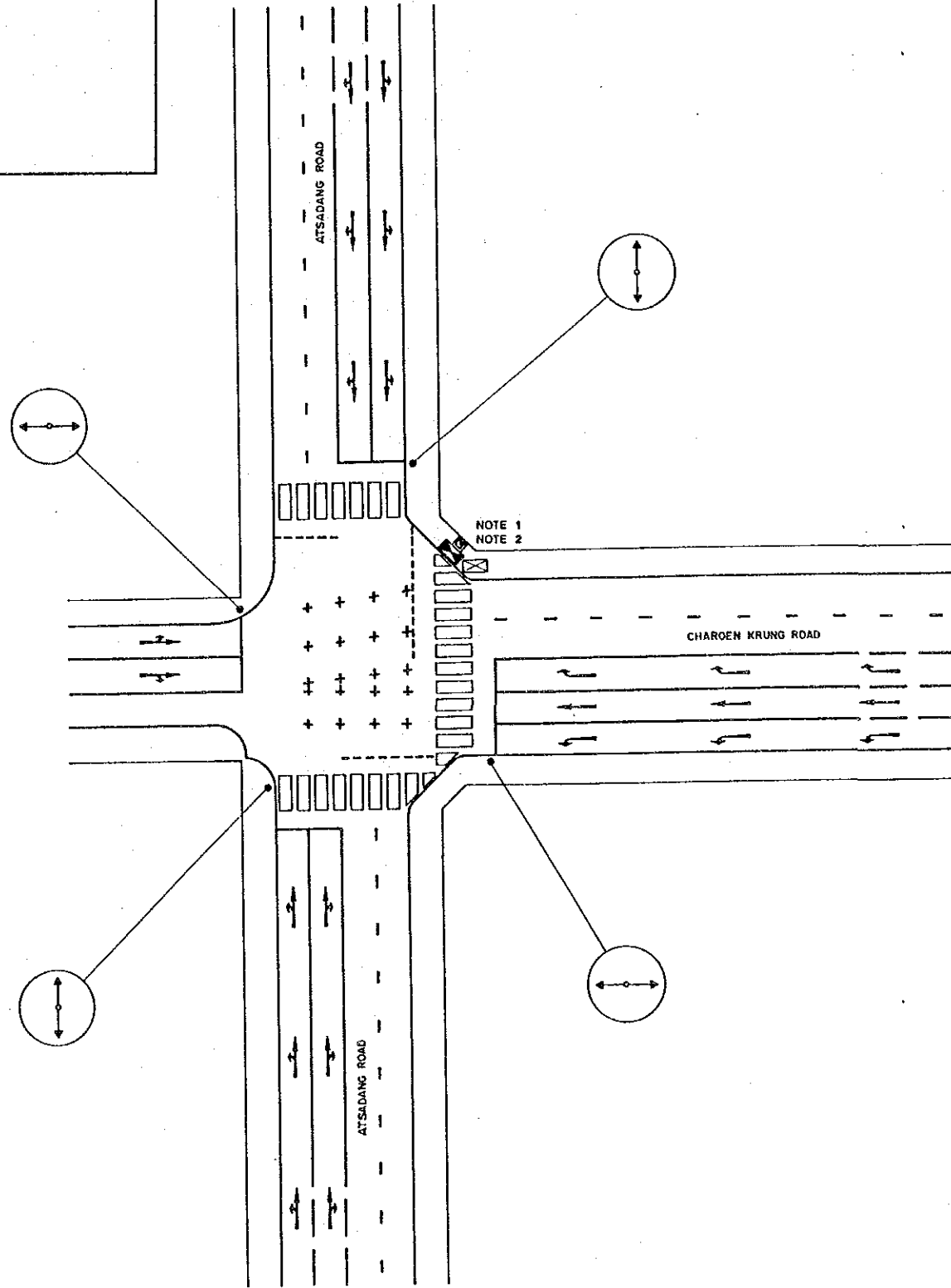


Intersection Equipments List		
Intersection No. 80		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	6
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 38 mm	-
31	Steel Conduit 28 mm	-
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	6
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	-
39	Signal Cable 6c (2 sq mm)	-
40	Signal Cable 12c (2 sq mm)	8
41	Signal Cable 20c (2 sq mm)	-
42	Power Cable	5
43	Cable Splicing Jit	1
44	Remove Existing Signal Post and Head's (Main-arm Type)	-
45	Remove Existing Signal Post and Head's (Pedestrian Type)	-
46	Remove Existing Signal Head	1
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (C/F), 0.65mm, 1P	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq mm x 1c)	6

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
				WORACHAK - LUANG		Jiro Kodera JICA Study Team Leader	Boonsawat Tiptua BMA Study Team Leader
				INTERSECTION NO 80		Designed By :	Checked By :
				JICA		Yasuo Hasehime JICA Study Member	TEO, BMA
				BMA		Scale	Drawing No
				Japan International Cooperation Agency		1 / 250	2080
				Bangkok Metropolitan Administration		Date	Total
				Associated Plan No. :		SEPTEMBER '90	59 / 139

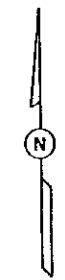


PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5

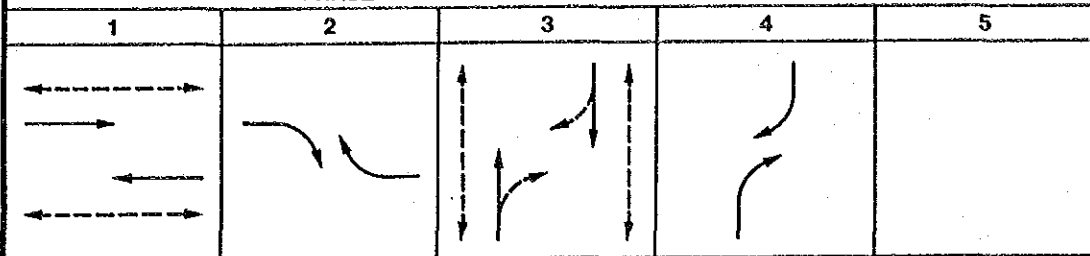


Intersection Equipments List		
Intersection No. 81		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor of Detector Pulse	-
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	8
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement of Sidewalk	8
34	Install Conduit under Path	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	-
39	Signal Cable 8c (2 sq mm)	-
40	Signal Cable 12c (2 sq mm)	-
41	Signal Cable 20c (2 sq mm)	8
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Main-arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestrian Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq mm x 1c)	5

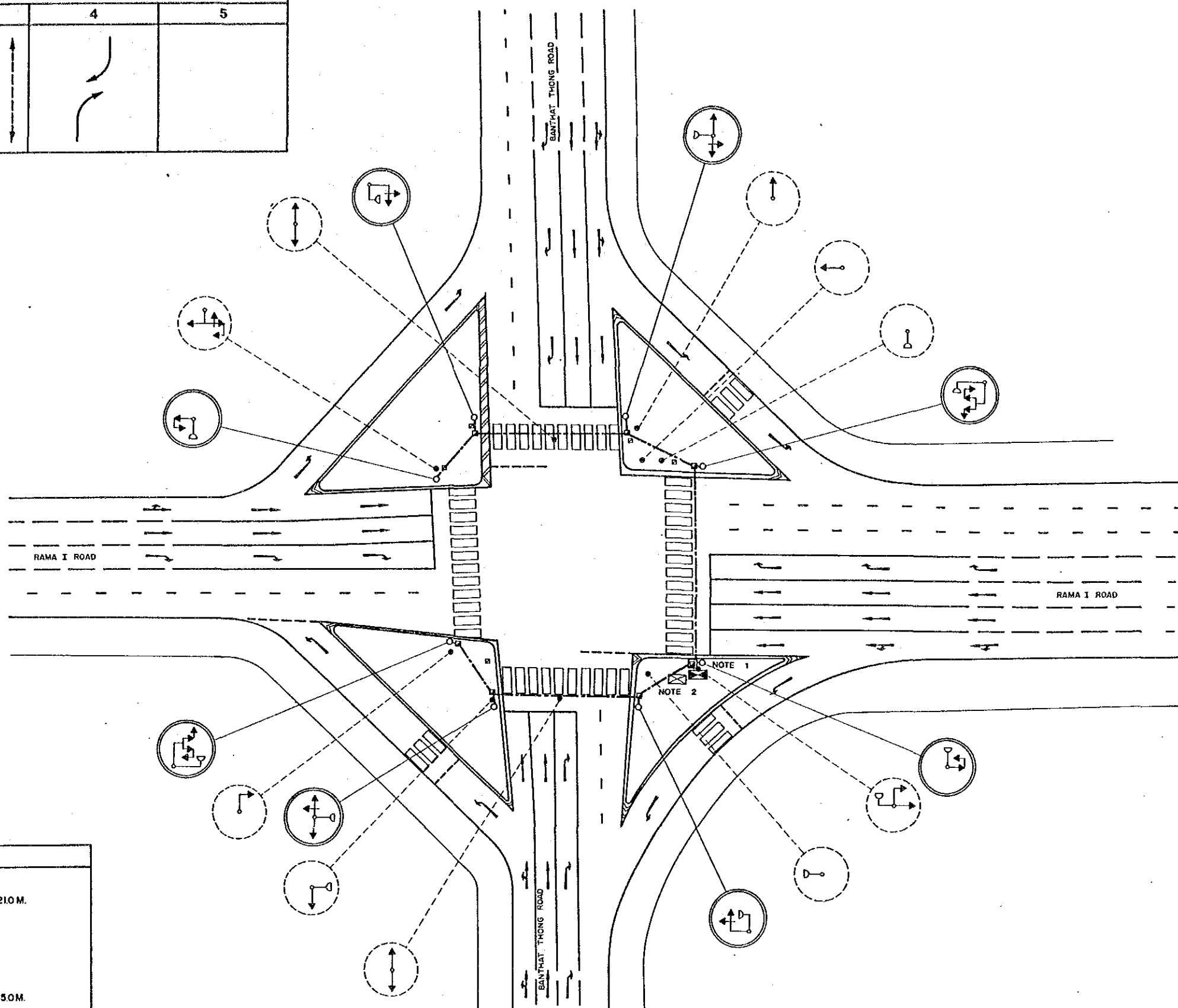
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
ATSADANG - CHAROEN KRUNG		Juro Kodera JICA Study Team Leader	Boonyawat Tiptua BMA Study Team Leader
INTERSECTION NO 81		Designed By :	Checked By :
JICA		Yasue Nabeshima JICA Study Member	TED, BMA
BMA		Scale	Drawing No
Japan International Cooperation Agency		1 / 250	2081
Bangkok Metropolitan Administration		Date	Total
Associated Plan No. :		SEPTEMBER '90	60 / 139



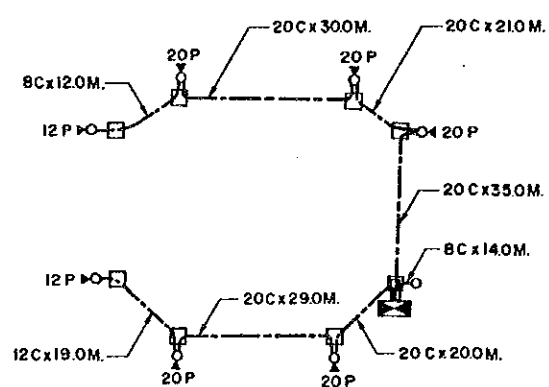
PHASE PLAN FOR AUTOMATIC SEQUENCE



Intersection Equipments List		
Intersection No. 82		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	5
5	Pre-Processor of Detector Pulse	-
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	4
10	Signal Pole Type B	4
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 17 p	2
14	Terminal 20 p	5
15	Signal Head 3 Aspects (200mm x 3)	2
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	2
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	2
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (200mm x 4)	2
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	2
23	Signal Head Pedestrian	8
24	Lantern Arrow Mask	10
25	Target Board for 3 Aspects	4
26	Target Board for 4 Aspects	2
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	110
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 38 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	110
34	Install Conduit under Rail	-
35	Install Conduit on Pylon Support Pole	5
36	Handhole Type C	8
37	Handhole Type D	1
38	Signal Cable 8c (2 sq.mm)	-
39	Signal Cable 8c (2 sq.mm)	26
40	Signal Cable 12c (2 sq.mm)	19
41	Signal Cable 20c (2 sq.mm)	135
42	Power Cable	5
43	Cable Splicing Kit	-
44	Remove Existing Signal Post and Heads (Mast-arm Type)	2
45	Remove Existing Signal Post and Heads (Pedestal Type)	8
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq. mm x 1c)	5

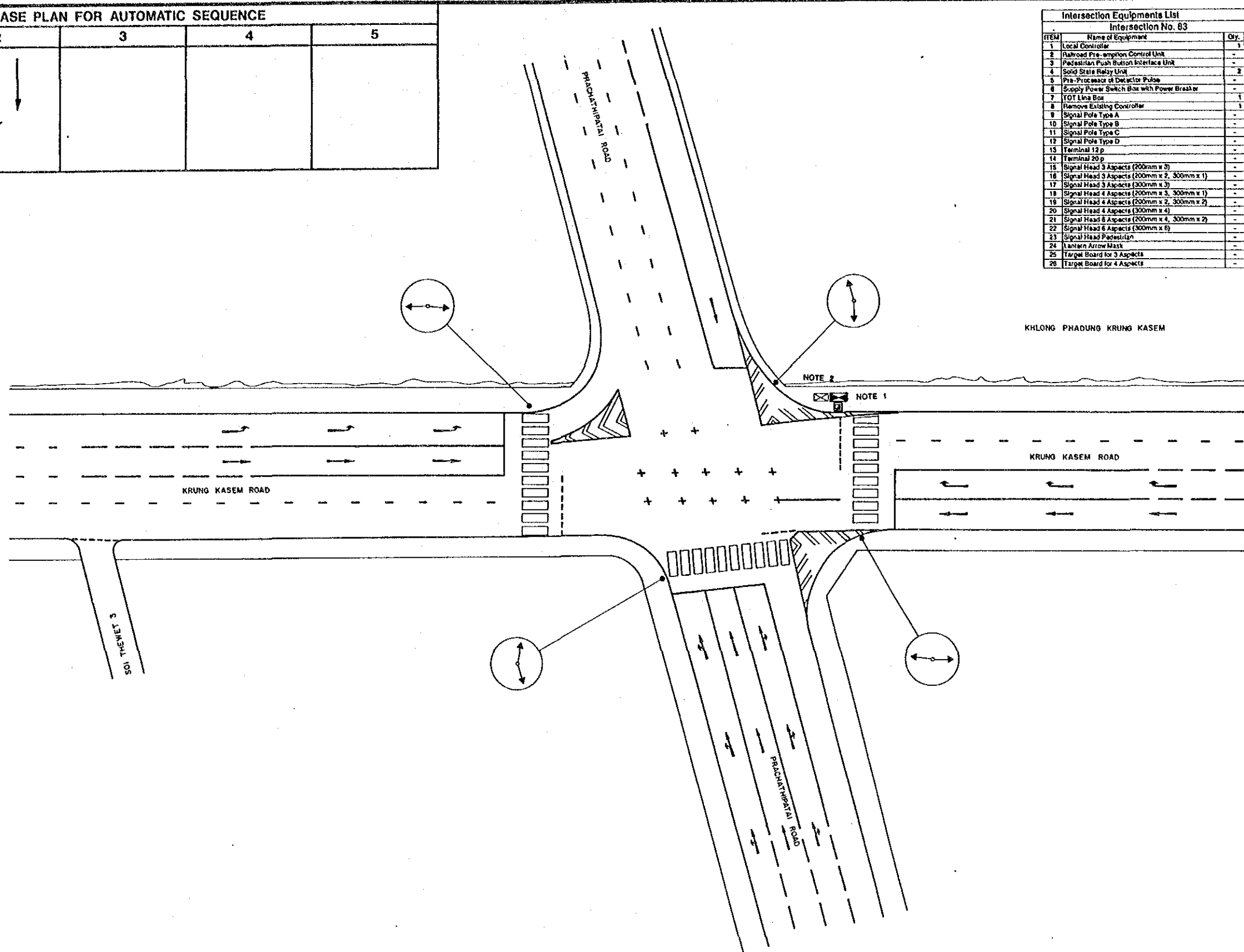


CABLE LAYOUT



BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
BANTHAT THONG - RAM I		Juro Kodera JICA Study Team Leader	Boonyawat Tiptan BMA Study Team Leader
		Designed By :	Checked By :
INTERSECTION NO 82		Yasuo Hasebina JICA Study Member	TED.BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale 1 / 250	Drawing No 2082
		Date SEPTEMBER '90	Total 61 / 139

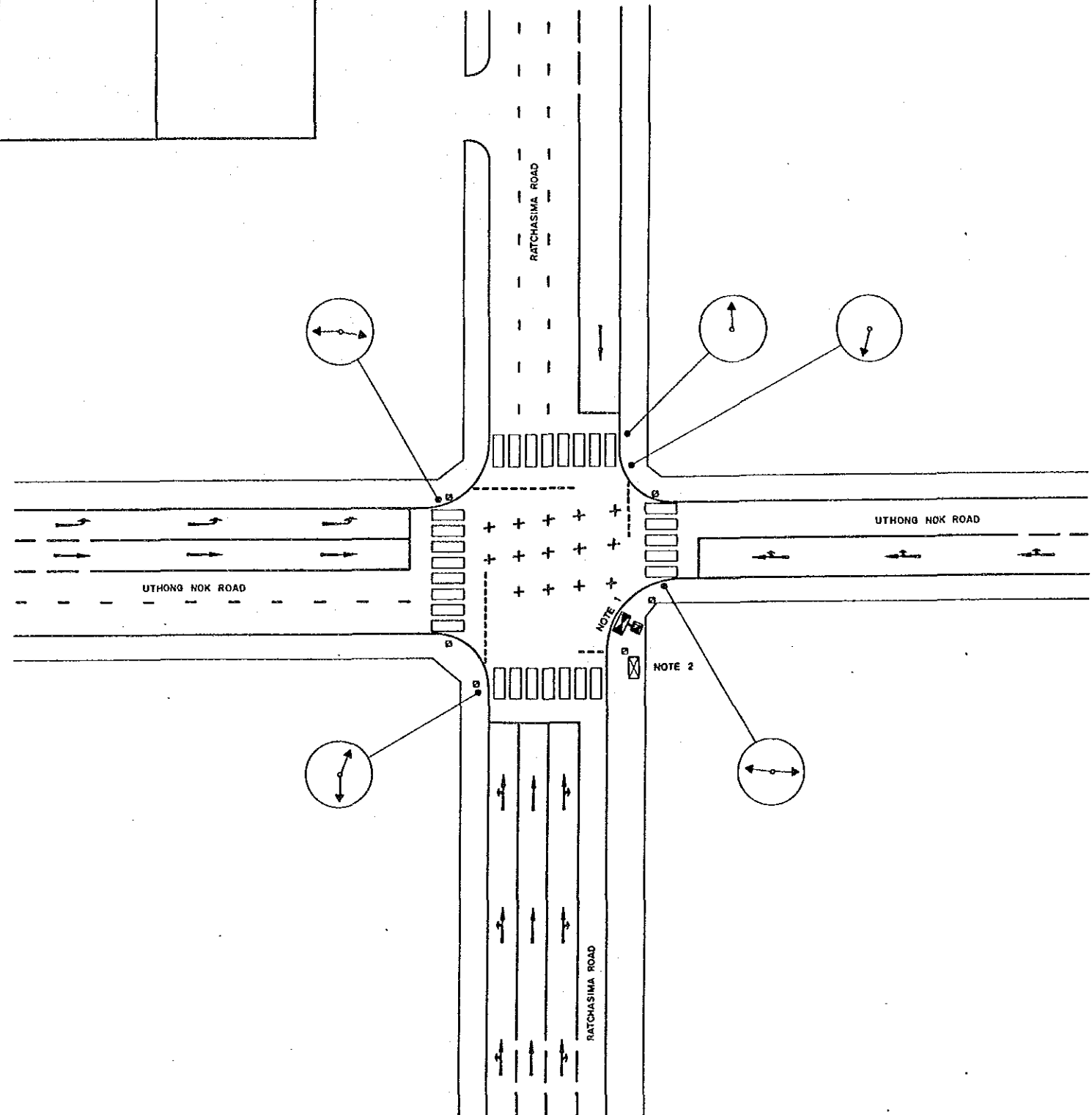
PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5



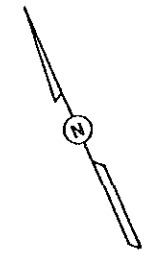
Intersection Equipments List					
Intersection No. 83					
ITEM	Name of Equipment	Qty.	ITEM	Name of Equipment	Qty.
1	Local Controller	1	37	Target Board for 4 Aspects	-
2	Railroad Pre-emption Control Unit	-	38	PVC Conduit 100 mm (4")	8
3	Pedestrian Push Button Interface Unit	-	39	Steel Conduit 100 mm (4")	-
4	Solid State Relay Unit	2	40	Steel Conduit 39 mm	-
5	Pre-Processor of Detector Pulse	-	41	Steel Conduit 28 mm	5
6	Supply Power Switch Box with Power Breaker	-	42	Install Conduit under Asphalt Pavement	-
7	TOT Line Box	1	43	Install Conduit under Concrete Pavement or Sidewalk	8
8	Remove Existing Conduit/ohr	1	44	Install Conduit under Road	-
9	Signal Pole Type A	-	45	Install Conduit on Riser Support Pole	8
10	Signal Pole Type B	-	46	Handhole Type C	-
11	Signal Pole Type C	-	47	Handhole Type D	1
12	Signal Pole Type D	-	48	Signal Cable 6c (2 sq mm)	-
13	Terminal 12 p	-	49	Signal Cable 8c (2 sq mm)	-
14	Terminal 20 p	-	50	Signal Cable 12c (2 sq mm)	-
15	Signal Head 3 Aspects (200mm x 3)	-	51	Signal Cable 20c (2 sq mm)	8
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-	52	Power Cable	5
17	Signal Head 3 Aspects (300mm x 3)	-	53	Cable Splicing Kit	1
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-	54	Remove Existing Signal Post and Heads (Standard Type)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-	55	Remove Existing Signal Post and Heads (Pedestrian Type)	-
20	Signal Head 4 Aspects (300mm x 4)	-	56	Remove Existing Signal Head	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-	57	Remove Existing Arrow Mast	-
22	Signal Head 6 Aspects (300mm x 6)	-	58	Remove Pedestrian Push Button	-
23	Signal Head Pedestrian	-	59	TOT Line (CPV, 0.65mm, 1P)	20
24	Lantern Arrow Mast	-	60	Grounding Rod	1
25	Target Board for 3 Aspects	-	61	Grounding Cable (IV 5.5 sq mm x 1c)	5
26	Target Board for 4 Aspects	-			

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I				
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :	
PRACHATHIPATAI - KRUNG KASEM		Jura Kodera JICA Study Team Leader	Boonsawat Tipitua BMA Study Team Leader	
INTERSECTION NO 83		Designed By :	Checked By :	
		Yasue Nabeshima JICA Study Member	TED, BMA	
Code	Revision	Date	Initial	
Associated Plan No. :	JICA	BMA	Scale	1 / 250
	Japan International Cooperation Agency	Bangkok Metropolitan Administration	Date	SEPTEMBER '90
			Drawing No	2083
			Total	62 / 139

PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5

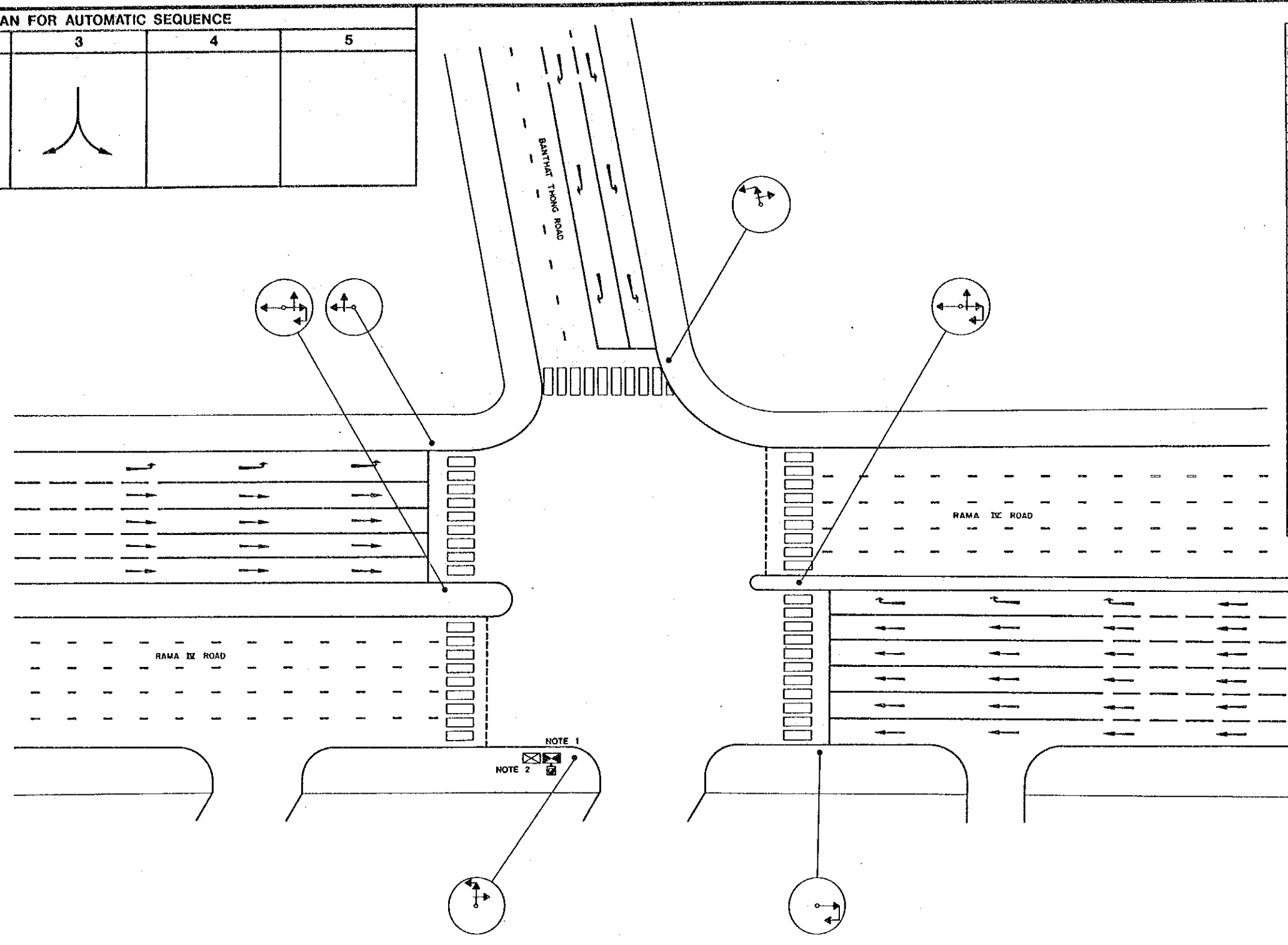


Intersection Equipments List		
Intersection No. 84		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor or Detector Pulse	-
6	Supply Power Switch Box with Power Breaker	-
7	FOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	8
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	6
34	Install Conduit under Road	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq. mm)	-
39	Signal Cable 8c (2 sq. mm)	-
40	Signal Cable 12c (2 sq. mm)	-
41	Signal Cable 20c (2 sq. mm)	8
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Main-arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestrian Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	FOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq. mm x 1c)	5



BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I					
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN			Submitted By :	Approved By :	
RATCHASIMA - UTHONG NOK			Juro Kodera JICA Study Team Leader	Boonyawat Tiptus BMA Study Team Leader	
INTERSECTION NO 84			Designed By :	Checked By :	
			Yasuo Matsushita JICA Study Member	TED, BMA	
Code	Revision	Date	Initial	JICA	BMA
Associated Plan No. :	JICA		BMA		Scale 1 / 250
	Japan International Cooperation Agency		Bangkok Metropolitan Administration		Drawing No 2084
	Date SEPTEMBER 90		Total 63 / 139		

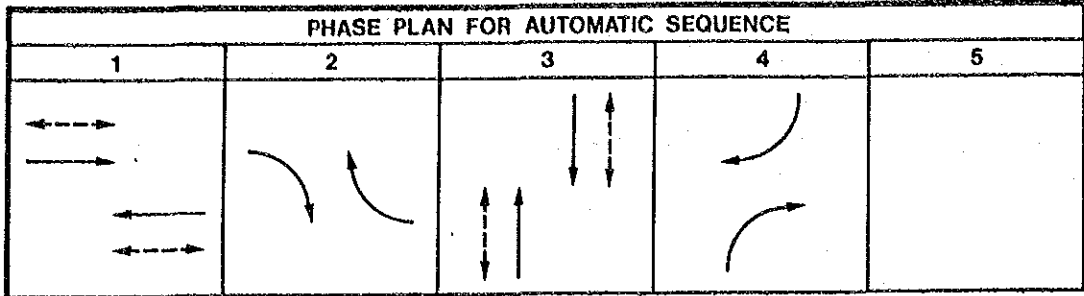
PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5



Intersection Equipments List		
Intersection No. 87		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	8
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 38 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	8
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq. mm)	-
39	Signal Cable 8c (2 sq. mm)	-
40	Signal Cable 12c (2 sq. mm)	8
41	Signal Cable 20c (2 sq. mm)	-
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Non-arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestrian Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq. mm x 1c)	5

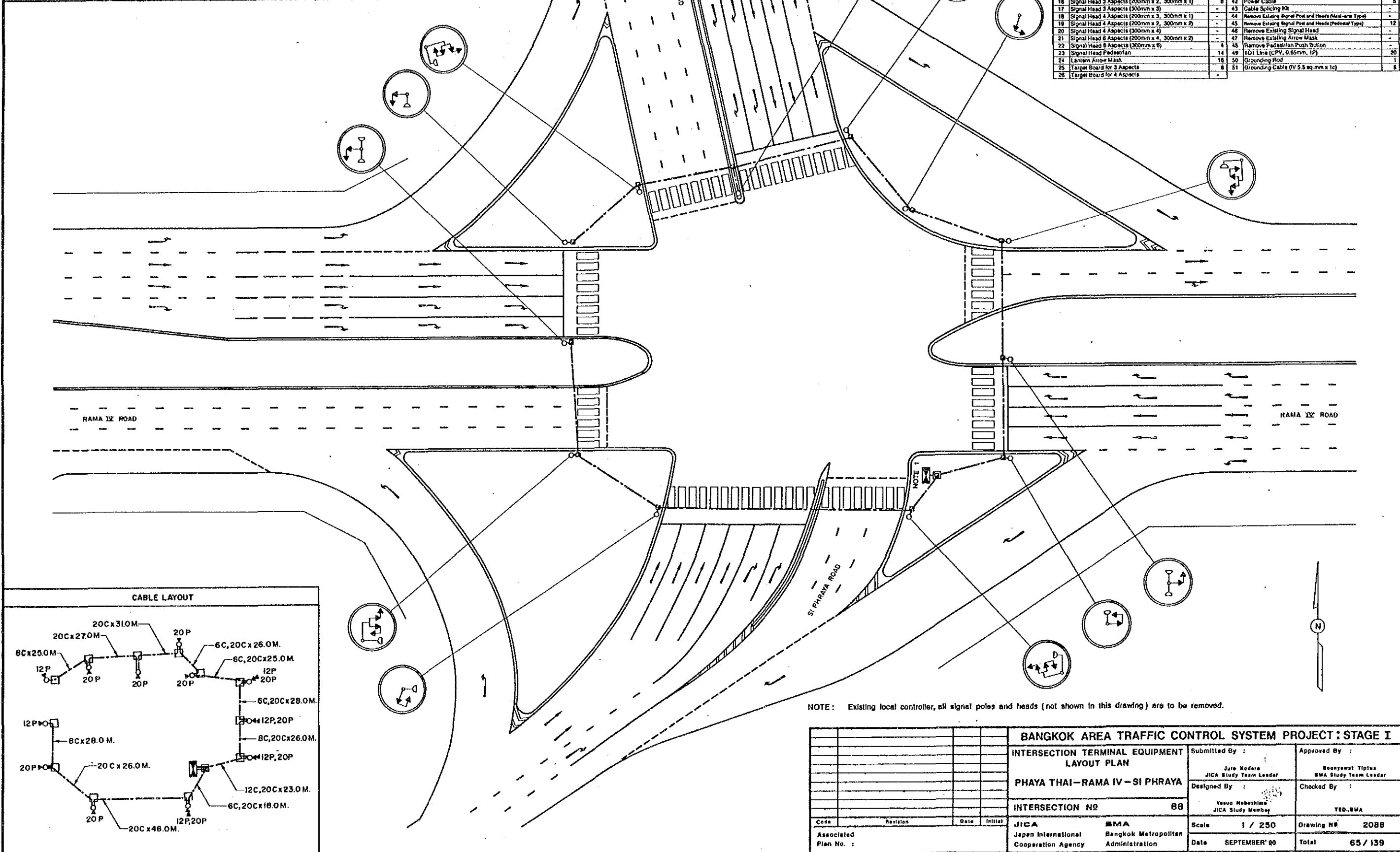
NOTE 1
NOTE 2

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
RAMA IV - BANTHAT THONG		Jare Kefero JICA Study Team Leader	Boonsawat Titian BMA Study Team Leader
INTERSECTION NO 87		Designed By :	Checked By :
		Tasuo Hasehime JICA Study Member	TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale 1 / 250 Date SEPTEMBER '90
		Drawing No 2087	Total 64 / 139

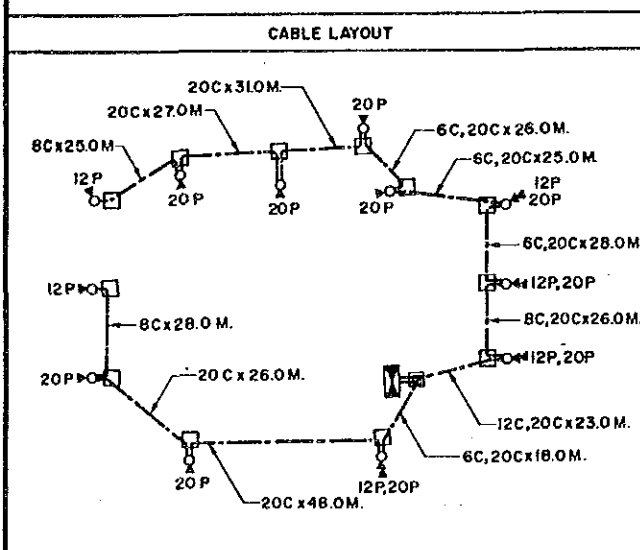


Intersection Equipments List Intersection No. 88

ITEM	Name of Equipment	Qty.	ITEM	Name of Equipment	Qty.
1	Local Controller	1	27	Target Board for 6 Aspects	-
2	Railroad Pre-emption Control Unit	-	28	PVC Conduit 100 mm (4")	213
3	Pedestrian Push Button Interface Unit	-	29	Steel Conduit 100 mm (4")	-
4	Solid State Relay Unit	6	30	Steel Conduit 39 mm	-
5	Pre-Processor of Detector Pulse	1	31	Steel Conduit 28 mm	5
6	Supply Power Switch Box with Power Breaker	-	32	Install Conduit under Asphalt Pavement	-
7	TOI Line Box	1	33	Install Conduit under Concrete Pavement of Sidewalk	213
8	Remove Existing Controller	1	34	Install Conduit under Road	-
9	Signal Pole Type A	4	35	Install Conduit on Riser Support Pole	5
10	Signal Pole Type B	8	36	Handhole Type C	12
11	Signal Pole Type C	-	37	Handhole Type D	1
12	Signal Pole Type D	-	38	Signal Cable 6c (2 sq. mm)	97
13	Terminal 12 p	8	39	Signal Cable 8c (2 sq. mm)	79
14	Terminal 20 p	10	40	Signal Cable 12c (2 sq. mm)	23
15	Signal Head 3 Aspects (200mm x 3)	-	41	Signal Cable 20c (2 sq. mm)	278
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	6	42	Power Cable	5
17	Signal Head 3 Aspects (300mm x 3)	-	43	Cable Splicing Kit	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-	44	Remove Existing Signal Post and Heads (Main-arm Type)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-	45	Remove Existing Signal Post and Heads (Pedestrian Type)	12
20	Signal Head 4 Aspects (300mm x 4)	-	46	Remove Existing Signal Head	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-	47	Remove Existing Arrow Mask	-
22	Signal Head 8 Aspects (300mm x 6)	-	48	Remove Pedestrian Push Button	-
23	Signal Head Pedestrian	4	49	TOI Line (CPV, 0.65mm, 12)	20
24	Lantern Arrow Mask	16	50	Grounding Rod	1
25	Target Board for 3 Aspects	8	51	Grounding Cable (V 5.5 sq. mm x 1c)	6
26	Target Board for 4 Aspects	-	-	-	-

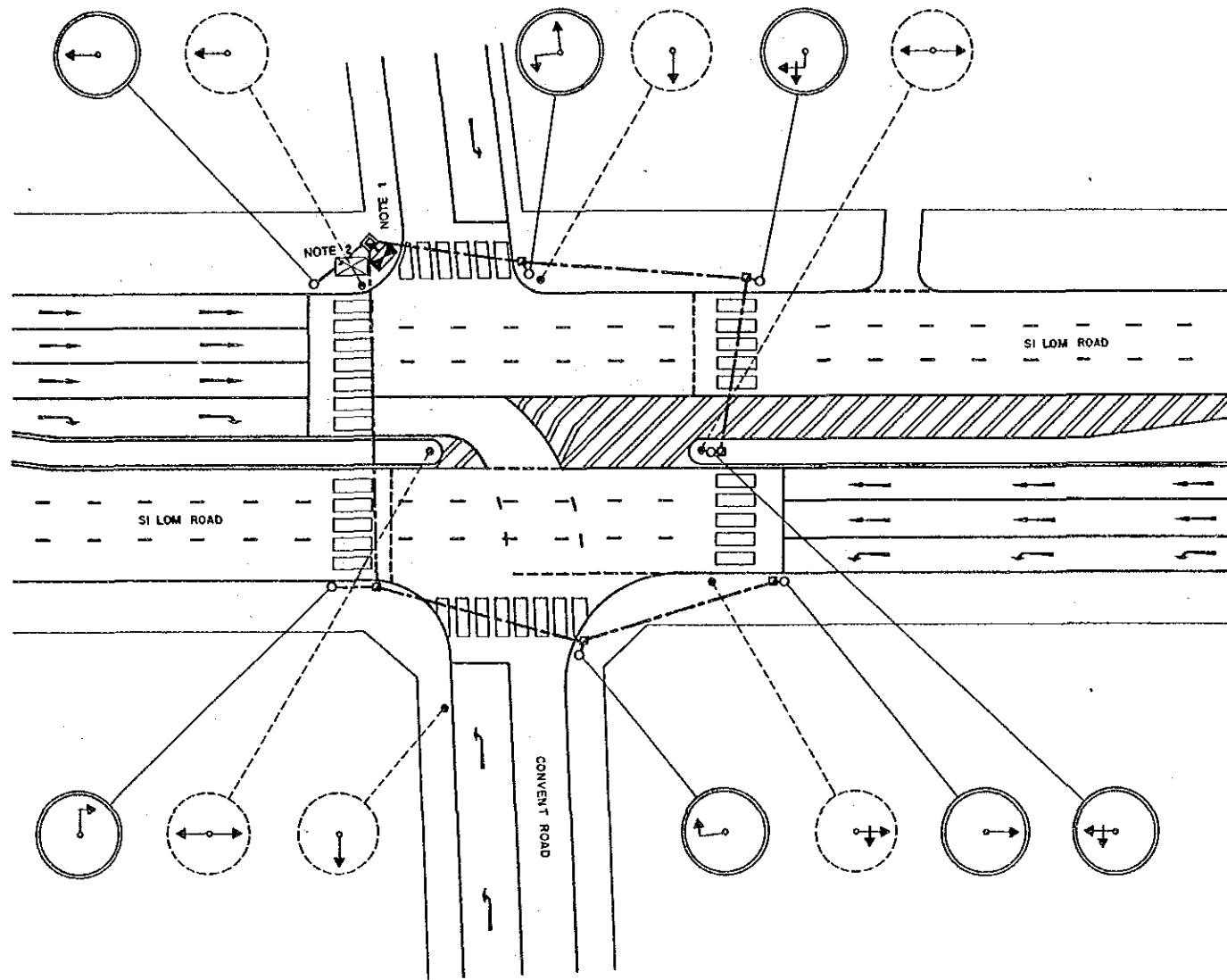


NOTE: Existing local controller, all signal poles and heads (not shown in this drawing) are to be removed.

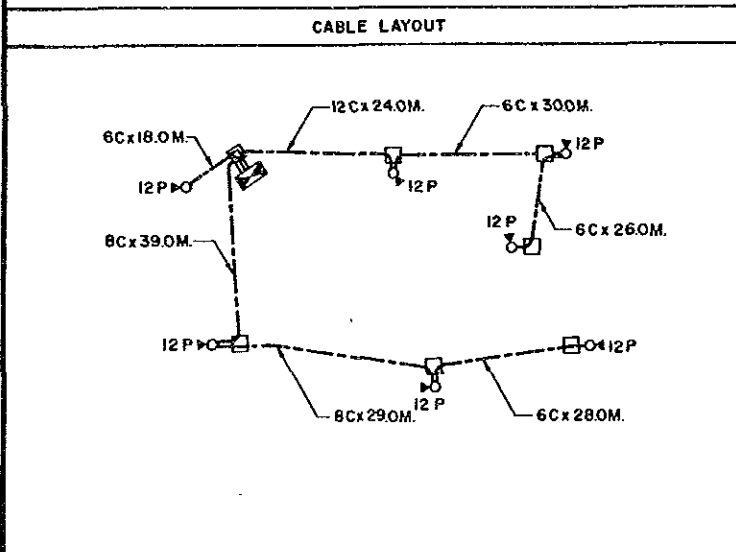


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
PHAYA THAI - RAMA IV - SI PHRAYA		Jure Kodera JICA Study Team Leader	Boonyawat Tiptua BMA Study Team Leader
INTERSECTION NO 88		Designed By :	Checked By :
JICA BMA Japan International Cooperation Agency Bangkok Metropolitan Administration		Yasu Nobuhiko JICA Study Member	YED, BMA
Code	Revision	Date	Initial
Associated Plan No. :			
Scale	1 / 250	Drawing No	2088
Date	SEPTEMBER '00	Total	65 / 139

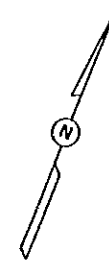
PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5



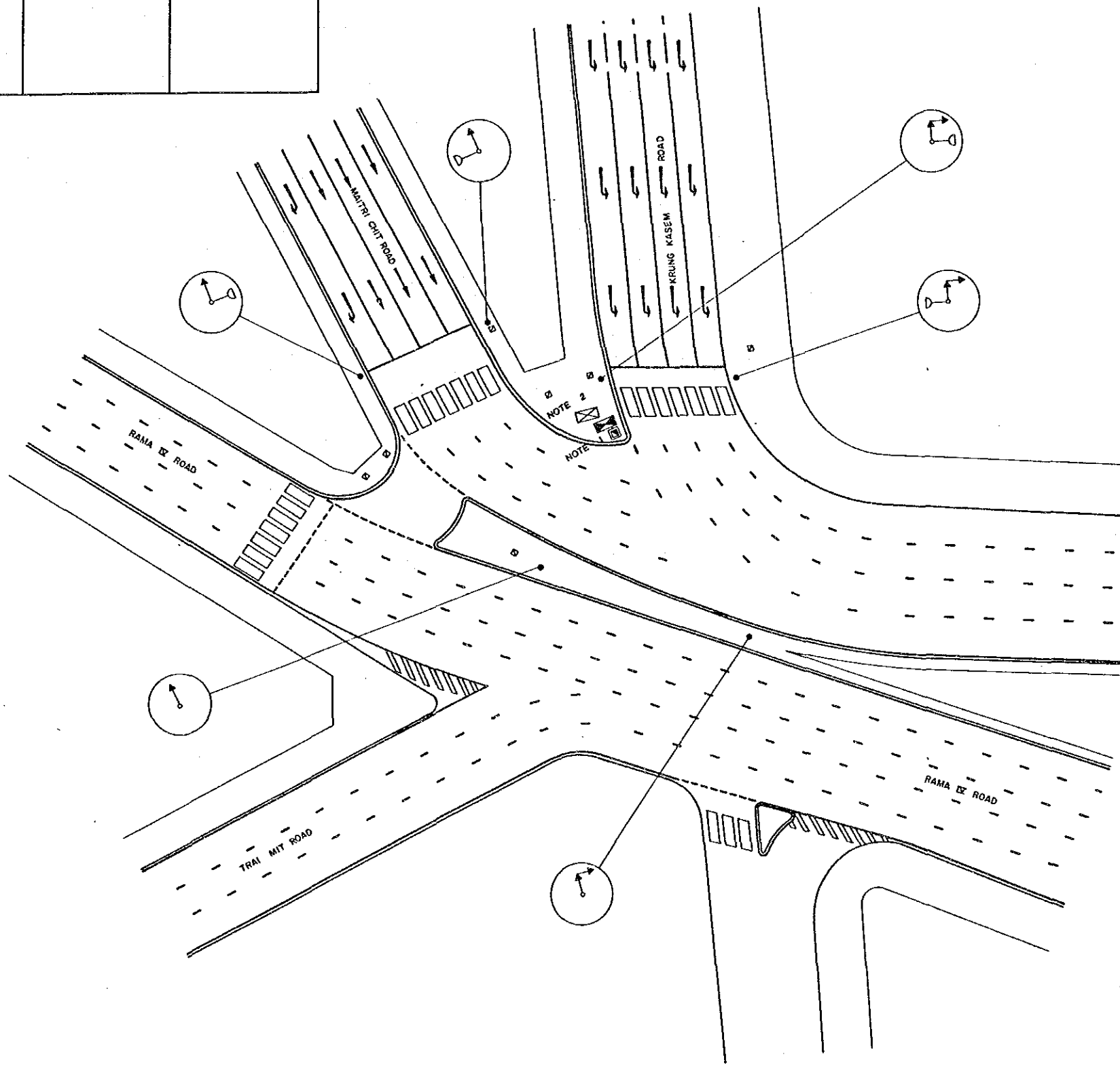
Intersection Equipments List		
Intersection No. 89		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	3
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	4
10	Signal Pole Type B	1
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p.	7
14	Terminal 20 p.	-
15	Signal Head 3 Aspects (200mm x 3)	3
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	3
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	1
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	1
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mast	2
25	Target Board for 3 Aspects	3
26	Target Board for 4 Aspects	1
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	126
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 33 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	126
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	6
36	Handhole Type C	6
37	Handhole Type D	1
38	Signal Cable 6c (2 sq. mm)	102
39	Signal Cable 8c (2 sq. mm)	84
40	Signal Cable 12c (2 sq. mm)	-
41	Signal Cable 20c (2 sq. mm)	-
42	Power Cable	5
43	Cable Splicing Kit	-
44	Remove Existing Signal Pole and Heads (Mast-arm Type)	-
45	Remove Existing Signal Pole and Heads (Pedestal Type)	6
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mast	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq. mm x 1c)	5



BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
SI LOM - CONVENT		Juta Kedra JICA Study Team Leader	Boonyasat Tiptua BMA Study Team Leader
INTERSECTION NO 89		Designed By :	Checked By :
		Yasui Nobuhisa JICA Study Member	TED_BMA
Code	Revision	Date	Initial
Associated Plan No. :			
JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale 1 / 250	Drawing No 2089
		Date SEPTEMBER '90	Total 66 / 139

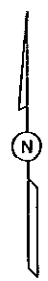


PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5

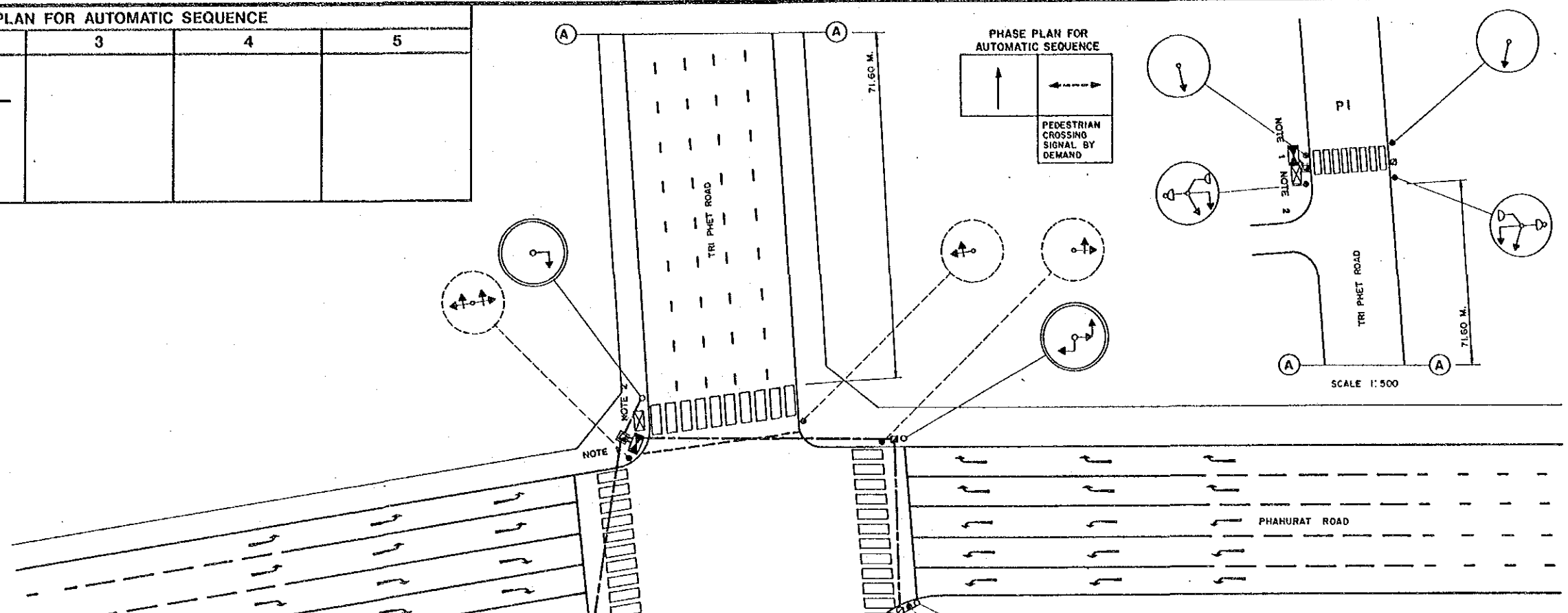


Intersection Equipments List		
Intersection No. 93		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Fire Processor or Detector Pulse	-
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 22 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	6
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	-
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	6
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	-
39	Signal Cable 8c (2 sq mm)	-
40	Signal Cable 12c (2 sq mm)	8
41	Signal Cable 20c (2 sq mm)	-
42	Power Cable	5
43	Cable Splicing Joints	1
44	Remove Existing Signal Pole and Heads (4-arm Type)	-
45	Remove Existing Signal Pole and Heads (Pedestal Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (SPV, Ø 65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (Ø 5.5 sq mm x 1c)	5

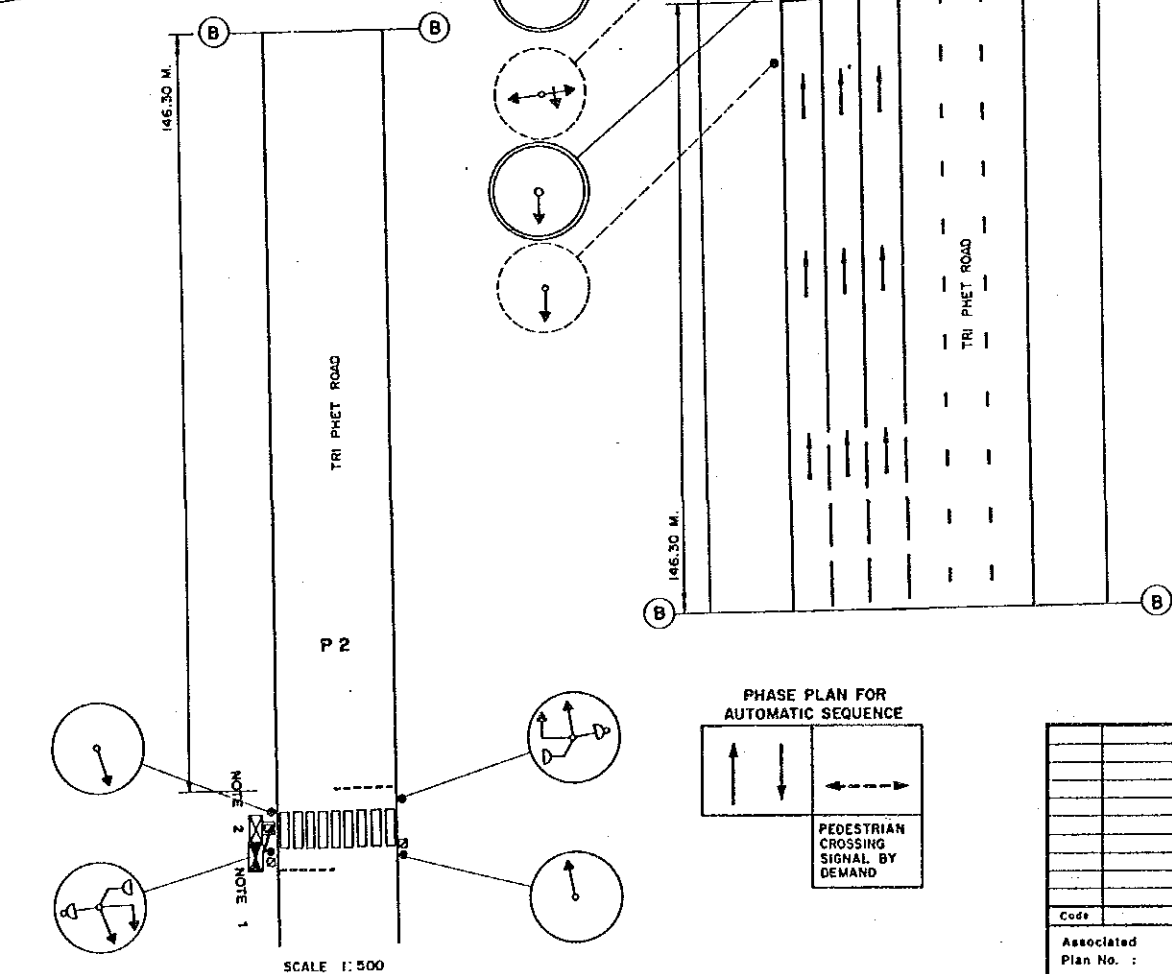
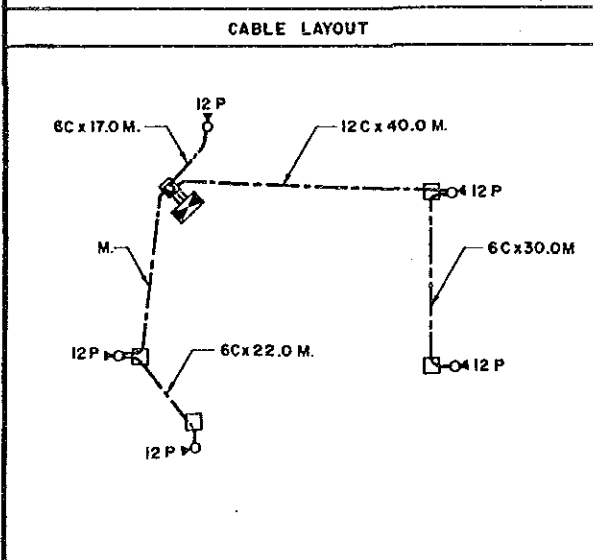
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
KRUNG KASEM-MAITRI CHIT- RAMA IV-TRAI MIT		Juro Kodera JICA Study Team Leader	Boonyawat Tiptua BMA Study Team Leader
INTERSECTION NO 93		Designed By :	Checked By :
		Yasuo Hasehina JICA Study Member	TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale 1 / 250	Drawing No 2093
		Date SEPTEMBER '90	Total 67 / 139



PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5

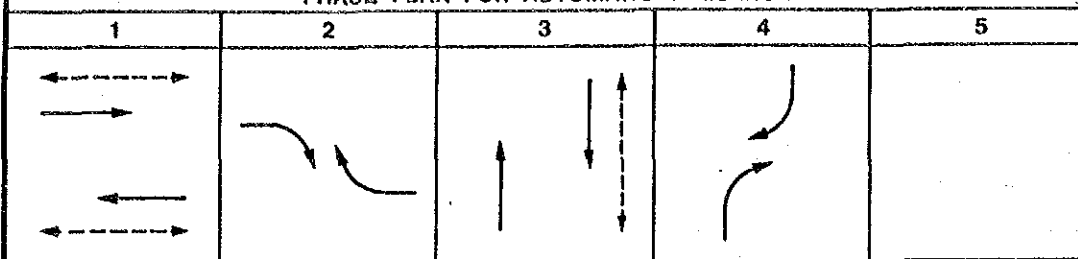


Intersection Equipments List					
Intersection No. 94					
ITEM	Name of Equipment	Qty.	ITEM	Name of Equipment	Qty.
1	Local Controller	3	27	Target Board for 5 Aspects	-
2	Railroad Pre-emption Control Unit	-	28	PVC Conduit 100 mm (4")	105
3	Pedestrian Push Button Interface Unit	2	29	Steel Conduit 100 mm (4")	-
4	Solid State Relay Unit	4	30	Steel Conduit 39 mm	-
5	Pre-Processor of Detector Pulse	1	31	Steel Conduit 28 mm	5
6	Supply Power Switch Box with Power Breaker	-	32	Install Conduit under Asphalt Pavement	105
7	TOT Line Box	3	33	Install Conduit under Concrete Pavement of Sidewalk	-
8	Remove Existing Controller	3	34	Install Conduit under Rail	-
9	Signal Pole Type A	3	35	Install Conduit on Riser Support Pole	5
10	Signal Pole Type B	2	36	Handhole Type C	3
11	Signal Pole Type C	-	37	Handhole Type D	3
12	Signal Pole Type D	-	38	Signal Cable 8c (2 sq mm)	59
13	Terminal 12 p	5	39	Signal Cable 8c (2 sq mm)	-
14	Terminal 20 p	-	40	Signal Cable 12c (2 sq mm)	58
15	Signal Head 3 Aspects (200mm x 3)	1	41	Signal Cable 20c (2 sq mm)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	2	42	Power Cable	15
17	Signal Head 3 Aspects (300mm x 3)	2	43	Cable Splicing Kit	2
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-	44	Remove Existing Signal Post and Heads (Main-type)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-	45	Remove Existing Signal Post and Heads (Pedestrian Type)	8
20	Signal Head 4 Aspects (300mm x 4)	1	46	Remove Existing Signal Head	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-	47	Remove Existing Arrow Mask	-
22	Signal Head 6 Aspects (300mm x 6)	-	48	Remove Pedestrian Push Button	-
23	Signal Head Pedestrian	-	49	TOT Line (CPV, 0.65mm, 1P)	60
24	Lantern Arrow Mask	4	50	Grounding Rod	3
25	Target Board for 3 Aspects	3	51	Grounding Cable (RV 5.5 sq mm x 1c)	15
26	Target Board for 4 Aspects	-			

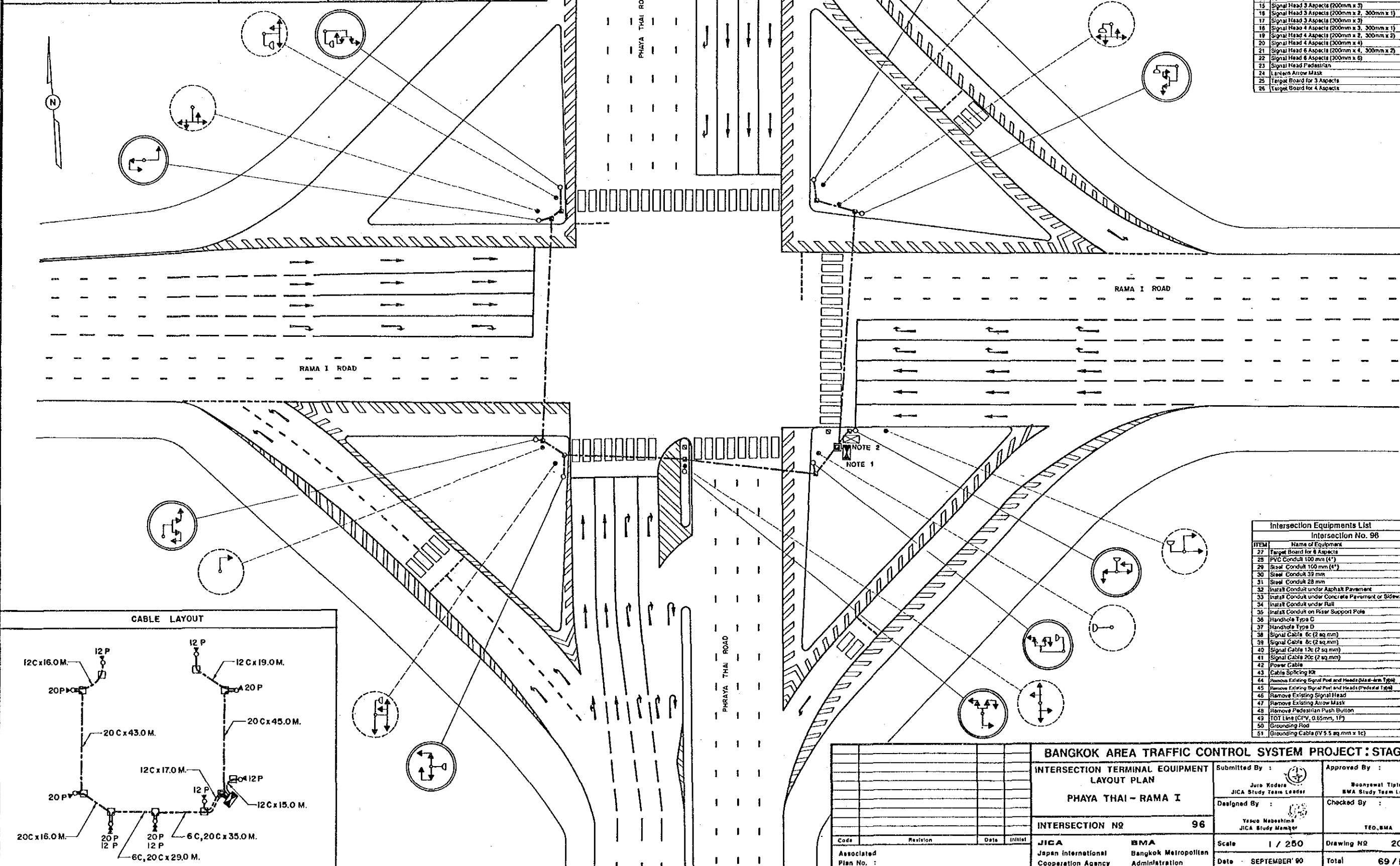


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
TRI PHET - PHAHURAT		Juro Kodera JICA Study Team Leader	Boonyawat Tiptua BMA Study Team Leader
INTERSECTION NO 94, P1, P2		Designed By :	Checked By :
JICA BMA Japan International Bangkok Metropolitan Cooperation Agency Administration		Yasuo Nabeshima JICA Study Member	TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :	Scale 1 / 250		Drawing No 2094
Date SEPTEMBER '90		Total 68 / 139	

PHASE PLAN FOR AUTOMATIC SEQUENCE

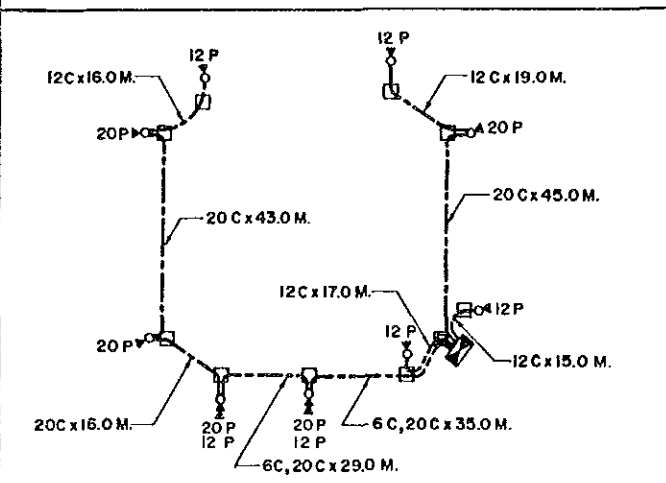


Intersection Equipments List		
Intersection No. 96		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	4
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	4
10	Signal Pole Type B	5
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	6
14	Terminal 20 p	5
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	9
17	Signal Head 3 Aspects (200mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	1
22	Signal Head 6 Aspects (300mm x 6)	4
23	Signal Head Pedestrian	6
24	Lantern Arrow Mask	19
25	Target Board for 3 Aspects	9
26	Target Board for 4 Aspects	-



Intersection Equipments List		
Intersection No. 96		
ITEM	Name of Equipment	Qty.
27	Target Board for 6 Aspects	1
28	PVC Conduit 100 mm (4")	143
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 59 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	143
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	1
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	96
39	Signal Cable 8c (2 sq mm)	-
40	Signal Cable 12c (2 sq mm)	87
41	Signal Cable 20c (2 sq mm)	168
42	Power Cable	5
43	Cable Splicing Kit	-
44	Remove Existing Signal Post and Heads (2-arm Type)	7
45	Remove Existing Signal Post and Heads (Pedestrian Type)	2
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq mm x 1c)	5

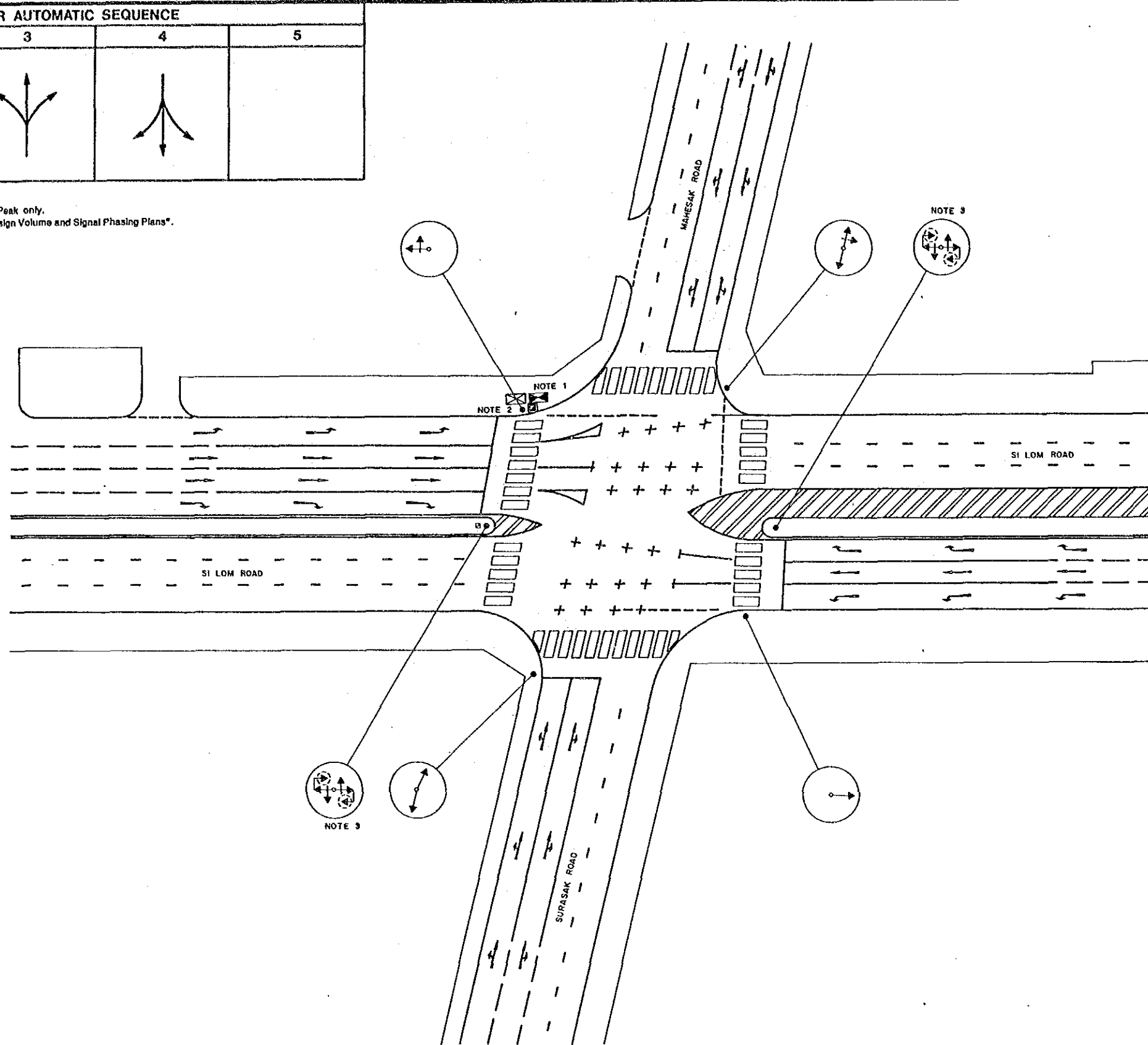
CABLE LAYOUT



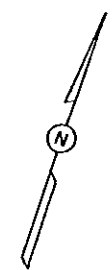
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
PHAYA THAI - RAMA I		Designed By :	Checked By :
INTERSECTION NO 96		JICA Study Manager	TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
Scale		1 / 250	Drawing NO 2096
Date		SEPTEMBER '90	Total 69 / 139

PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5

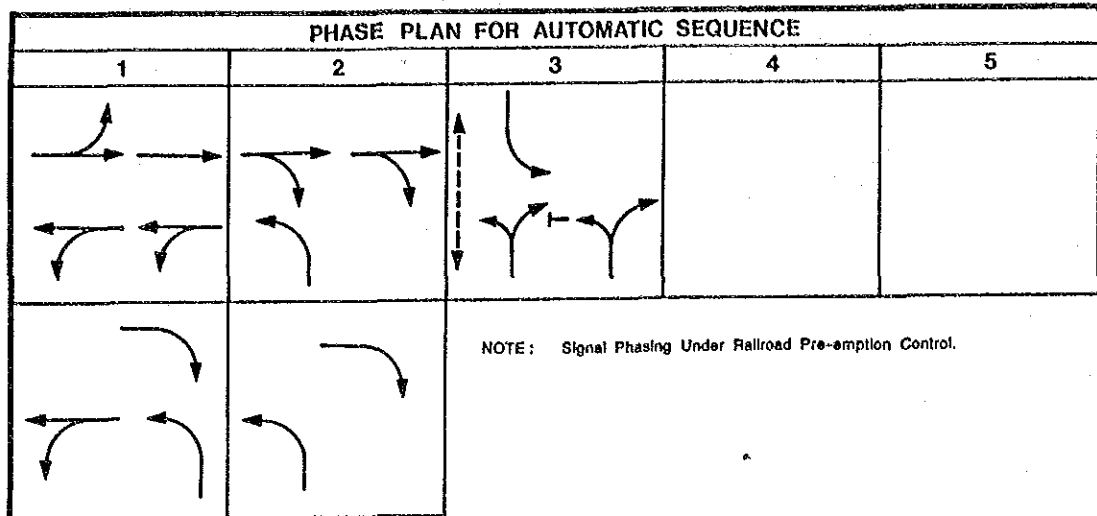
NOTE: Signal Phasing shown here is for the Morning Peak only.
For evening peak and off-peak, please refer to "Design Volume and Signal Phasing Plans".



Intersection Equipments List		
Intersection No. 98		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	3
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	-
9	Signal Pole Type A	1
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Flatten Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4')	8
29	Steel Conduit 100 mm (4')	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	6
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	6
34	Install Conduit under Rail	-
35	Install Conduit on River Support Pole	3
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq. mm)	-
39	Signal Cable 8c (2 sq. mm)	-
40	Signal Cable 12c (2 sq. mm)	-
41	Signal Cable 20c (2 sq. mm)	8
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Pole and Heads (Rail-own Type)	-
45	Remove Existing Signal Pole and Heads (Pedestrian Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	4
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 17)	20
50	Grounding Rod	1
51	Grounding Cable (W 5.5 sq. mm x 1c)	5

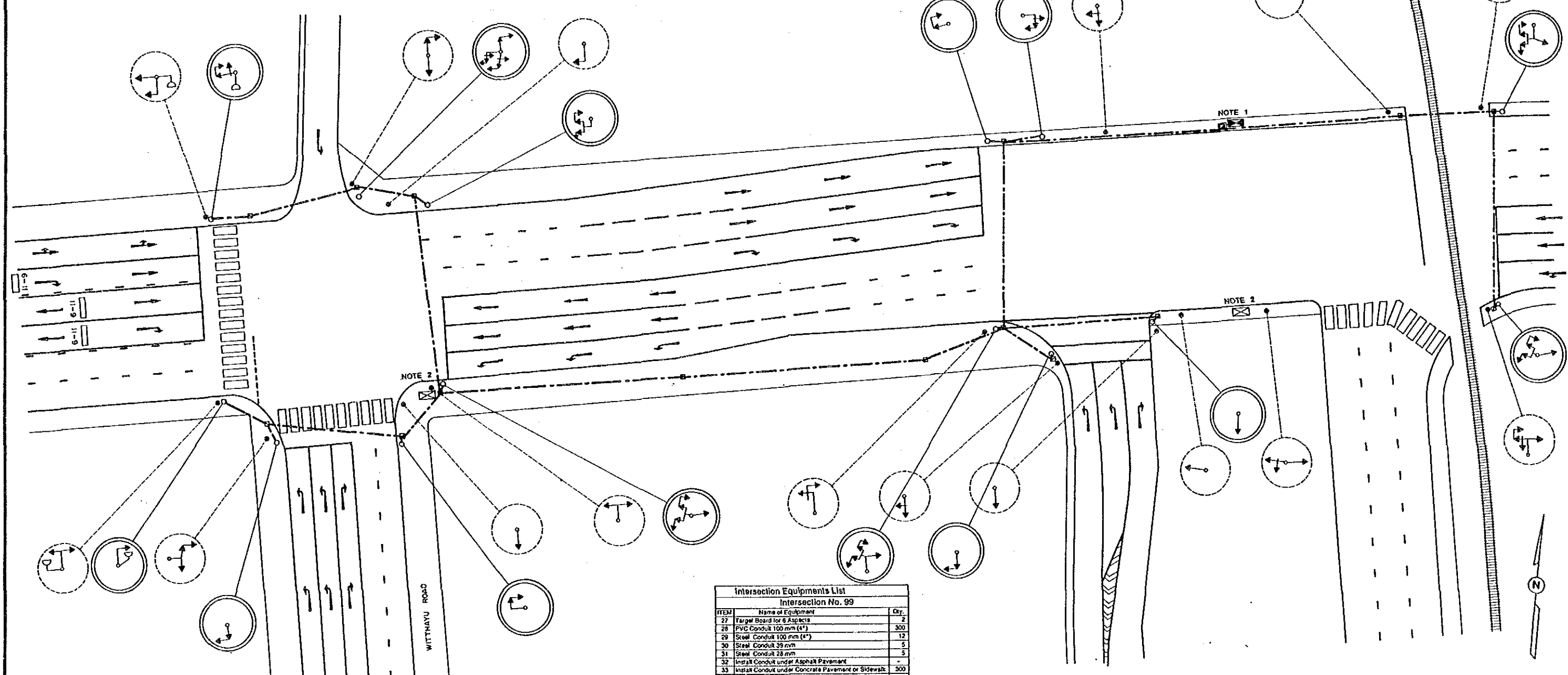
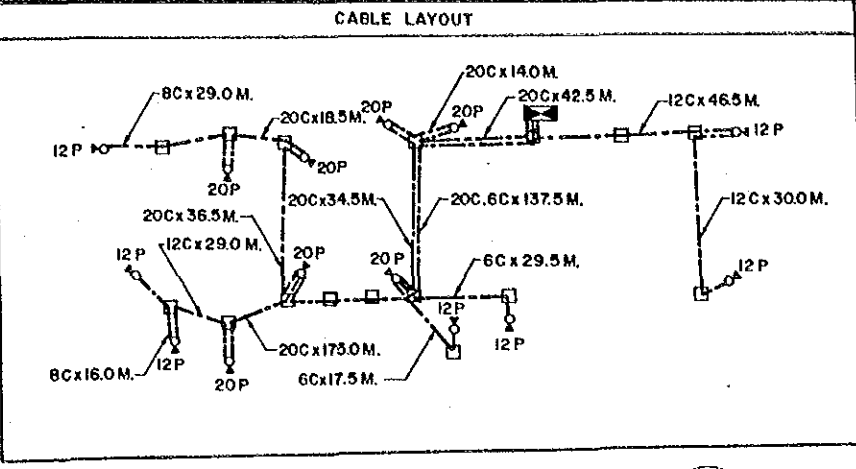


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I					
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN			Submitted By :	Approved By :	
SI LOM - SURASAK - MAHESAK			JICA Study Team Leader	BMA Study Team Leader	
INTERSECTION NO 98			Designed By :	Checked By :	
Code			JICA	BMA	Scale 1 / 250
Revision			Japan International	Bangkok Metropolitan	Drawing No 2098
Date			Cooperation Agency	Administration	Date SEPTEMBER '90
Initial					Total 70 / 139
Associated Plan No. :					



Intersection Equipments List Intersection No. 99

ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	1
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	8
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	3
9	Signal Pole Type A	7
10	Signal Pole Type B	8
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	7
14	Terminal 20 p	7
15	Signal Head 3 Aspects (200mm x 3)	3
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	4
17	Signal Head 3 Aspects (300mm x 2)	4
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	2
20	Signal Head 4 Aspects (300mm x 4)	2
21	Signal Head 6 Aspects (200mm x 2, 300mm x 2)	2
22	Signal Head 6 Aspects (300mm x 6)	3
23	Signal Head Pedestrian	23
24	Lantern Arrow Mask	7
25	Target Board for 3 Aspects	7
26	Target Board for 4 Aspects	2

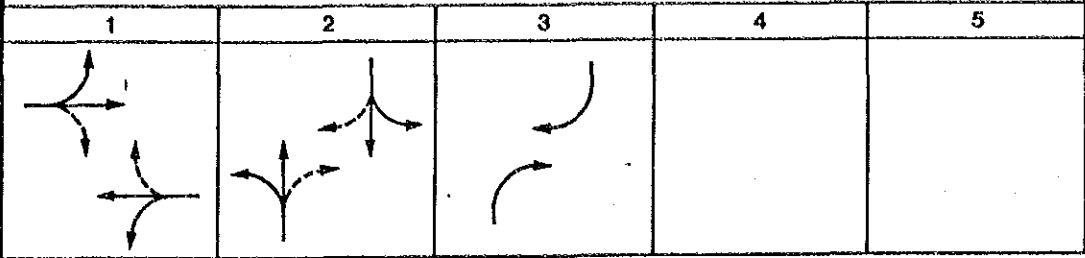


Intersection Equipments List Intersection No. 99

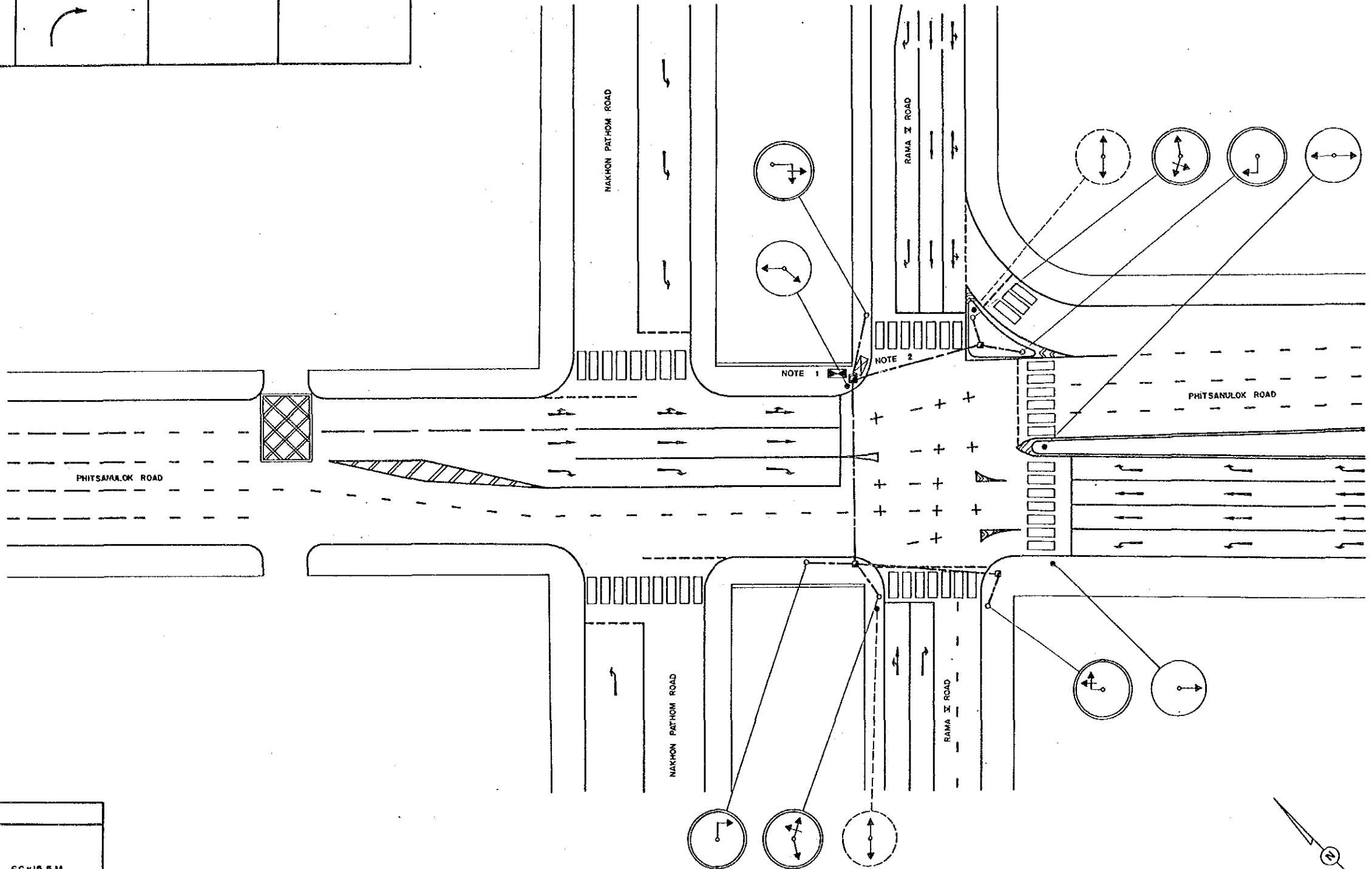
ITEM	Name of Equipment	Qty.
27	Target Board for 6 Aspects	2
28	PVC Conduit 100 mm (4")	300
29	Steel Conduit 100 mm (4")	12
30	Steel Conduit 39 mm	5
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	300
34	Install Conduit under Flat	12
35	Install Conduit on Riser Support Pole	10
36	Handhole Type C	6
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	184.5
39	Signal Cable 8c (2 sq mm)	45
40	Signal Cable 12c (2 sq mm)	110.5
41	Signal Cable 20c (2 sq mm)	301
42	Power Cable	5
43	Cable Splicing Job	-
44	Remove Existing Signal Post and Heads (Motor-veh Type)	8
45	Remove Existing Signal Post and Heads (Pedestrian Type)	8
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq mm x 1c)	5

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
WITTHAYU - PHETCHABURI - DIN DAENG PORT EXPRESSWAY		Designed By :	Checked By :
INTERSECTION NO. 99		JICA Study Member	TEO, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
Scale		1 / 250	Drawing No. 2099
Date		SEPTEMBER '90	Total 71 / 139

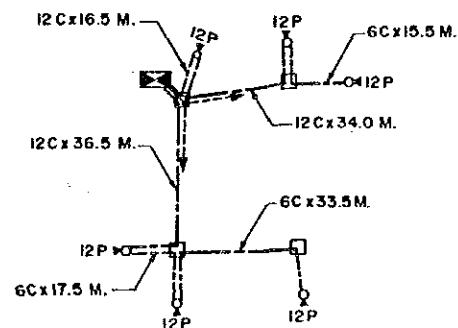
PHASE PLAN FOR AUTOMATIC SEQUENCE



Intersection Equipments List		
Intersection No. 101		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Roadway Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	3
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	4
10	Signal Pole Type B	2
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	8
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	2
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (200mm x 3)	2
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	2
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	2
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mark	4
25	Target Board for 3 Aspects	2
26	Target Board for 4 Aspects	2
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	87
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 38 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	87
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	3
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	49
39	Signal Cable 8c (2 sq mm)	8
40	Signal Cable 12c (2 sq mm)	104.5
41	Signal Cable 20c (2 sq mm)	-
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Post-arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestal Type)	2
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mark	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, Ø 65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq mm x 1c)	5



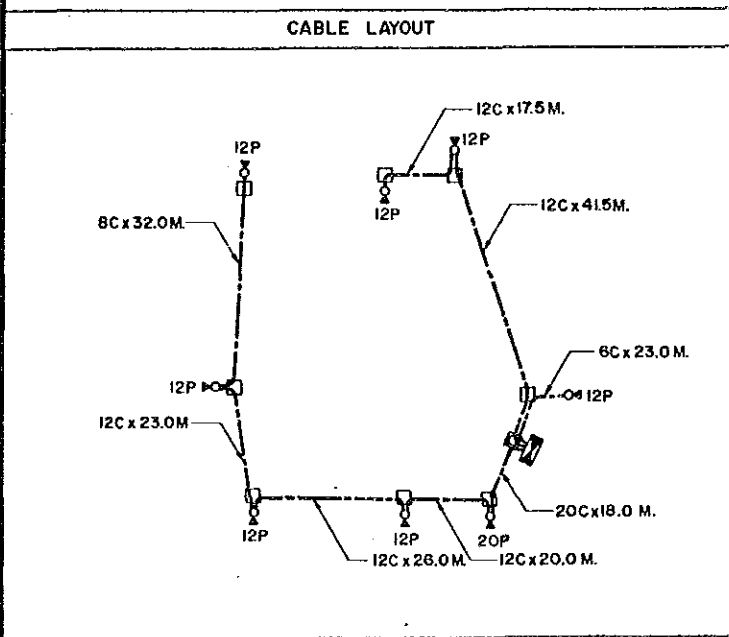
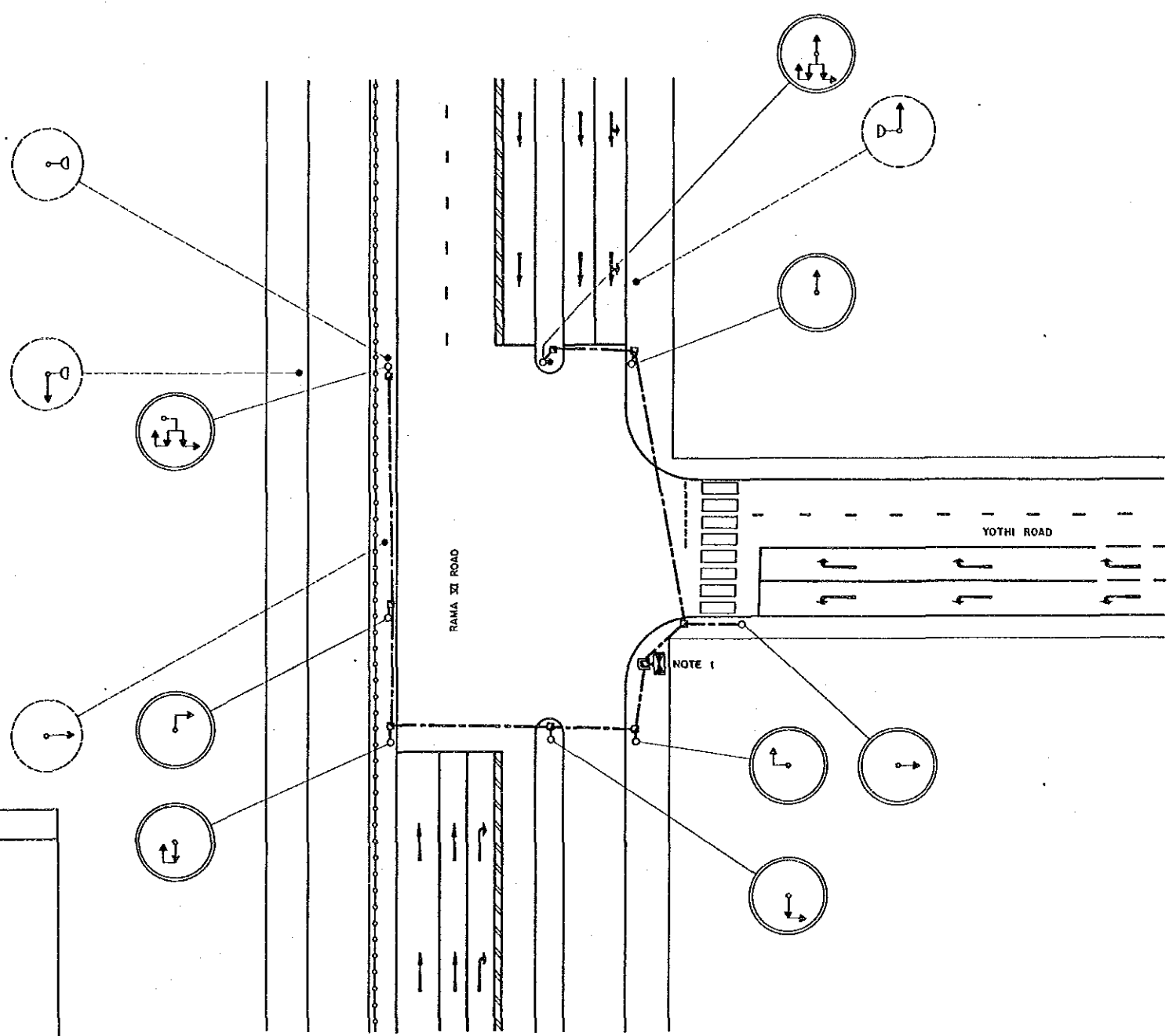
CABLE LAYOUT



BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN			
RAMA V - PHITSANULOK			
INTERSECTION NO 101		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonyawat Tiptus BMA Study Team Leader
		Designed By : Yasuo Nabeshima JICA Study Member	Checked By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale 1 / 250	Drawing No 2101
		Date SEPTEMBER '90	Total 72 / 139

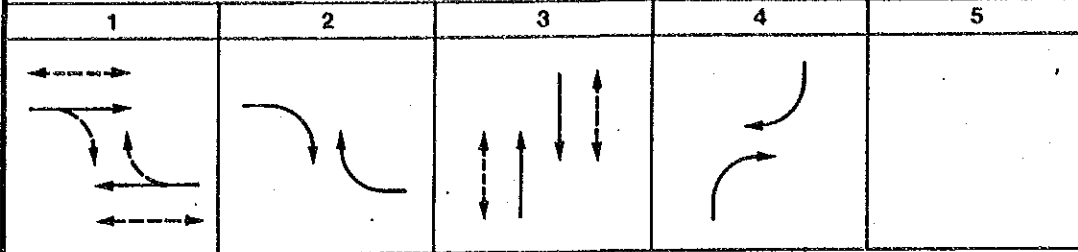
PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5

Intersection Equipments List		
Intersection No. 102		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	1
7	TOT Line Box	1
8	Remove Existing Controller	-
9	Signal Pole Type A	3
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	7
14	Terminal 20 p	1
15	Signal Head 3 Aspects (200mm x 3)	3
16	Signal Head 3 Aspects (300mm x 2, 300mm x 1)	2
17	Signal Head 3 Aspects (300mm x 3)	2
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	1
22	Signal Head 6 Aspects (300mm x 6)	1
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	6
25	Target Board for 3 Aspects	5
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	1
28	PVC Conduit 100 mm (4")	118
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	5
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	118
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	10
36	Handhole Type C	7
37	Handhole Type D	1
38	Signal Cable 6c (2 sq.mm)	23
39	Signal Cable 6c (2 sq.mm)	32
40	Signal Cable 12c (2 sq.mm)	128
41	Signal Cable 20c (2 sq.mm)	18
42	Power Cable	20
43	Cable Splicing Kit	-
44	Remove Existing Signal Post and Heads (all Type)	-
45	Remove Existing Signal Post and Heads (Pedestrian Type)	4
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (W 5.5 sq.mm x 1c)	5

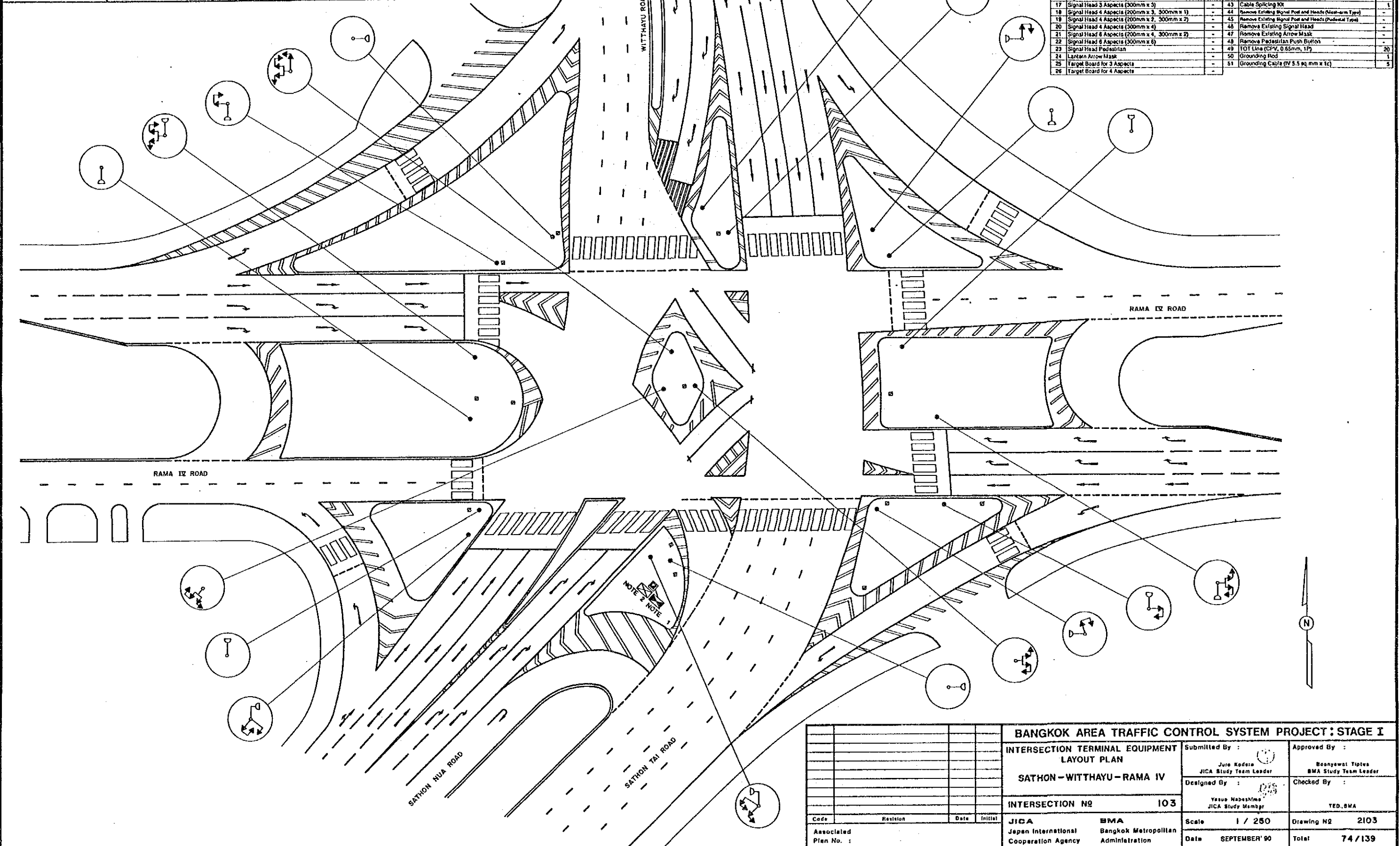


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I					
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN			Submitted By : Juro Kodera	Approved By : Boonyawat Tiplua	
RAMA VI - YOTHI			JICA Study Team Leader		BMA Study Team Leader
INTERSECTION NO 102			Designed By : Yssuo Nabeshima	Checked By : TED, BMA	
JICA Japan International Cooperation Agency			BMA Bangkok Metropolitan Administration		
Code	Revision	Date	Initial	Scale 1 / 250	Drawing No 2102
Associated Plan No. :			Date SEPTEMBER '90	Total 73 / 139	

PHASE PLAN FOR AUTOMATIC SEQUENCE

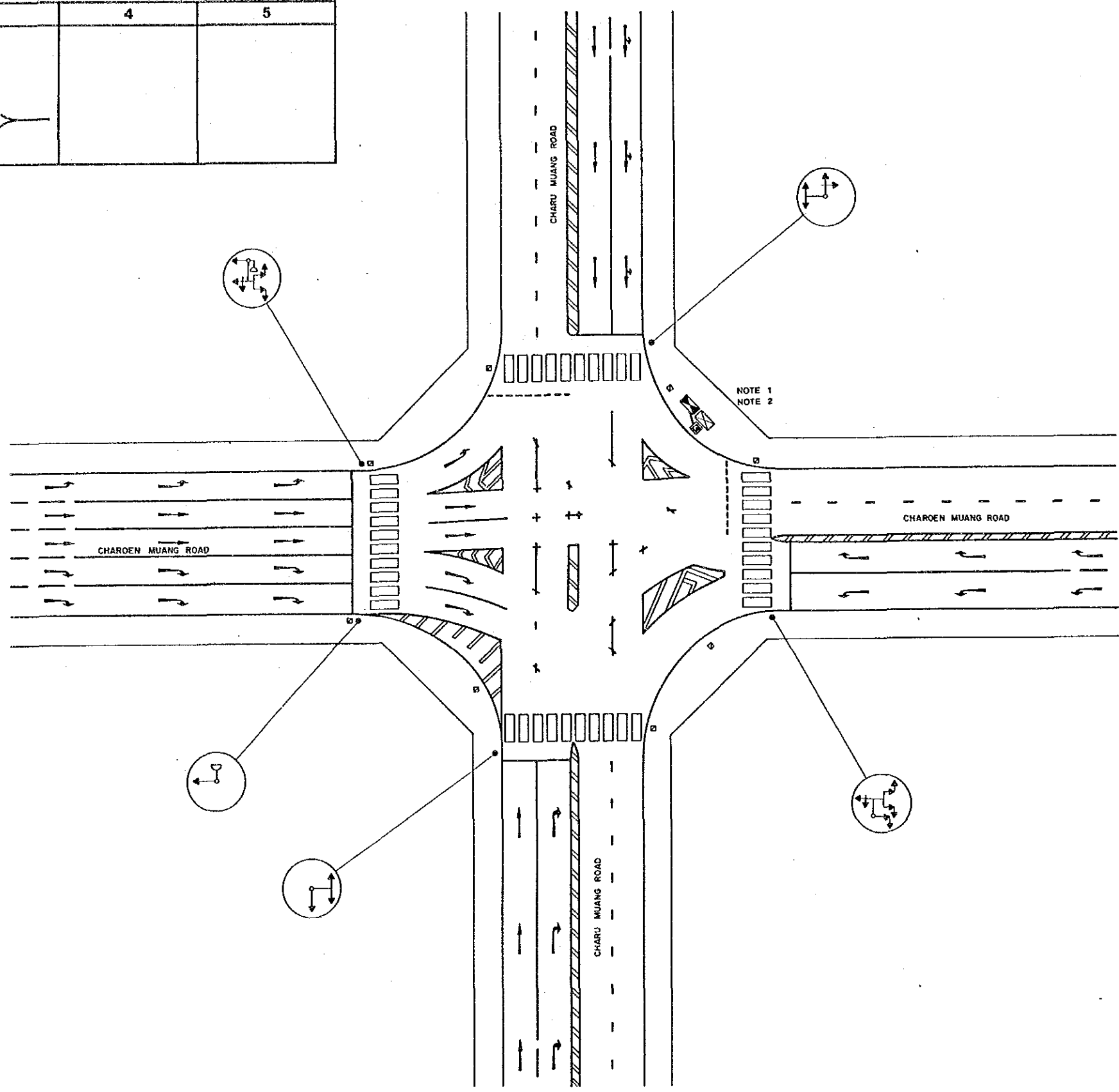


Intersection Equipments List				
Intersection No. 103				
ITEM	Name of Equipment	Qty.	ITEM	Name of Equipment
1	Local Controller	1	27	Target Board for 6 Aspects
2	Railroad Pre-emption Control Unit	-	28	PVC Conduit 100 mm (4")
3	Pedestrian Push Button Interlock Unit	-	29	Steel Conduit 100 mm (4")
4	Solid State Relay Unit	5	30	Steel Conduit 38 mm
5	Pre-Processor of Detector Pulse	1	31	Steel Conduit 25 mm
6	Supply Power Switch Box with Power Breaker	-	32	Install Conduit under Asphalt Pavement
7	TOT Line Box	1	33	Install Conduit under Concrete Pavement or Bitumast
8	Remove Existing Controller	1	34	Install Conduit under Rail
9	Signal Pole Type A	-	35	Install Conduit on Riser Support Pole
10	Signal Pole Type B	-	36	Handhole Type C
11	Signal Pole Type C	-	37	Handhole Type D
12	Signal Pole Type D	-	38	Signal Cable 8C (2 sq mm)
13	Terminal 12 p	-	39	Signal Cable 8C (2 sq mm)
14	Terminal 20 p	-	40	Signal Cable 12C (3 sq mm)
15	Signal Head 3 Aspects (200mm x 3)	-	41	Signal Cable 20C (2 sq mm)
16	Signal Head 3 Aspects (300mm x 2, 300mm x 1)	-	42	Power Cable
17	Signal Head 3 Aspects (300mm x 3)	-	43	Cable Splicing Box
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-	44	Remove Existing Signal Post and Heads (Mast-arm Type)
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-	45	Remove Existing Signal Post and Heads (Pedestal Type)
20	Signal Head 4 Aspects (300mm x 4)	-	46	Remove Existing Signal Head
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-	47	Remove Existing Arrow Mask
22	Signal Head 6 Aspects (300mm x 6)	-	48	Remove Pedestrian Push Button
23	Signal Head Pedestrian	-	49	TOT Line (CIV. 0.65mm, 1P)
24	Lantern Arrow Mask	-	50	Grounding Rod
25	Target Board for 3 Aspects	-	51	Grounding Cable (IV 5.5 sq mm x 1c)
26	Target Board for 4 Aspects	-		



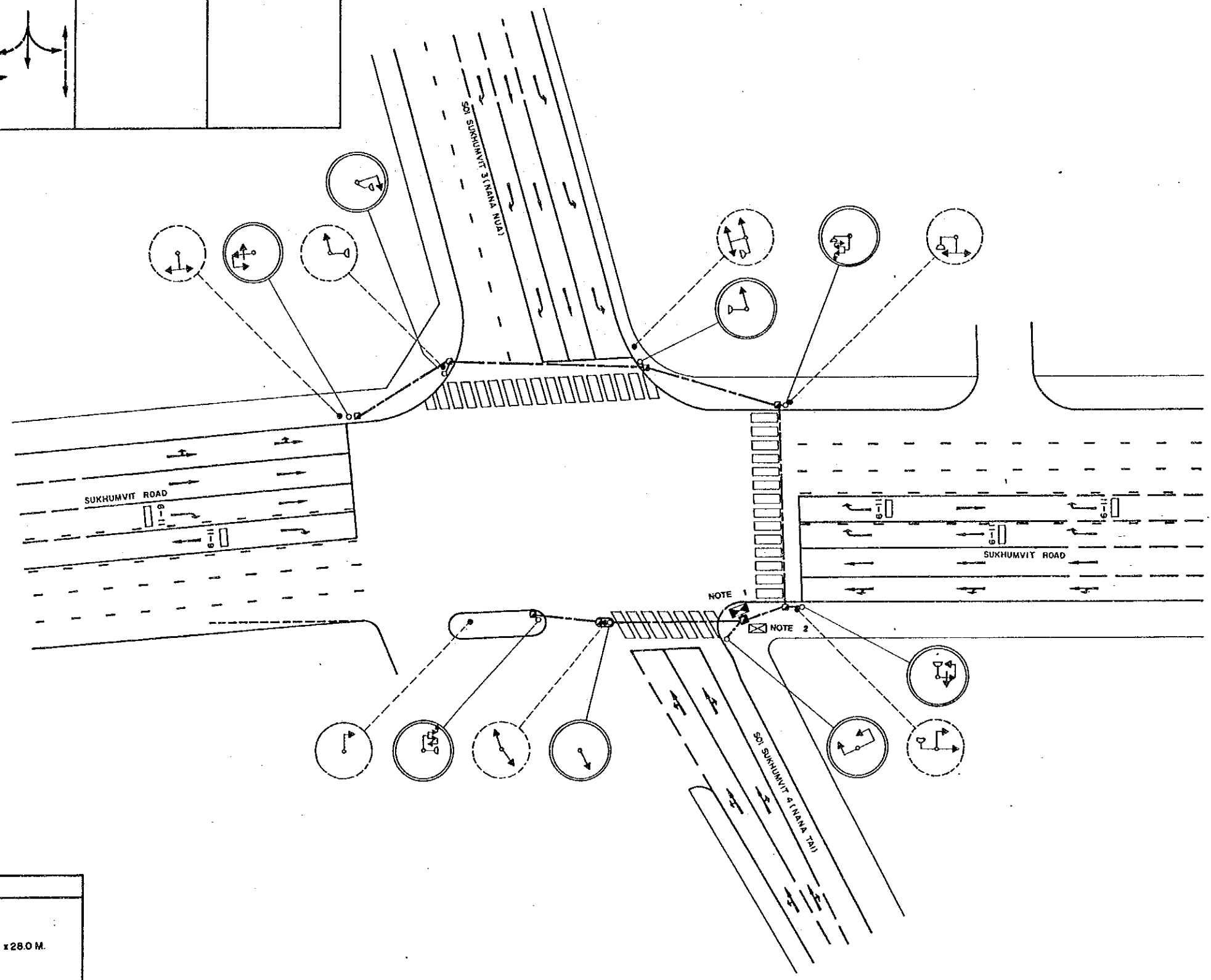
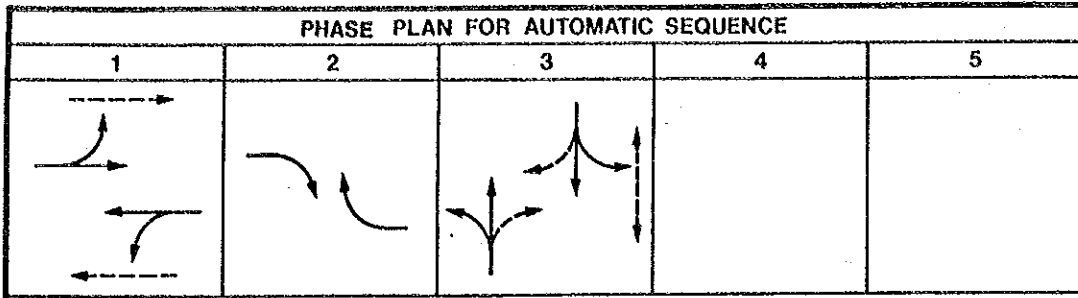
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I				
INTERSECTION EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :	
SATHON - WITTHAYU - RAMA IV		Jure Kodera JICA Study Team Leader	Boonyawat Tiptes BMA Study Team Leader	
INTERSECTION NO 103		Designed By :	Checked By :	
		Yasue Nabeshima JICA Study Member	YED, BMA	
Code	Revision	Date	Initial	
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale 1 / 250 Drawing M2 2103 Date SEPTEMBER '90 Total 74 / 139

PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5



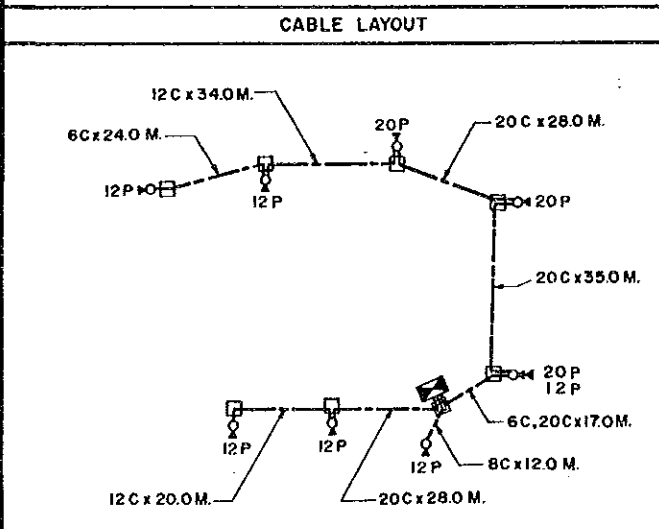
Intersection Equipments List		
Intersection No. 104		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	3
5	Pre-Processor of Detector Pulses	-
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4')	8
29	Steel Conduit 100 mm (4')	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	8
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq. mm)	8
39	Signal Cable 8c (2 sq. mm)	-
40	Signal Cable 12c (2 sq. mm)	-
41	Signal Cable 20c (2 sq. mm)	8
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Pole and Heads (Rec. arm Type)	-
45	Remove Existing Signal Pole and Heads (Pedestrian Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq. mm x 1c)	5

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I					
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN			Submitted By :	Approved By :	
CHARU MUANG - CHAROEN MUANG			Juro Kodera JICA Study Team Leader	Nobuyasu Tiptua BMA Study Team Leader	
INTERSECTION NO 104			Designed By :	Checked By :	
			Yasuo Nobeshima JICA Study Member	TED, BMA	
Code	Revision	Date	Initial	JICA	BMA
Associated Plan No. :			Japan International Cooperation Agency	Bangkok Metropolitan Administration	
			Scale	1 / 250	Drawing No 2104
			Date	SEPTEMBER '90	Total 75 / 139

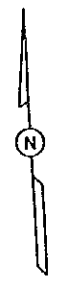


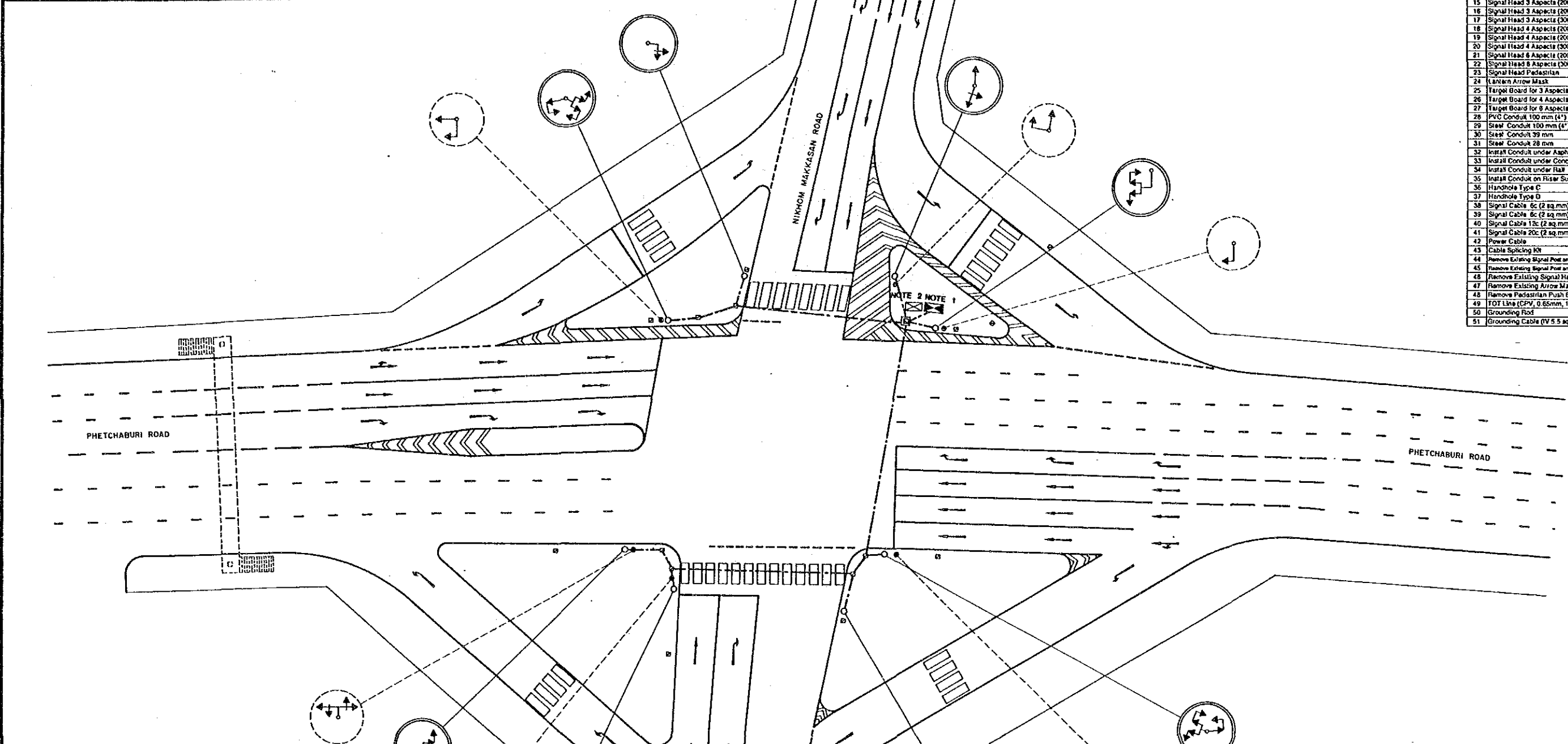
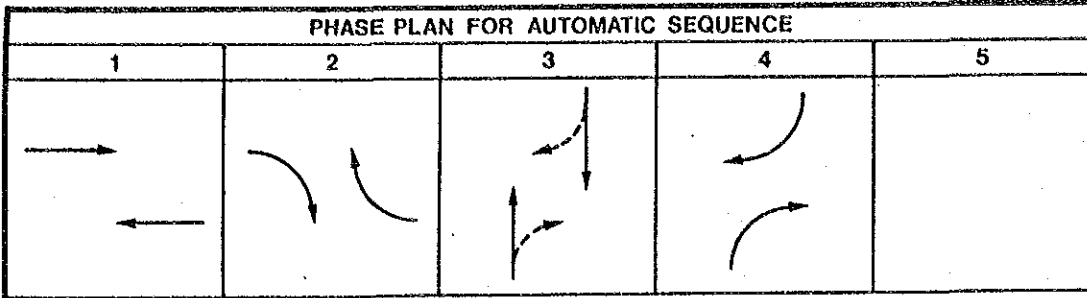
Intersection Equipments List Intersection No. 105

ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Bid State Relay Unit	4
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Braker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	4
10	Signal Pole Type B	4
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	8
14	Terminal 20 p	3
15	Signal Head 3 Aspects (200mm x 3)	2
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	2
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	2
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	2
23	Signal Head Pedestrian	6
24	Lantern Arrow Mast	8
25	Target Board for 3 Aspects	2
26	Target Board for 4 Aspects	2
27	Target Board for 6 Aspects	2
28	PVC Conduit 100 mm (4")	123
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	123
34	Install Conduit under R/S	-
35	Install Conduit on Rise Support Pole	5
36	Handhole Type C	7
37	Handhole Type D	1
38	Signal Cable 6C (2 sq mm)	41
39	Signal Cable 6C (2 sq mm)	12
40	Signal Cable 12C (2 sq mm)	54
41	Signal Cable 20C (2 sq mm)	108
42	Power Cable	5
43	Cable Splicing Kit	-
44	Remove Existing Signal Post and Heads (Bist-arm Type)	5
45	Remove Existing Signal Post and Heads (Pedestal Type)	2
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mast	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (6V 5.5 sq mm x 1c)	5



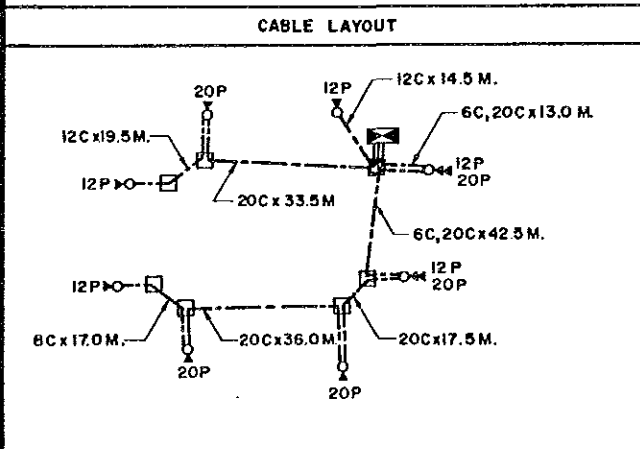
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN SUKHUMVIT-SOI SUKHUMVIT 4 (NANA TAI)		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Boonyawat Yipive BMA Study Team Leader
INTERSECTION NO 105		Designed By : Yasuo Nabeshima JICA Study Member	Checked By : TED_BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale 1 / 250	Drawing No 2105
		Date SEPTEMBER '90	Total 76 / 139





Intersection Equipments List
Intersection No. 106

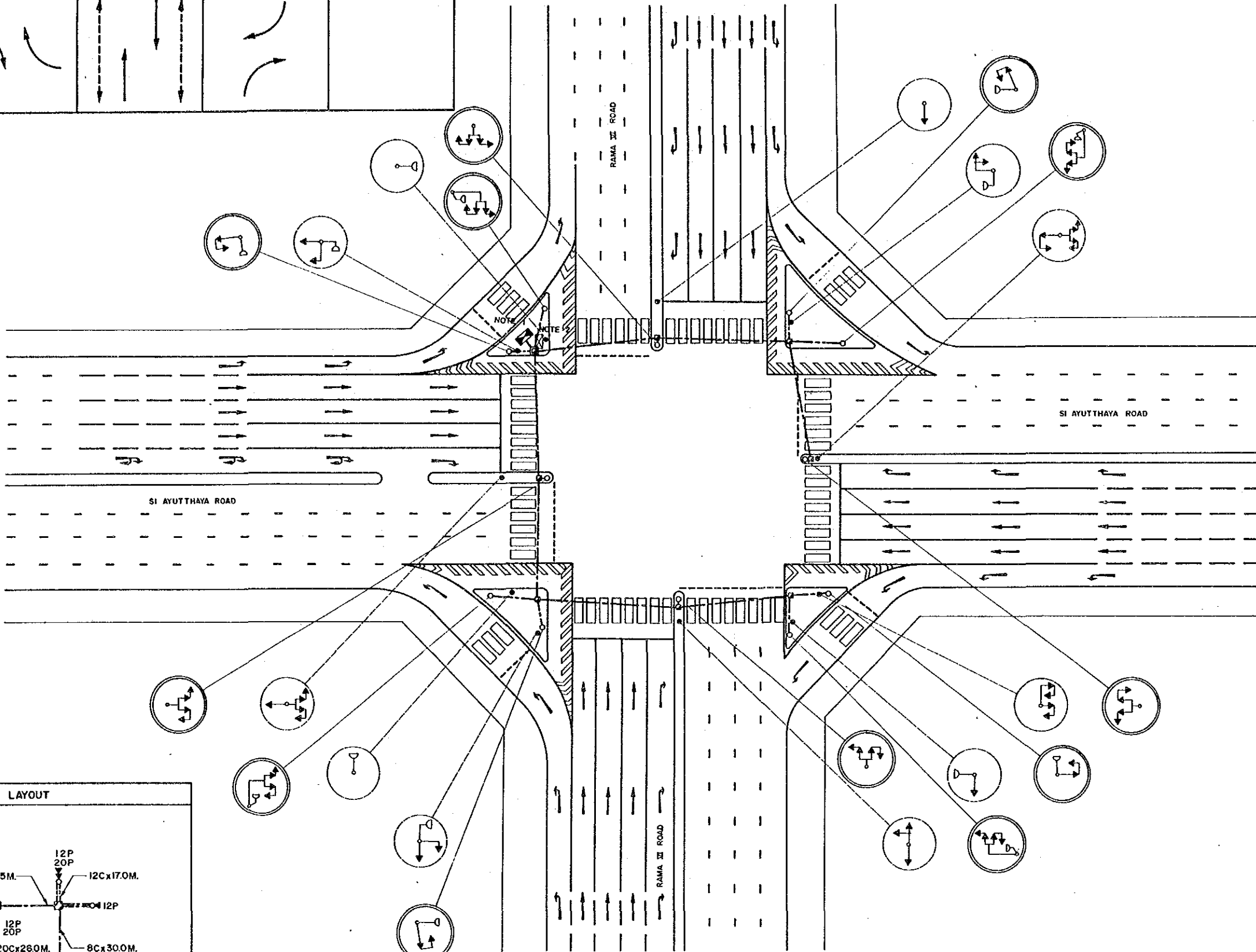
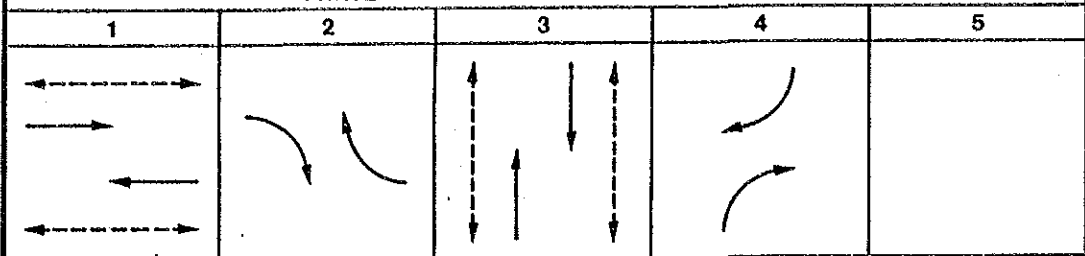
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Gold State Relay Unit	4
5	Pre-Processor of Detector Poles	1
6	Supply Power Switch Box with Power Braker	1
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	4
10	Signal Pole Type B	4
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 P	5
14	Terminal 20 P	5
15	Signal Head 3 Aspects (200mm x 3)	2
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	2
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	2
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	2
21	Signal Head 8 Aspects (200mm x 4, 300mm x 2)	2
22	Signal Head 8 Aspects (300mm x 6)	2
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	16
25	Target Board for 3 Aspects	4
26	Target Board for 4 Aspects	2
27	Target Board for 6 Aspects	2
28	PVC Conduit 100 mm (4")	112.5
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	112.5
34	Install Conduit under Flag	-
35	Install Conduit on Fixer Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6C (2 sq. mm)	55.5
39	Signal Cable 6C (2 sq. mm)	17
40	Signal Cable 12C (2 sq. mm)	34
41	Signal Cable 20C (2 sq. mm)	142.5
42	Power Cable	5
43	Cable Splicing Kit	-
44	Remove Existing Signal Post and Heads (Mast-arm Type)	6
45	Remove Existing Signal Post and Heads (Pedestal Type)	1
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (RV 5.5 sq. mm x 1c)	5



BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I

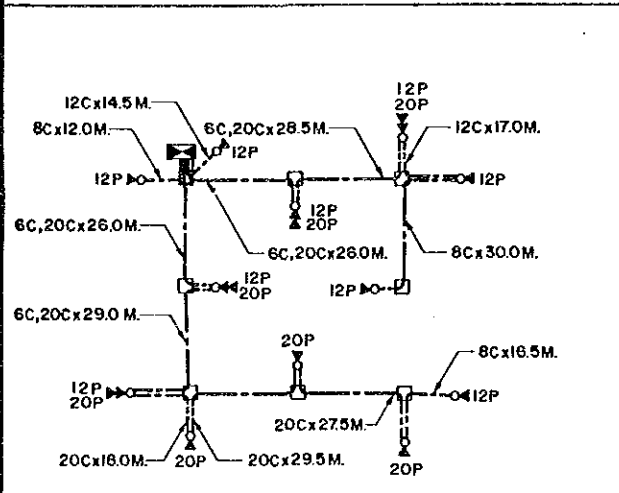
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By : Jura Kedera JICA Study Team Leader	Approved By : Boonawat Tipus BMA Study Team Leader
NIKHOM MAKKASAN-PHETCHABURI-SOI SUKHUMVIT 3 (NANA NUA)		Designed By : Yasuo Mochizuki JICA Study Member	Checked By : TED, BMA
INTERSECTION NO 106		Scale : 1 / 250	Drawing No : 2106
Associated Plan No. :		Date : SEPTEMBER '90	Total : 77 / 139
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	

PHASE PLAN FOR AUTOMATIC SEQUENCE

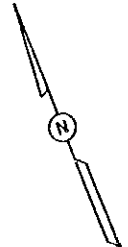


Intersection Equipments List		
Intersection No. 109		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	4
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Conductor	1
9	Signal Pole Type A	1
10	Signal Pole Type B	4
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	7
14	Terminal 20 p	7
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	4
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 2, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 5 Aspects (200mm x 4, 300mm x 2)	4
22	Signal Head 6 Aspects (300mm x 6)	4
23	Signal Head Pedestrian	8
24	Lenslet Arrow Mask	20
25	Target Board for 3 Aspects	4
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	4
28	PVC Conduit 100 mm (4")	150.5
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	6
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	150.5
34	Install Conduit under Rail	-
35	Install Conduit on Tower Support Pole	5
36	Handhole Type C	7
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	81
39	Signal Cable 8c (2 sq mm)	58.5
40	Signal Cable 12c (2 sq mm)	31.5
41	Signal Cable 20c (2 sq mm)	182.5
42	Power Cable	5
43	Cable Splicing Kit	-
44	Remove Existing Signal Post and Heads (Main-arm Type)	4
45	Remove Existing Signal Post and Heads (Pedestrian Type)	7
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (TV 5.5 sq. mm x 1c)	5

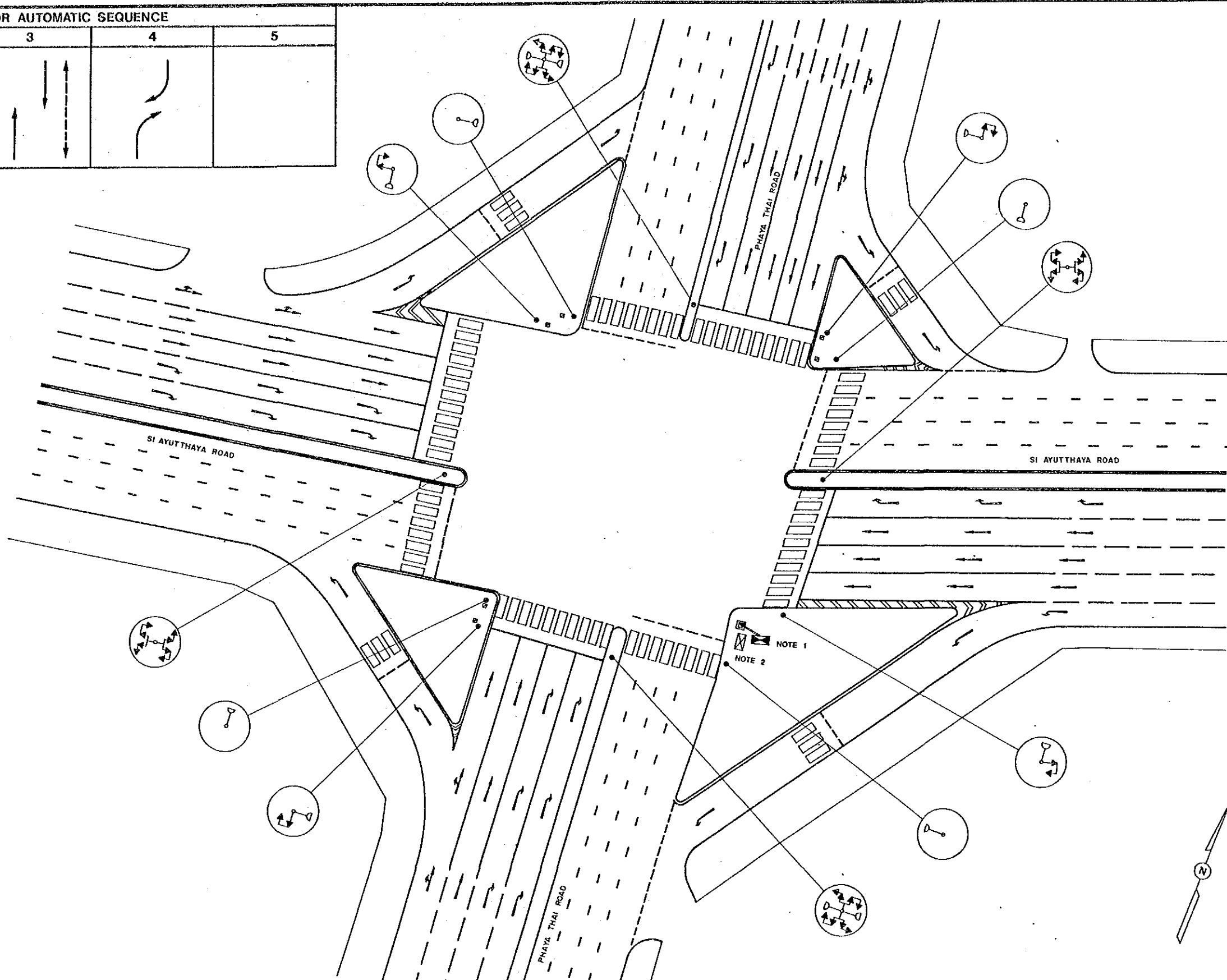
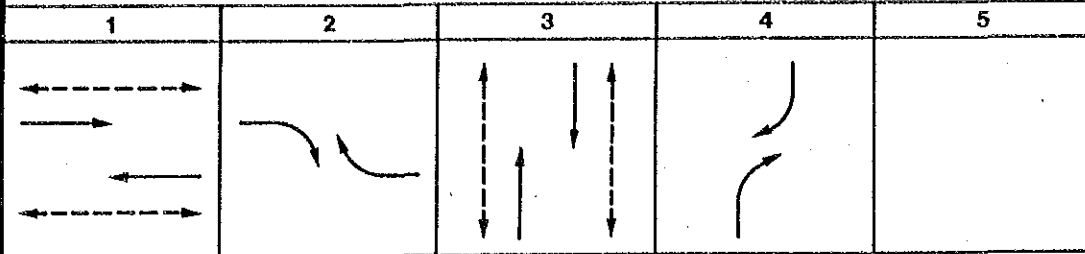
CABLE LAYOUT



Code				Revision				Date				Initial				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
																INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN			
Associated Plan No. :				INTERSECTION NO 109				Designed By : Yasoobhathara JICA Study Member				Checked By : TED, BMA							
JICA Japan International Cooperation Agency				BMA Bangkok Metropolitan Administration				Scale 1 / 250				Drawing No 2109							
Date				SEPTEMBER '90				Total				78 / 139							



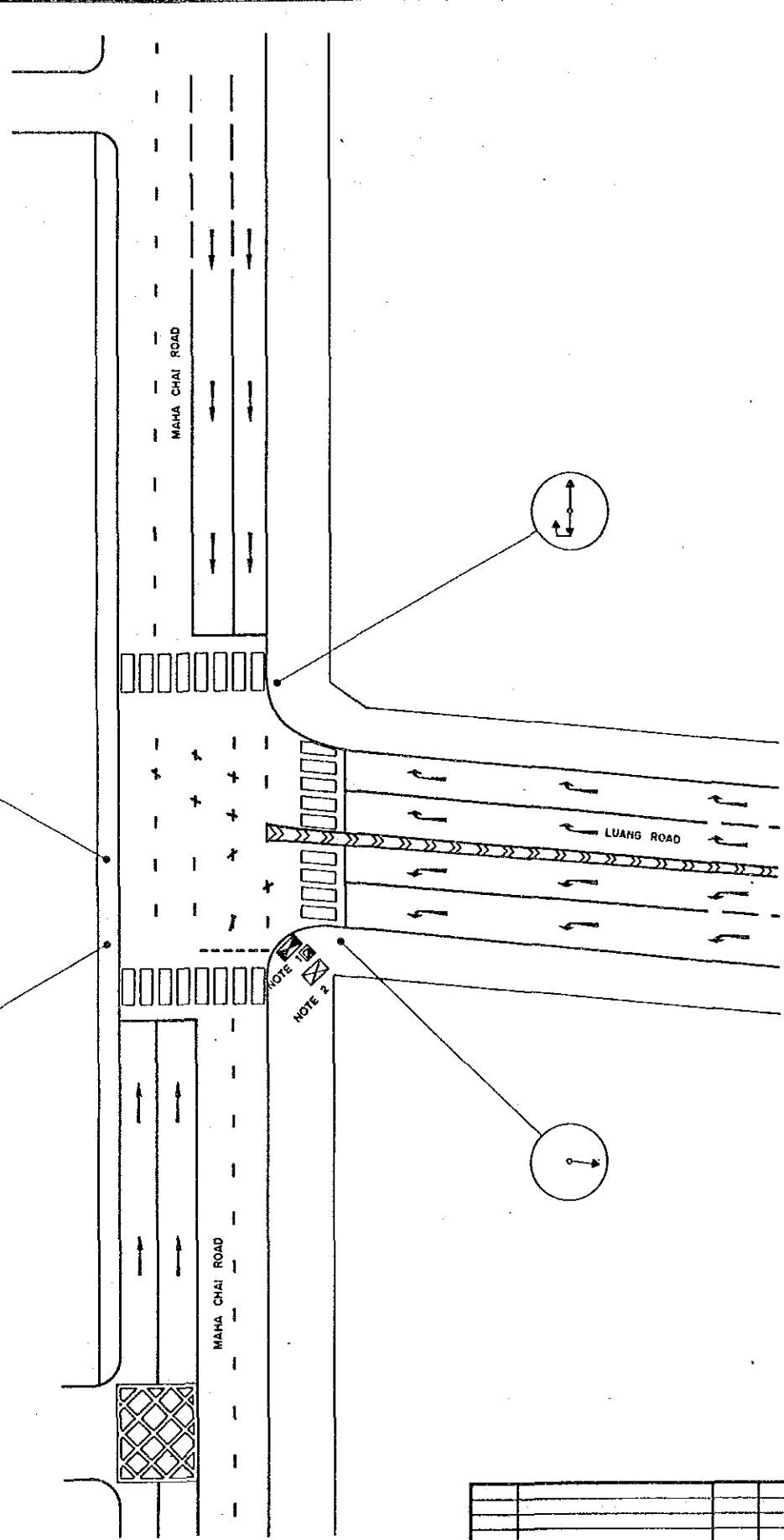
PHASE PLAN FOR AUTOMATIC SEQUENCE



Intersection Equipments List		
Intersection No. 110		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	6
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (200mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 8 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 8 Aspects	-
28	PVC Conduit 100 mm (4")	6
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	6
34	Install Conduit under Flat	-
35	Install Conduit on Rear Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq. mm)	-
39	Signal Cable 8c (2 sq. mm)	-
40	Signal Cable 12c (2 sq. mm)	8
41	Signal Cable 20c (2 sq. mm)	8
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Main-arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestrian Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq. mm x 1c)	5

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonyawat Tiplua BMA Study Team Leader
PHAYA THAI-SI AYUTTHAYA		Designed By : Yasuo Nabeshima JICA Study Member	Checked By : YED.BMA
INTERSECTION NO 110		Scale 1 / 250	Drawing No 2110
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Date SEPTEMBER '90	Total 79 / 139

PHASE PLAN FOR AUTOMATIC SEQUENCE				
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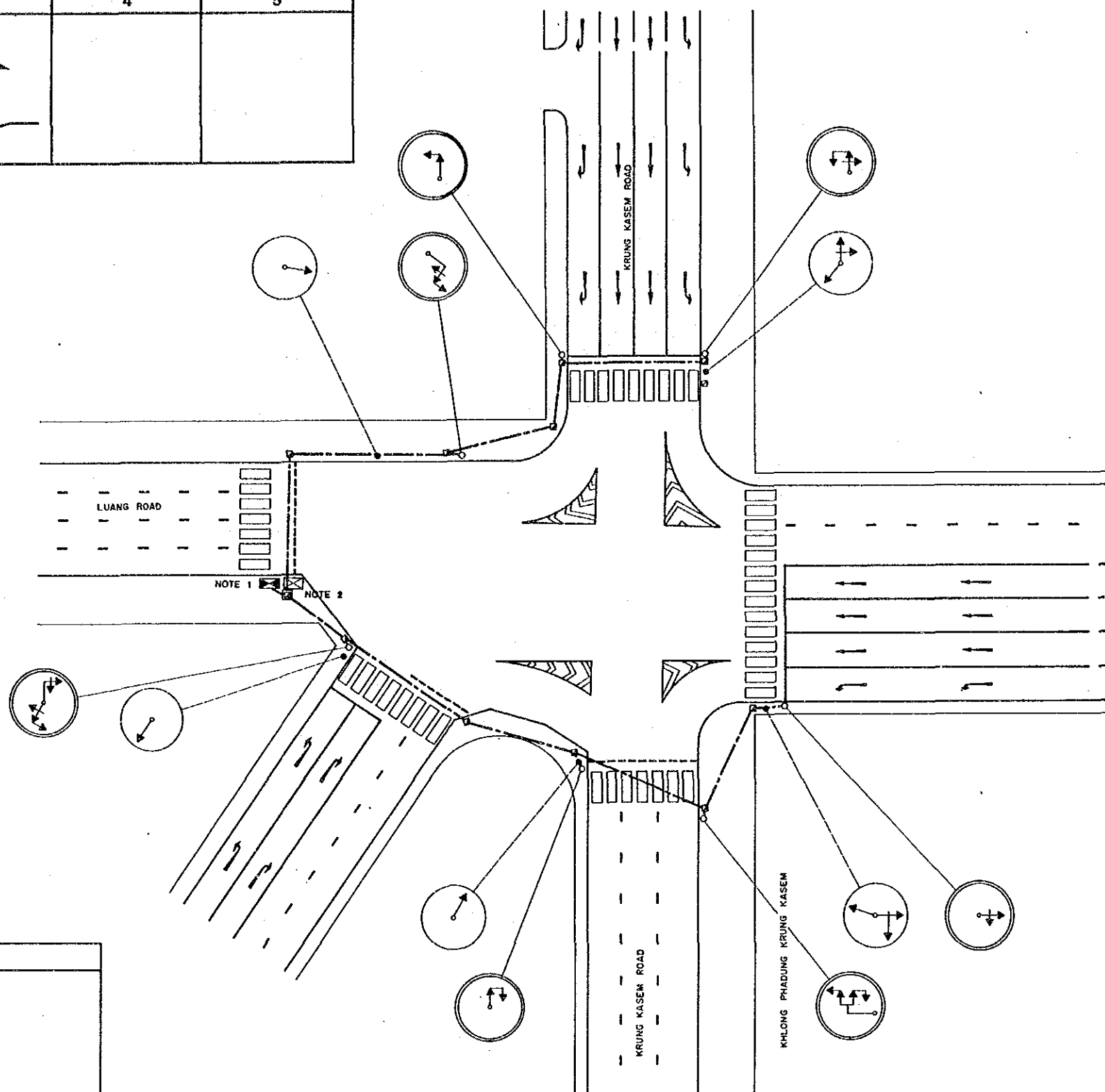


Intersection Equipments List		
Intersection No. 112		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor of Detector Pulse	-
6	Supply Power of Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lensless Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	8
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 75 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	8
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	-
39	Signal Cable 8c (2 sq mm)	8
40	Signal Cable 12c (2 sq mm)	-
41	Signal Cable 20c (2 sq mm)	-
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Head (Base-iron Type)	-
45	Remove Existing Signal Post and Head (Pedestal Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (GPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (V 5.5 sq mm x 1c)	8

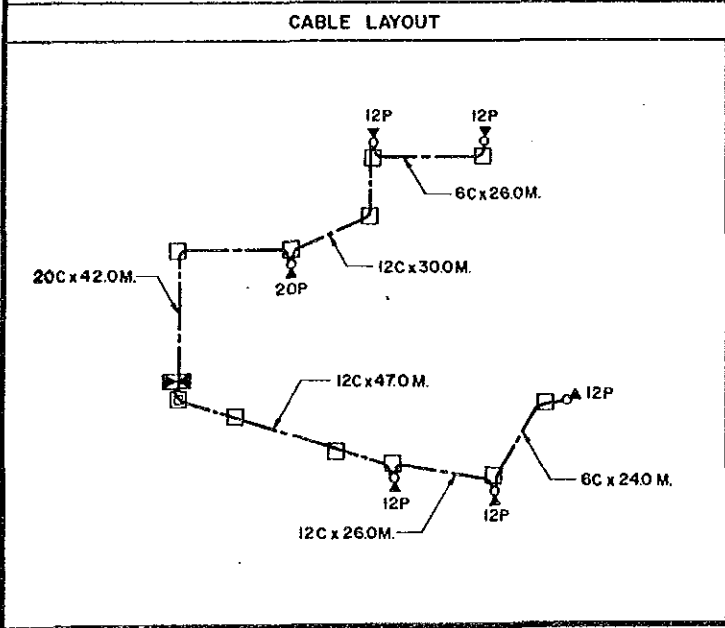
NOTE 1
NOTE 2

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I							
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN				Submitted By :	Approved By :		
MAHA CHAI - LUANG				Juro Kodera JICA Study Team Leader	Boonyawat Tiptus BMA Study Team Leader		
				Designed By :	Checked By :		
INTERSECTION NO 112				Yasuo Nabeshima JICA Study Member	TED.BMA		
Code	Revision	Date	Initial	JICA	BMA	Scale 1 / 250	Drawing NR 2112
Associated Plan No. :				Japan International Cooperation Agency	Bangkok Metropolitan Administration	Date SEPTEMBER '90	Total 80 / 139

PHASE PLAN FOR AUTOMATIC SEQUENCE				
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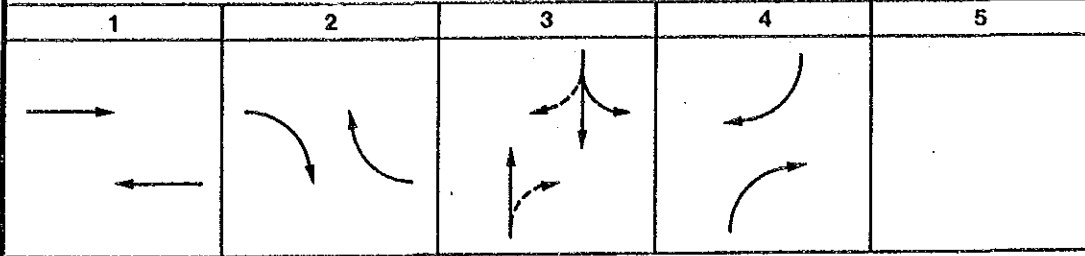


Intersection Equipments List		
Intersection No. 114		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Hardware Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	3
5	Pre-Processor of Detector Pulses	-
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	3
10	Signal Pole Type B	4
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	5
14	Terminal 20 p	1
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	2
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	1
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	2
20	Signal Head 4 Aspects (300mm x 4)	2
21	Signal Head 8 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 8 Aspects (300mm x 8)	1
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	12
25	Target Board for 3 Aspects	2
26	Target Board for 4 Aspects	3
27	Target Board for 8 Aspects	-
28	PVC Conduit 100 mm (4")	135
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 25 mm	5
32	Install Conduit under Asphalt Pavement	48.5
33	Install Conduit under Concrete Pavement or Sidewalk	88.5
34	Install Conduit under Full	-
35	Install Conduit on Flare Support Pole	6
36	Handhole Type C	10
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	50
39	Signal Cable 8c (2 sq mm)	-
40	Signal Cable 12c (2 sq mm)	100
41	Signal Cable 20c (2 sq mm)	42
42	Power Cable	5
43	Cable Splicing Kit	-
44	Remove Existing Signal Pole and Heads (Main-rod Type)	-
45	Remove Existing Signal Pole and Heads (Pedestal Type)	5
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (20p, 0.65cm, 1p)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq mm x 1c)	6

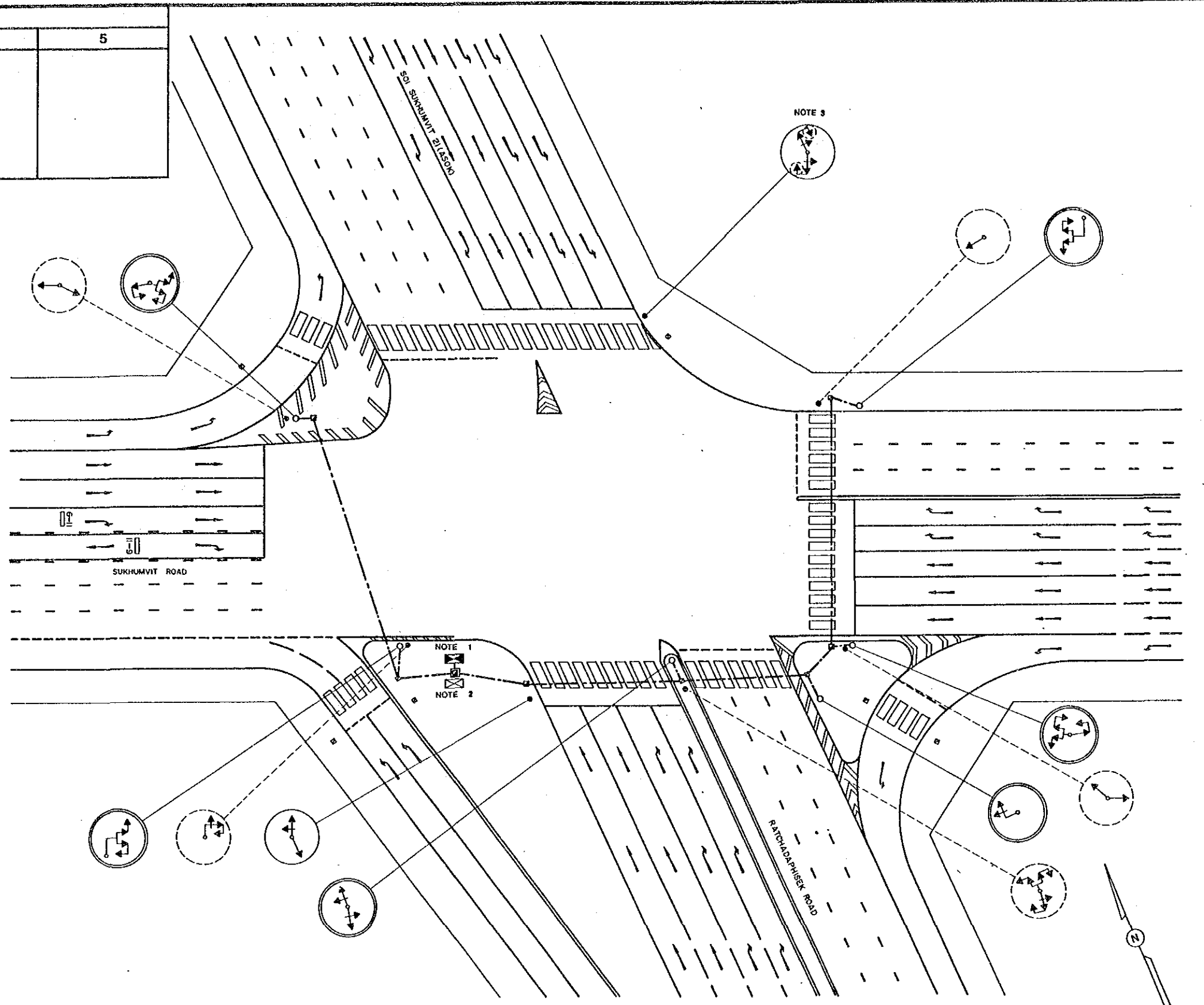


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
KRUNG KASEM - MITTRAPHAN - LUANG		Jiro Kedara JICA Study Team Leader	Bongjaval Tiptus BMA Study Team Leader
INTERSECTION NO 114		Designed By :	Checked By :
		Tesuo Wabeshima JICA Study Member	TRD, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA	BMA
		Japan International Cooperation Agency	Bangkok Metropolitan Administration
		Scale	Drawing No
		1 / 250	2114
		Date	Total
		SEPTEMBER '90	81 / 139

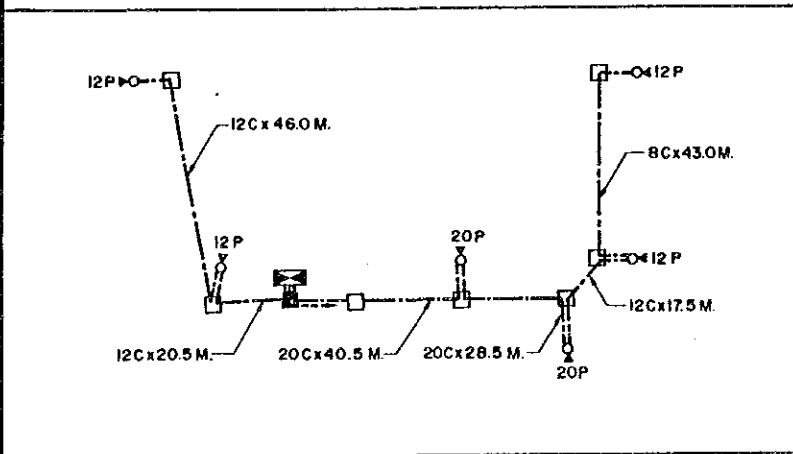
PHASE PLAN FOR AUTOMATIC SEQUENCE



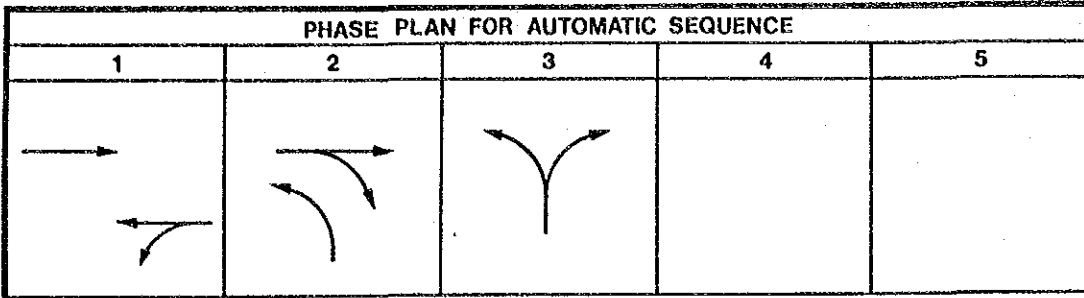
Intersection Equipments List		
Intersection No. 115		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	4
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	3
10	Signal Pole Type B	3
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	4
14	Terminal 20 p	2
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	2
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	2
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	1
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	2
22	Signal Head 8 Aspects (300mm x 6)	2
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	13
25	Target Board for 3 Aspects	2
26	Target Board for 4 Aspects	2
27	Target Board for 6 Aspects	2
28	PVC Conduit 100 mm (4")	134.5
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	134.5
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	3
37	Handhole Type D	1
38	Signal Cable 8c (2 sq. mm)	-
39	Signal Cable 6c (2 sq. mm)	43
40	Signal Cable 12c (2 sq. mm)	92
41	Signal Cable 20c (2 sq. mm)	69
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Rail-ave Type)	1
45	Remove Existing Signal Post and Heads (Pedestrian Type)	4
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	2
48	Remove Pedestrian Push Button	-
49	TOT Line (CPW, 6.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (BV 5.5 sq. mm x 1c)	5



CABLE LAYOUT

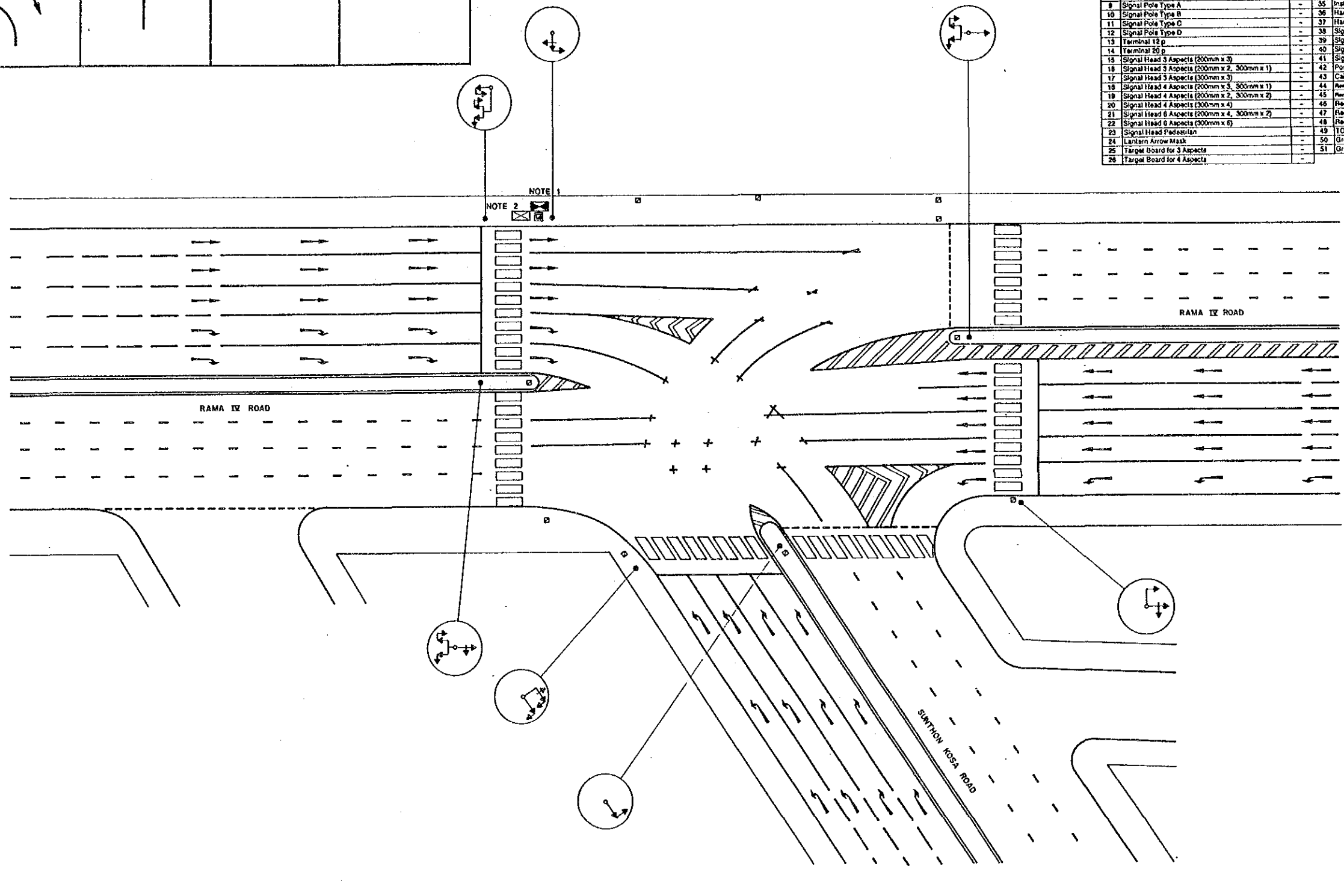


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Boonyawat Tiptas BMA Study Team Leader
SUKHUMVIT - SOI SUKHUMVIT 21 (ASOK) - RATCHADAPHISEK		Designed By : Yasu Kobayashi JICA Study Member	Checked By : TED.BMA
INTERSECTION NO. 115		Scale 1 / 250	Drawing No. 2115
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Date SEPTEMBER '90	Total 62 / 139



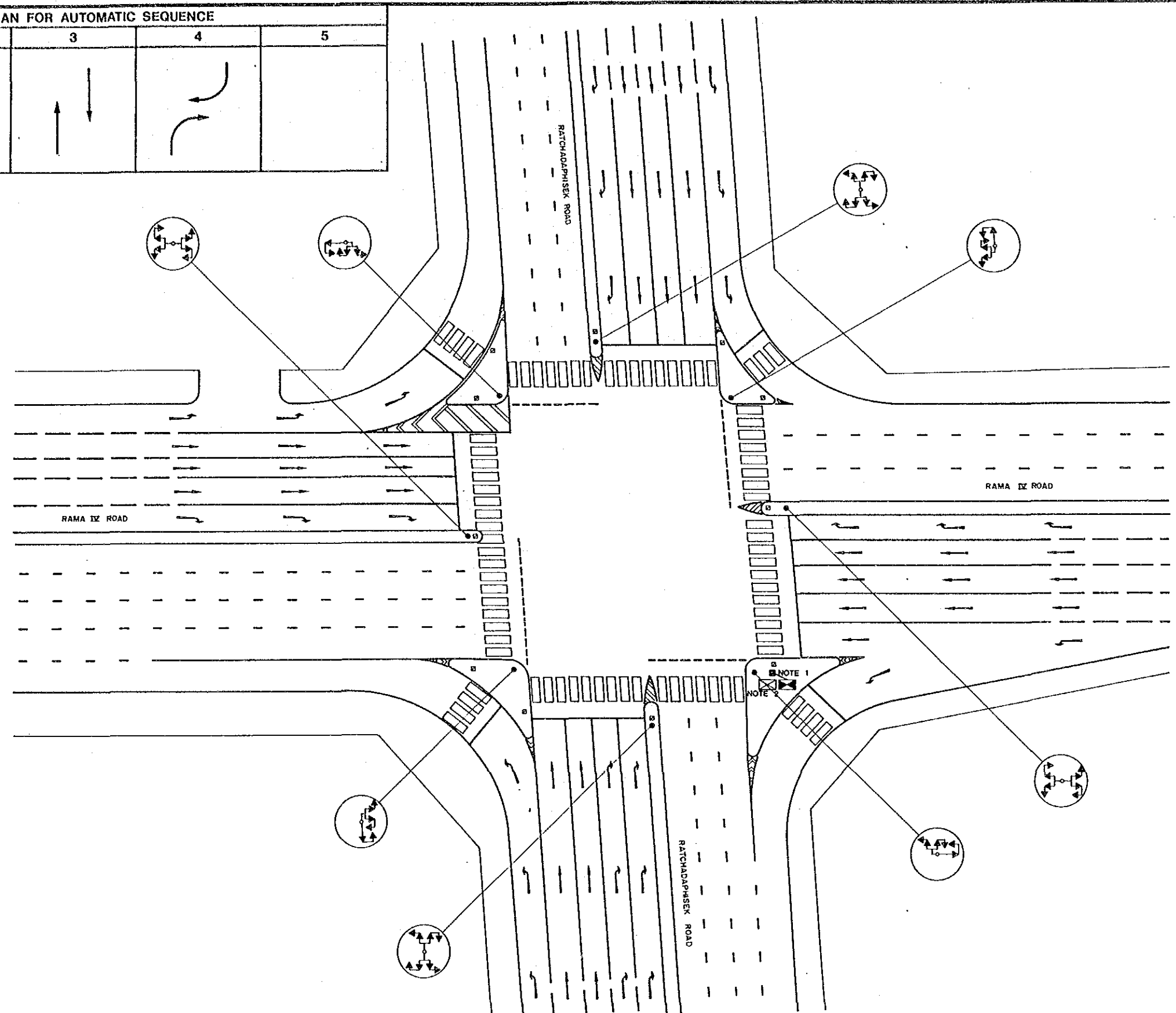
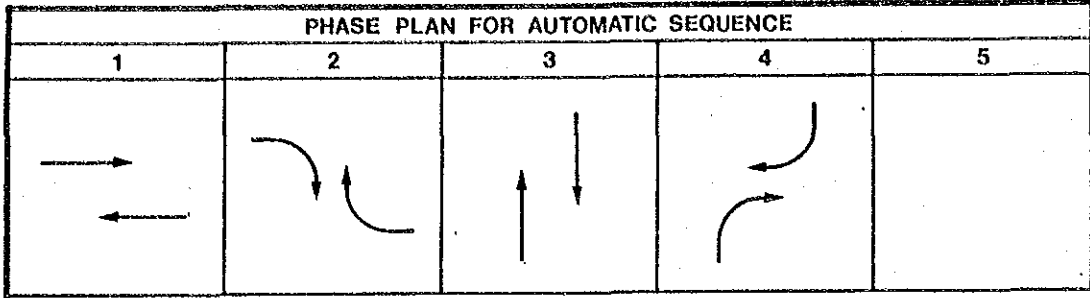
Intersection Equipments List
Intersection No. 118

ITEM	Name of Equipment	Qty.	ITEM	Name of Equipment	Qty.
1	Local Controller	1	27	Target Board for 6 Aspects	-
2	Railroad Pre-emption Control Unit	-	28	PVC Conduit 100 mm (4")	8
3	Pedestrian Push Button Interface Unit	-	29	Steel Conduit 100 mm (4")	-
4	Solid State Relay Unit	-	30	Steel Conduit 38 mm	-
5	Pre-Processor of Detector Pulse	-	31	Steel Conduit 28 mm	6
6	Supply Power Switch Box with Power Breaker	-	32	Install Conduit under Asphalt Pavement	-
7	TOT Line Box	1	33	Install Conduit under Concrete Pavement or Sidewalk	8
8	Remove Existing Controller	-	34	Install Conduit under Rail	-
9	Signal Pole Type A	-	35	Install Conduit on Riser Support Pole	-
10	Signal Pole Type B	-	36	Handhole Type C	-
11	Signal Pole Type C	-	37	Handhole Type D	1
12	Signal Pole Type D	-	38	Signal Cable 8c (2 sq mm)	-
13	Terminal 12 p	-	39	Signal Cable 8c (2 sq mm)	-
14	Terminal 20 p	-	40	Signal Cable 12c (2 sq mm)	-
15	Signal Head 3 Aspects (200mm x 3)	-	41	Signal Cable 20c (2 sq mm)	8
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-	42	Power Cable	5
17	Signal Head 3 Aspects (300mm x 3)	-	43	Cable Splicing Kit	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-	44	Remove Existing Signal Post and Head's Mast-arm Type	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-	45	Remove Existing Signal Post and Head's (Pedestrian Type)	-
20	Signal Head 4 Aspects (300mm x 4)	-	46	Remove Existing Signal Head	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-	47	Remove Existing Arrow Mask	-
22	Signal Head 6 Aspects (300mm x 6)	-	48	Remove Pedestrian Push Button	-
23	Signal Head Pedestrian	-	49	TOT Line (CPV, 0.65mm, 1P)	20
24	Lantern Arrow Mask	-	50	Grounding Rod	1
25	Target Board for 3 Aspects	-	51	Grounding Cable (IV 5.5 sq mm x 1c)	5
26	Target Board for 4 Aspects	-			



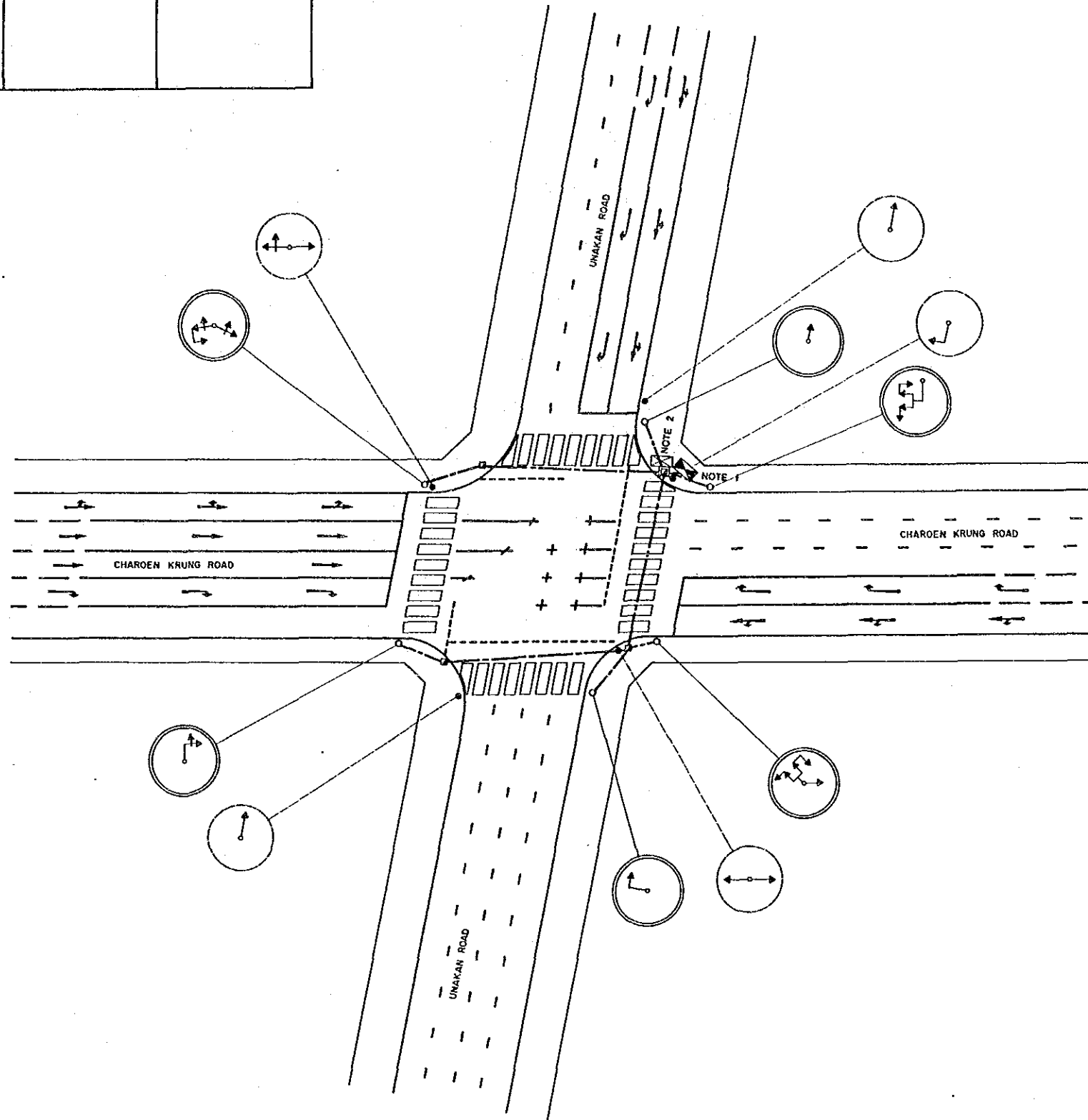
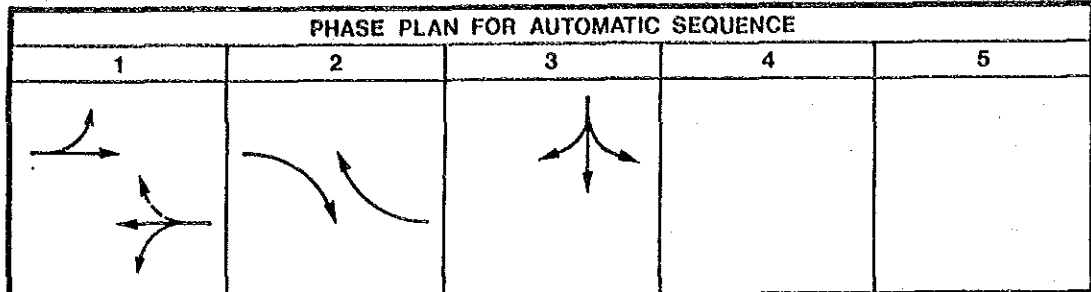
NOTE 1
NOTE 2

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By : Juro Kadera JICA Study Team Leader	
				SUNTHON KOSA - RAMA IV		Approved By : Boonyawat Tiplas BMA Study Team Leader	
				INTERSECTION NO 118		Designed By : Yasuo Kabea-Nima JICA Study Member	
				JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	
Code				Revision		Date	
Associated Plan No. :				Scale 1 / 250		Drawing No 2118	
				Date SEPTEMBER '90		Total 03 / 139	

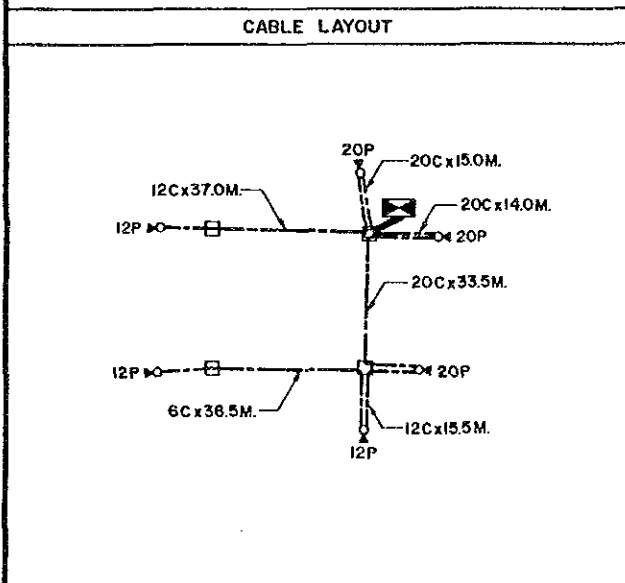


Intersection Equipments List		
Intersection No. 123		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Signal State Relay Unit	4
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 P	-
14	Terminal 20 P	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	6
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	6
34	Install Conduit under Wall	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 8c (2 sq. mm)	6
39	Signal Cable 8c (2 sq. mm)	6
40	Signal Cable 12c (2 sq. mm)	-
41	Signal Cable 20c (2 sq. mm)	6
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Metal-arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestal Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (SPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (V 5.5 sq. mm x 1c)	5

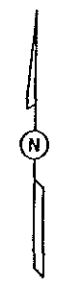
				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
				INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Boonyawat Tiptus BMA Study Team Leader
				RATCHADAPHISEK-RAMA IV		Designed By : Yasuo Kobayashi JICA Study Member	Checked By : TED, BMA
				INTERSECTION NO 123		Scale 1 / 250	Drawing No 2123
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Date SEPTEMBER '90	Total 84 / 139
Associated Plan No. :							



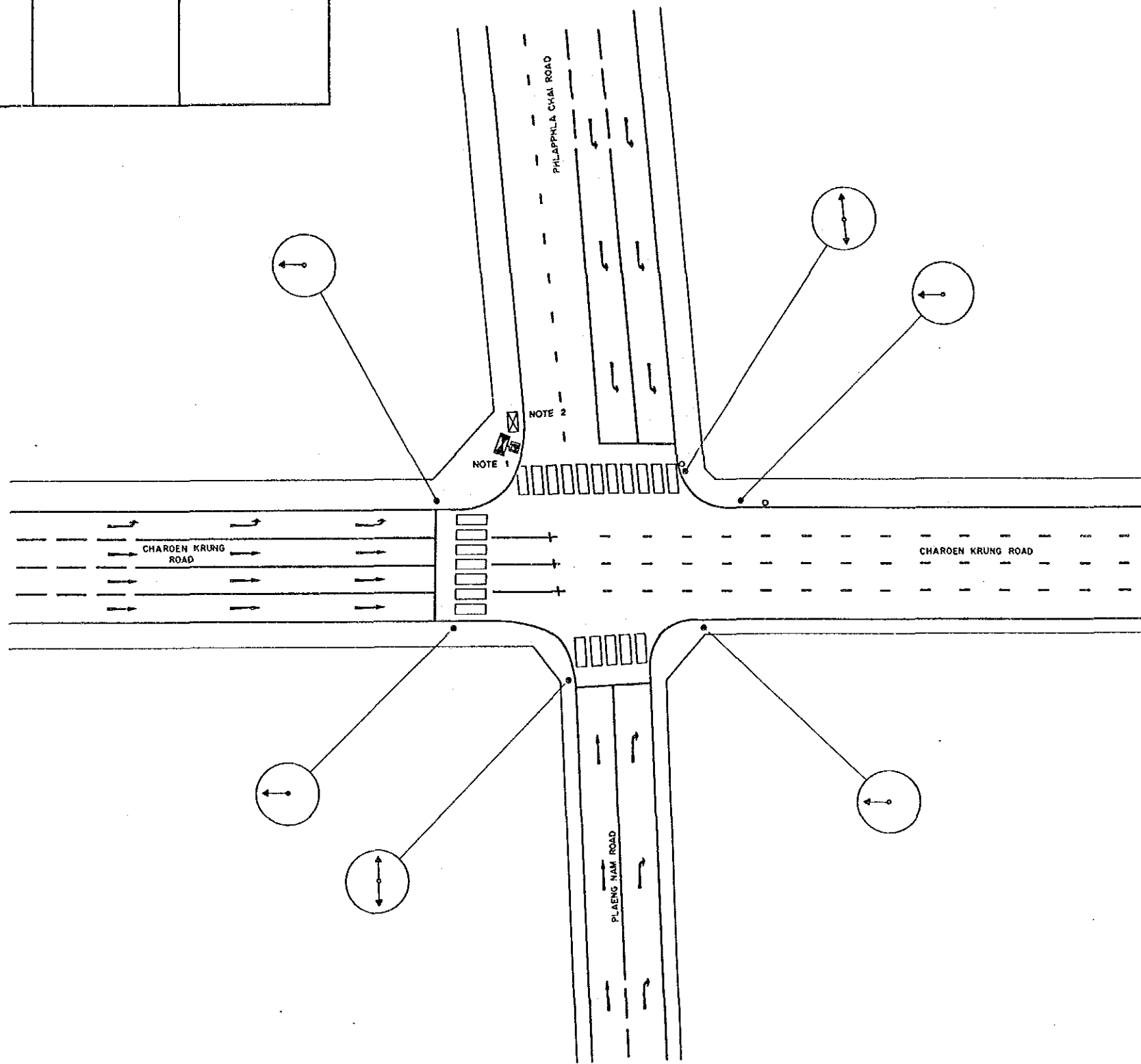
Intersection Equipments List		
Intersection No. 130		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	3
5	Pie-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	3
10	Signal Pole Type B	1
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	3
14	Terminal 20 p	3
15	Signal Head 3 Aspects (200mm x 3)	2
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	1
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	1
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	1
20	Signal Head 4 Aspects (300mm x 4)	1
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	1
22	Signal Head 6 Aspects (300mm x 6)	1
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	8
25	Target Board for 3 Aspects	2
26	Target Board for 4 Aspects	2
27	Target Board for 6 Aspects	1
28	PVC Conduit 100 mm (4")	87
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 38 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	45
33	Install Conduit under Concrete Pavement or Sidewalk	41
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	3
37	Handhole Type D	1
38	Signal Cable 6c (2 sq. mm)	36.5
39	Signal Cable 8c (2 sq. mm)	-
40	Signal Cable 12c (2 sq. mm)	52.5
41	Signal Cable 20c (2 sq. mm)	62.5
42	Power Cable	5
43	Cable Splicing Kit	-
44	Remove Existing Signal Post and Heads (Max-arm Type)	1
45	Remove Existing Signal Post and Heads (Pedestrian Type)	4
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq. mm x 1c)	8



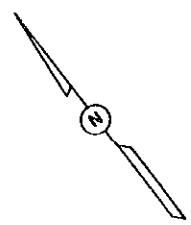
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN			
UNAKAN - CHAROEN KRUNG			
INTERSECTION NO		130	
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
Submitted By :		Juro Kodera JICA Study Team Leader	Boonyawat Tiptue BMA Study Team Leader
Designed By :		Yasuo Hubechima JICA Study Member	Checked By :
Scale		1 / 250	
Date		SEPTEMBER '90	
Drawing No		2130	
Total		85 / 139	



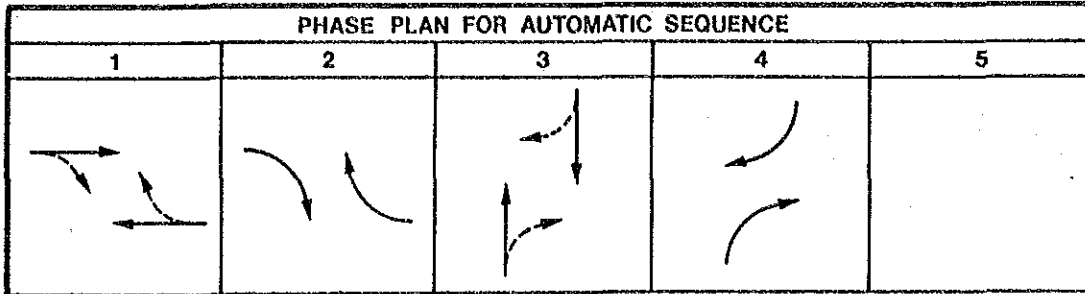
PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5



Intersection Equipments List		
Intersection No. 131		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Reload Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	8
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 50 mm	-
31	Steel Conduit 28 mm	6
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	8
34	Install Conduit under Road	-
35	Install Conduit on Riser Support Pole	6
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	-
39	Signal Cable 8c (2 sq mm)	-
40	Signal Cable 12c (2 sq mm)	8
41	Signal Cable 20c (2 sq mm)	-
42	Power Cable	6
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Mast-arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestal Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Existing Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq mm x 1c)	6



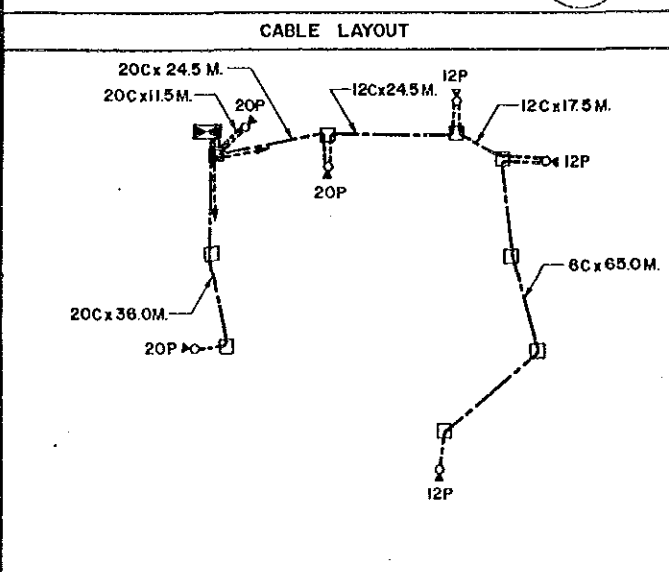
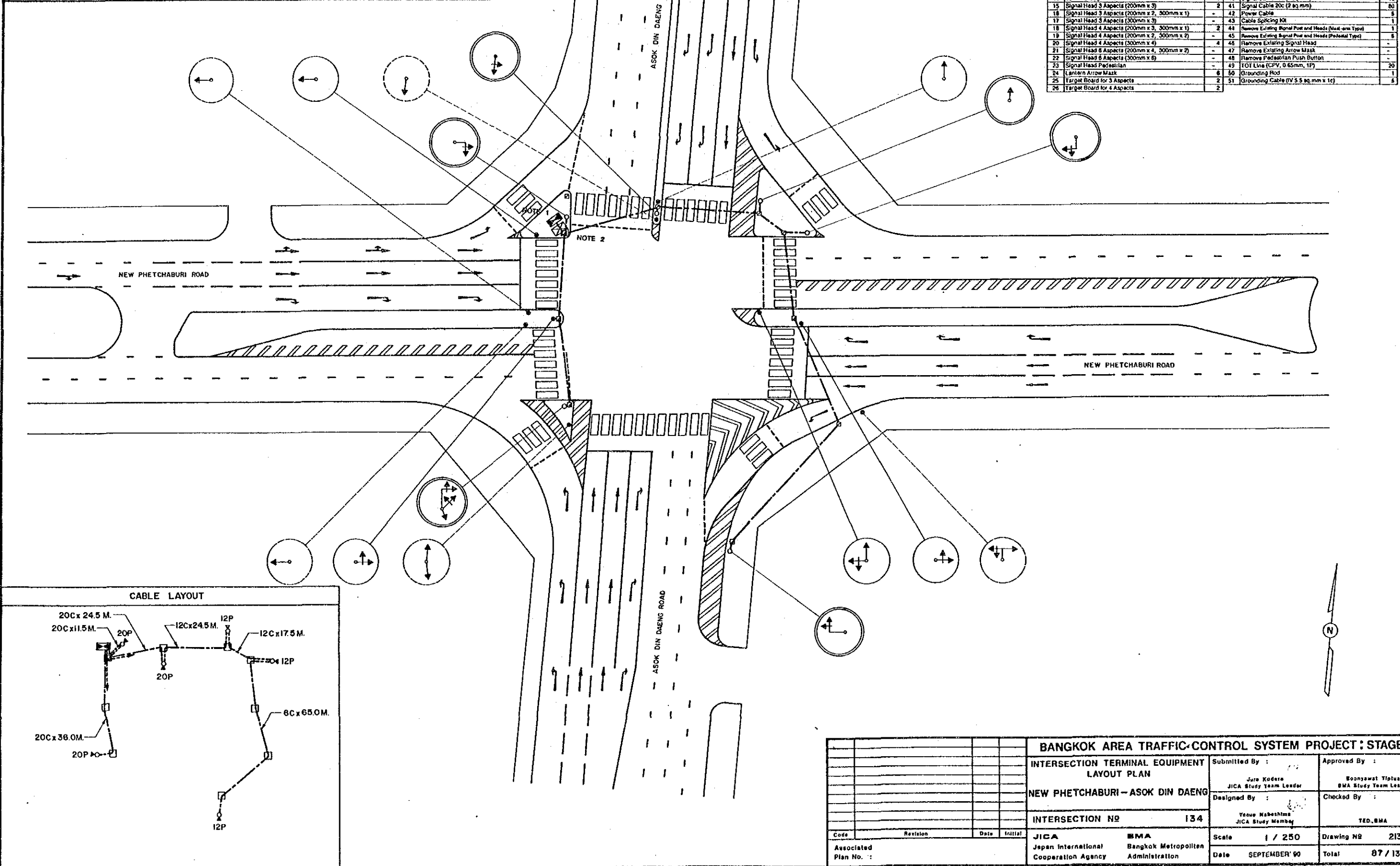
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
PLAENG NAM - CHAROEN KRUNG		Jiro Kodera JICA Study Team Leader	Bonnyawel Titus BMA Study Team Leader
INTERSECTION NO 131		Designed By :	Checked By :
		Yasu Habeshita JICA Study Member	TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale 1 / 250	Drawing NO 2131
		Date SEPTEMBER '90	Total 86 / 139



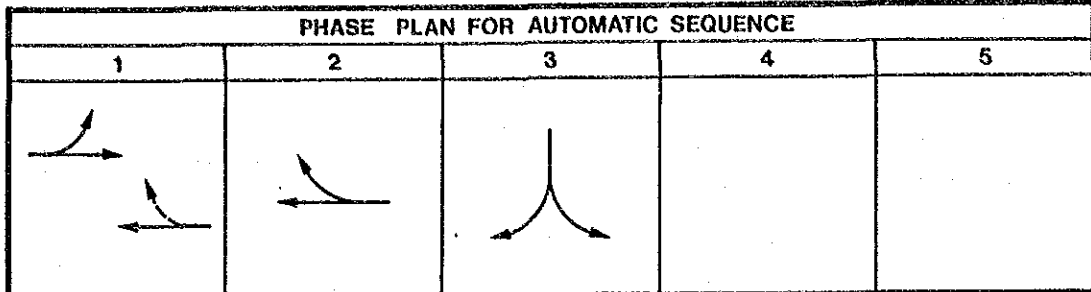
Intersection Equipments List

Intersection No. 134

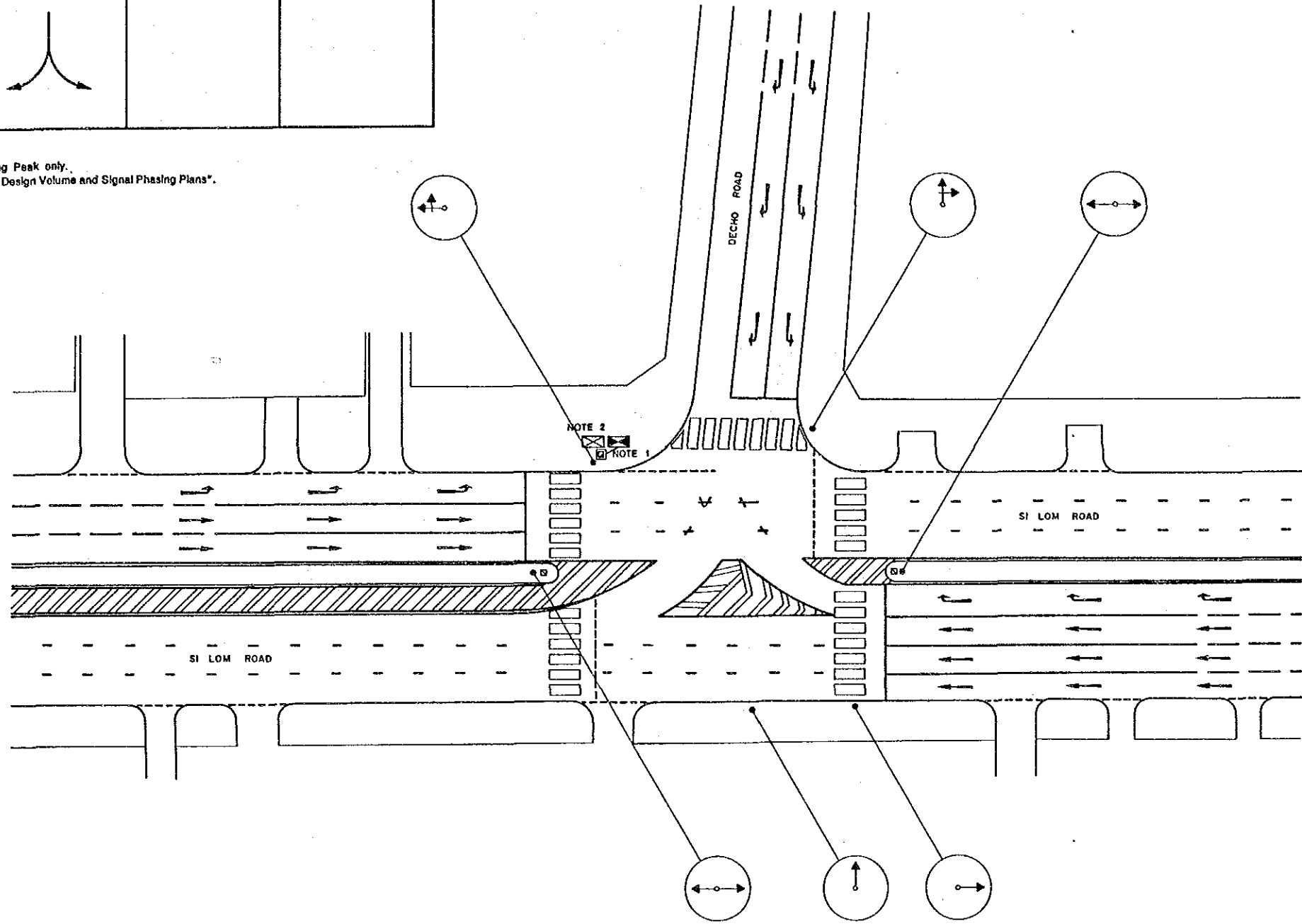
ITEM	Name of Equipment	Qty.	ITEM	Name of Equipment	Qty.
1	Local Controller	1	27	Target Board for 8 Aspects	-
2	Railroad Pre-emption Control Unit	-	28	PVC Conduit 100 mm (4")	120.8
3	Pedestrian Push Button Interface Unit	-	29	Steel Conduit 100 mm (4")	-
4	Solid State Relay Unit	3	30	Steel Conduit 59 mm	-
5	Pre-Processor of Detector Pulse	1	31	Steel Conduit 28 mm	8
6	Supply Power Switch Box with Power Breaker	-	32	Install Conduit under Asphalt Pavement	-
7	TOT Line Box	1	33	Install Conduit under Concrete Pavement or Sidewalk	120.5
8	Remove Existing Controller	1	34	Install Conduit under Rail	-
9	Signal Pole Type A	4	35	Install Conduit on Riser Support Pole	5
10	Signal Pole Type B	2	36	Handhole Type C	4
11	Signal Pole Type C	-	37	Handhole Type D	1
12	Signal Pole Type D	-	38	Signal Cable 6c (2 sq. mm)	65
13	Terminal 12p	2	39	Signal Cable 8c (2 sq. mm)	-
14	Terminal 20p	1	40	Signal Cable 12c (2 sq. mm)	42
15	Signal Head 3 Aspects (200mm x 3)	2	41	Signal Cable 20c (2 sq. mm)	60
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-	42	Power Cable	5
17	Signal Head 3 Aspects (300mm x 3)	-	43	Cable Splicing Kit	1
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	2	44	Remove Existing Signal Post and Heads (Post-arm Type)	1
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-	45	Remove Existing Signal Post and Heads (Pedestal Type)	5
20	Signal Head 4 Aspects (300mm x 4)	-	46	Remove Existing Signal Head	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-	47	Remove Existing Arrow Mask	-
22	Signal Head 6 Aspects (300mm x 6)	-	48	Remove Pedestrian Push Button	-
23	Signal Head Pedestrian	-	49	TOT Line (CPV, 0.65mm, 12p)	20
24	Lumen Arrow Mask	6	50	Grounding Rod	1
25	Target Board for 3 Aspects	2	51	Grounding Cable (IV 5.5 sq. mm x 1c)	5
26	Target Board for 4 Aspects	2			



BANGKOK AREA TRAFFIC-CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
NEW PHETCHABURI - ASOK DIN DAENG		Juro Kodera JICA Study Team Leader	Boonyawat Titus BMA Study Team Leader
INTERSECTION NO 134		Designed By :	Checked By :
JICA		Yasue Nabeshima JICA Study Member	TED, BMA
Japan International Cooperation Agency		Scale	Drawing No
BMA Bangkok Metropolitan Administration		1 / 250	2134
Associated Plan No. :		Date	Total
		SEPTEMBER '90	87 / 139



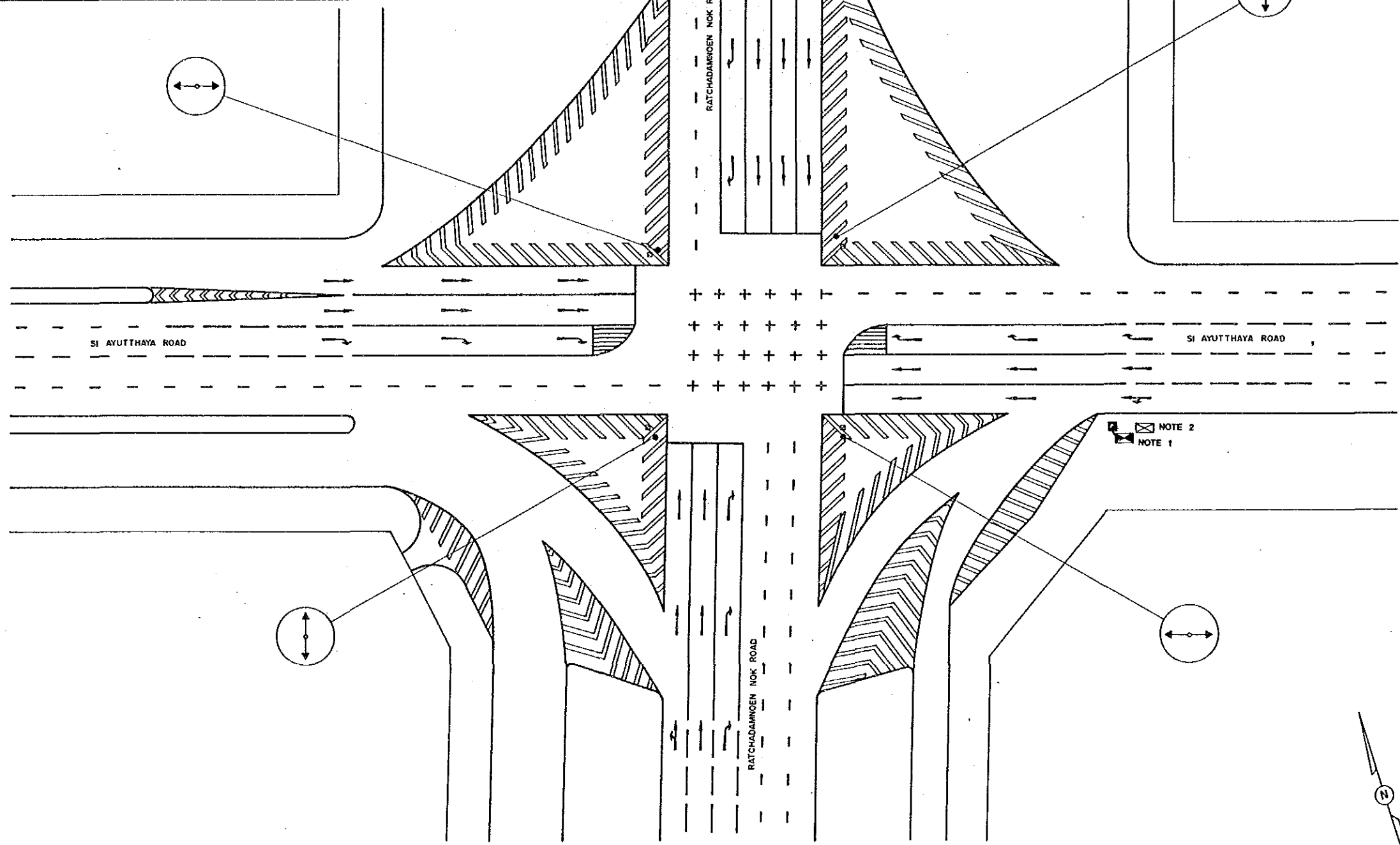
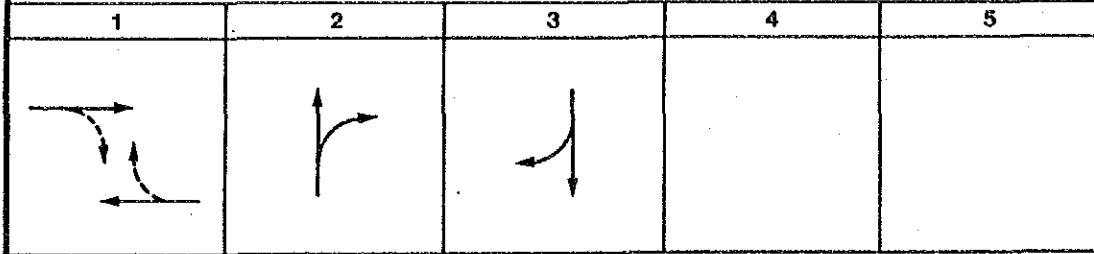
NOTE: Signal Phasing shown here is for the Morning Peak only.
For evening peak and off-peak, please refer to "Design Volume and Signal Phasing Plans".



Intersection Equipments List		
Intersection No. 137		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor of Detector Pulse	-
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 8 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 8 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	6
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	6
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq. mm)	-
39	Signal Cable 8c (2 sq. mm)	-
40	Signal Cable 12c (2 sq. mm)	8
41	Signal Cable 20c (2 sq. mm)	-
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Max. 1.5m Type)	-
45	Remove Existing Signal Post and Heads (Pedestrian Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (RV 3.5 sq. mm x 1c)	5

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
DECHO - SI LOM		Juro Kodera JICA Study Team Leader	Boonyawat Tipius BMA Study Team Leader
INTERSECTION NO 137		Designed By :	Checked By :
		Yasuo Hasehime JICA Study Member	TEO, BMA
Code	Revision	Date	Initial
Associated Plan No. :	JICA	BMA	Scale 1 / 250
	Japan International Cooperation Agency	Bangkok Metropolitan Administration	Drawing No 2137
		Date SEPTEMBER '90	Total 08 / 139

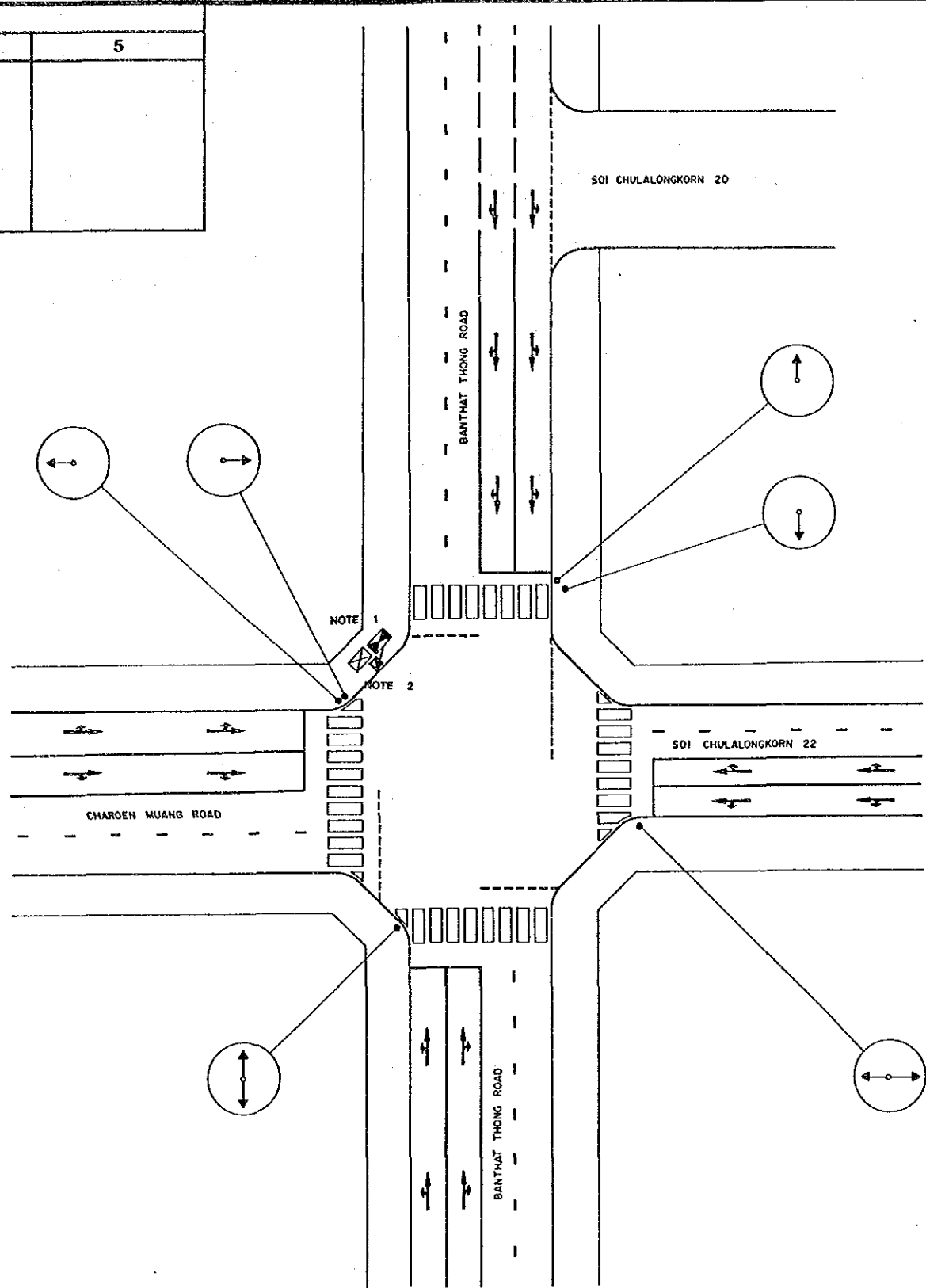
PHASE PLAN FOR AUTOMATIC SEQUENCE



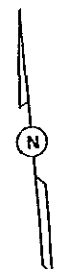
Intersection Equipments List		
Intersection No. 139		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	1
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 2, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Eastern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	6
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 38 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	8
34	Install Conduit under Pole	-
35	Install Conduit on Fiber Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	-
39	Signal Cable 8c (2 sq mm)	-
40	Signal Cable 12c (2 sq mm)	-
41	Signal Cable 20c (2 sq mm)	8
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Main-arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestal Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.85mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq mm x 1c)	5

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Boonyawat Titus BMA Study Team Leader
RATCHADAMNOEN NOK-SI AYUTTHAYA		Designed By : Yasuo Nabshima JICA Study Member	Checked By : TED, BMA
INTERSECTION NO 139		Scale 1 / 250	Drawing No 2139
Associated Plan No. :		Date SEPTEMBER '90	Total 89 / 139
Code	Revision	Date	Initial
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	

PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5

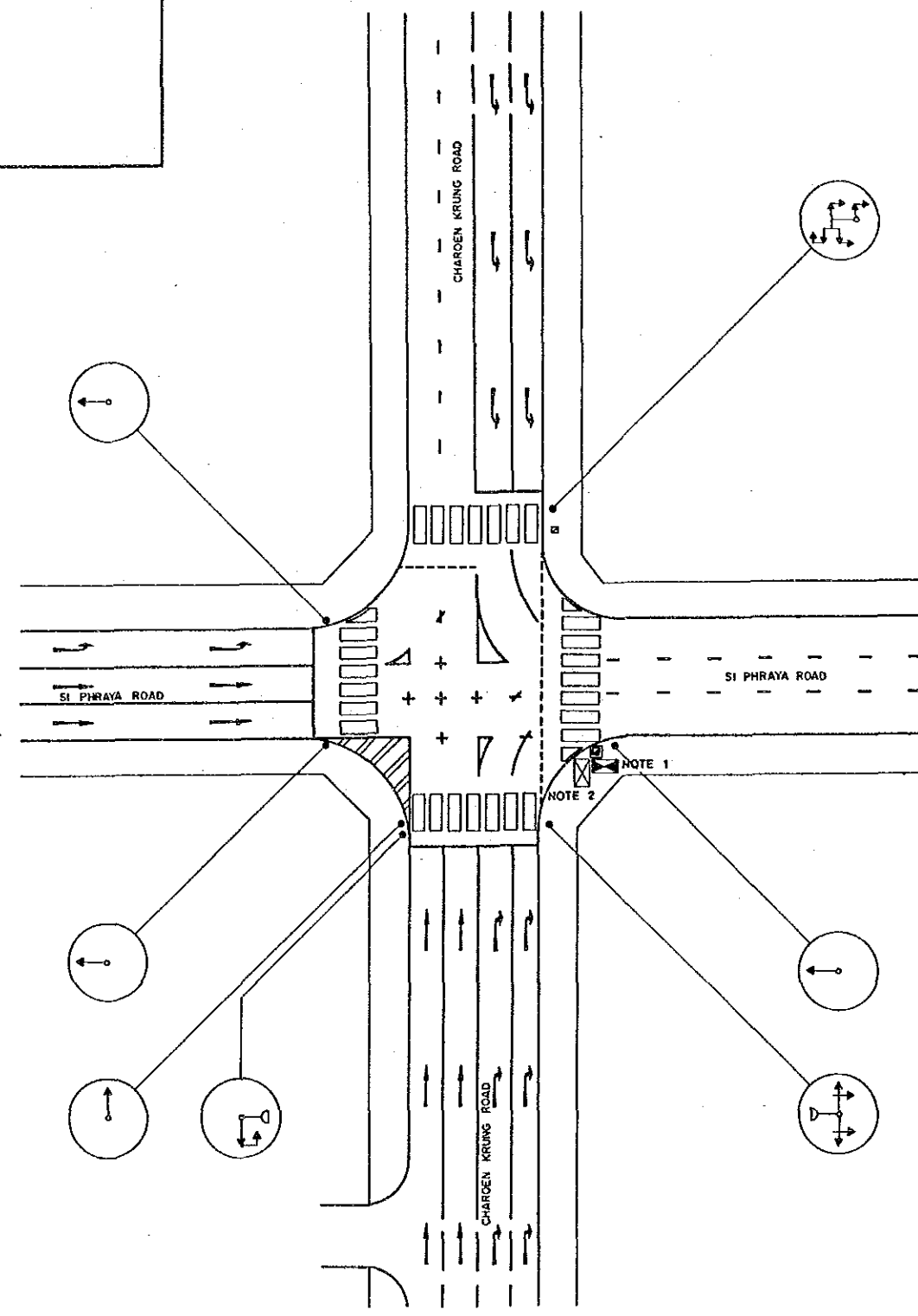


Intersection Equipment List		
Intersection No. 140		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Main Road Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor of Detector Pulse	-
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4')	8
29	Steel Conduit 100 mm (4')	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	6
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq. mm)	-
39	Signal Cable 8c (2 sq. mm)	-
40	Signal Cable 12c (2 sq. mm)	-
41	Signal Cable 20c (2 sq. mm)	8
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Head (Post-arm Type)	-
45	Remove Existing Signal Post and Head (Pedestal Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq. mm x 1c)	6



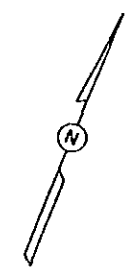
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I					
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN			Submitted By :	Approved By :	
BANTHAT THONG - CHAROEN MUANG			Designed By :	Checked By :	
INTERSECTION NO 140			Scale 1 / 250		
Associated Plan No. :			Drawing NR 2140		
JICA Japan International Cooperation Agency			BMA Bangkok Metropolitan Administration		
Date SEPTEMBER '90			Total 90 / 139		

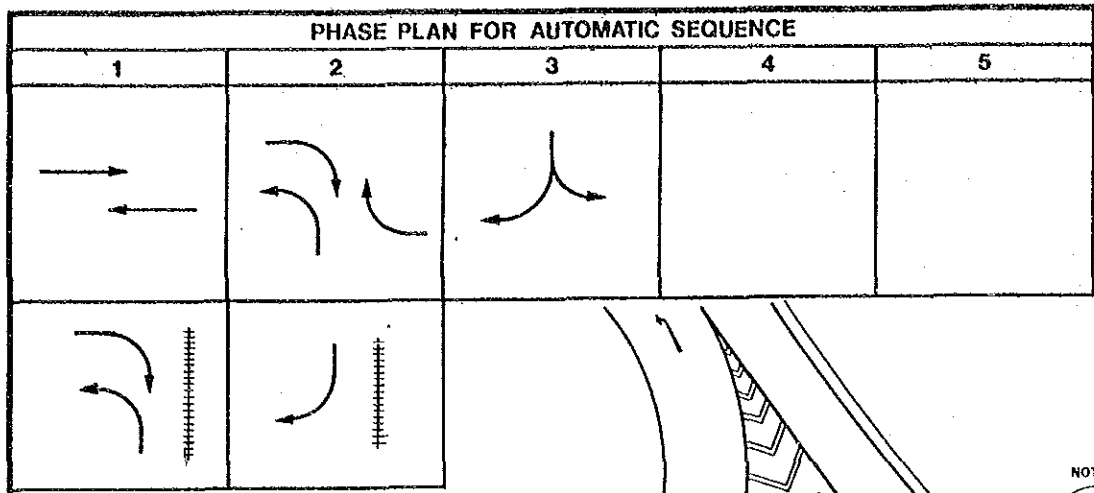
PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5



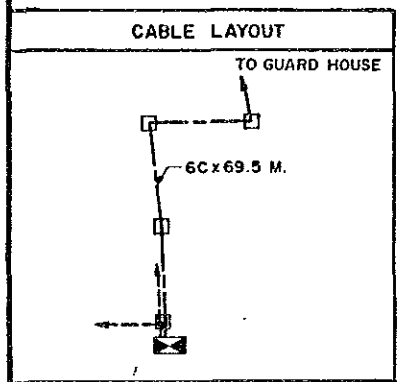
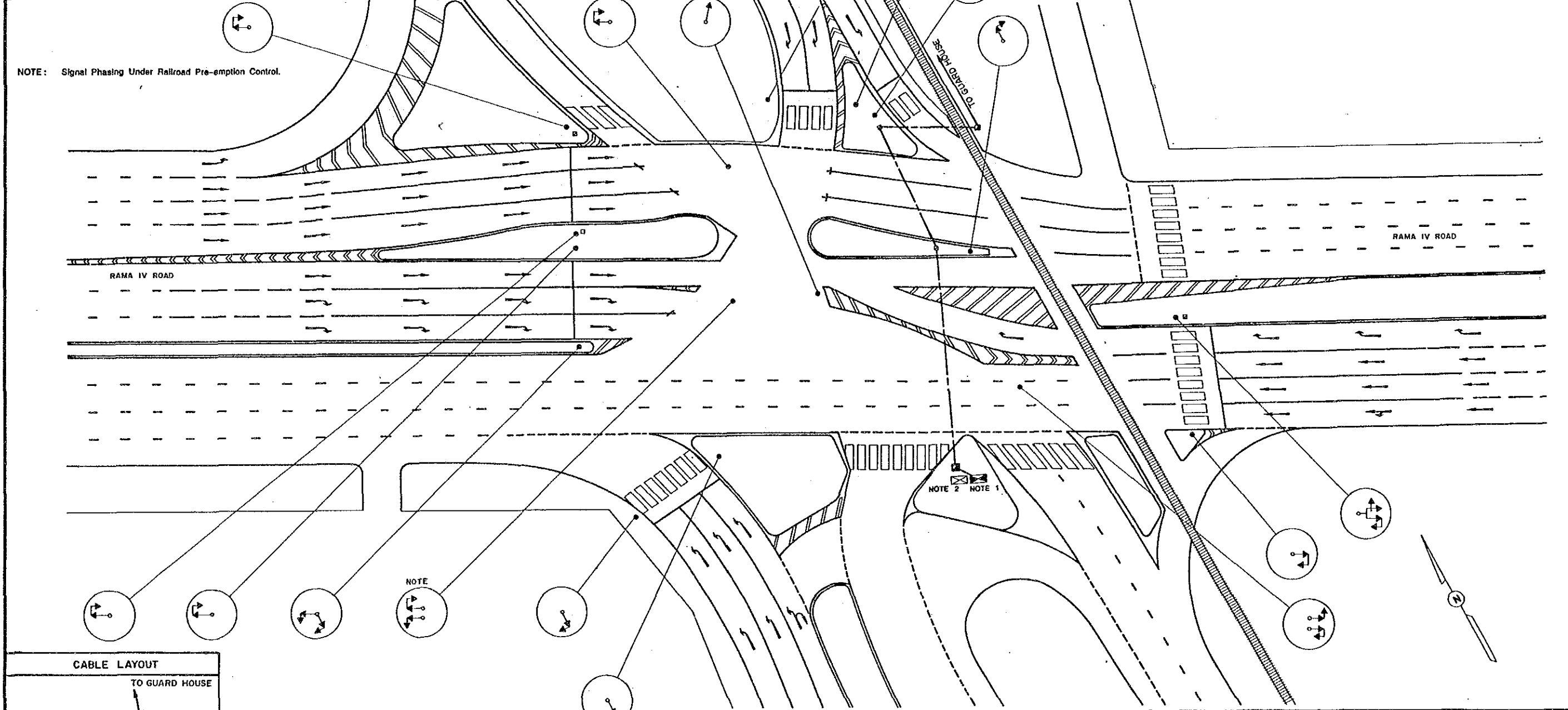
Intersection Equipments List		
Intersection No. 141		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Flashtoad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	-
5	Pre-Processor of Detector Pulse	2
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12P	-
14	Terminal 20P	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	8
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 38 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	8
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	8
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	-
39	Signal Cable 8c (2 sq mm)	-
40	Signal Cable 12c (2 sq mm)	-
41	Signal Cable 20c (2 sq mm)	8
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (4-arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestrian Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (W 5.5 sq mm x 1c)	5

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By : Jura Kodera JICA Study Team Leader	Approved By : Boonyawat Tiptus BMA Study Team Leader
SI PHRAYA - CHAROEN KRUNG		Designed By : Yasuo Nabeshima JICA Study Member	Checked By : TED, BMA
INTERSECTION NO 141		Scale 1 / 250	Drawing No 2141
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Date SEPTEMBER '90	Total 91 / 139

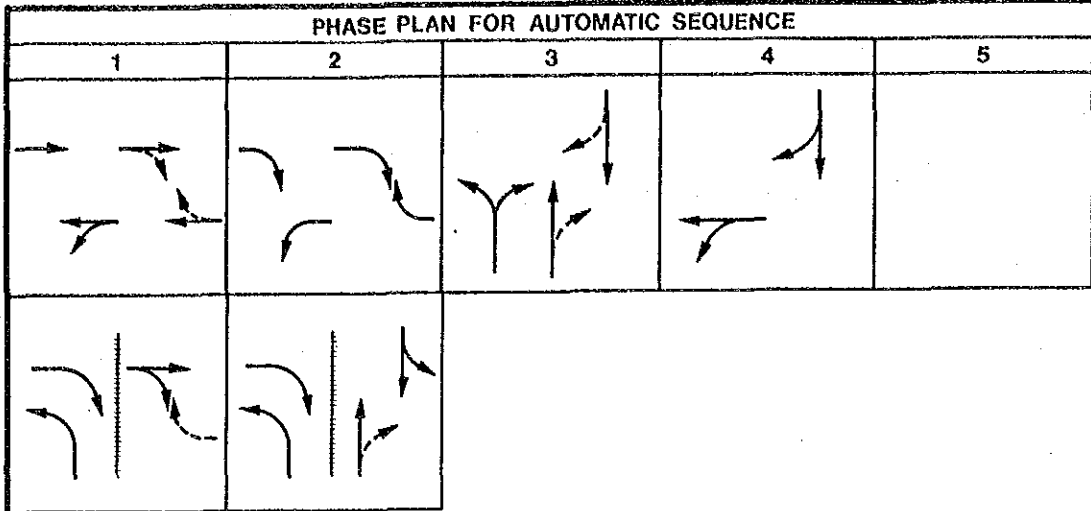




Intersection Equipments List					
Intersection No. 142					
ITEM	Name of Equipment	Qty.	ITEM	Name of Equipment	Qty.
1	Local Controller	1	27	Target Board for 6 Aspects	-
2	Railroad Pre-emption Control Unit	1	28	PVC Conduit 100 mm (4")	60.5
3	Pedestrian Push Button Interface Unit	-	29	Steel Conduit 100 mm (4")	12
4	Solid State Relay Unit	4	30	Steel Conduit 38 mm	-
5	Pre-Processor of Detector Pulses	1	31	Steel Conduit 28 mm	5
6	Supply Power Switch Box with Power Breaker	-	32	Install Conduit under Asphalt Pavement	-
7	TOT Line Box	1	33	Install Conduit under Concrete Pavement or Sidewalk	50.5
8	Remove Existing Controller	1	34	Install Conduit under Road	12
9	Signal Pole Type A	-	35	Install Conduit on Euser Support Pole	5
10	Signal Pole Type B	-	36	Handhole Type C	1
11	Signal Pole Type C	-	37	Handhole Type D	1
12	Signal Pole Type D	-	38	Signal Cable 6c (2 sq. mm)	77.5
13	Terminal 12p	-	39	Signal Cable 8c (2 sq. mm)	-
14	Terminal 20p	-	40	Signal Cable 12c (2 sq. mm)	-
15	Signal Head 3 Aspects (200mm x 3)	-	41	Signal Cable 20c (2 sq. mm)	5
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-	42	Power Cable	5
17	Signal Head 4 Aspects (300mm x 3)	-	43	Cable Splicing Kit	1
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-	44	Remove Existing Signal Post and Heads (Main-stem Type)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-	45	Remove Existing Signal Post and Heads (Pedestal Type)	-
20	Signal Head 4 Aspects (300mm x 4)	-	46	Remove Existing Signal Head	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-	47	Remove Existing Arrow Mask	-
22	Signal Head 8 Aspects (300mm x 6)	-	48	Remove Pedestrian Push Button	-
23	Signal Head Pedestrian	-	49	TOT Line (CPV, 6.65mm, 1P)	20
24	Lantern Arrow Mask	-	50	Grounding Rod	1
25	Target Board for 3 Aspects	-	51	Grounding Cable (IV 5.5 sq. mm x 1c)	5
26	Target Board for 4 Aspects	-			

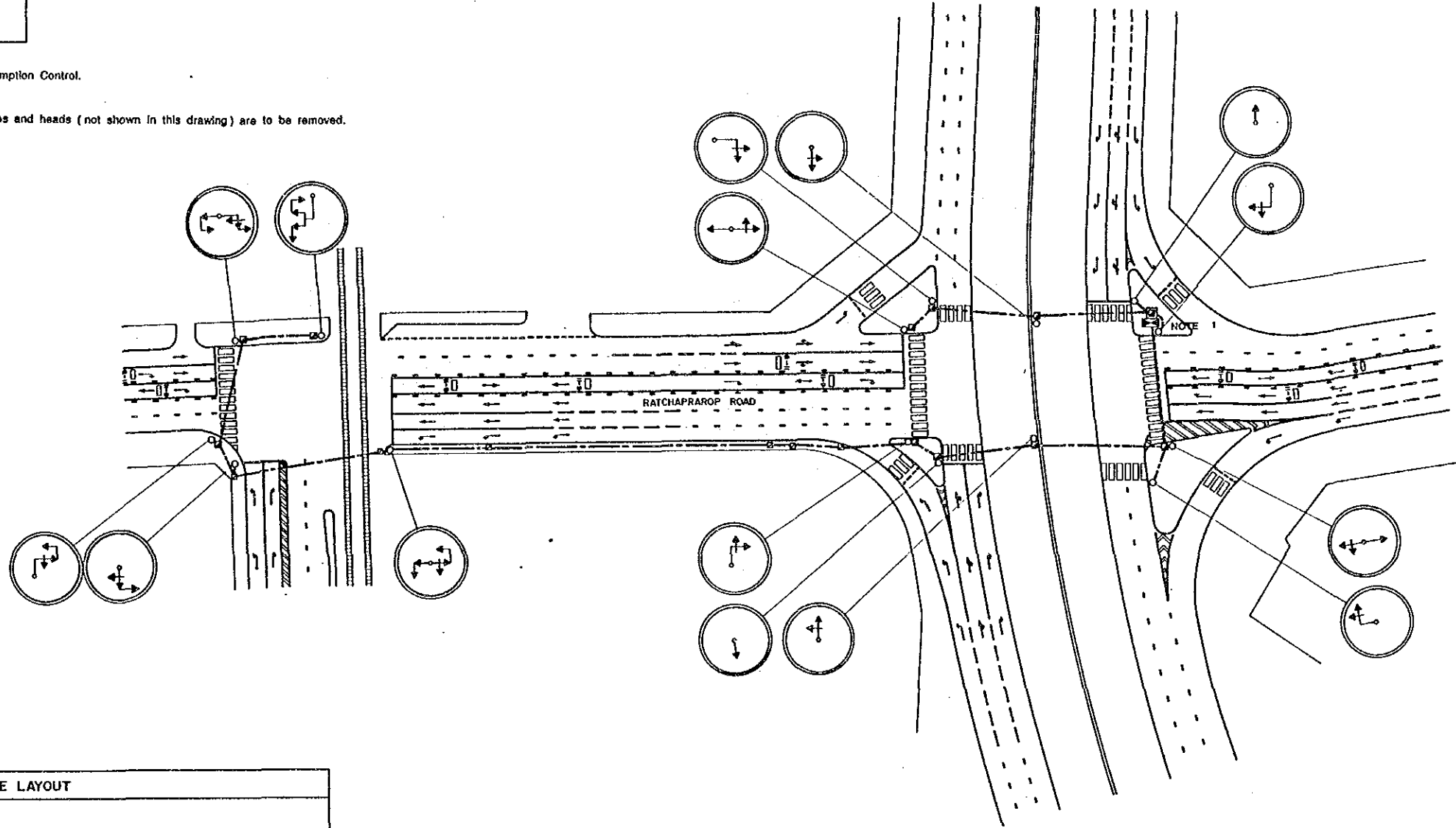


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
CHUA PHLOENG - RAMA IV - DIN DAENG PORT EXPRESSWAY		Jure Kedara JICA Study Team Leader	Boonyawat Tiplus BMA Study Team Leader
INTERSECTION NO. 142		Designed By :	Checked By :
Yasuo Nabeshima JICA Study Member		YED, BMA	
JICA BMA Japan International Bangkok Metropolitan Cooperation Agency Administration		Scale 1 / 250	Drawing NO 2142
Associated Plan No. :		Date SEPTEMBER '80	Total 92 / 139

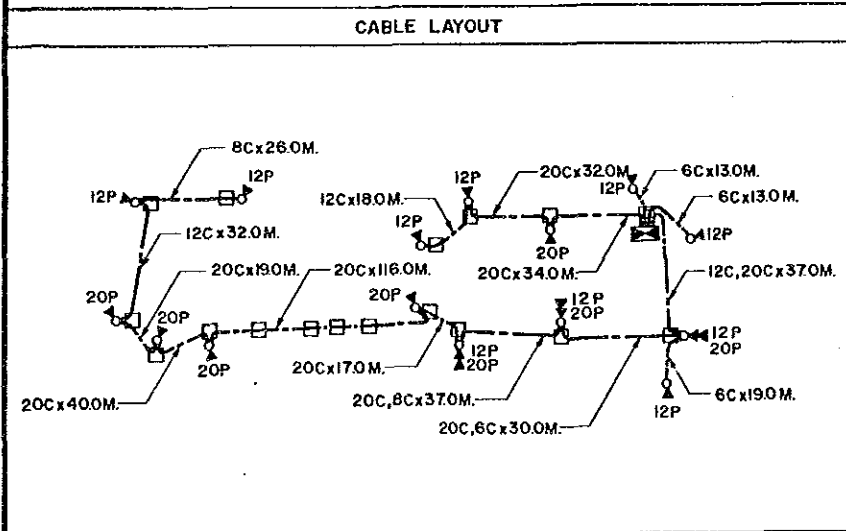


NOTE: Signal Phasing Under Railroad Pre-emption Control.

NOTE: Existing local controller, all signal poles and heads (not shown in this drawing) are to be removed.

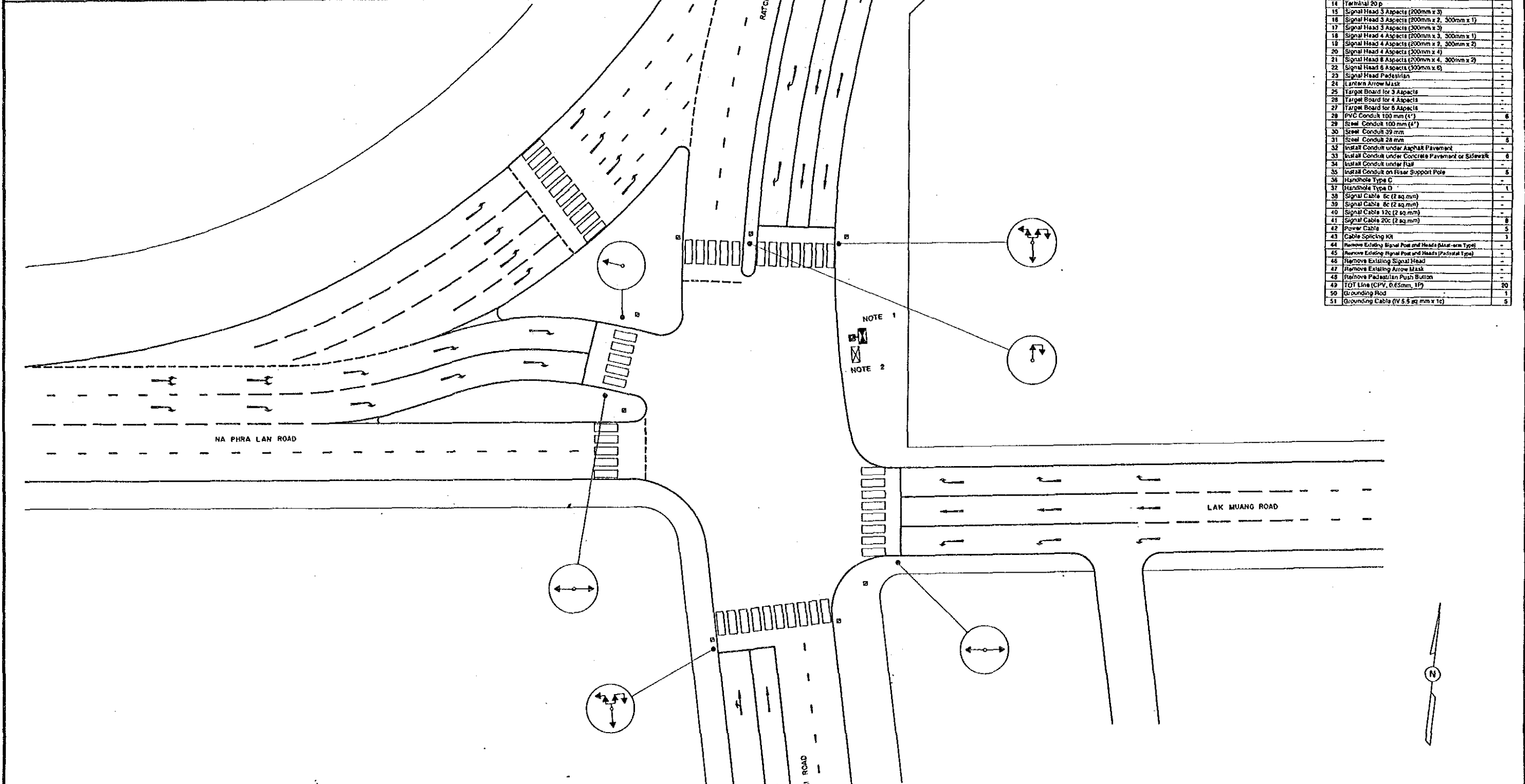


Intersection Equipments List		
Intersection No. 143		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	1
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	6
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	2
10	Signal Pole Type B	1
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	10
14	Terminal 30 p	1
15	Signal Head 3 Aspects (200mm x 3)	4
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	2
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	4
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	2
20	Signal Head 4 Aspects (300mm x 4)	6
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	1
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	19
25	Target Board for 3 Aspects	6
26	Target Board for 4 Aspects	4
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	308
29	Steel Conduit 100 mm (4")	28
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	306
34	Install Conduit under Road	28
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	10
37	Handhole Type D	1
38	Signal Cable 6c (2 sq. mm)	75
39	Signal Cable 8c (2 sq. mm)	63
40	Signal Cable 12c (2 sq. mm)	87
41	Signal Cable 20c (2 sq. mm)	328
42	Power Cable	-
43	Cable Splicing Kit	5
44	Remove Existing Signal Post and Heads (Multi-arm Type)	-
45	Remove Existing Signal Post and Heads (Prestalid Type)	12
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq. mm x 1c)	5



BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
RATCHAPRAROP - SI AYUTTHAYA		Juro Kodera JICA Study Team Leader	Ranyawat Tiptus BMA Study Team Leader
INTERSECTION NO 143		Designed By :	Checked By :
Code Revision Date Initial		Yasuo Mabeshima JICA Study Member	TED, BMA
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
Scale 1 / 250		Date SEPTEMBER '90	Drawing No 2143
Total 93 / 139			

PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5

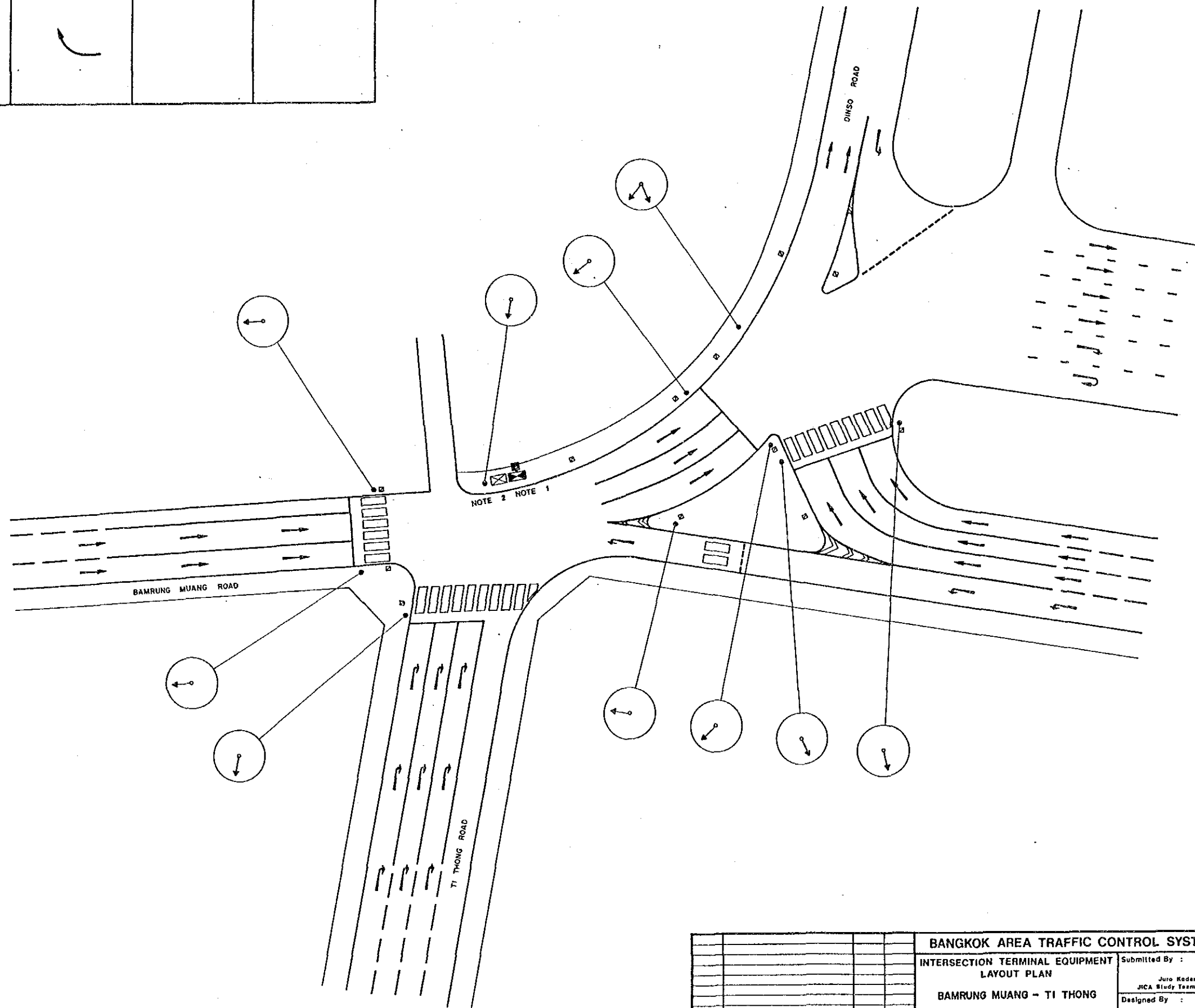


Intersection Equipments List		
Intersection No. 144		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Roadway Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor of Detector Pulse	-
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lenses Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	6
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	8
34	Install Conduit under Wall	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 8c (2 sq. mm)	-
39	Signal Cable 8c (2 sq. mm)	-
40	Signal Cable 12c (2 sq. mm)	-
41	Signal Cable 20c (2 sq. mm)	8
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Plan-arm Type)	-
45	Remove Existing Signal Post and Heads (Pactrol Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq. mm x 1c)	5

NOTE 1
NOTE 2

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Beonyant Tiptua BMA Study Team Leader
NA PHRA LAN-LAK MUANG-SANAM CHAI		Designed By : Tesuo Hebashima JICA Study Member	Checked By : TED.BMA
INTERSECTION NO 144		Scale 1 / 250	Drawing NR 2144
Code Revision Date Initial		Date SEPTEMBER '90	Total 54 / 139
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration

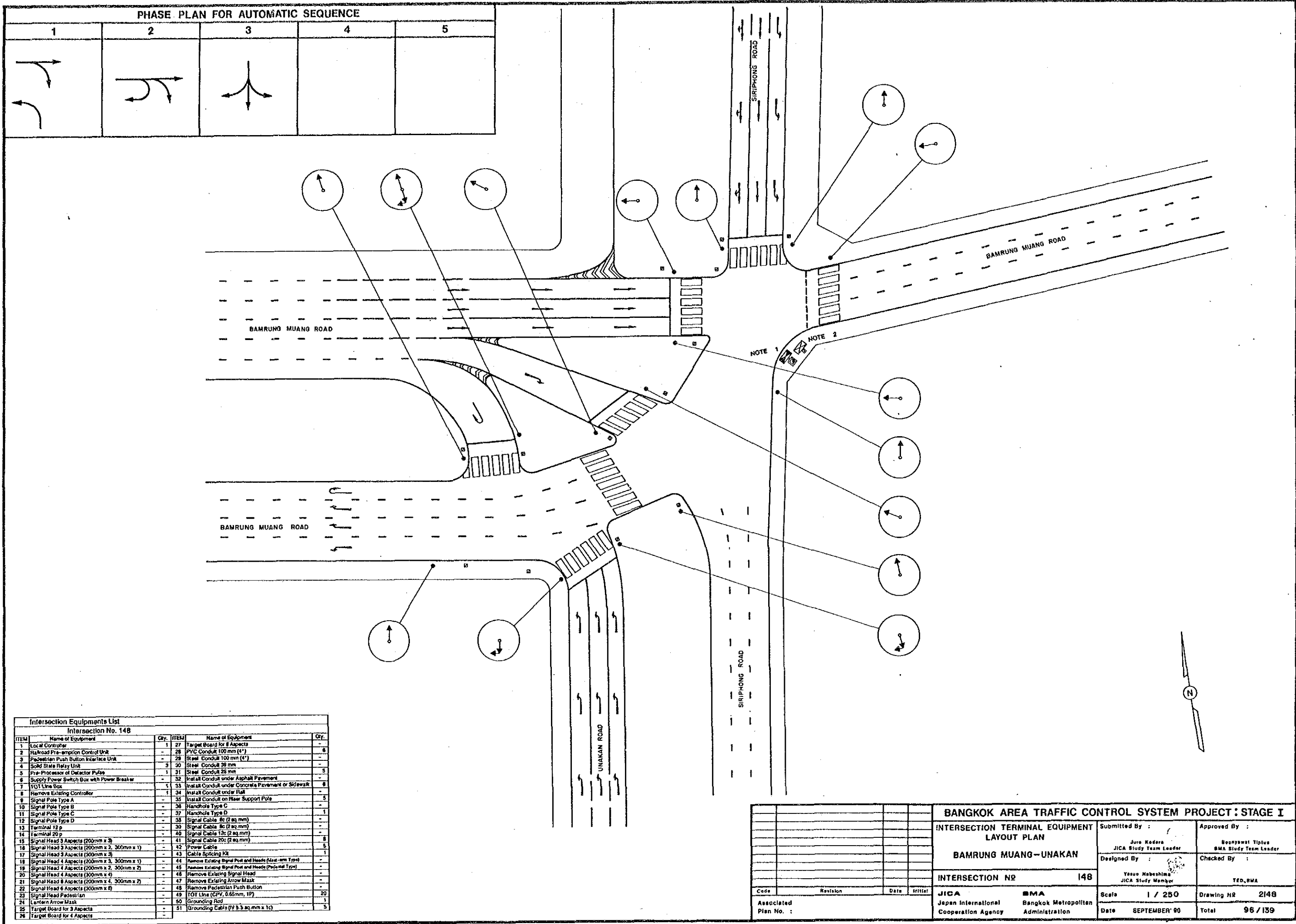
PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5
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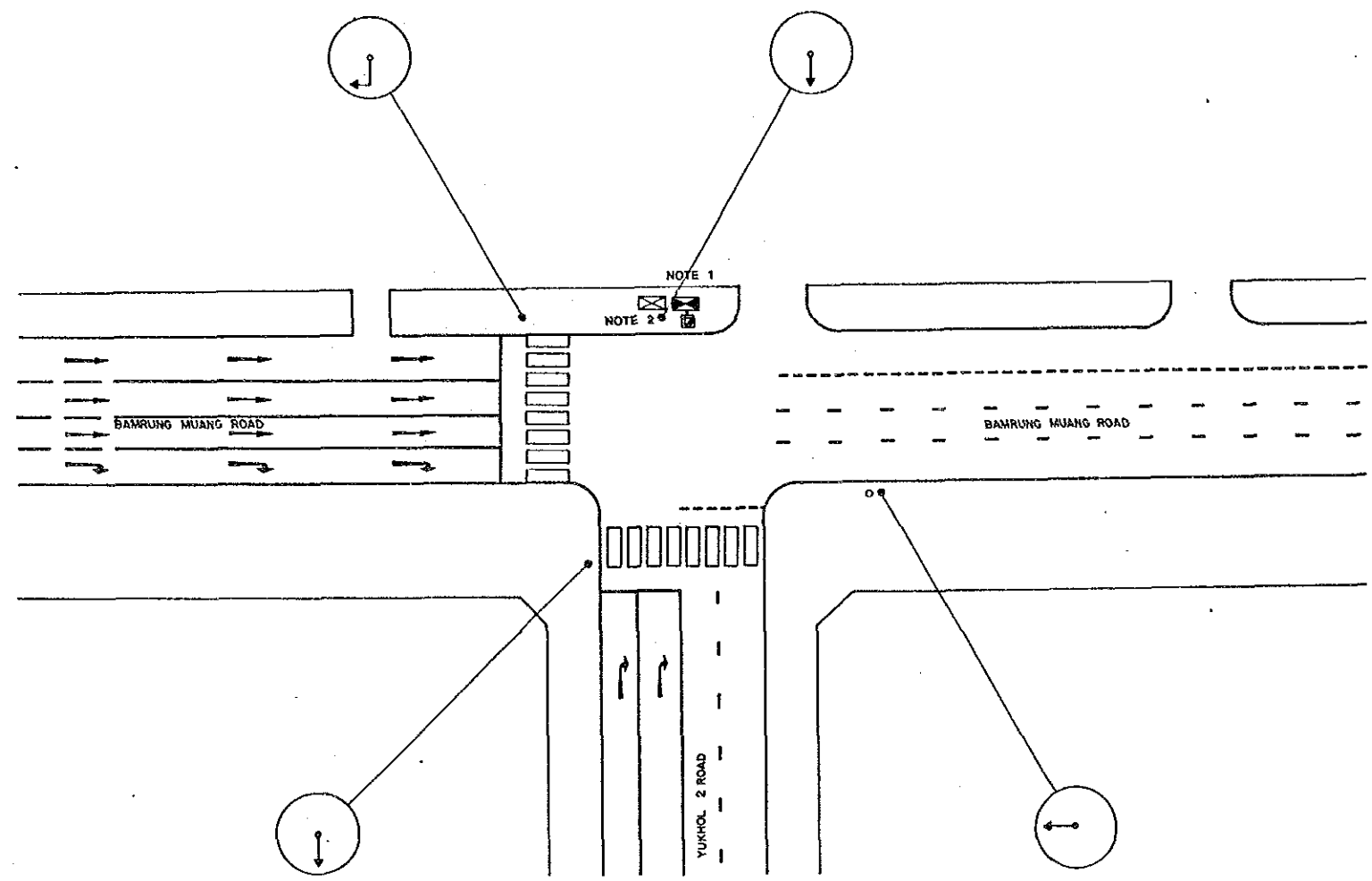
Intersection Equipments List		
Intersection No. 147		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor of Detector Pulse	-
6	Supply Power Switch Box with Power Braker	-
7	TOT Line Rod	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Left-turn Arrow Mast	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4')	6
29	Steel Conduit 100 mm (4')	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	6
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	8
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6C (2 sq. mm)	-
39	Signal Cable 8C (2 sq. mm)	-
40	Signal Cable 12c (2 sq. mm)	-
41	Signal Cable 20c (2 sq. mm)	8
42	Power Cable	5
43	Cable Splicing Kit	-
44	Remove Existing Signal Pole and Head (Main arm Type)	1
45	Remove Existing Signal Pole and Head (Pedestrian Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mast	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (TV S.S. 20mm x 1c)	5

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
BAMRUNG MUANG - TI THONG		Juro Kadera JICA Study Team Leader	Boonyawat Tiplus BMA Study Team Leader
		Designed By : Yasuo Nabeshima JICA Study Member	Checked By : TED.BMA
INTERSECTION NO 147		Scale 1 / 250	Drawing No 2147
Associated Plan No. :		Date SEPTEMBER '90	Total 95 / 139





PHASE PLAN FOR AUTOMATIC SEQUENCE				
1	2	3	4	5
				

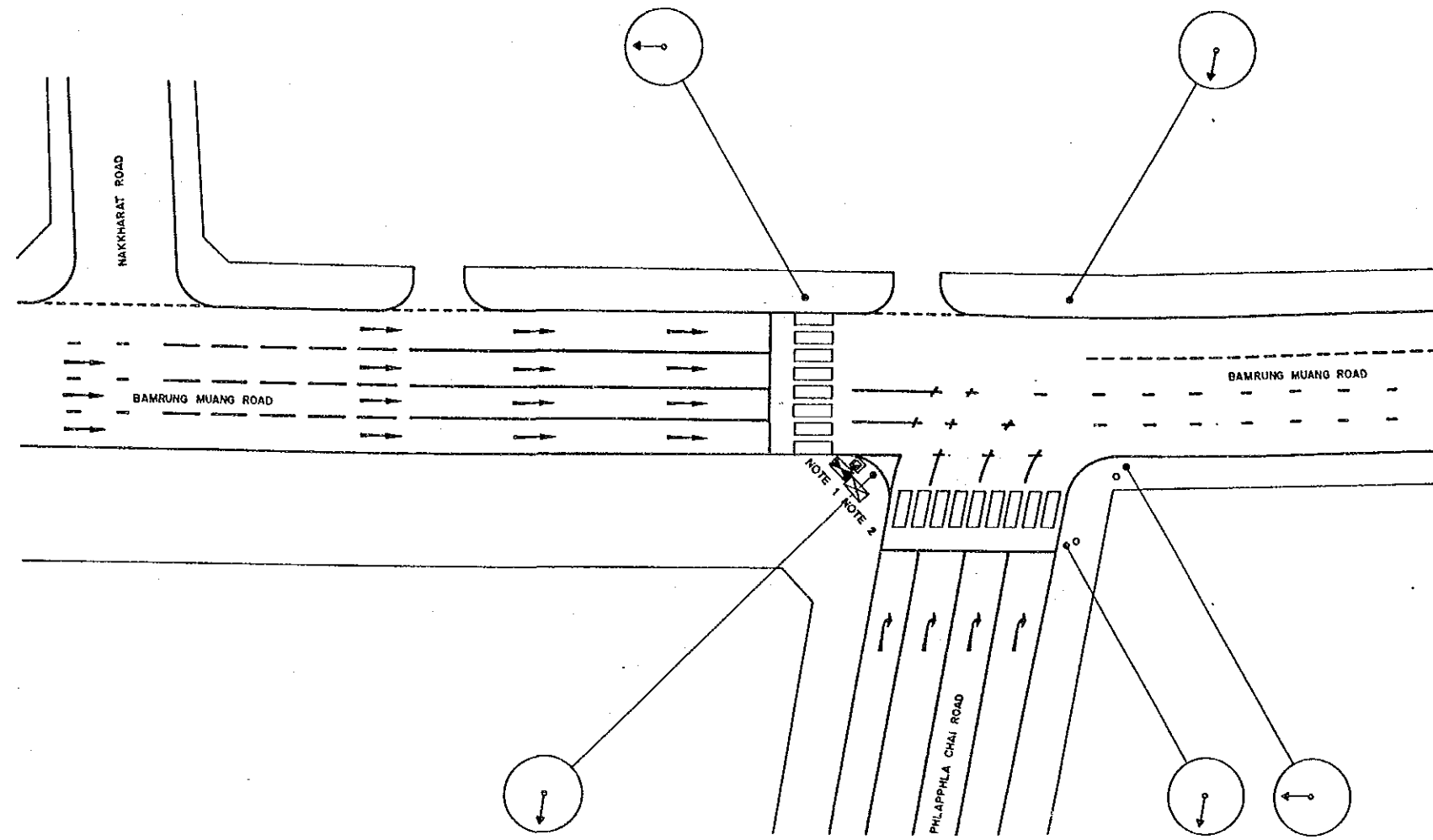


Intersection Equipments List		
Intersection No. 160		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Soft State Relay Unit	1
5	Pre-Processor of Deflector Pulse	-
6	Supply Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 2 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 8 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mark	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	8
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 38 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	6
34	Install Conduit under Flat	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq.mm)	-
39	Signal Cable 8c (2 sq.mm)	8
40	Signal Cable 12c (2 sq.mm)	-
41	Signal Cable 20c (2 sq.mm)	-
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Rail-rod Type)	-
45	Remove Existing Signal Post and Heads (Pedestal Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mark	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, Ø 65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq. mm x 1c)	5

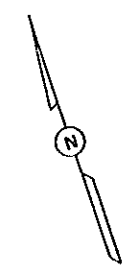
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN			
YUKHOL 2 - BAMRUNG MUANG			
INTERSECTION NO		160	
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
Submitted By :		Approved By :	
Designed By :		Checked By :	
Scale		1 / 250	
Date		SEPTEMBER '90	
Drawing NR		2160	
Total		97 / 139	

PHASE PLAN FOR AUTOMATIC SEQUENCE

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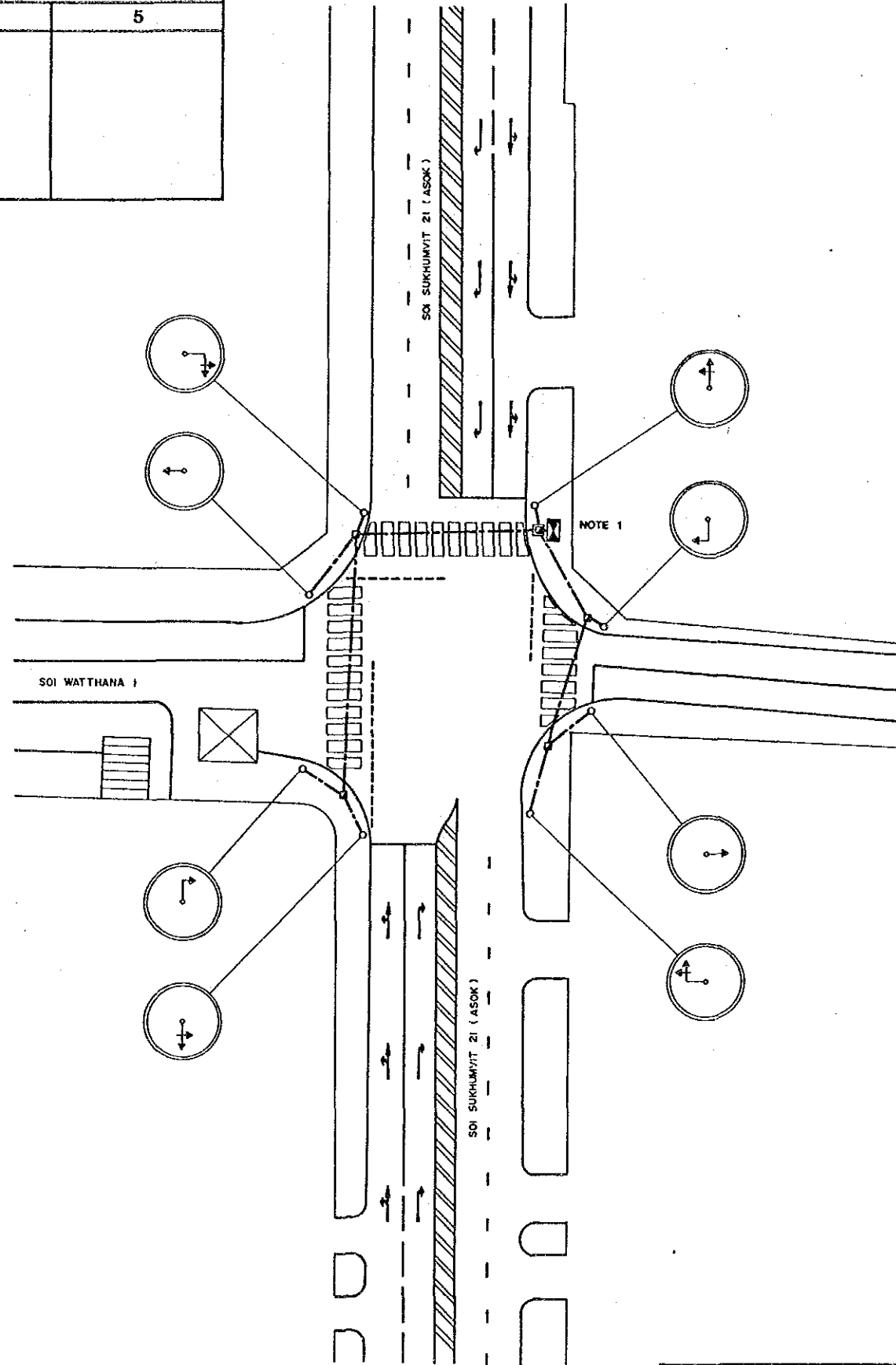
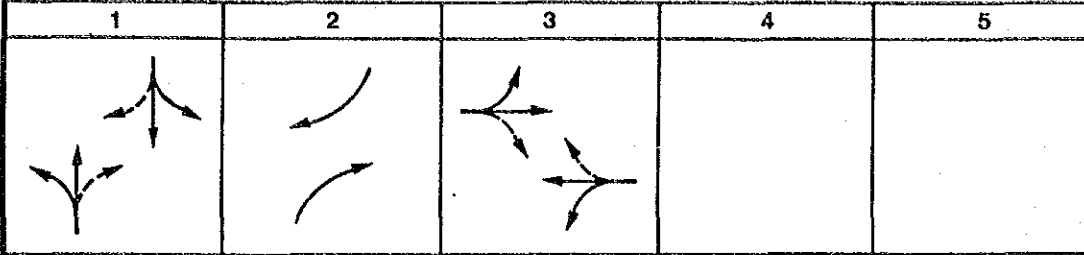


Intersection Equipments List		
Intersection No. 161		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	-
5	Pre-Processor of Detector Pulse	1
6	Bugby Power Switch Box with Power Breaker	-
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	-
10	Signal Pole Type B	-
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	-
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	-
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	-
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	-
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	6
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	8
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	8
34	Install Conduit under Rail	-
35	Install Conduit on Riser Support Pole	5
36	Handhole Type C	-
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	-
39	Signal Cable 8c (2 sq mm)	8
40	Signal Cable 10c (2 sq mm)	-
41	Signal Cable 20c (2 sq mm)	-
42	Power Cable	5
43	Cable Splicing Kit	1
44	Remove Existing Signal Post and Heads (Mast-arm Type)	-
45	Remove Existing Signal Post and Heads (Pedestal Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPW, 0.65mm, 1P)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq mm x 1c)	5



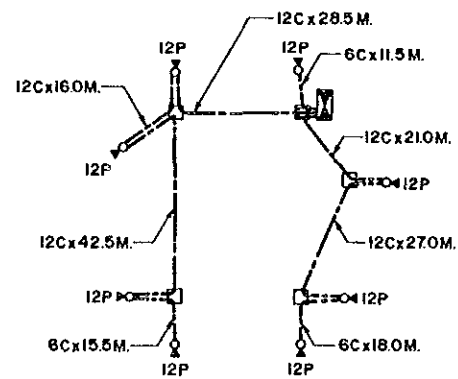
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By : Jiro Kudara JICA Study Team Leader	Approved By : Boonyawat Tiplua BMA Study Team Leader
PHLAPPLA CHAI - BAMRUNG MUANG		Designed By : Yaww Nabeshin JICA Study Member	Checked By : TED.BMA
INTERSECTION NO 161		Scale 1 / 250	Drawing No 2161
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Date SEPTEMBER '90	Total 98 / 139

PHASE PLAN FOR AUTOMATIC SEQUENCE



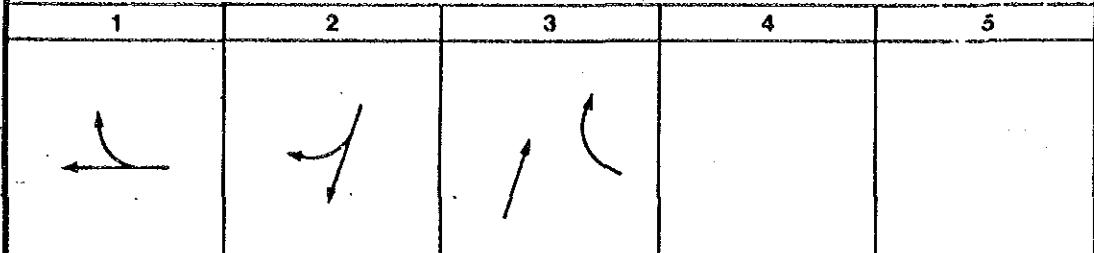
Intersection Equipments List		
Intersection No. 162		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Fire-alarm Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	3
5	Pre-Processor of Detector Pulse	1
6	Supply Power Switch Box with Power Breaker	1
7	TOT Line Box	1
8	Remove Existing Controller	-
9	Signal Pole Type A	4
10	Signal Pole Type B	4
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 p	8
14	Terminal 20 p	-
15	Signal Head 3 Aspects (200mm x 3)	2
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	2
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	2
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	4
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	4
25	Target Board for 3 Aspects	2
26	Target Board for 4 Aspects	2
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (4")	97.5
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 38 mm	8
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	97.5
34	Install Conduit under Ra	-
35	Install Conduit on Riser Support Pole	10
36	Handhole Type D	4
37	Handhole Type G	1
38	Signal Cable 8c (2 sq. mm)	45
39	Signal Cable 8c (2 sq. mm)	45
40	Signal Cable 12c (2 sq. mm)	135
41	Signal Cable 20c (2 sq. mm)	-
42	Power Cable	20
43	Cable Splicing Kit	-
44	Remove Existing Signal Post and Head (Metal-arm Type)	-
45	Remove Existing Signal Post and Head (Pedestal Type)	-
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Existing Arrow Mask	-
49	Remove Pedestrian Push Button	-
50	TOT Line (CPV, 0.65mm, 1P)	20
51	Grounding Rod	1
52	Grounding Cable (RV 5.5 sq. mm x 1c)	5

CABLE LAYOUT



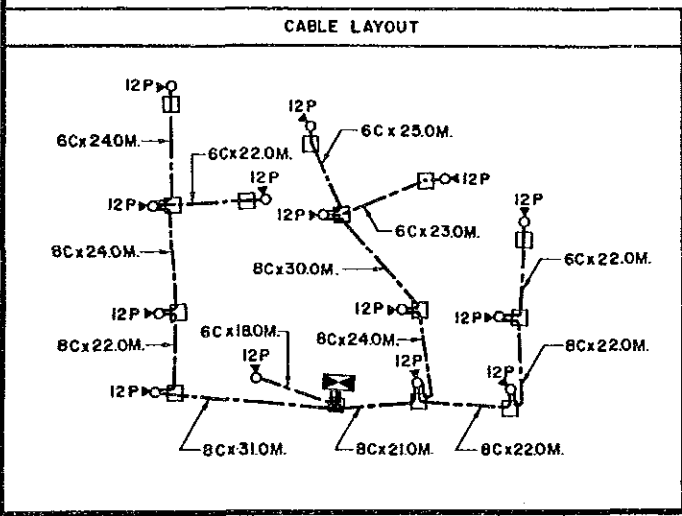
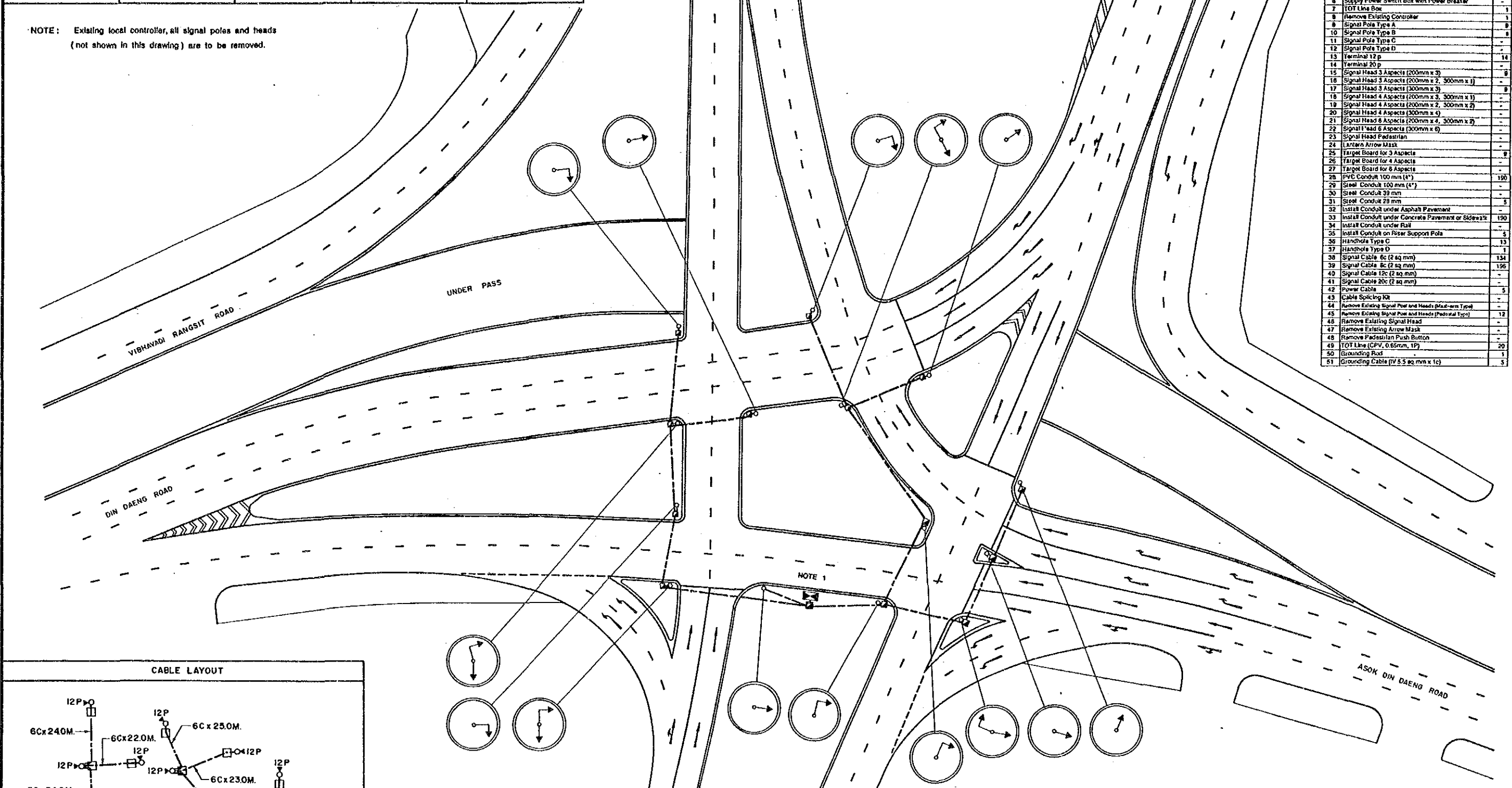
				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	
				SOI SUKHUMVIT 21 (ASOK) - SOI WATTHANA 1		Approved By :	
				INTERSECTION NO 162		Checked By :	
Code		Revision		Date		Initial	
Associated Plan No. :				JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	
				Scale 1 / 250		Drawing No 2162	
				Date SEPTEMBER '90		Total 99 / 139	

PHASE PLAN FOR AUTOMATIC SEQUENCE



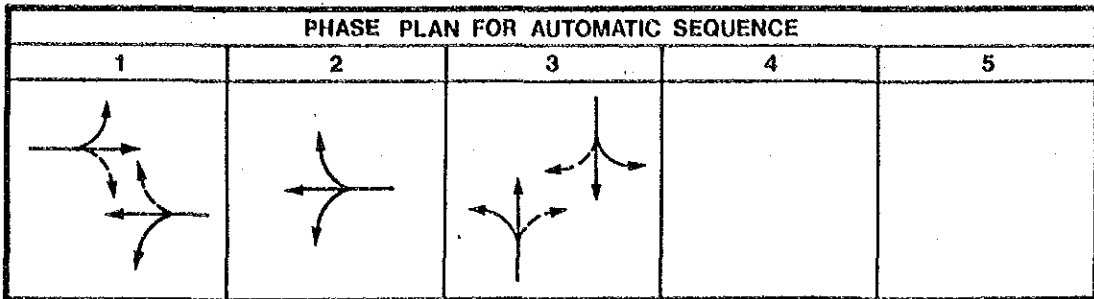
NOTE: Existing local controller, all signal poles and heads (not shown in this drawing) are to be removed.

Intersection Equipments List		
Intersection No. 163		
ITEM	Name of Equipment	Qty.
1	Local Controller	1
2	Railroad Pre-emption Control Unit	-
3	Pedestrian Push Button Interface Unit	-
4	Solid State Relay Unit	2
5	Pre-Processor of Detector Pulse	-
6	Supply Power Switch Box with Power Breaker	1
7	TOT Line Box	1
8	Remove Existing Controller	1
9	Signal Pole Type A	8
10	Signal Pole Type B	8
11	Signal Pole Type C	-
12	Signal Pole Type D	-
13	Terminal 12 P	14
14	Terminal 20 P	-
15	Signal Head 3 Aspects (200mm x 3)	9
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-
17	Signal Head 3 Aspects (300mm x 3)	9
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-
20	Signal Head 4 Aspects (300mm x 4)	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-
22	Signal Head 6 Aspects (300mm x 6)	-
23	Signal Head Pedestrian	-
24	Lantern Arrow Mask	-
25	Target Board for 3 Aspects	9
26	Target Board for 4 Aspects	-
27	Target Board for 6 Aspects	-
28	PVC Conduit 100 mm (1")	190
29	Steel Conduit 100 mm (4")	-
30	Steel Conduit 39 mm	-
31	Steel Conduit 28 mm	5
32	Install Conduit under Asphalt Pavement	-
33	Install Conduit under Concrete Pavement or Sidewalk	190
34	Install Conduit under Rail	-
35	Install Conduit on Fiser Support Pole	5
36	Handhole Type C	13
37	Handhole Type D	1
38	Signal Cable 6c (2 sq mm)	134
39	Signal Cable 8c (2 sq mm)	190
40	Signal Cable 12c (2 sq mm)	-
41	Signal Cable 20c (2 sq mm)	-
42	Power Cable	5
43	Cable Splicing Kit	-
44	Remove Existing Signal Pole and Heads (Rail-rem Type)	-
45	Remove Existing Signal Pole and Heads (Pedestrian Type)	12
46	Remove Existing Signal Head	-
47	Remove Existing Arrow Mask	-
48	Remove Pedestrian Push Button	-
49	TOT Line (CPV, 0.65mm, 17)	20
50	Grounding Rod	1
51	Grounding Cable (IV 5.5 sq mm x 1c)	5



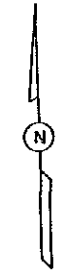
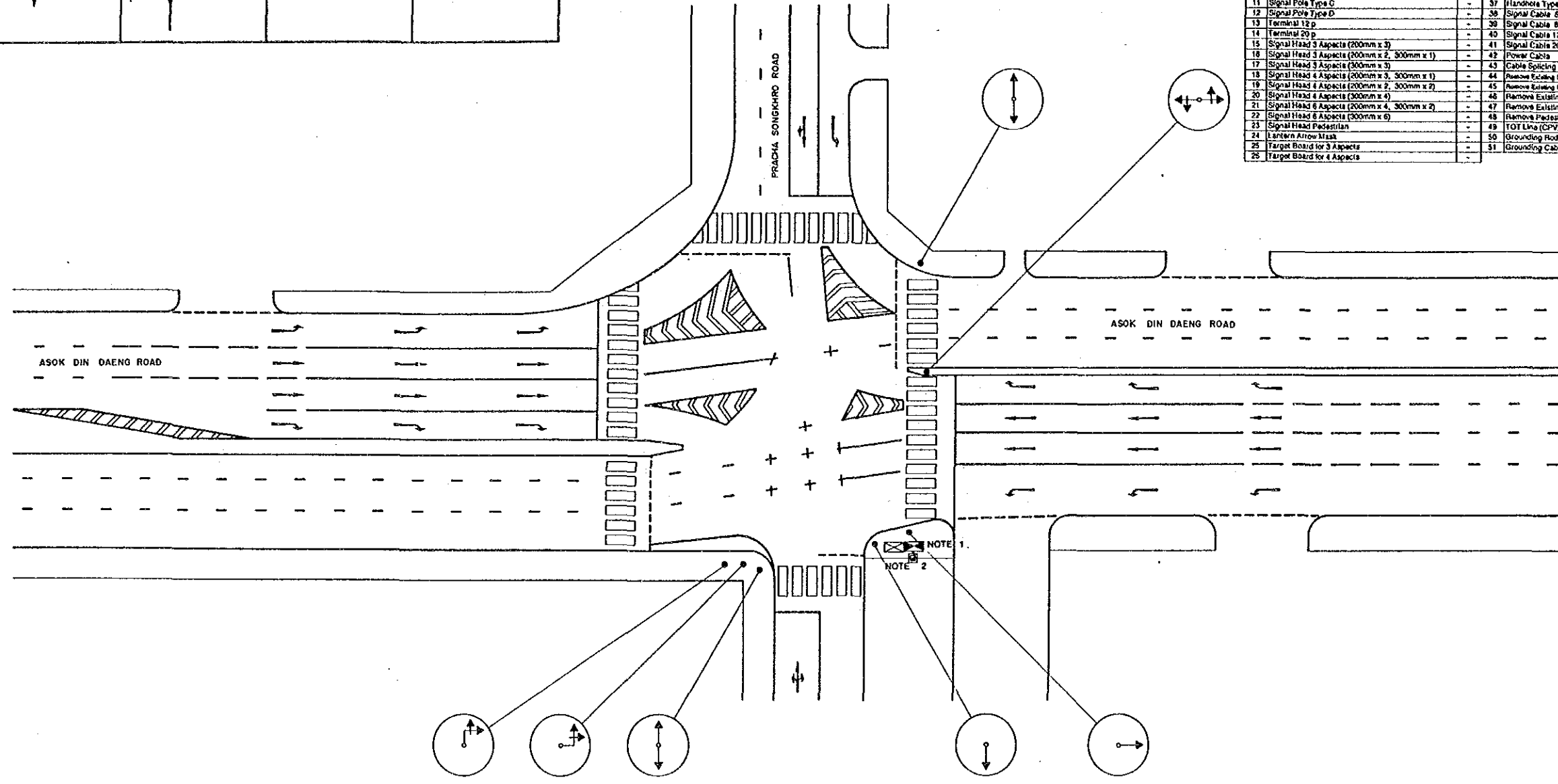
NOTE 1

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By :	Approved By :
VIBHAVADI RANGSIT - DIN DAENG		Juro Kadera JICA Study Team Leader	Boonrattal Tiplue BMA Study Team Leader
INTERSECTION NO 163		Designed By :	Checked By :
		Yasuo Nabeshima JICA Study Member	TEO, BMA
Code	Revision	Date	Initial
Associated Plan No. :	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale 1 / 250 Drawing NR 2163 Date SEPTEMBER '90 Total 100 / 139



Intersection Equipments List
Intersection No. 164

ITEM	Name of Equipment	Qty.	ITEM	Name of Equipment	Qty.
1	Local Controller	1	37	Target Board for 8 Aspects	-
2	Railroad Pre-emption Control Unit	-	38	PVC Conduit 100 mm (4")	8
3	Pedestrian Push Button Interface Unit	-	39	Steel Conduit 100 mm (4")	-
4	Solid State Relay Unit	2	30	Steel Conduit 39 mm	-
5	Pre-Processor of Detector Pulse	1	31	Steel Conduit 28 mm	5
6	Supply Power Switch Box with Power Breaker	-	32	Install Conduit under Asphalt Pavement	-
7	TOT Line Box	1	33	Install Conduit under Concrete Pavement or Sidewalk	8
8	Remove Existing Controller	1	34	Install Conduit under Riser	-
9	Signal Pole Type A	-	35	Install Conduit on Riser Support Pole	5
10	Signal Pole Type B	-	36	Handhole Type C	-
11	Signal Pole Type C	-	37	Handhole Type D	1
12	Signal Pole Type D	-	38	Signal Cable 5c (2 sq mm)	-
13	Terminal 12 p	-	39	Signal Cable 8c (2 sq mm)	-
14	Terminal 20 p	-	40	Signal Cable 12c (2 sq mm)	-
15	Signal Head 3 Aspects (200mm x 3)	-	41	Signal Cable 20c (2 sq mm)	8
16	Signal Head 3 Aspects (200mm x 2, 300mm x 1)	-	42	Power Cable	5
17	Signal Head 3 Aspects (300mm x 3)	-	43	Cable Splicing Kit	1
18	Signal Head 4 Aspects (200mm x 3, 300mm x 1)	-	44	Remove Existing Signal Post and Heads (Mask-arm Type)	-
19	Signal Head 4 Aspects (200mm x 2, 300mm x 2)	-	45	Remove Existing Signal Post and Heads (Pedestal Type)	-
20	Signal Head 4 Aspects (300mm x 4)	-	46	Remove Existing Signal Head	-
21	Signal Head 6 Aspects (200mm x 4, 300mm x 2)	-	47	Remove Existing Arrow Mask	-
22	Signal Head 6 Aspects (300mm x 6)	-	48	Remove Pedestrian Push Button	-
23	Signal Head Pedestrian	-	49	TOT Line (CPV, 0.65mm, 1P)	20
24	Lantern Arrow Mask	-	50	Grounding Rod	1
25	Target Board for 3 Aspects	-	51	Grounding Cable (TV 5.5 sq. mm x 1c)	5
26	Target Board for 4 Aspects	-	-	-	-



BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
INTERSECTION TERMINAL EQUIPMENT LAYOUT PLAN		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonyawat Tiplux BMA Study Team Leader
PRACHA SONGKHRO-ASOK DIN DAENG		Designed By : Takuo Nabeshima JICA Study Member	Checked By : TED, BMA
INTERSECTION NO 164		Scale 1 / 250	Drawing No 2164
Code	Revision	Date	Initial
Associated Plan No. :		Date SEPTEMBER '90	Total 101 / 139
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	