

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

SUPPLEMENTARY VOLUME

PART 7

DRAFT VEHICLE DETECTOR INSTALLATION PLANS

FINAL REPORT

OCTOBER 1990

JAPAN INTERNATIONAL COOPERATION AGENCY

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AREA TRAFFIC CONTROL PROJECT IN BANGKOK
IN THE KINGDOM OF THAILAND

SUPPLEMENTARY VOLUME

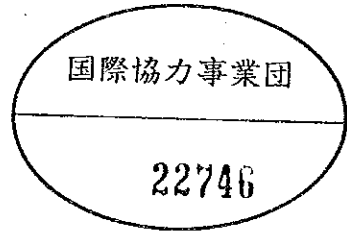
PART 7

DRAFT VEHICLE DETECTOR INSTALLATION PLANS

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JAPAN INTERNATIONAL COOPERATION AGENCY



PART I: SCHEDULE OF DRAWINGS

VOLUME 4

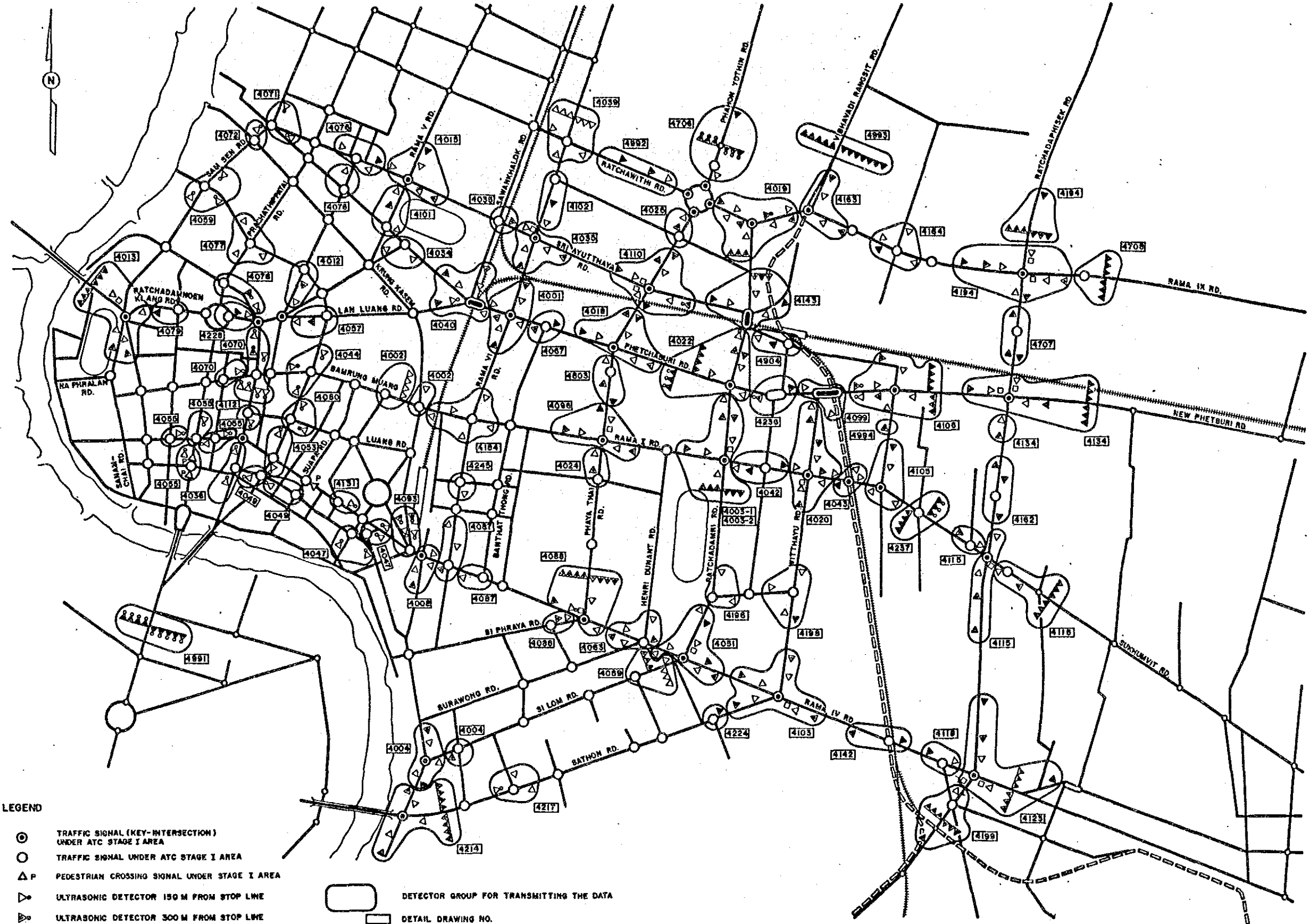
VEHICLE DETECTOR INSTALLATION PLANS

This "Volume 4: Vehicle Detector Installation Plans" contains the proposed vehicle detector installation plans in relation to the intersection to be centrally controlled by the Bangkok ATC System - Stage I.

Main items included on each plan are:

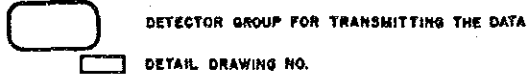
- (1) Location site of vehicle detector installation,
- (2) Type of vehicle detectors at each site,
- (3) Number of vehicle detector sensor at each site,
- (4) Location of vehicle detector cabinet,
- (5) Location of telemetry for transmitting detector data,
- (6) Cable location for vehicle detector.

* Note: Tenderers should note that any specifications that may have been shown as "PVC" in the drawings for field installation shall read as "Steel" instead.



LEGEND

- ⊙ TRAFFIC SIGNAL (KEY-INTERSECTION) UNDER ATC STAGE I AREA
- TRAFFIC SIGNAL UNDER ATC STAGE I AREA
- △ P PEDESTRIAN CROSSING SIGNAL UNDER STAGE I AREA
- ▽ ULTRASONIC DETECTOR 150 M FROM STOP LINE
- ▽ ULTRASONIC DETECTOR 300 M FROM STOP LINE
- ▽ ULTRASONIC DETECTOR 600 M FROM STOP LINE
- ▽ LOOP DETECTOR 150 M FROM STOP LINE
- ▽ LOOP DETECTOR 300 M FROM STOP LINE
- ▽ LOOP DETECTOR 600 M FROM STOP LINE
- LOOP DETECTOR FOR ACTUATED CONTROL
- TRAFFIC SIGNAL OUTSIDE OF ATC STAGE I AREA



BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
<p style="text-align: center;">DETECTOR LOCATION</p>		Submitted By :	Approved By :
		<p style="text-align: center;"><small>Jiro Kudo JICA Study Team Leader</small></p>	<p style="text-align: center;"><small>Boonjavit Thipras BMA Study Team Leader</small></p>
		Designed By :	Checked By :
		<p style="text-align: center;"><small>Yozo Kobayashi JICA Study Member</small></p>	<p style="text-align: center;"><small>YEO, BMA</small></p>
Code	Revision	Date	Sheet
Associated Plan No. :	<p style="text-align: center;">JICA Japan International Cooperation Agency</p>		<p style="text-align: center;">BMA Bangkok Metropolitan Administration</p>
		Scale : 1 / 15,000	Drawing No : 4000-1
		Date : SEPTEMBER '80	Total : 1 / 86

SYMBOLS FOR VEHICLE DETECTOR AND CABLE LAYOUT PLAN

SYMBOL	ITEM	SYMBOL	ITEM	SYMBOL	ITEM	SYMBOL	ITEM
	ULTRASONIC TYPE DETECTOR	● UH	DETECTOR POLE TYPE C	☑	HAND HOLE (C) (EXISTING)		PVC CONDUIT (TO BE INSTALLED BY INTERSECTION SIGNAL WORK)
	LOOP COIL TYPE DETECTOR	☒	DETECTOR CABINET	☑	HAND HOLE (C) (NEWLY)		CABLE CVV-2 [□] (FOR UNDERGROUND)
● LL	DETECTOR POLE TYPE A	☒	TRAFFIC SIGNAL CONTROLLER	☑	HAND HOLE (D)		CABLE CVV-SS2 [□] (FOR AERIAL)
● LH	DETECTOR POLE TYPE B						

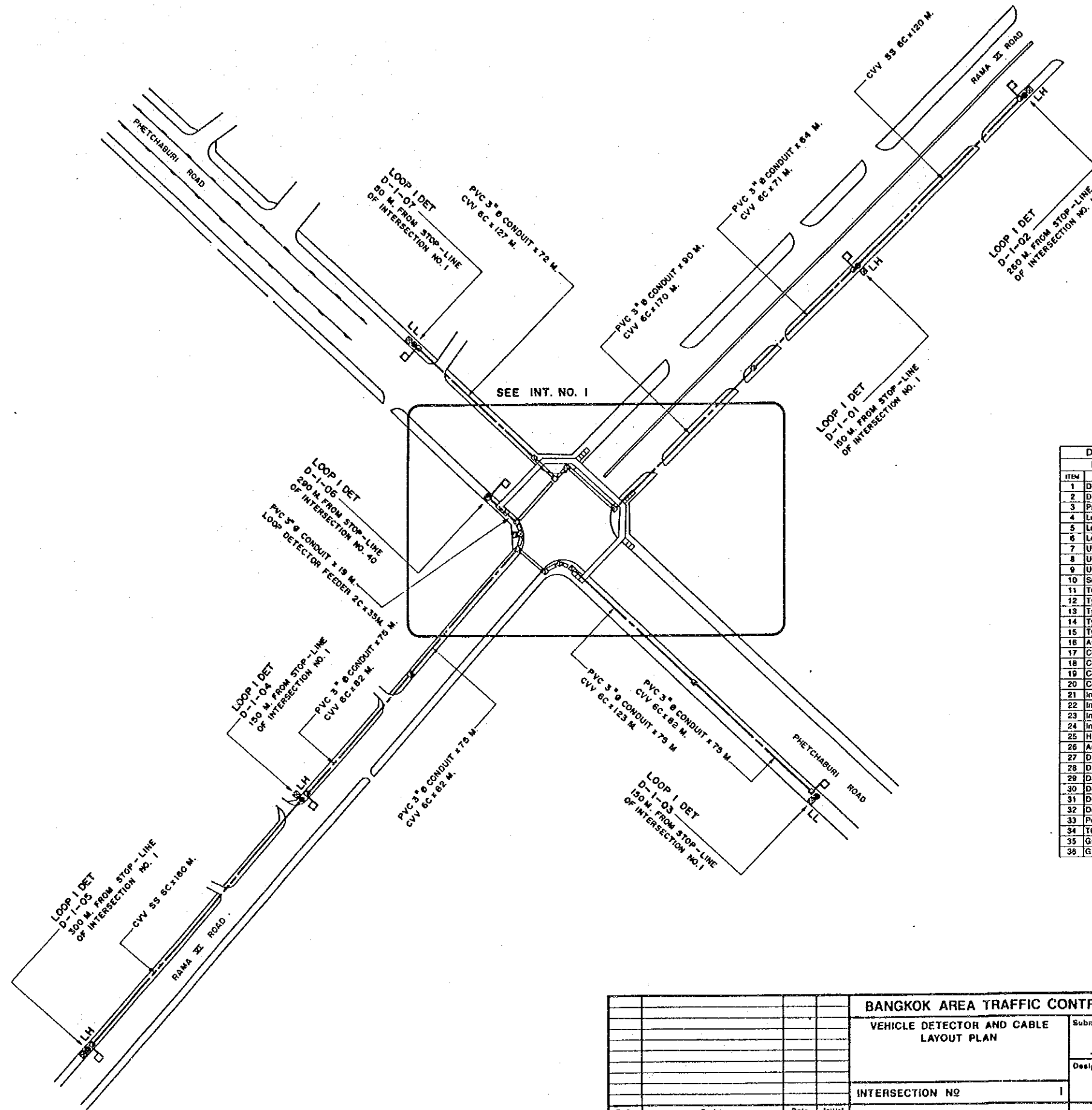
				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				SYMBOLS FOR VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Beanyawat Tiptao BMA Study Team Leader
						Designed By : Yasuo Hasehime JICA Study Member	Checked By :
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale	Drawing No 4000-2
Associated Plan No. :						Date SEPTEMBER '90	Total 2 / 86

LIST OF VEHICLE DETECTOR AND CABLE LAYOUT PLANS

NO.	Drawing NO.	Intersection NO. or Transmission Unit NO.				Number of Detector	
						Loop Coil Type	Ultrasonic Type
1	4001	1	---	---	---	7	---
2	4002	2	181	---	---	5	---
3	4003-1	3	---	---	---	7	---
4	4003-2	3	---	---	---	7	---
5	4004	4	98	---	---	6	---
6	4008	8	---	---	---	4	---
7	4012	12	---	---	---	2	---
8	4013	13	---	---	---	13	---
9	4015	15	---	---	---	5	---
10	4018	18	---	---	---	7	---
11	4019	19	---	---	---	11	1
12	4020	20	---	---	---	11	---
13	4022	22	---	---	---	9	4
14	4024	24	---	---	---	2	---
15	4025	25	---	---	---	2	---
16	4034	34	---	---	---	2	---
17	4035	35	109	---	---	7	---
18	4036	36	---	---	---	---	2
19	4039	39	---	---	---	9	---
20	4040	40	---	---	---	6	1
21	4042	42	---	---	---	3	---
22	4043	43	---	---	---	3	---
23	4044	44	---	---	---	---	3
24	4047	47	48	---	---	---	4
25	4049	49	50	---	---	---	2
26	4051	51	---	---	---	9	---
27	4053	53	---	---	---	---	2
28	4055	55	94	130	176	---	5
29	4057	57	---	---	---	2	---
30	4059	59	---	---	---	---	3
31	4063	63	---	---	---	5	---
32	4067	67	---	---	---	2	---
33	4070	70	148	---	---	---	8
34	4071	71	---	---	---	---	2
35	4072	72	---	---	---	---	1
36	4076	76	139	---	---	4	---
37	4077	77	---	---	---	3	---
38	4078	78	---	---	---	---	2
39	4079	79	---	---	---	1	---
40	4080	80	---	---	---	---	2
41	4087	87	185	---	---	4	---
42	4088	88	905	---	---	15	---
43	4089	89	---	---	---	7	---
44	4093	93	---	---	---	---	4
45	4096	96	---	---	---	7	---
46	4099	99	---	---	---	2	---
47	4101	101	---	---	---	3	---
48	4102	102	---	---	---	2	---
49	4103	103	---	---	---	9	---
50	4105	105	---	---	---	4	---

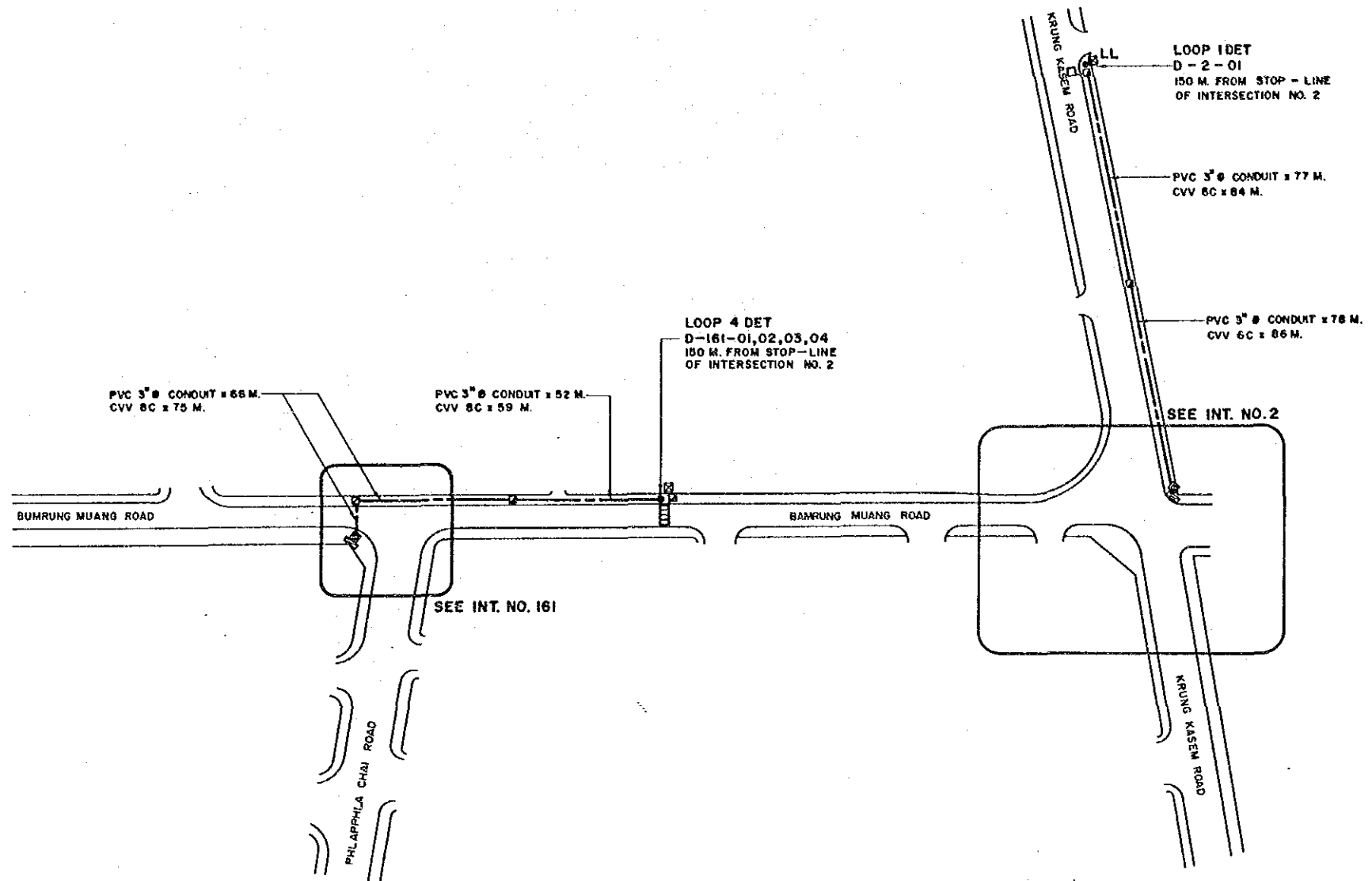
NO.	Drawing NO.	Intersection NO. or Transmission Unit NO.				Number of Detector	
						Loop Coil Type	Ultrasonic Type
51	4108	106	T-4	---	---	14	2
52	4110	110	---	---	---	10	1
53	4112	112	---	---	---	---	1
54	4115	115	---	---	---	15	---
55	4118	118	---	---	---	2	---
56	4123	123	---	---	---	13	---
57	4131	131	---	---	---	---	1
58	4134	134	T-5	---	---	15	1
59	4142	142	---	---	---	2	---
60	4143	143	---	---	---	8	---
61	4162	162	---	---	---	3	---
62	4163	163	---	---	---	4	---
63	4164	164	---	---	---	4	---
64	4184	184	---	---	---	5	---
65	4194	194	T-6	---	---	17	---
66	4196	196	---	---	---	2	---
67	4198	198	---	---	---	4	---
68	4199	199	---	---	---	8	---
69	4214	214	---	---	---	13	---
70	4217	217	---	---	---	2	---
71	4224	224	---	---	---	1	---
72	4228	228	---	---	---	2	---
73	4236	236	---	---	---	1	1
74	4237	237	---	---	---	4	3
75	4245	245	---	---	---	1	---
76	4706	706	---	---	---	2	---
77	4707	707	---	---	---	3	6
78	4708	708	---	---	---	6	---
79	4803	803	---	---	---	3	---
80	4904	904	---	---	---	2	---
81	4991	T-1	---	---	---	---	---
82	4992	T-2	---	---	---	3	---
83	4993	T-3	---	---	---	12	9
SUB TOTAL						388	71
GRAND TOTAL						459	

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
		LIST OF VEHICLE DETECTOR AND CABLE LAYOUT PLANS	Submitted By : <i>Juro Kadota</i> JICA Study Team Leader
			Approved By : <i>Boonyawat Tiptua</i> BMA Study Team Leader
			Designed By : <i>Tsuo Kobayashi</i> JICA Study Member
			Checked By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency BMA Bangkok Metropolitan Administration	
		Scale	Drawing No. 4000-3
		Date SEPTEMBER '80	Total 3 / 86



Detector Equipments List		
Drawing NO. 4001		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	6
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	7
5	Loop Coil Cable	56
6	Loop Coil Feeder Cable	70
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	2
13	Type B Pole	4
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	600
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	500
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	10
26	Aerial Cable Supporter	9
27	Detector Cable 6c	744
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	280
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.85mm, 1P)	-
35	Grounding Rod	6
36	Grounding Cable	30

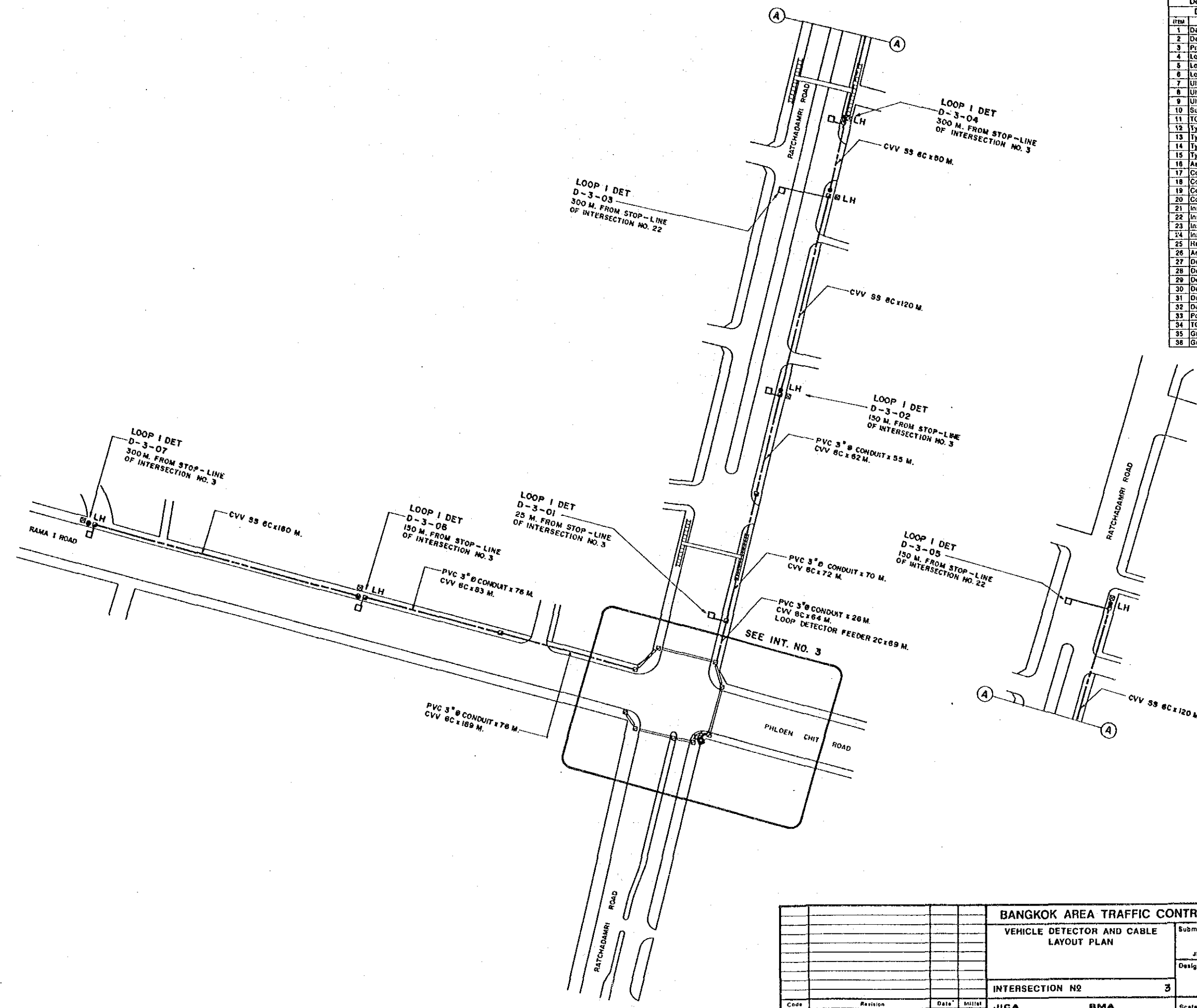
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Bangwanit Tiplas BMA Study Team Leader
INTERSECTION NO 1		Designed By : Yasuo Hasehime JICA Study Member	Checked By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale 1 / 1,000	Drawing HQ 4001
		Date SEPTEMBER '80	Total 4 / 86



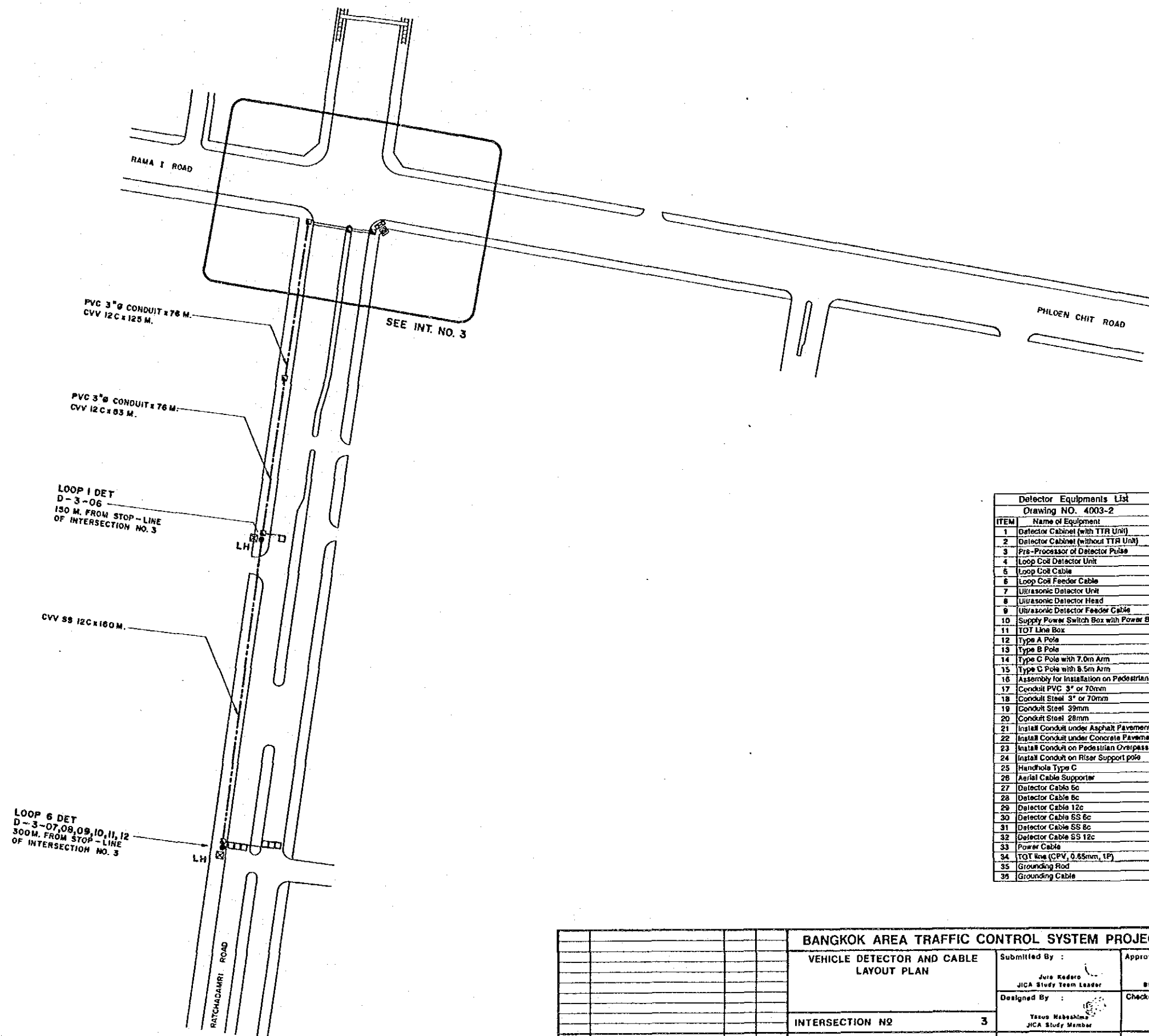
Detector Equipments List		
Drawing NO. 4002		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	2
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	5
5	Loop Coil Cable	40
6	Loop Coil Feeder Cable	43
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	2
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 6.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	273
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	273
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Risor Support pole	-
25	Handhole Type C	4
26	Aerial Cable Supporter	-
27	Detector Cable 8c	170
28	Detector Cable 8c	134
29	Detector Cable 12c	-
30	Detector Cable SS 8c	-
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	2
36	Grounding Cable	10

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN INTERSECTION NO 2, 161		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Boonyawat Tipus BMA Study Team Leader
		Designed By : Yasuo Nishizima 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 / 1,000	Drawing No 4002
		Date : SEPTEMBER '90	Total 5 / 86

Detector Equipments List		
Drawing NO. 4003-1		
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	8
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	7
5	Loop Coil Cable	58
6	Loop Coil Feeder Cable	104
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	6
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	303
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	303
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	9
26	Aerial Cable Supporter	14
27	Detector Cable Fo	272
28	Detector Cable 8c	188
29	Detector Cable 12c	-
30	Detector Cable SS 6c	330
31	Detector Cable SS 8c	120
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	6
36	Grounding Cable	30



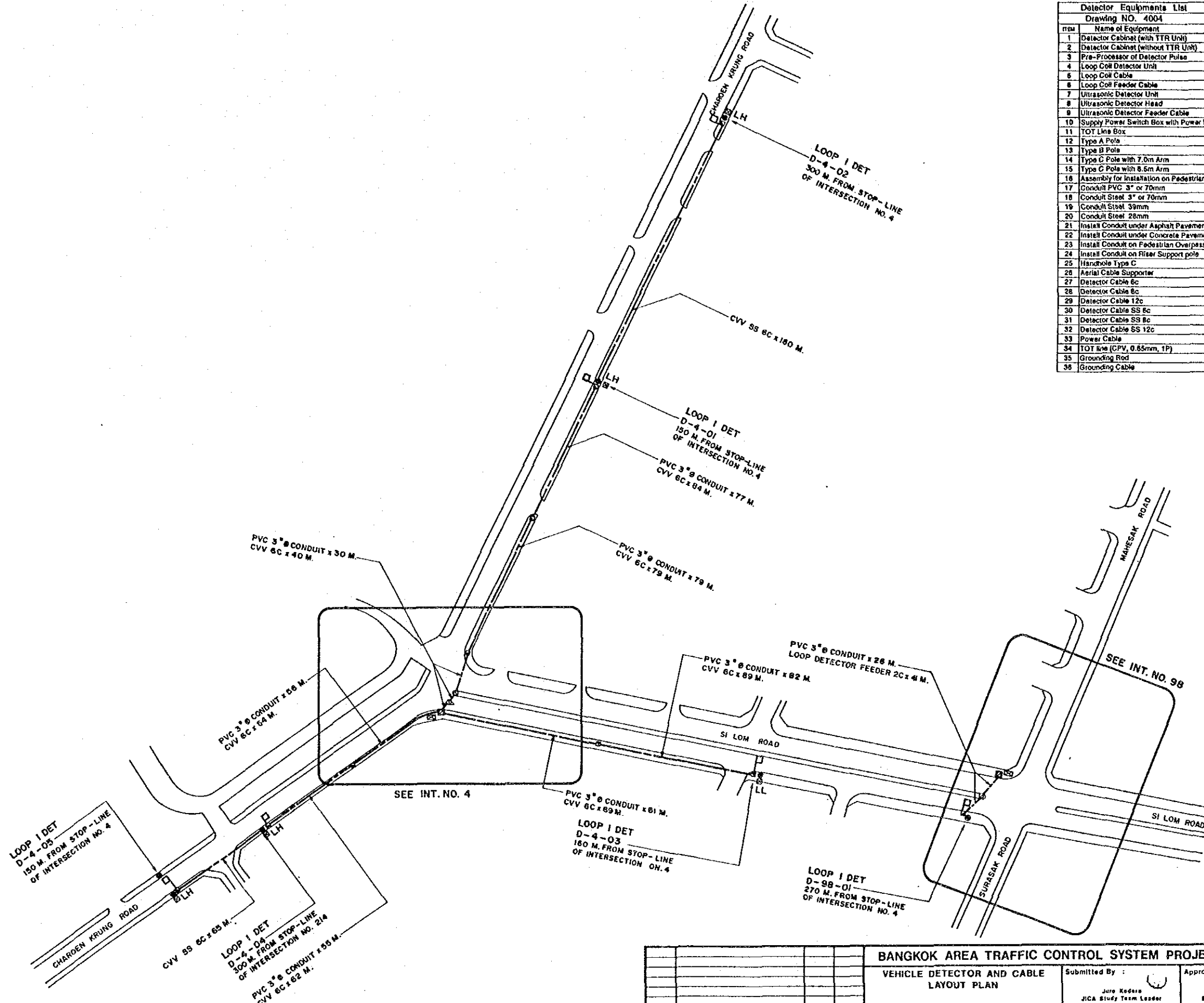
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By :	Approved By :
		Jiro Kodera JICA Study Team Leader	Boonyawat Tiptus BMA Study Team Leader
		Designed By :	Checked By :
		Tasuo Nishizima JICA Study Member	TEO, BMA
INTERSECTION NO 3		Scale : 1 / 1,000	Drawing NO 4003-1
Associated Plan No. :		Date : SEPTEMBER '90	Total 6 / 86



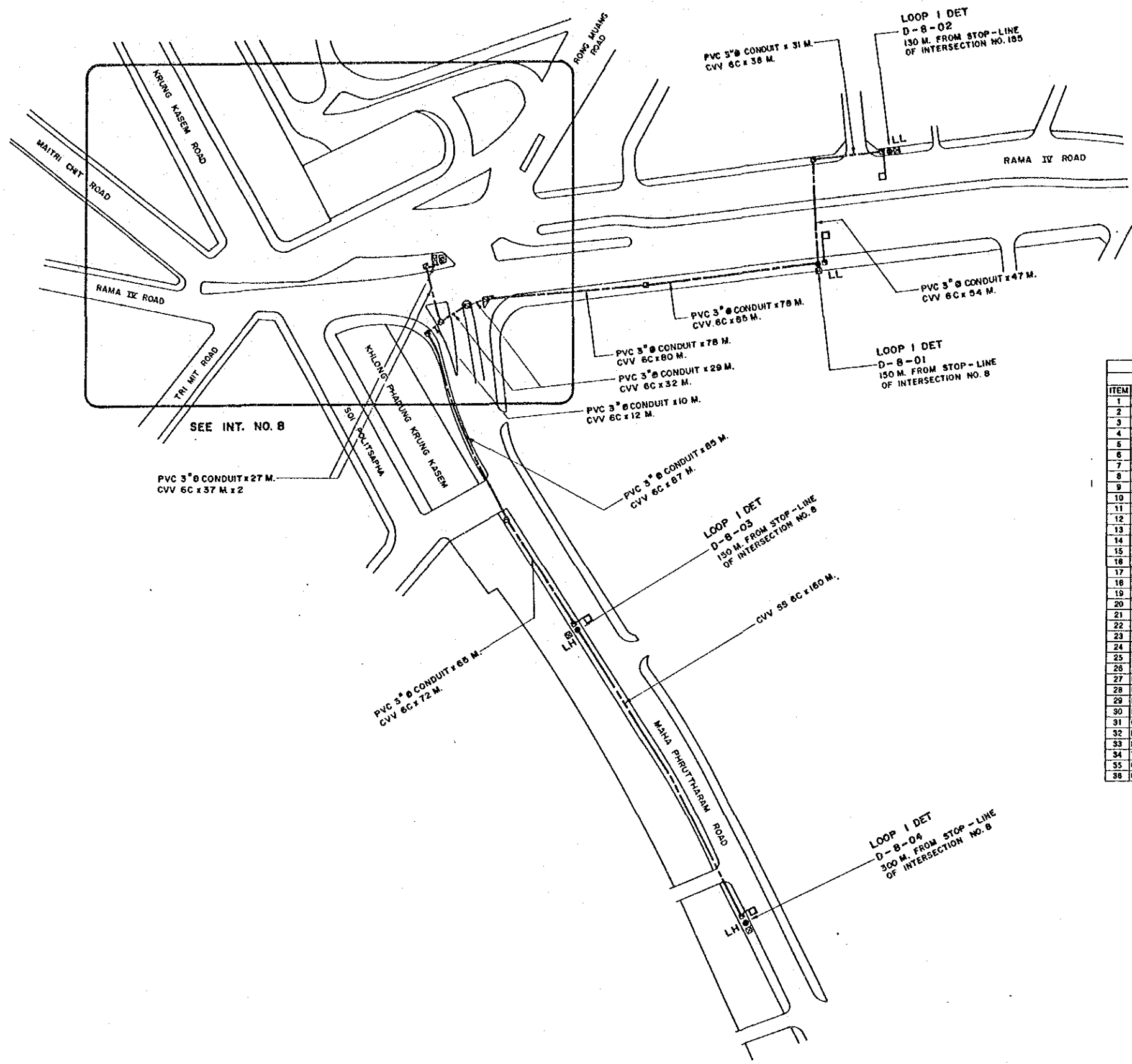
Detector Equipments List		
Drawing NO. 4003-2		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	2
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	7
5	Loop Coil Cable	56
6	Loop Coil Feeder Cable	63
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	2
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	152
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	152
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	3
26	Aerial Cable Supporter	5
27	Detector Cable 6c	-
28	Detector Cable 6c	-
29	Detector Cable 12c	208
30	Detector Cable SS 6c	-
31	Detector Cable SS 6c	-
32	Detector Cable SS 12c	160
33	Power Cable	-
34	TOT line (CPV, 0.85mm, 1P)	-
35	Grounding Rod	2
36	Grounding Cable	10

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I					
VEHICLE DETECTOR AND CABLE LAYOUT PLAN			Submitted By :	Approved By :	
			June Kadero JICA Study Team Leader	Somyawat Tialus BMA Study Team Leader	
			Designed By :	Checked By :	
			Yasuo Nabeshima JICA Study Member	TED, BMA	
INTERSECTION NO 3			Scale 1 / 1,000	Drawing NO 4003-2	
Code	Revision	Date	Initial	Date SEPTEMBER '90	
Associated Plan No. :			JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	
			Scale 1 / 1,000	Drawing NO 4003-2	
			Date SEPTEMBER '90	Total 7 / 86	

Detector Equipments List		
Drawing NO. 4004		
NO.	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	8
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	8
5	Loop Coil Cable	48
6	Loop Coil Feeder Cable	71
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	1
13	Type B Pole	4
14	Type C Pole with 7.5m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	478
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	475
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	10
26	Aerial Cable Supporter	8
27	Detector Cable 6c	507
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	225
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	5
36	Grounding Cable	25



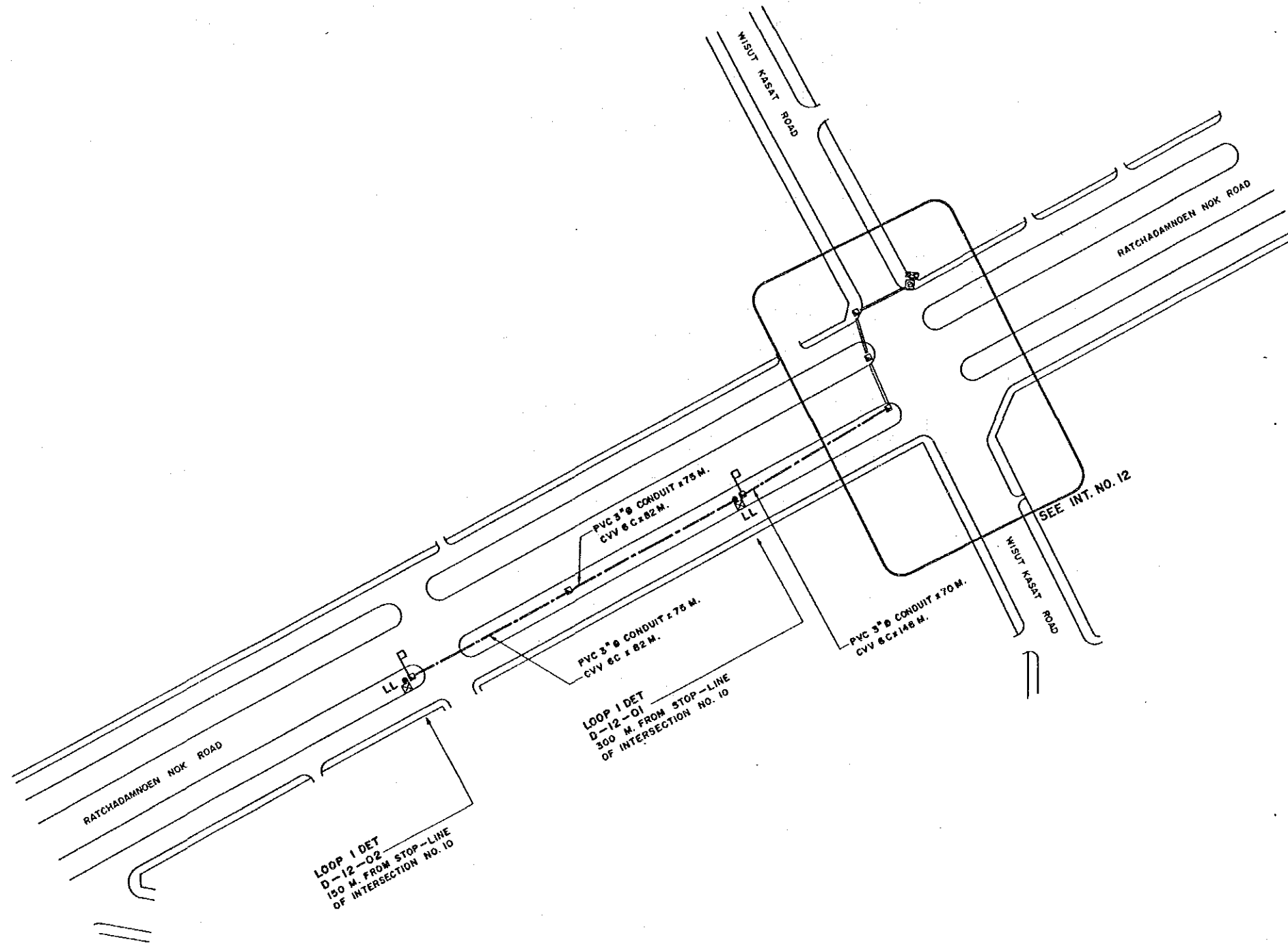
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By :	Approved By :
		Juro Kodera JICA Study Team Leader	Boonyawat Tipitua BMA Study Team Leader
		Designed By :	Checked By :
		Yasuo Haseboshima JICA Study Member	TED.BMA
INTERSECTION NO. 4, 98		Scale : 1 / 1,000	Drawing NR 4004
Associated Plan No. :		Date : SEPTEMBER '90	Total 8 / 86



Detector Equipments List		
Drawing NO. 4008		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	4
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	4
5	Loop Coil Cable	32
6	Loop Coil Feeder Cable	20
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	2
13	Type B Pole	2
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	452
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	452
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	8
26	Aerial Cable Supporter	5
27	Detector Cable 6c	527
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	180
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	4
36	Grounding Cable	20

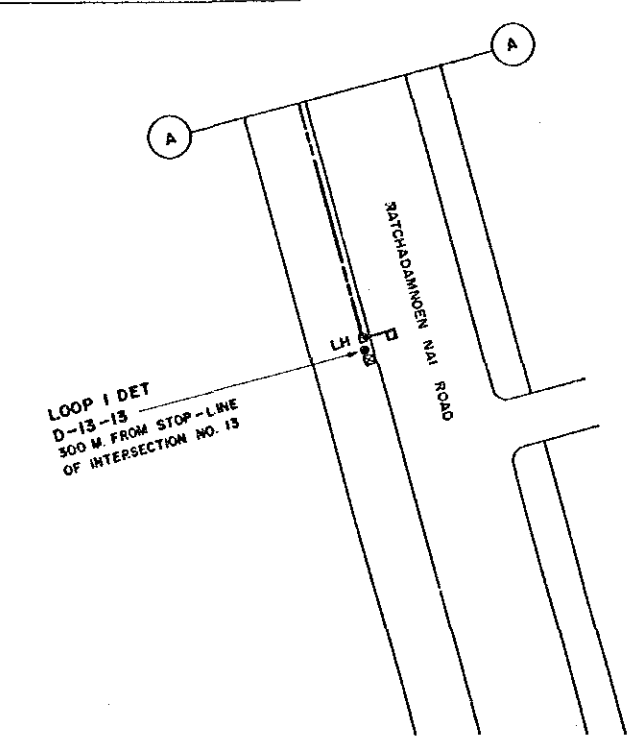
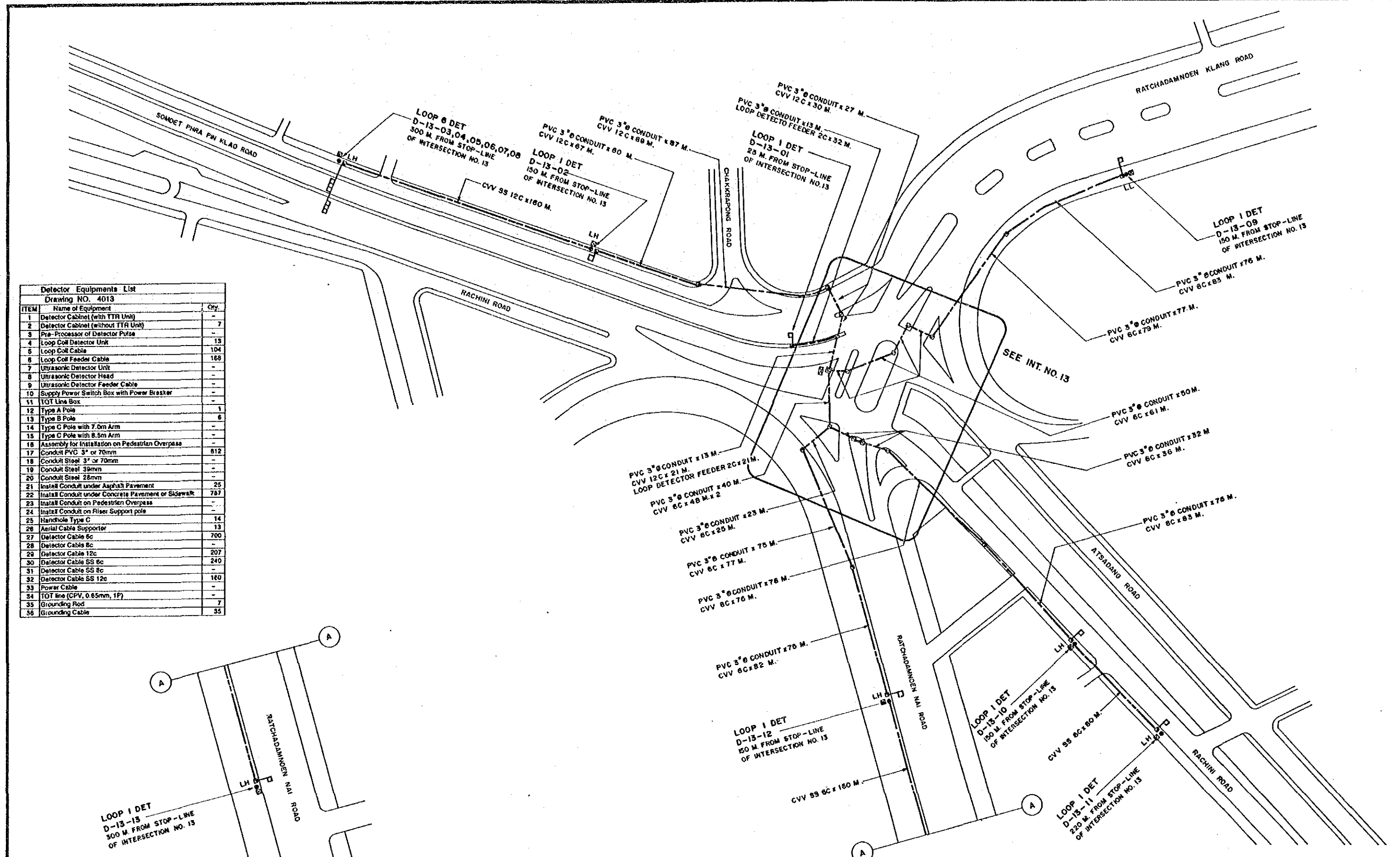
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN INTERSECTION NO. 8		Submitted By : Juro Kadota JICA Study Team Leader	Approved By : Boonyawat Tiptua BMA Study Team Leader
		Designed By : Yasuo Mabejima JICA Study Member	Checked By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :	JICA	BMA	Scale 1 / 1,000
	Japan International Cooperation Agency	Bangkok Metropolitan Administration	Date SEPTEMBER '80
			Drawing NO. 4008
			Total 9 / 86

Detector Equipments List		
Drawing NO. 4012		
row	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	2
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	2
5	Loop Coil Cable	16
6	Loop Coil Feeder Cable	10
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	2
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 6.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	220
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	220
22	Install Conduit under Concrete Pavement or Sidewalk	-
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	3
26	Aerial Cable Supporter	-
27	Detector Cable 6c	310
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	-
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	2
36	Grounding Cable	10

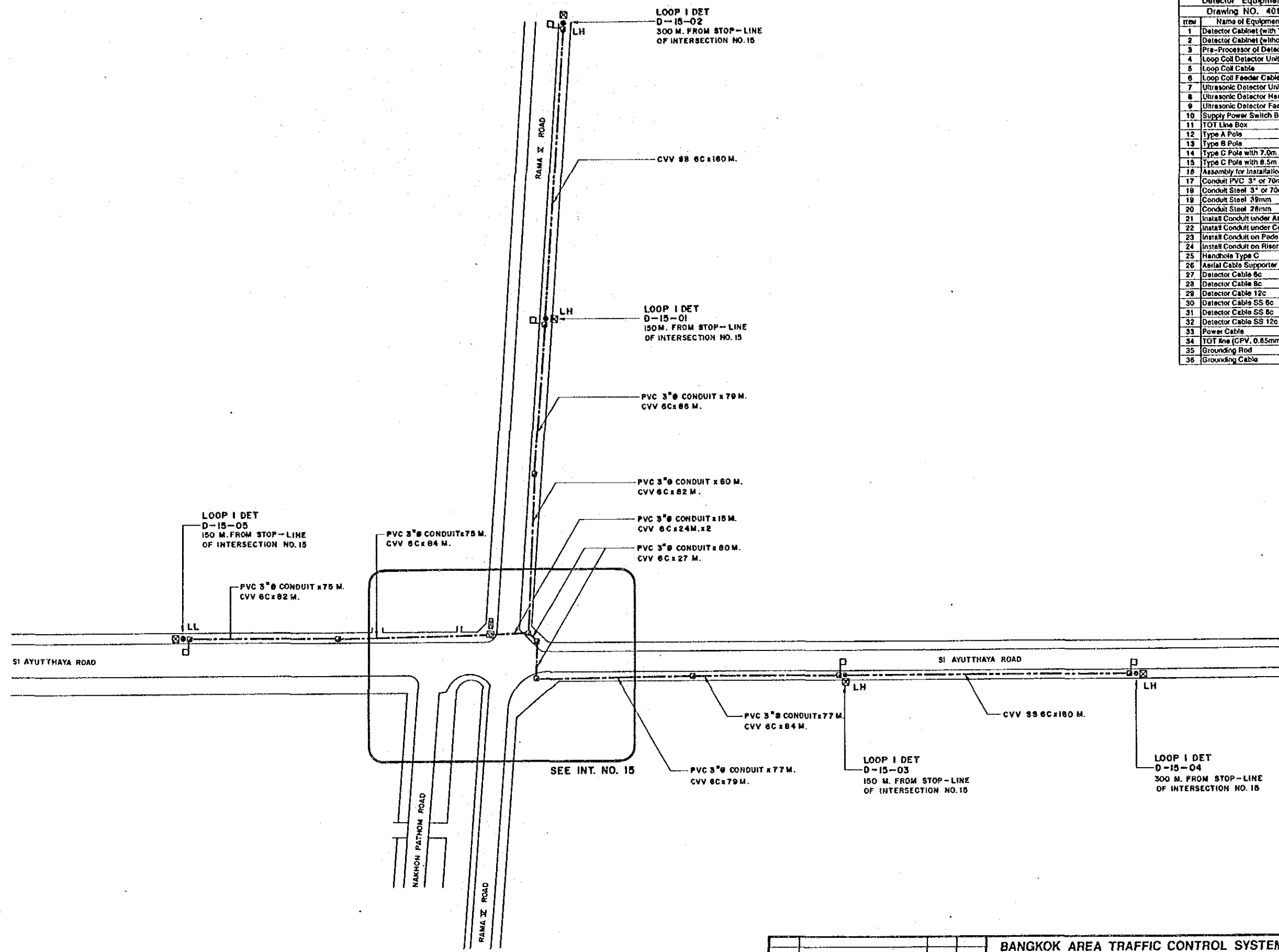


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By :	Approved By :
		Jiro Kodera JICA Study Team Leader	Boonprast Tiptan BMA Study Team Leader
INTERSECTON N2 12		Designed By :	Checked By :
		Yasuo Kobayashi JICA Study Member	TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale : 1 / 1,000	Drawing N2 4012
		Date SEPTEMBER '90	Total 10 / 86

Detector Equipments List		
Drawing NO. 4013		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	7
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	13
5	Loop Coil Cable	104
6	Loop Coil Feeder Cable	168
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	1
13	Type B Pole	6
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	812
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	25
22	Install Conduit under Concrete Pavement or Sidewalk	787
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	14
26	Aerial Cable Supporter	13
27	Detector Cable 6c	700
28	Detector Cable 8c	-
29	Detector Cable 12c	207
30	Detector Cable SS 6c	240
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	160
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1F)	-
35	Grounding Rod	7
36	Grounding Cable	35

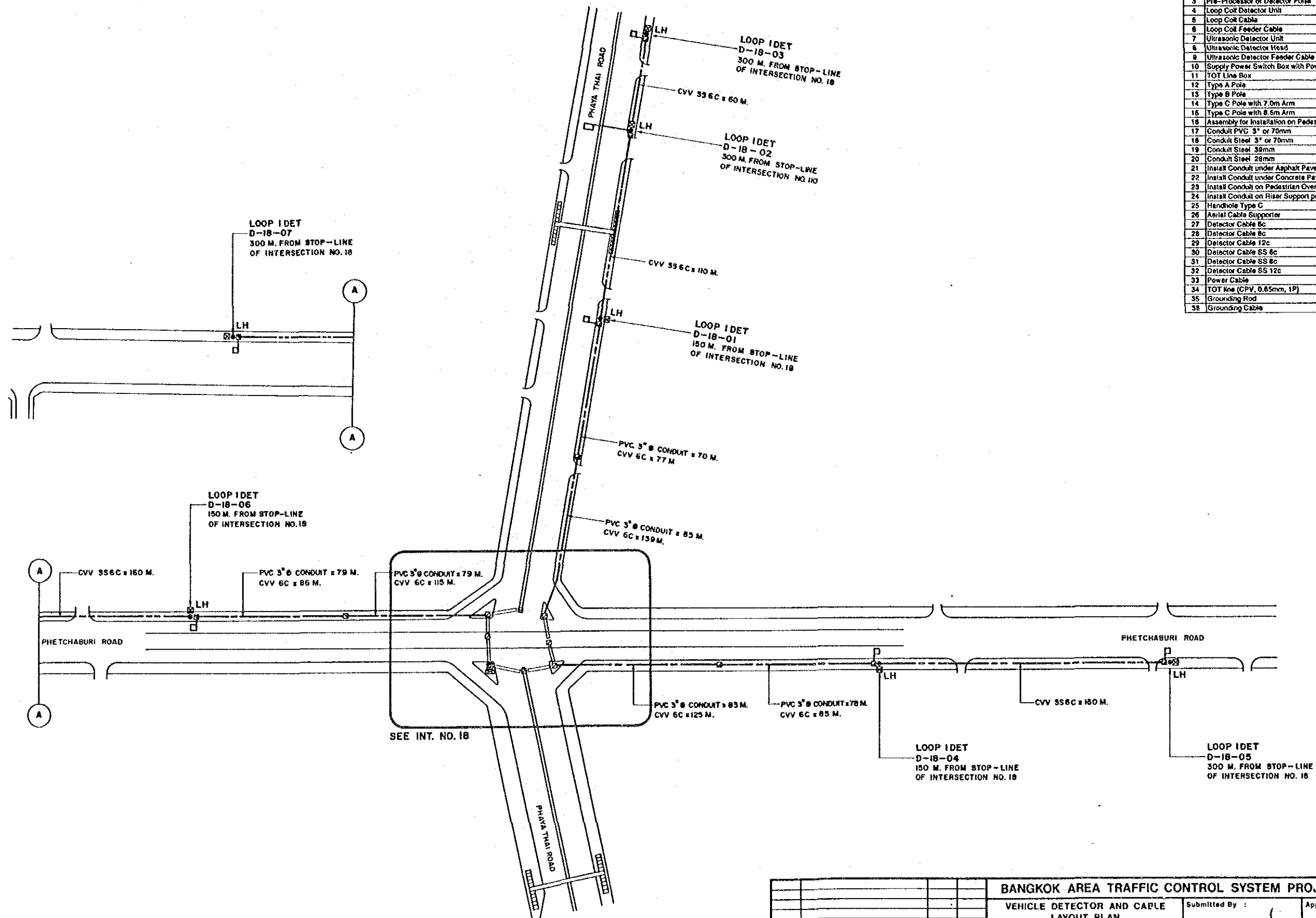


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Juta Kodara JICA Study Team Leader	Approved By : Boonkawit Tiptua BMA Study Team Leader
INTERSECTION NO 13		Designed By : Yasu Nobuhisa JICA Study Member	Checked By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale 1 / 1,000 Date SEPTEMBER '90 Drawing NR 4013 Total 11 / 86



Detector Equipments List		
Drawing NO. 4015		
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	5
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	5
5	Loop Coil Cable	40
6	Loop Coil Feeder Cable	25
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	1
13	Type B Pole	4
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 6.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	520
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 38mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	520
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	8
26	Aerial Cable Supporter	10
27	Detector Cable 6c	572
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	320
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT Line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	5
36	Grounding Cable	25

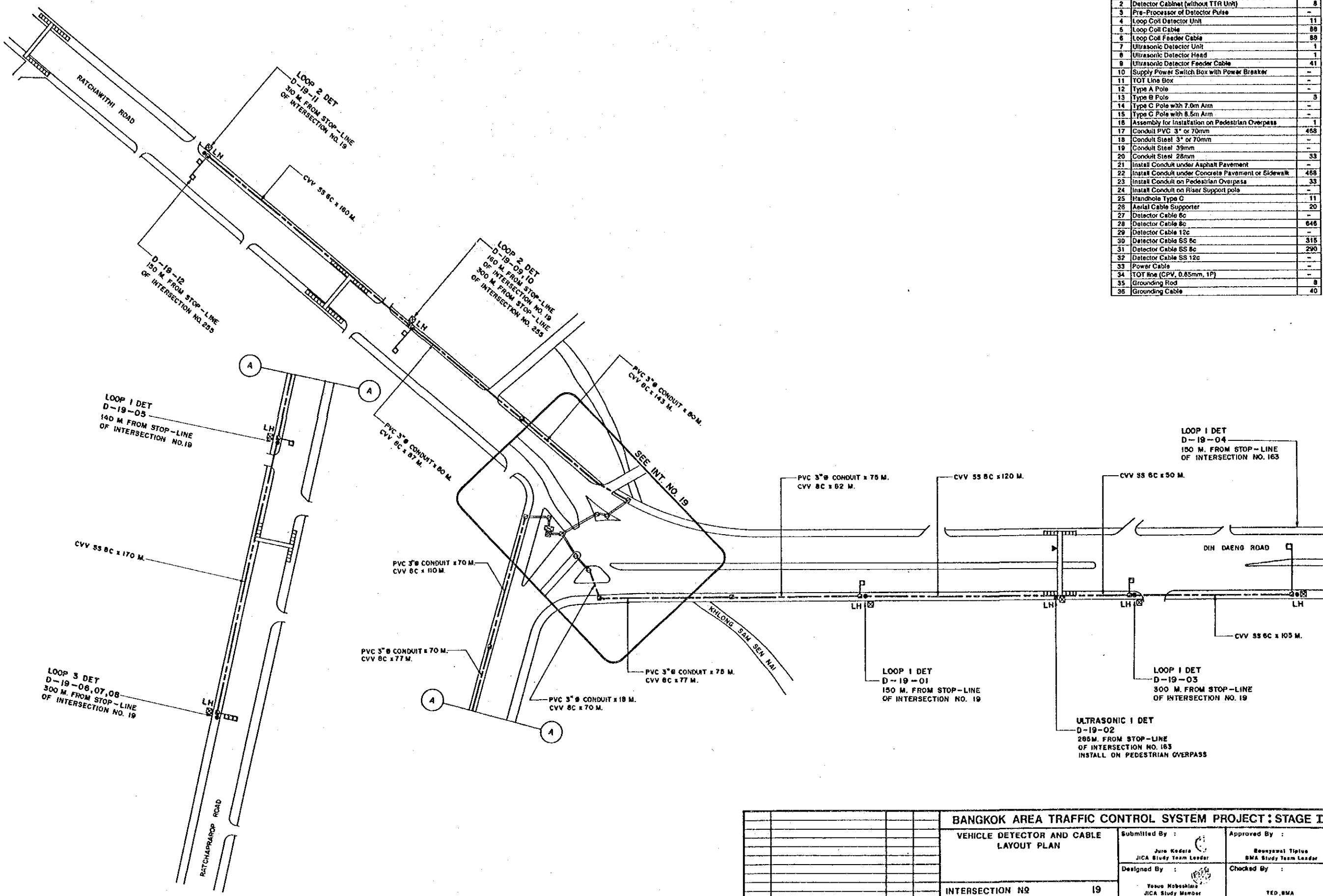
				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Juro Hedera JICA Study Team Leader	Approved By : Boonyawat Tiptas BMA Study Team Leader
		INTERSECTION NO. 15		Designed By : Tasuo Mabeshima JICA Study Member	Checked By : TED, BMA		
Code	Revision	Date	Initial	JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale 1 / 1,000	Drawing No. 4015
Associated Plan No. :				Date . SEPTEMBER '80	Total 12 / 86		



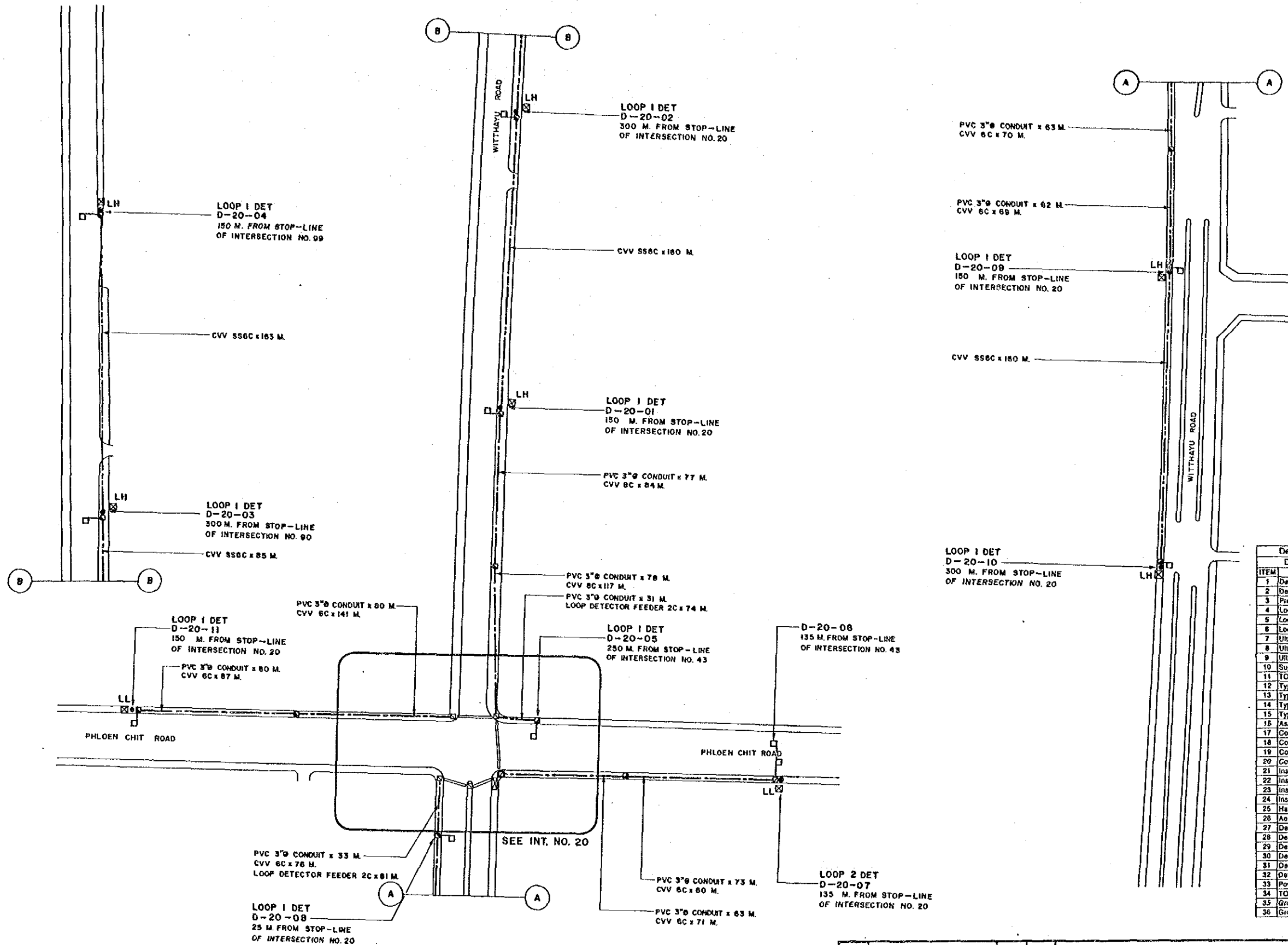
Detector Equipments List		
Drawing NO. 4018		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	7
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	7
5	Loop Coil Cable	66
6	Loop Coil Feeder Cable	60
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	7
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	474
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 38mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	474
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	10
26	Aerial Cable Supporter	18
27	Detector Cable 8c	490
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable 6S 8c	847
31	Detector Cable 6S 8c	-
32	Detector Cable 6S 12c	-
33	Power Cable	-
34	TOT Line (CPV, 0.85mm, 1P)	7
35	Grounding Rod	-
36	Grounding Cable	35

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Boonyawat Tiptua BMA Study Team Leader
INTERSECTION NO 18		Designed By : Yasuo Nishikawa 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 / 1,000 Date SEPTEMBER '90 Drawing NR 4018 Total 13 / 86

Detector Equipments List		
Drawing NO. 4019		
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	2
2	Detector Cabinet (without TTR Unit)	8
3	Pre-Processor of Detector Pulse	2
4	Loop Coil Detector Unit	11
5	Loop Coil Cable	88
6	Loop Coil Feeder Cable	88
7	Ultrasonic Detector Unit	1
8	Ultrasonic Detector Head	1
9	Ultrasonic Detector Feeder Cable	41
10	Supply Power Switch Box with Power Breaker	2
11	TOT Line Box	2
12	Type A Pole	3
13	Type B Pole	3
14	Type C Pole with 7.0m Arm	2
15	Type C Pole with 8.5m Arm	2
16	Assembly for Installation on Pedestrian Overpass	1
17	Conduit PVC 3" or 70mm	468
18	Conduit Steel 3" or 70mm	2
19	Conduit Steel 39mm	2
20	Conduit Steel 28mm	33
21	Install Conduit under Asphalt Pavement	2
22	Install Conduit under Concrete Pavement or Sidewalk	468
23	Install Conduit on Pedestrian Overpass	33
24	Install Conduit on Riser Support pole	2
25	Handhole Type C	11
26	Aerial Cable Supporter	20
27	Detector Cable 6c	2
28	Detector Cable 8c	646
29	Detector Cable 12c	2
30	Detector Cable 6S 6c	315
31	Detector Cable 6S 8c	290
32	Detector Cable SS 12c	2
33	Power Cable	2
34	TOT line (CPV, 0.65mm, 1P)	2
35	Grounding Rod	8
36	Grounding Cable	40

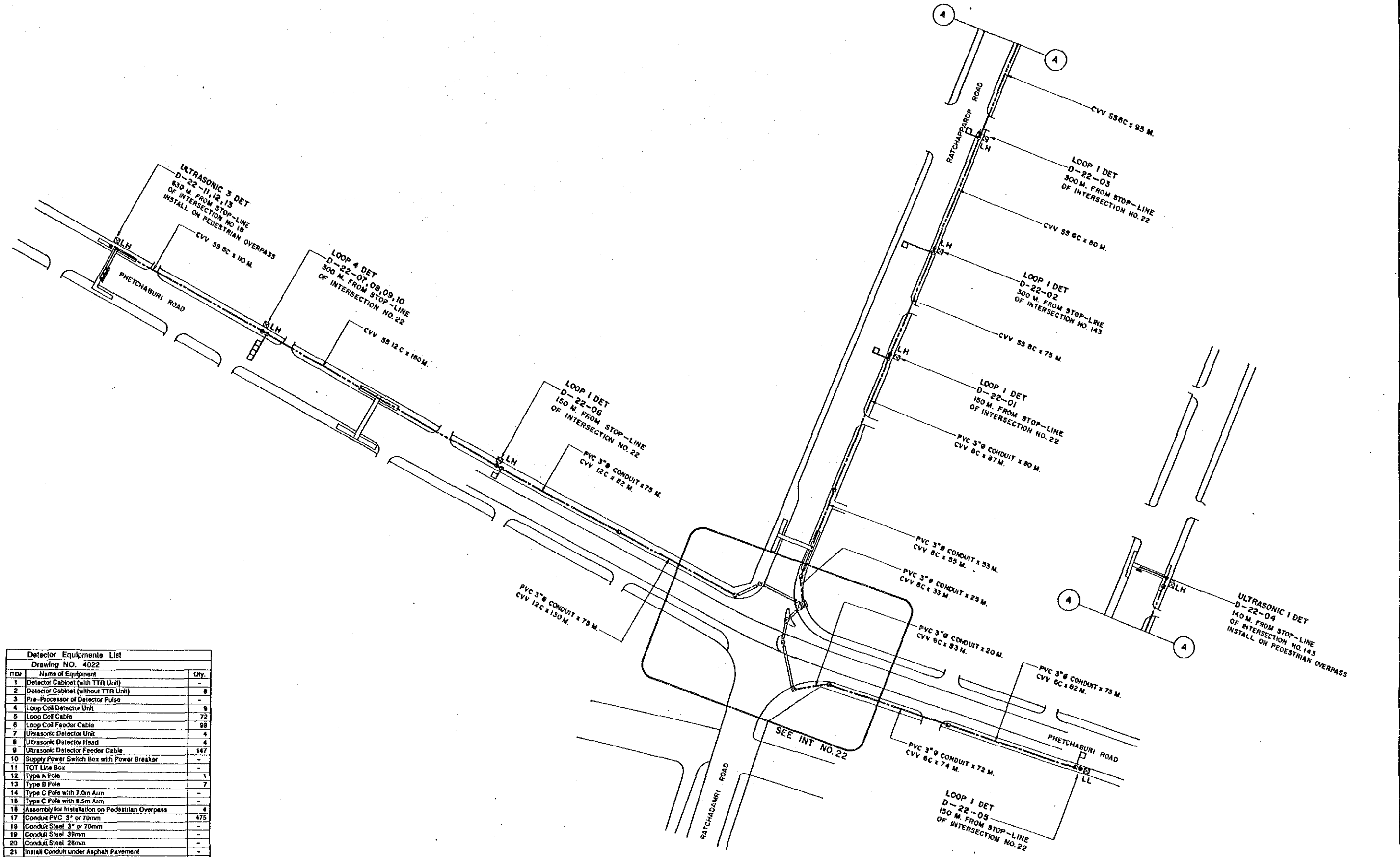


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By :	Approved By :
		Jura Kedara JICA Study Team Leader	Boonyarat Tiptua BMA Study Team Leader
		Designed By :	Checked By :
		Yasuo Nobushina JICA Study Member	TEO, BMA
INTERSECTION NO. 19		Scale : 1 / 1,000	Drawing No. 4019
Associated Plan No. :		Date : SEPTEMBER '90	Total : 14 / 86
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	



Detector Equipments List		
Drawing NO. 4020		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	5
2	Detector Cabinet (without TTR Unit)	5
3	Pre-Processor of Detector Pulse	5
4	Loop Coil Detector Unit	11
5	Loop Coil Cable	66
6	Loop Coil Feeder Cable	200
7	Ultrasonic Detector Unit	5
8	Ultrasonic Detector Head	5
9	Ultrasonic Detector Feeder Cable	5
10	Supply Power Switch Box with Power Breaker	5
11	TOT Line Box	5
12	Type A Pole	2
13	Type B Pole	5
14	Type C Pole with 7.0m Arm	5
15	Type C Pole with 8.5m Arm	5
16	Assembly for Installation on Pedestrian Overpass	5
17	Conduit PVC 3" or 70mm	640
18	Conduit Steel 3" or 70mm	5
19	Conduit Steel 39mm	5
20	Conduit Steel 28mm	5
21	Install Conduit under Asphalt Pavement	5
22	Install Conduit under Concrete Pavement or Sidewalk	640
23	Install Conduit on Pedestrian Overpass	5
24	Install Conduit on Riser Support pole	5
25	Handhole Type C	14
26	Aerial Cable Supporter	17
27	Detector Cable 6c	594
28	Detector Cable 8c	201
29	Detector Cable 12c	5
30	Detector Cable SS 6c	408
31	Detector Cable SS 8c	160
32	Detector Cable SS 12c	5
33	Power Cable	5
34	TOT line (CPV, 0.65mm, 1P)	5
35	Grounding Rod	5
36	Grounding Cable	40

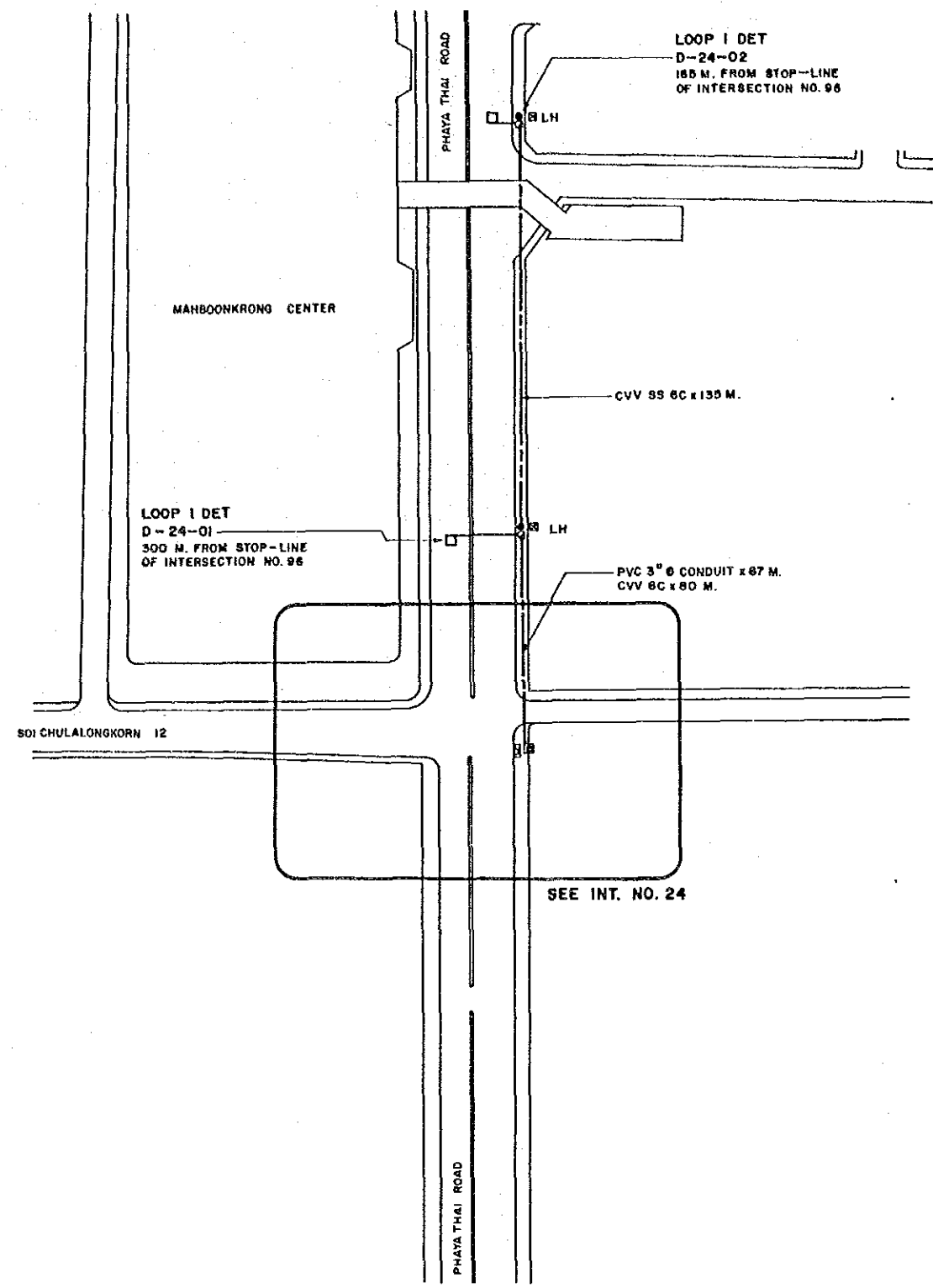
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : June Kodera JICA Study Team Leader	Approved By : Boonyawat Tiptua BMA Study Team Leader
		Designed By : Yasuo Nabeshima JICA Study Member	Checked By : TED, BMA
INTERSECTION NO. 20		Scale 1 / 1,000	Drawing NO. 4020
Associated Plan No. :		Date . SEPTEMBER '90	Total 15 / 86



Detector Equipments List
Drawing NO. 4022

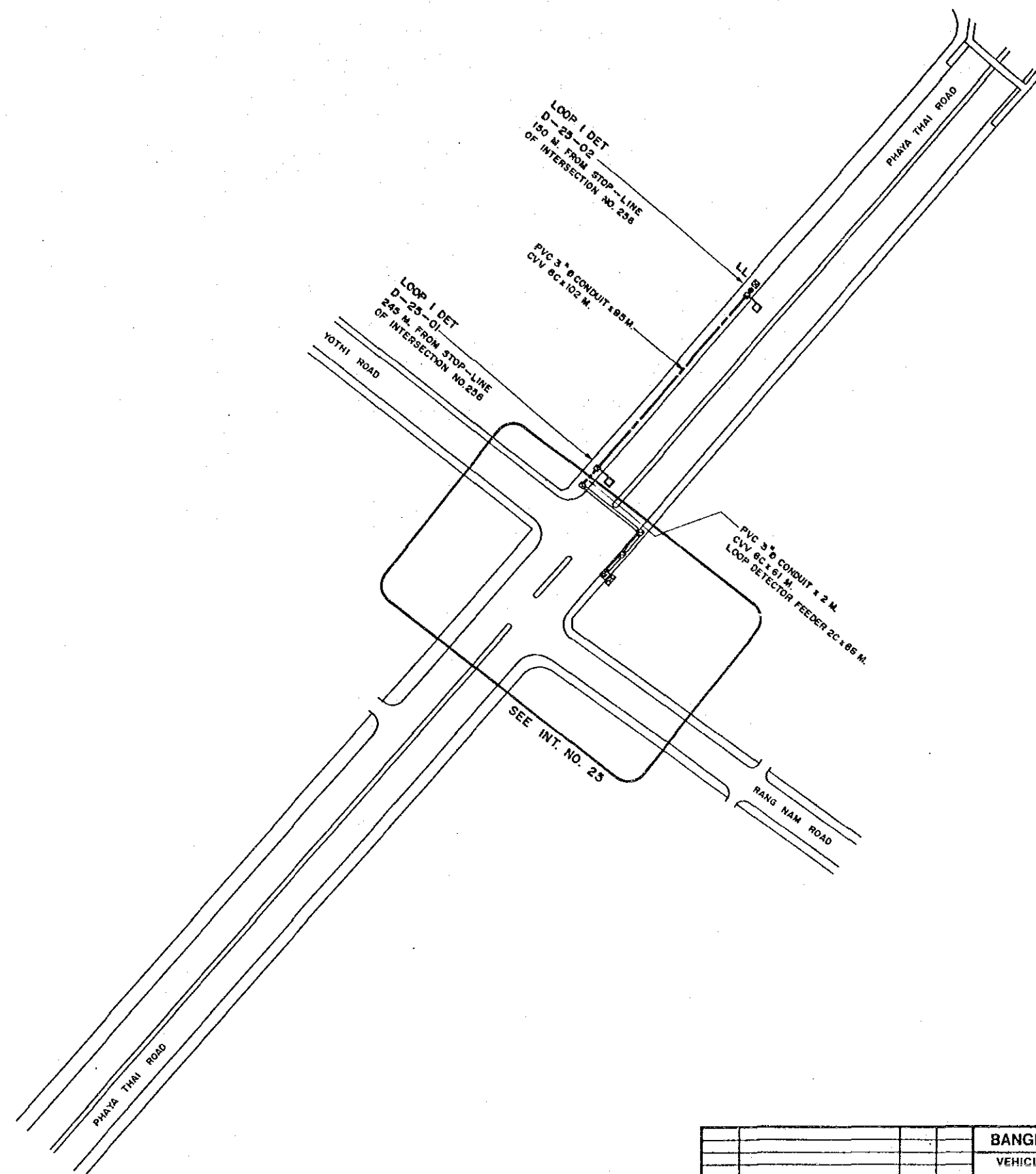
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	8
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	9
5	Loop Coil Cable	72
6	Loop Coil Feeder Cable	98
7	Ultrasonic Detector Unit	4
8	Ultrasonic Detector Head	4
9	Ultrasonic Detector Feeder Cable	147
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	1
13	Type B Pole	7
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	4
17	Conduit PVC 3" or 70mm	475
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	475
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	13
26	Aerial Cable Supporter	18
27	Detector Cable 6c	239
28	Detector Cable 8c	175
29	Detector Cable 12c	212
30	Detector Cable SS 8c	175
31	Detector Cable SS 8c	185
32	Detector Cable SS 12c	212
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	8
36	Grounding Cable	40

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By :	Approved By :
		Jiro Kodera JICA Study Team Leader	Boonyawat Tipiso BMA Study Team Leader
		Designed By :	Checked By :
		Yasuo Nishizima JICA Study Member	TED.BMA
INTERSECTION NO. 22		Scale 1 / 1,000	Drawing NR 4022
Associated Plan No. :		Date SEPTEMBER '90	Total 16 / 86
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	



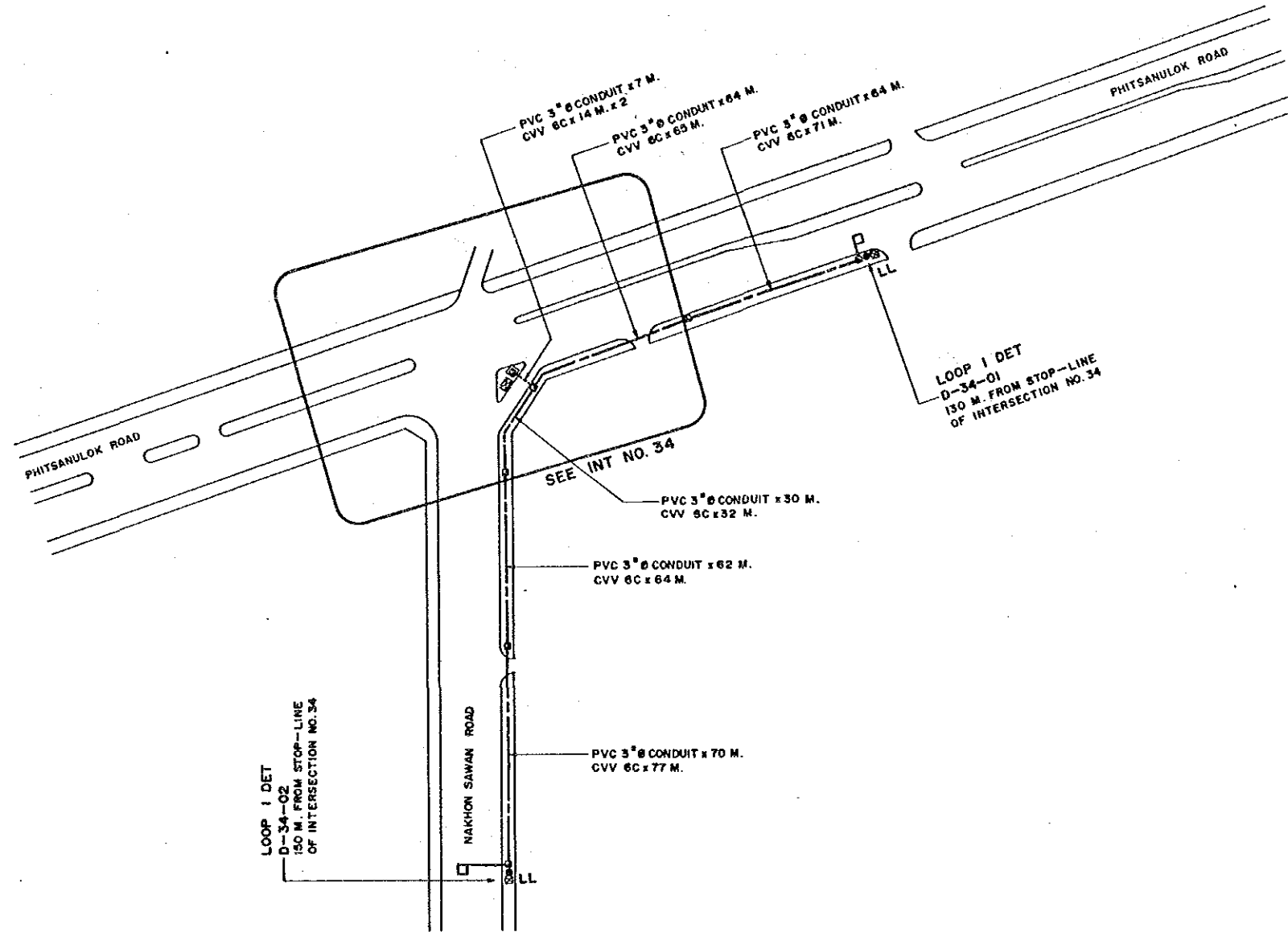
Detector Equipments List		
Drawing NO. 4024		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	2
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	2
5	Loop Coil Cable	18
6	Loop Coil Feeder Cable	10
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	2
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	67
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	67
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	2
26	Aerial Cable Supporter	5
27	Detector Cable 6c	80
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable 5S 8c	135
31	Detector Cable 5S 8c	-
32	Detector Cable 5S 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	2
36	Grounding Cable	10

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I					
VEHICLE DETECTOR AND CABLE LAYOUT PLAN INTERSECTION NO. 24			Submitted By :	Approved By :	
			Jiro Kedera JICA Study Team Leader		Boonyawat Titlus BMA Study Team Leader
Code Revision Date Initial			Designed By :	Checked By :	
			Yoon Heesikim JICA Study Member		TED.BMA
Associated Plan No. :			JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Scale 1 / 1,000 Date SEPTEMBER '80 Drawing NO 4024 Total 17 / 86



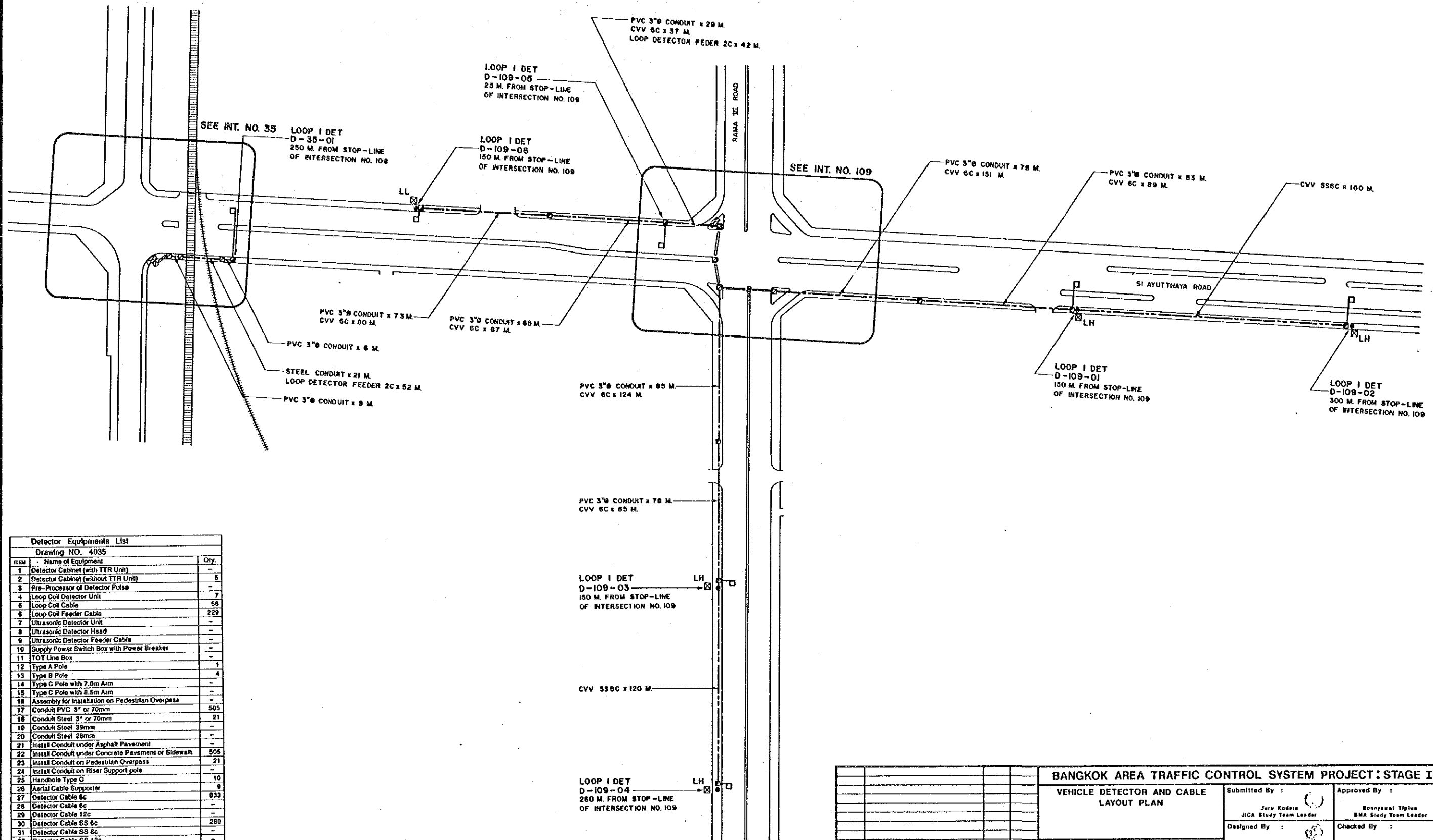
Detector Equipments List		
Drawing NO. 4025		
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	1
3	Pra-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	2
5	Loop Coil Cable	16
6	Loop Coil Feeder Cable	76
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	1
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	100
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	100
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	2
26	Aerial Cable Supporter	-
27	Detector Cable 6c	161
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	-
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	1
35	Grounding Rod	-
36	Grounding Cable	6

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN INTERSECTION NO. 25		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonyawat Tiptua 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 / 1,000	Drawing No. 4025
		Date : SEPTEMBER '80	Total : 18 / 86



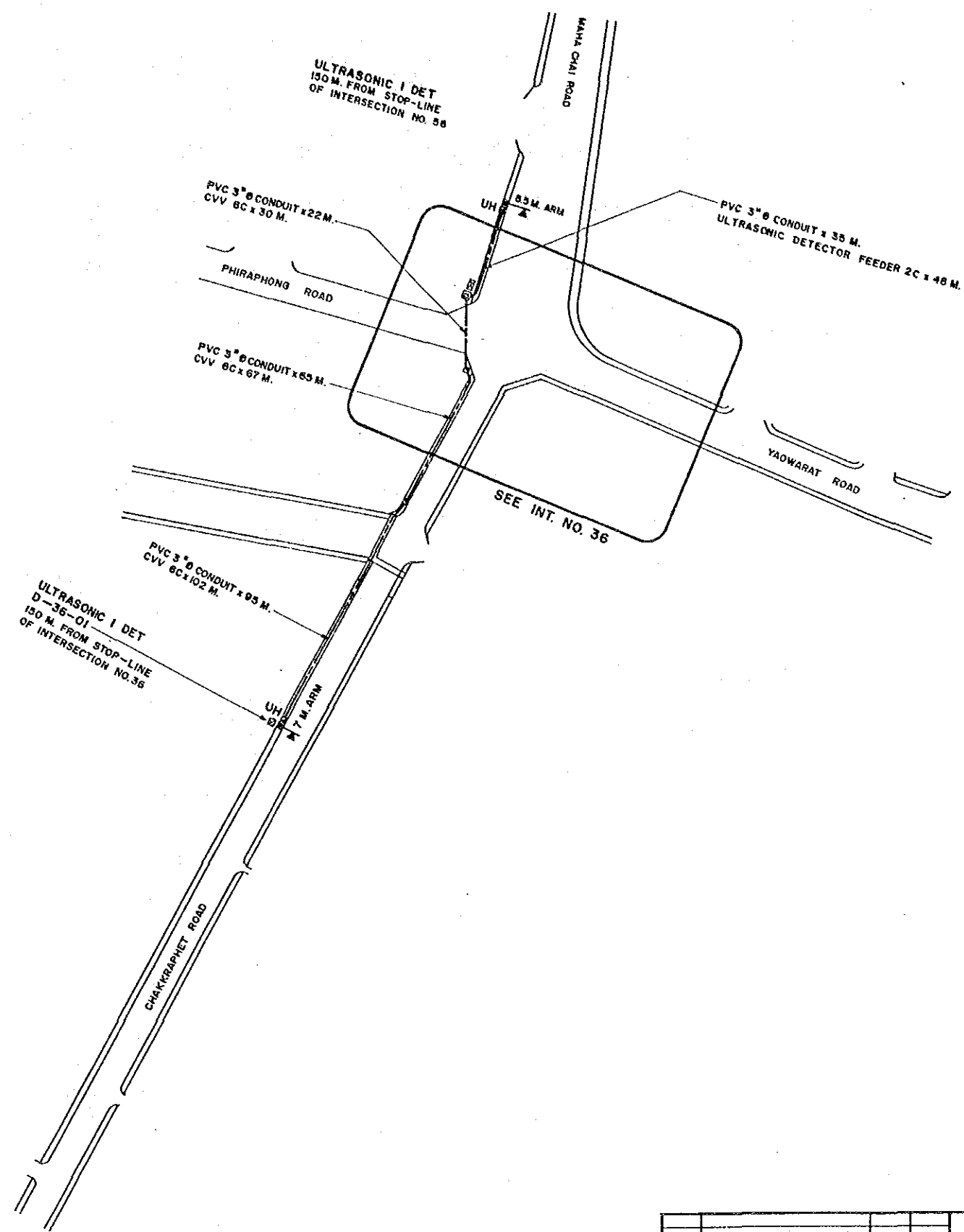
Detector Equipments List		
Drawing NO. 4034		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	2
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	2
5	Loop Coil Cable	16
6	Loop Coil Feeder Cable	10
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	2
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 6.5m Arm	-
16	Assembly for installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	297
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	297
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	6
26	Aerial Cable Supporter	-
27	Detector Cable 6c	337
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	-
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	2
36	Grounding Cable	10

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By :	Approved By :
		Juro Kodera JICA Study Team Leader	Boonyawat Tiptua BMA Study Team Leader
		Designed By :	Checked By :
		Yasuo Nishikawa JICA Study Member	TED, BMA
INTERSECTION NO 34		Scale 1 / 1,000	Drawing NR 4034
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Date SEPTEMBER '86	Total 19 / 86



Detector Equipments List		
Drawing NO. 4035		
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	5
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	7
5	Loop Coil Cable	56
6	Loop Coil Feeder Cable	229
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	1
13	Type B Pole	4
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	505
18	Conduit Steel 3" or 70mm	21
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	505
23	Install Conduit on Pedestrian Overpass	21
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	10
26	Aerial Cable Supporter	9
27	Detector Cable 6c	633
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	280
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	6
36	Grounding Cable	25

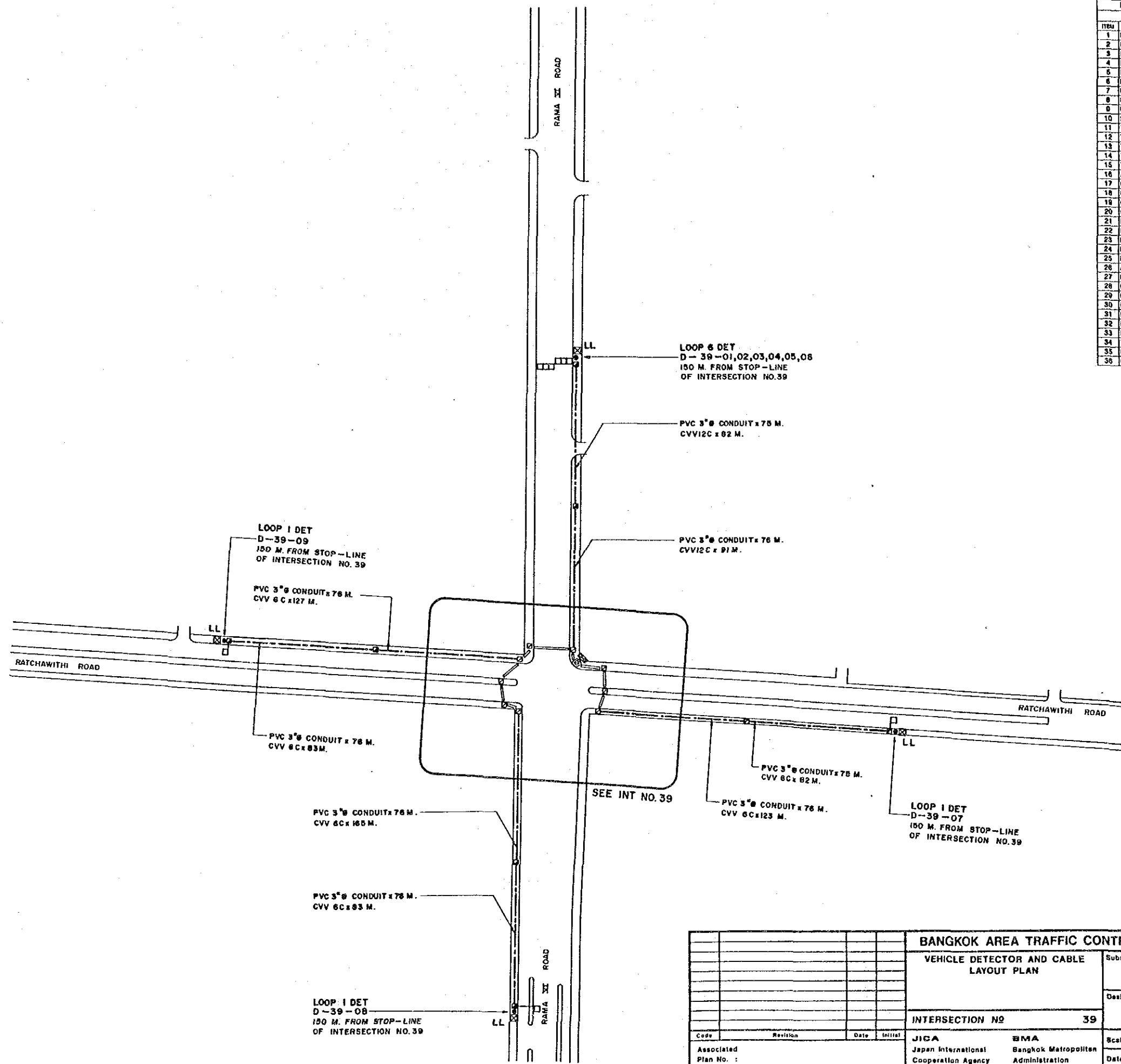
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN			
INTERSECTION NO. 35,109		Submitted By :	Approved By :
		Jure Kodera JICA Study Team Leader	Bhonyawat Tiptua BMA Study Team Leader
		Designed By :	Checked By :
		Yasuo Nobushima JICA Study Member	TEO, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale 1 / 1,000	Drawing No. 4035
		Date SEPTEMBER '86	Total 20 / 86



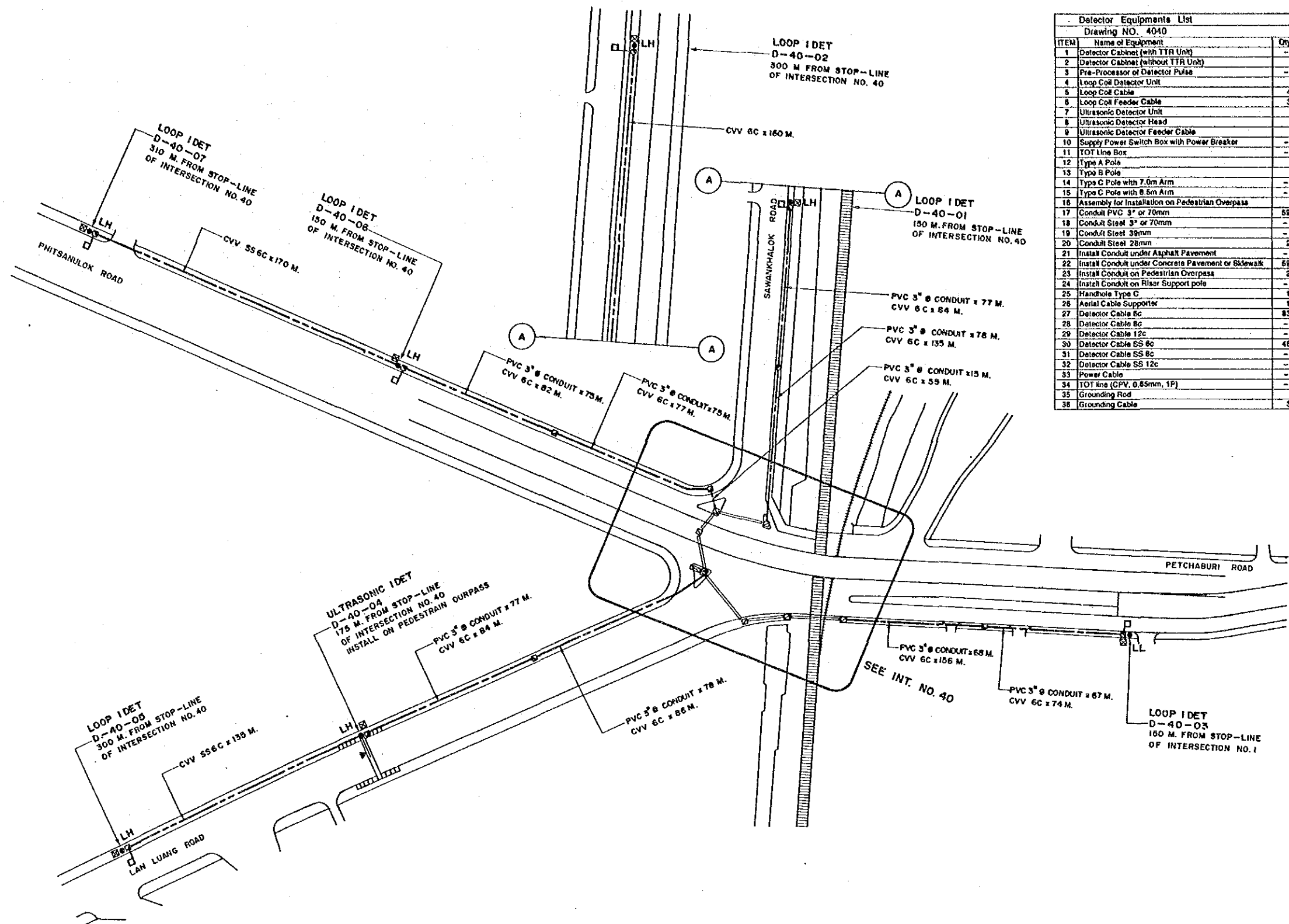
Detector Equipments List		
Drawing NO. 4036		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	1
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	-
5	Loop Coil Cable	-
6	Loop Coil Feeder Cable	-
7	Ultrasonic Detector Unit	2
8	Ultrasonic Detector Head	2
9	Ultrasonic Detector Feeder Cable	64
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	1
15	Type C Pole with 8.5m Arm	1
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	182
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	18
22	Install Conduit under Concrete Pavement or Sidewalk	163
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	4
26	Aerial Cable Supporter	-
27	Detector Cable 6c	198
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	-
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	2
36	Grounding Cable	10

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Jure Kedara JICA Study Team Leader	Approved By : Boonsawat Tiptee BMA Study Team Leader
				INTERSECTION NO. 36		Designed By : Tasuo Nabeshima JICA Study Member	Checked By : TEO, BMA
Code	Revision	Date	Initial	JICA	BMA	Scale	Drawing No.
Associated Plan No. :				Japan International Cooperation Agency	Bangkok Metropolitan Administration	1 / 1,000	4036
						Date	Total
						SEPTEMBER '80	21 / 86

Detector Equipments List		
Drawing NO. 4039		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	4
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	9
5	Loop Coil Cable	72
6	Loop Coil Feeder Cable	85
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	4
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	608
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	608
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	8
26	Aerial Cable Supporter	-
27	Detector Cable 6c	663
28	Detector Cable 8c	-
29	Detector Cable 12c	173
30	Detector Cable SS 8c	-
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	4
36	Grounding Cable	20

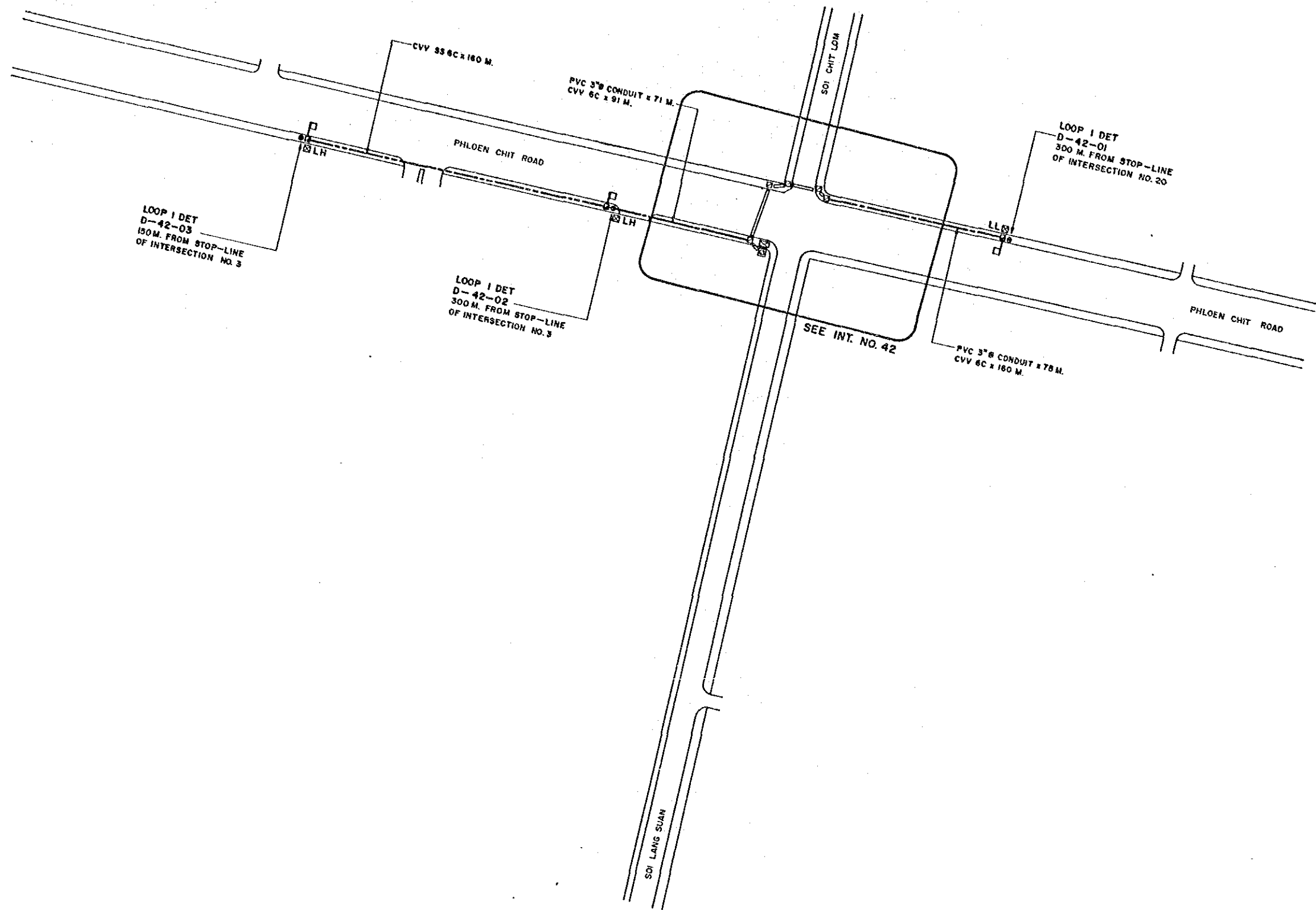


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Jira Kodera JICA Study Team Leader	Approved By : Wongwatt Tiptus BMA Study Team Leader
INTERSECTION NO 39		Designed By : Yasuo Hasegawa JICA Study Member	Checked By : FED, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
Scale : 1 / 1,000		Date : SEPTEMBER '80	Drawing No : 4039
Total		22 / 86	



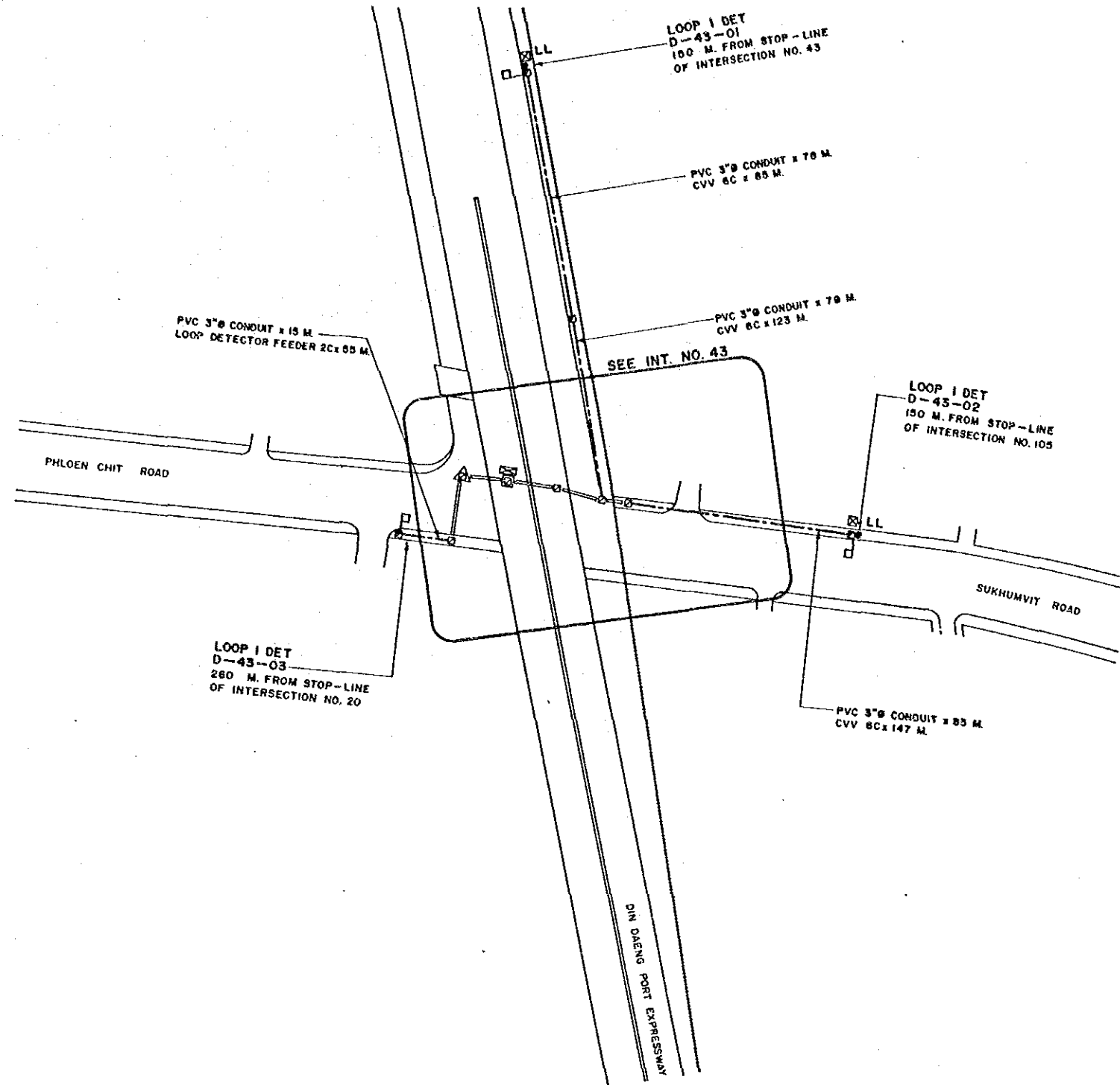
Detector Equipments List		
Drawing NO. 4040		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	7
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	6
5	Loop Coil Cable	48
6	Loop Coil Feeder Cable	30
7	Ultrasonic Detector Unit	1
8	Ultrasonic Detector Head	1
9	Ultrasonic Detector Feeder Cable	8
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	1
13	Type B Pole	6
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 6.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	1
17	Conduit PVC 3" or 70mm	695
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 38mm	-
20	Conduit Steel 28mm	20
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	695
23	Install Conduit on Pedestrian Overpass	20
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	11
26	Aerial Cable Supporter	15
27	Detector Cable 6c	839
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	465
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.85mm, 1P)	7
35	Grounding Rod	-
36	Grounding Cable	35

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Juro Kedera JICA Study Team Leader	Approved By : Boonyawat Tiptus BMA Study Team Leader
INTERSECTION NO 40		Designed By : Yasoo Maheshima 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 / 1,000	Drawing No 4040
		Date SEPTEMBER '00	Total 23 / 86



Detector Equipments List		
Drawing NO. 4042		
Qty.	Name of Equipment	Unit
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	3
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	3
5	Loop Coil Cable	24
6	Loop Coil Feeder Cable	15
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	1
13	Type B Pole	2
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	149
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	149
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	4
26	Aerial Cable Supporter	5
27	Detector Cable 6c	251
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	160
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT Line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	3
36	Grounding Cable	15

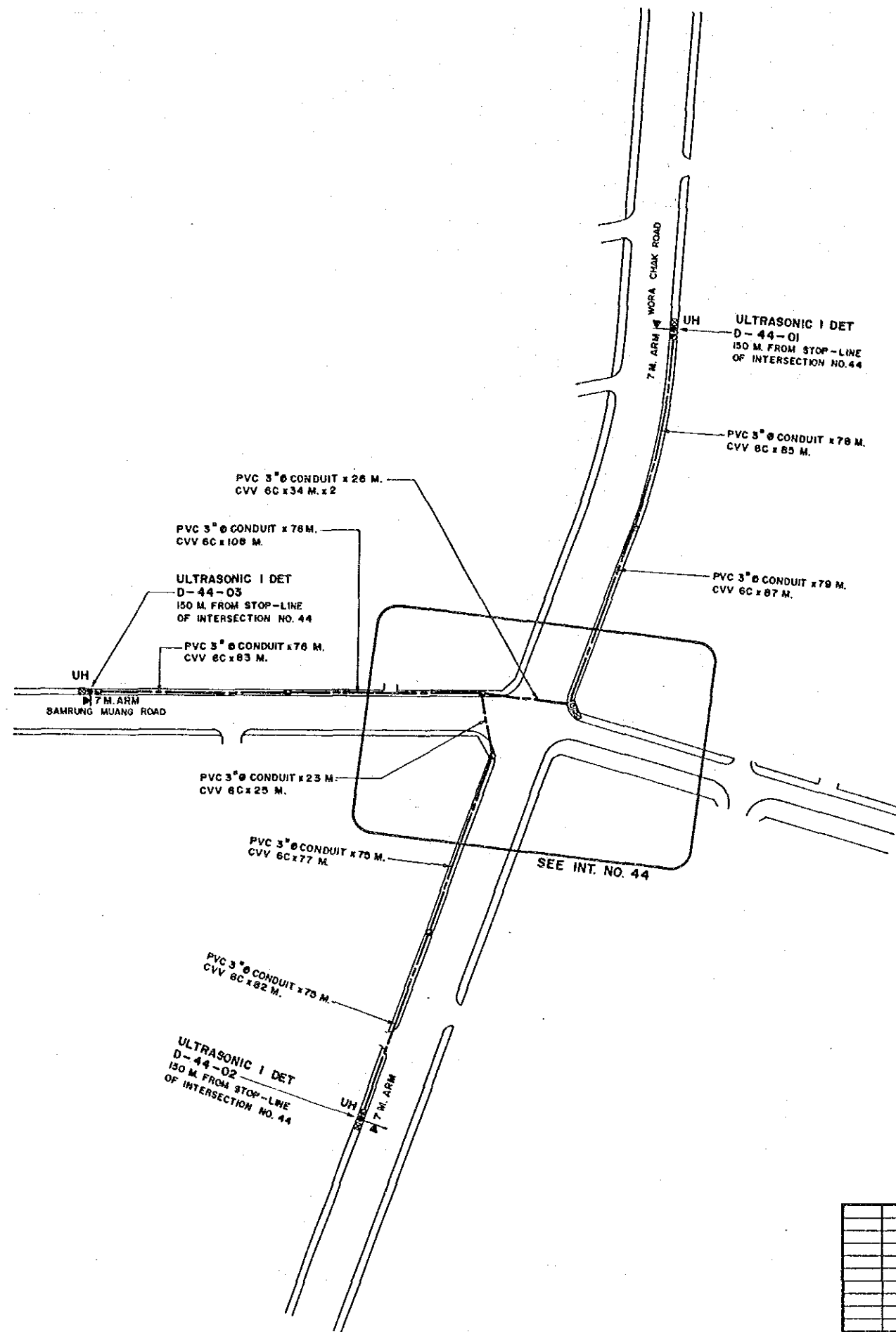
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN			
Submitted By :		Approved By :	
Juro Kodera JICA Study Team Leader		Boonyawat Tiptua BMA Study Team Leader	
Designed By :		Checked By :	
Yasuo Nabeshima JICA Study Member		TED.BMA	
INTERSECTION NO 42		Scale 1 / 1,000	
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	
Date SEPTEMBER '90		Drawing NO 4042	
Associated Plan No. :		Total 24 / 86	



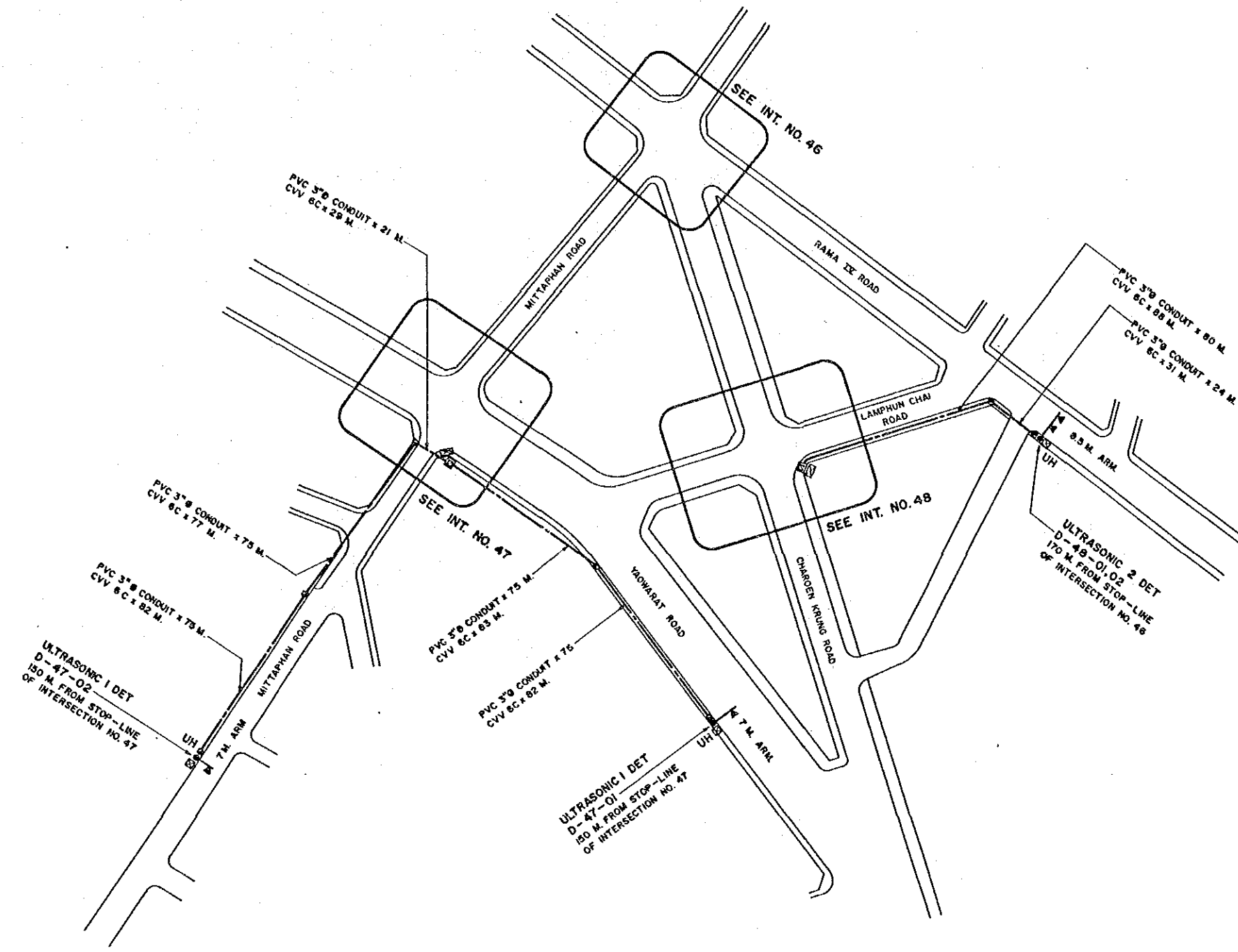
Detector Equipments List		
Drawing NO. 4043		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	--
2	Detector Cabinet (without TTR Unit)	2
3	Pre-Processor of Detector Pulse	--
4	Loop Coil Detector Unit	3
5	Loop Coil Cable	24
6	Loop Coil Feeder Cable	70
7	Ultrasonic Detector Unit	--
8	Ultrasonic Detector Head	--
9	Ultrasonic Detector Feeder Cable	--
10	Supply Power Switch Box with Power Breaker	--
11	TOT Line Box	--
12	Type A Pole	2
13	Type B Pole	--
14	Type C Pole with 7.0m Arm	--
15	Type C Pole with 8.5m Arm	--
16	Assembly for Installation on Pedestrian Overpass	--
17	Conduit PVC 3" or 70mm	257
18	Conduit Steel 3" or 70mm	--
19	Conduit Steel 39mm	--
20	Conduit Steel 28mm	--
21	Install Conduit under Asphalt Pavement	--
22	Install Conduit under Concrete Pavement or Sidewalk	257
23	Install Conduit on Pedestrian Overpass	--
24	Install Conduit on Riser Support pole	--
25	Handhole Type C	4
26	Aerial Cable Supporter	--
27	Detector Cable 6c	355
28	Detector Cable 8c	--
29	Detector Cable 12c	--
30	Detector Cable SS 6c	--
31	Detector Cable SS 8c	--
32	Detector Cable SS 12c	--
33	Power Cable	--
34	TOT line (CPV, 0.65mm, 1P)	--
35	Grounding Rod	2
36	Grounding Cable	10

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I							
VEHICLE DETECTOR AND CABLE LAYOUT PLAN				Submitted By : Jiro Kodera JICA Study Team Leader		Approved By : Boonyawat Tiptua BMA Study Team Leader	
				Designed By : Yasu Nabeshima JICA Study Member		Checked By : TED, BMA	
INTERSECTION NO. 43				Scale 1 / 1,000		Drawing No. 4043	
Associated Plan No. :				Date SEPTEMBER '80		Total 25 / 86	

Detector Equipments List		
Drawing NO. 4044		
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	3
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	-
5	Loop Coil Cable	-
6	Loop Coil Feeder Cable	-
7	Ultrasonic Detector Unit	3
8	Ultrasonic Detector Head	3
9	Ultrasonic Detector Feeder Cable	24
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	3
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	508
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	45
22	Install Conduit under Concrete Pavement or Sidewalk	463
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	6
26	Aerial Cable Supporter	-
27	Detector Cable 6c	560
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	-
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	3
36	Grounding Cable	15

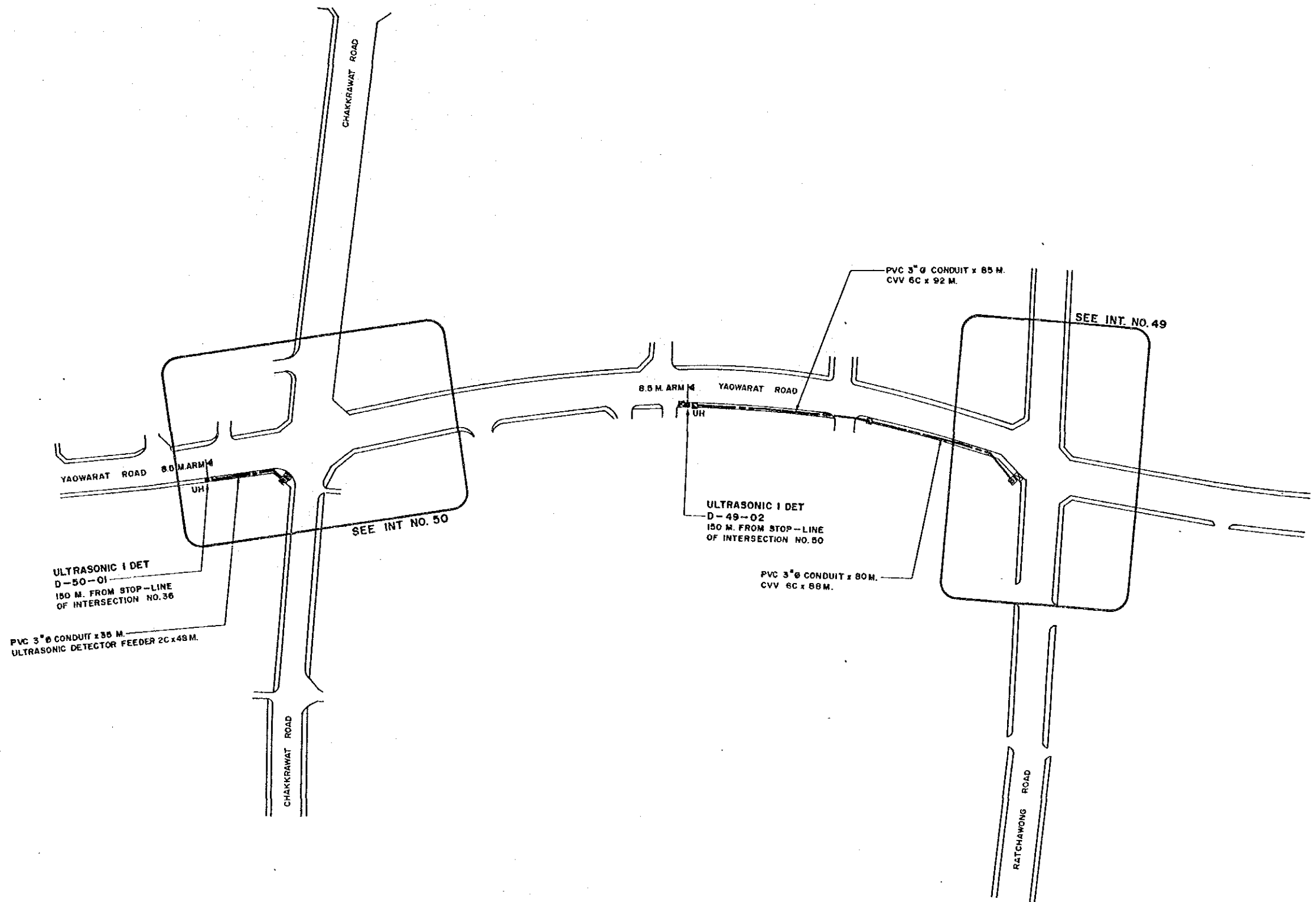


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN			
Submitted By :		Approved By :	
Jiro Kodera JICA Study Team Leader		Boonyawat Titus BMA Study Team Leader	
Designed By :		Checked By :	
Yasuo Nishizima JICA Study Member		TED, BMA	
INTERSECTION NO 44		Scale 1 / 1,000	
Associated Plan No. :		Drawing No 4044	
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	
Date SEPTEMBER 90		Total 26 / 86	



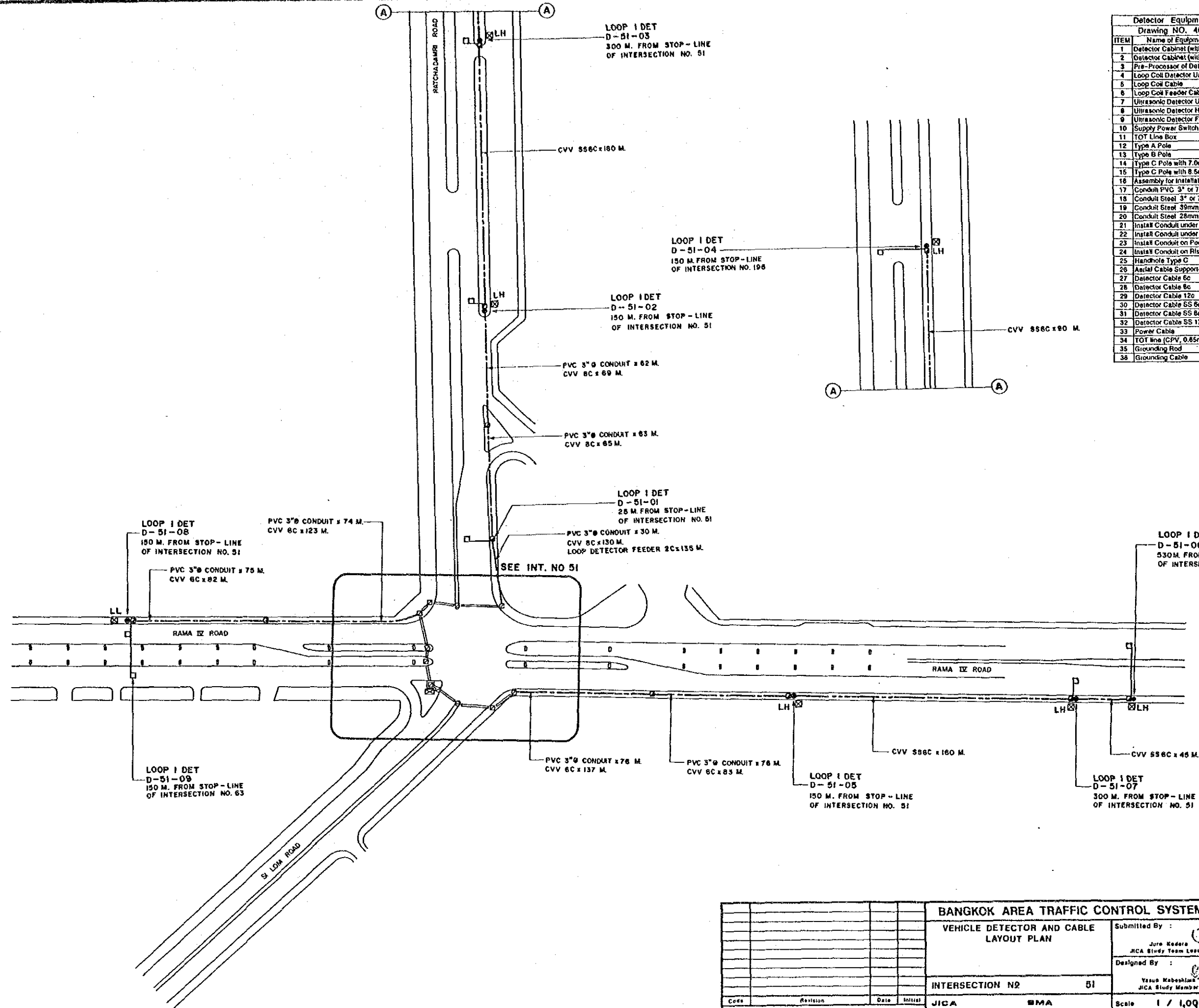
Detector Equipments List		
Drawing NO. 4047		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	3
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	-
5	Loop Coil Cable	-
6	Loop Coil Feeder Cable	-
7	Ultrasonic Detector Unit	4
8	Ultrasonic Detector Head	4
9	Ultrasonic Detector Feeder Cable	32
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	2
15	Type C Pole with 8.5m Arm	1
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	425
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	18
22	Install Conduit under Concrete Pavement or Sidewalk	407
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	7
26	Aerial Cable Supporter	-
27	Detector Cable 6c	472
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	-
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	3
36	Grounding Cable	15

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Jure Kodera JICA Study Team Leader	Approved By : Boonyawat Tiplua BMA Study Team Leader
INTERSECTION NO. 47,48		Designed By : Yasuo Kobayashi 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 / 1,000	Drawing No. 4047
		Date SEPTEMBER '80	Total 27 / 86







Detector Equipments List		
Drawing NO. 4049		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	1
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	-
5	Loop Coil Cable	-
6	Loop Coil Feeder Cable	-
7	Ultrasonic Detector Unit	2
8	Ultrasonic Detector Head	2
9	Ultrasonic Detector Feeder Cable	64
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	2
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	200
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	200
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	3
26	Aerial Cable Supporter	-
27	Detector Cable 8c	180
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 8c	-
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT Ene (CPV, 0.65mm, 1P)	-
35	Grounding Rod	2
36	Grounding Cable	10

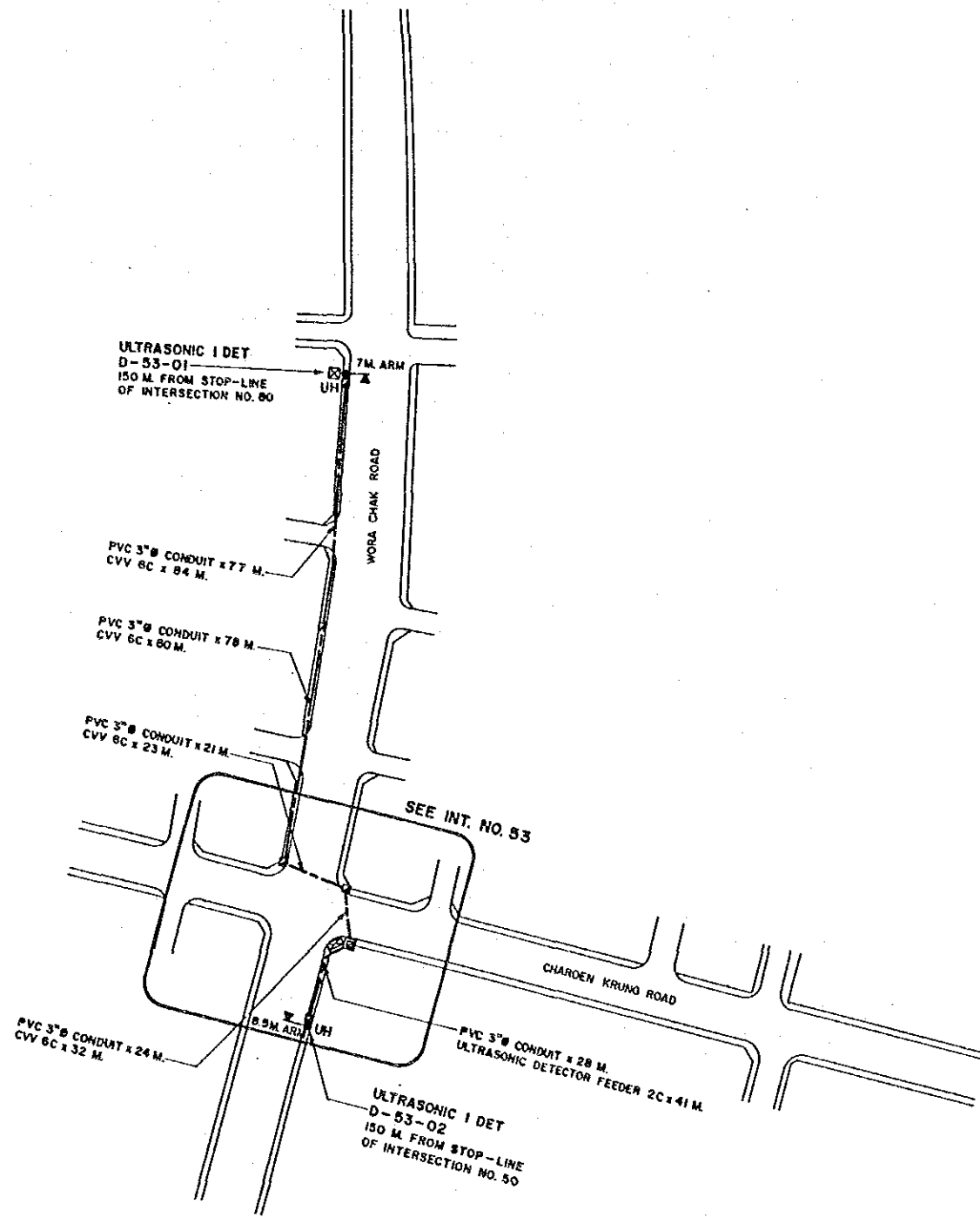
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By :	Approved By :
		Juro Modera JICA Study Team Leader	Boonyamat Tiptus BMA Study Team Leader
		Designed By :	Checked By :
		Tawee Mahabhesha JICA Study Member	TEO, BMA
INTERSECTION NO. 49, 50		Scale 1 / 1,000	Drawing NR 4049
Associated Plan No. :		Date SEPTEMBER '90	Total 28 / 86
Code	Revision	Date	Initial
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	



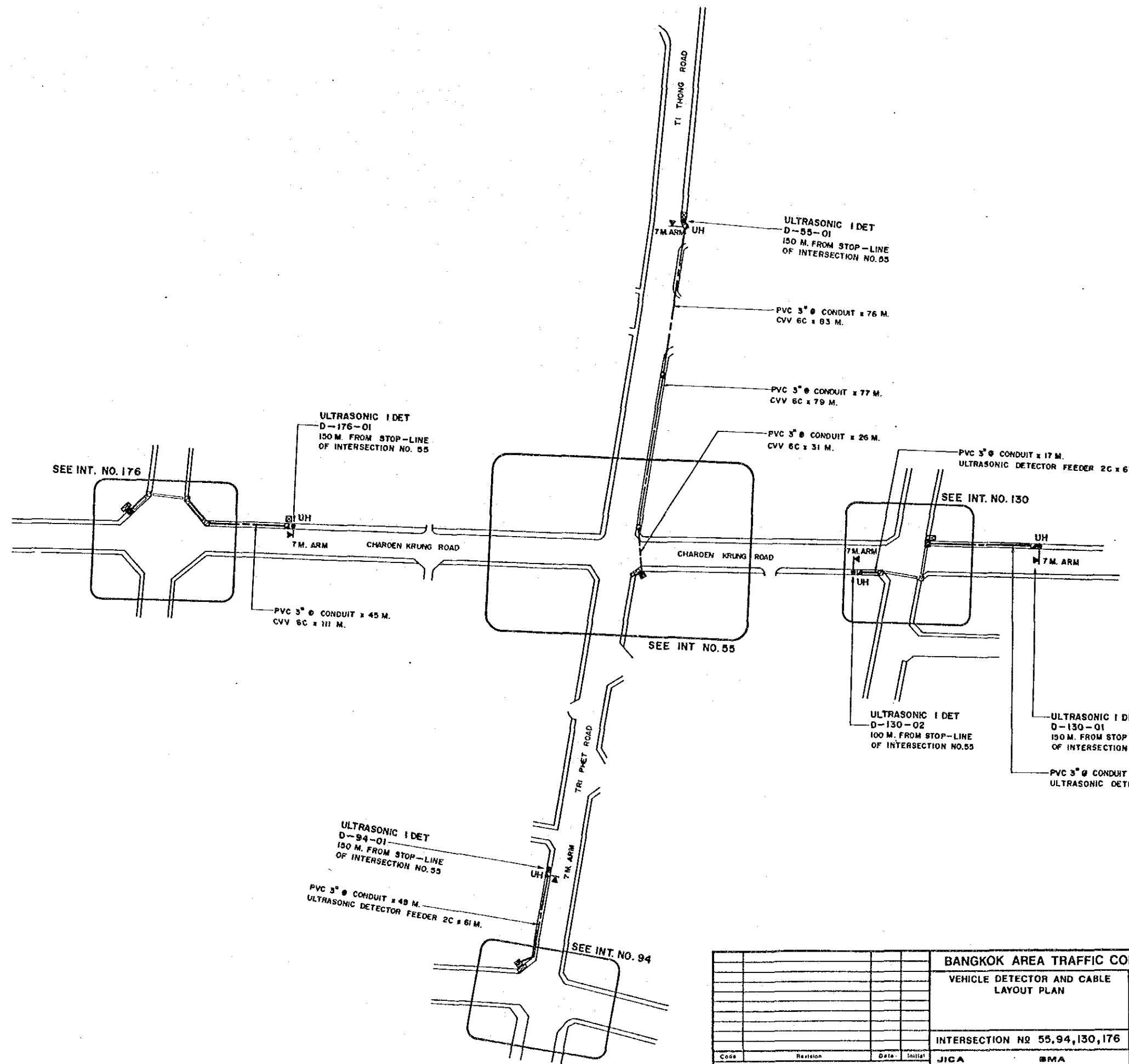
Detector Equipments List		
Drawing NO. 4051		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	7
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	9
5	Loop Coil Cable	72
6	Loop Coil Feeder Cable	230
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	1
13	Type B Pole	8
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	456
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	456
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	11
26	Aerial Cable Supporter	14
27	Detector Cable 6c	425
28	Detector Cable 8c	264
29	Detector Cable 12c	-
30	Detector Cable SS 6c	-
31	Detector Cable SS 8c	455
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.85mm, 1P)	-
35	Grounding Rod	7
36	Grounding Cable	35

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I					
VEHICLE DETECTOR AND CABLE LAYOUT PLAN			Submitted By : 	Approved By : 	
			JICA Study Team Leader	BMA Study Team Leader	
			Designed By : 	Checked By : 	
			JICA Study Member	TED, BMA	
Code	Revision	Date	Initial	INTERSECTION NO 51	
Associated Plan No. :			JICA	BMA	Scale 1 / 1,000
			Japan International Cooperation Agency	Bangkok Metropolitan Administration	Drawing No 4051
				Date SEPTEMBER '90	Total 29 / 86

Detector Equipments List		
Drawing NO. 4053		
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	--
2	Detector Cabinet (without TTR Unit)	1
3	Pre-Processor of Detector Pulse	--
4	Loop Coil Detector Unit	--
5	Loop Coil Cable	--
6	Loop Coil Feeder Cable	--
7	Ultrasonic Detector Unit	2
8	Ultrasonic Detector Head	2
9	Ultrasonic Detector Feeder Cable	67
10	Supply Power Switch Box with Power Breaker	--
11	TOT Line Box	--
12	Type A Pole	--
13	Type B Pole	--
14	Type C Pole with 7.0m Arm	1
15	Type C Pole with 8.5m Arm	1
16	Assembly for Installation on Pedestrian Overpass	--
17	Conduit PVC 3" or 70mm	228
18	Conduit Steel 3" or 70mm	--
19	Conduit Steel 35mm	--
20	Conduit Steel 28mm	--
21	Install Conduit under Asphalt Pavement	31
22	Install Conduit under Concrete Pavement or SL Swalk	197
23	Install Conduit on Pedestrian Overpass	--
24	Install Conduit on Riser Support pole	--
25	Handhole Type C	6
26	Aerial Cable Supporter	--
27	Detector Cable 6c	219
28	Detector Cable 8c	--
29	Detector Cable 12c	--
30	Detector Cable SS 6c	--
31	Detector Cable SS 8c	--
32	Detector Cable SS 12c	--
33	Power Cable	--
34	TOT box (CPV, 0.65mm, 1P)	--
35	Grounding Rod	2
36	Grounding Cable	10



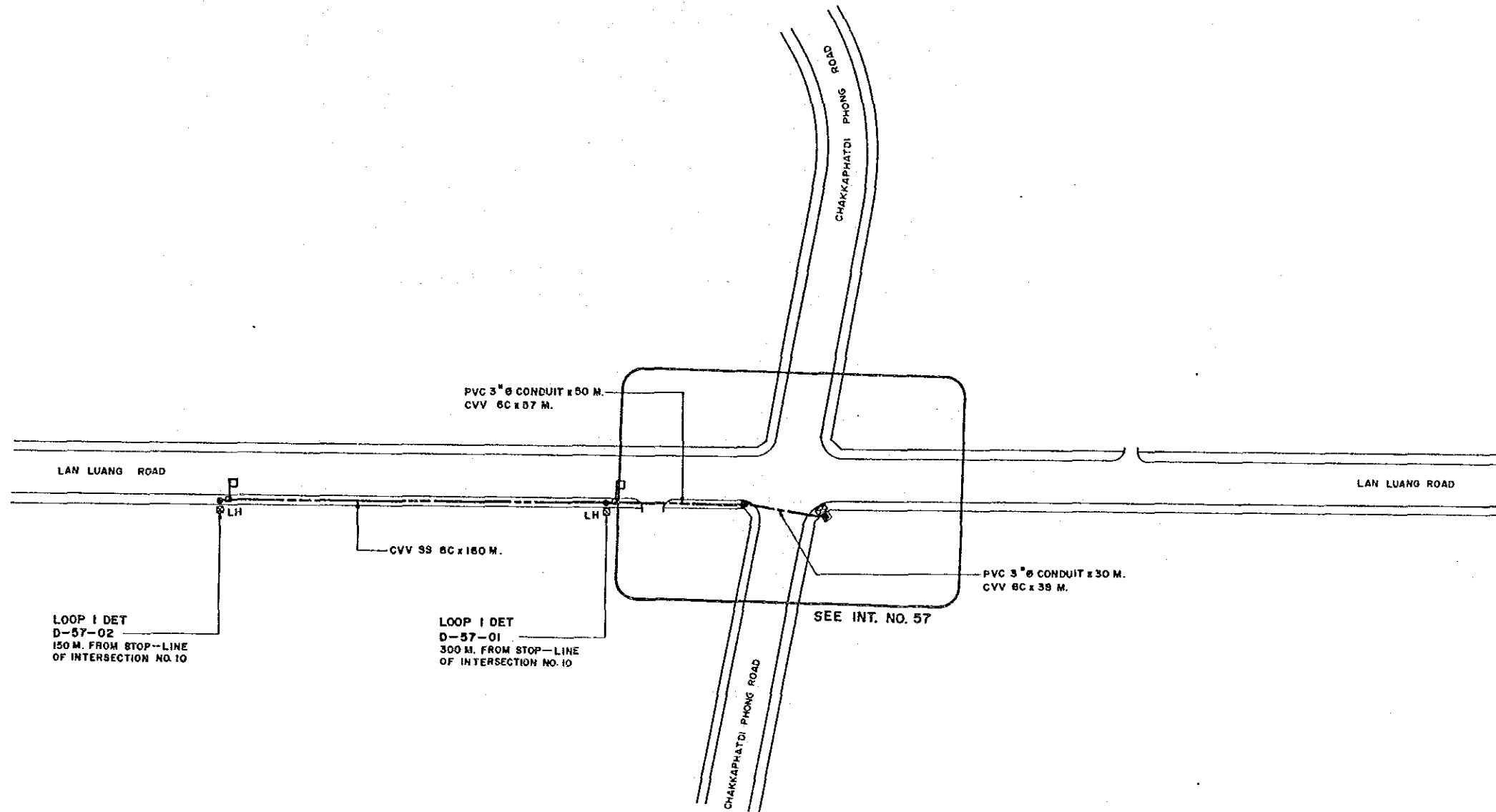
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN			
Submitted By :		Approved By :	
Jure Kodaro JICA Study Team Leader		Boonyawat Tiptus BMA Study Team Leader	
Designed By :		Checked By :	
Yasuo Hasekawa JICA Study Member		TED, BMA	
INTERSECTION NO. 53		Scale: 1 / 1,000	
Date: SEPTEMBER 80		Drawing NO. 4053	
Total: 30 / 86			



Detector Equipments List		
Drawing NO. 4055		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	2
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	-
5	Loop Coil Cable	-
6	Loop Coil Feeder Cable	-
7	Ultrasonic Detector Unit	8
8	Ultrasonic Detector Head	8
9	Ultrasonic Detector Feeder Cable	234
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	8
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	342
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 38mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	42
22	Install Conduit under Concrete Pavement or Sidewalk	300
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	7
26	Aerial Cable Supporter	-
27	Detector Cable 8c	184
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 8c	-
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	8
36	Grounding Cable	25

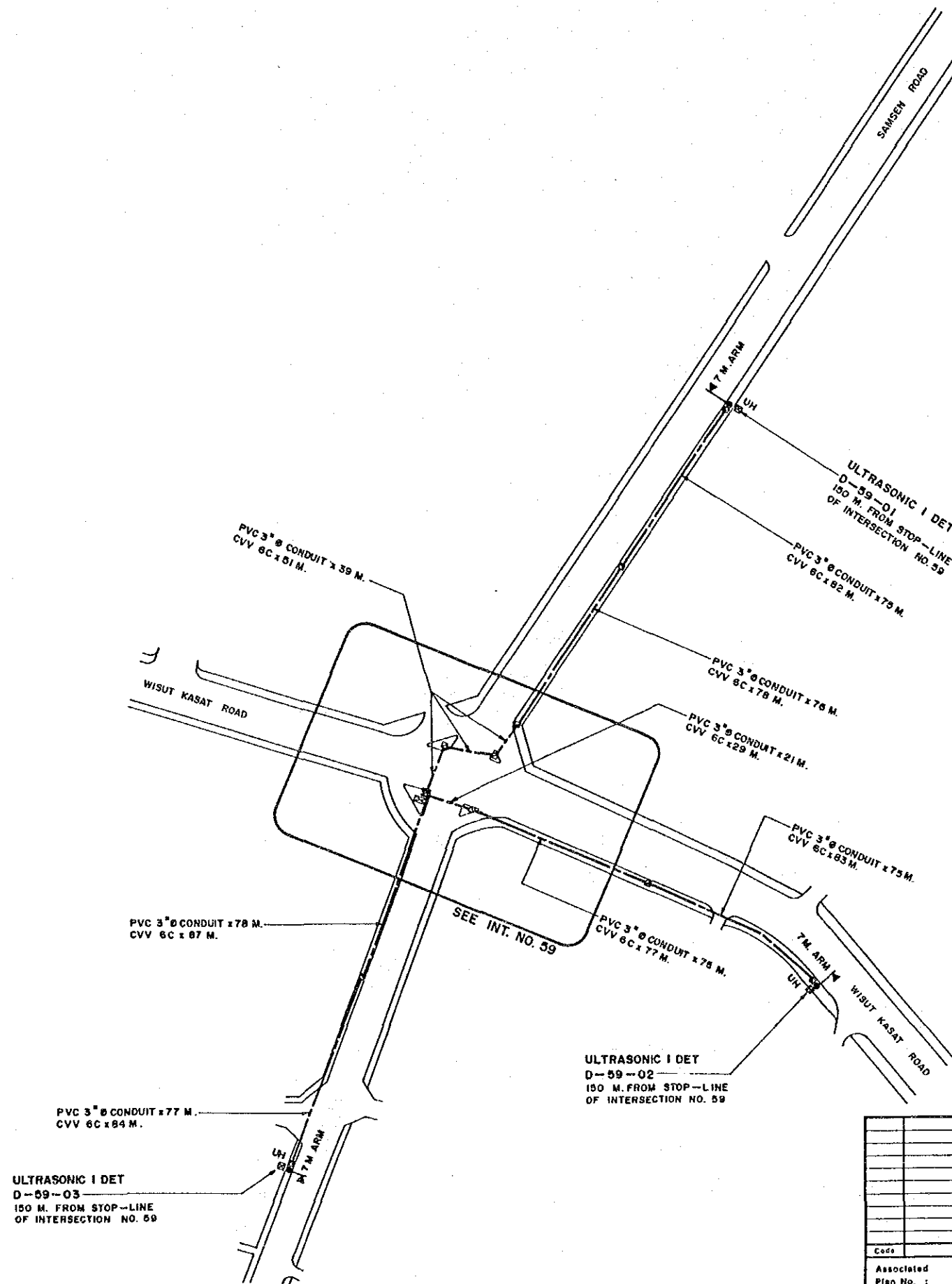
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Jure Kodera JICA Study Team Leader	Approved By : Boonyawat Tiptua BMA Study Team Leader
INTERSECTION NO 55, 94, 130, 176		Designed By : Yasuo Nabeshima JICA Study Member	Checked By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
Scale		1 / 1,000	Drawing No 4055
Date		SEPTEMBER '90	Total 31 / 86

Detector Equipments List		
Drawing NO. 4057		
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	2
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	2
5	Loop Coil Cable	18
6	Loop Coil Feeder Cable	10
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	2
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	60
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 38mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	80
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	3
26	Aerial Cable Supporter	5
27	Detector Cable 6c	95
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	160
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	2
35	Grounding Rod	-
36	Grounding Cable	10

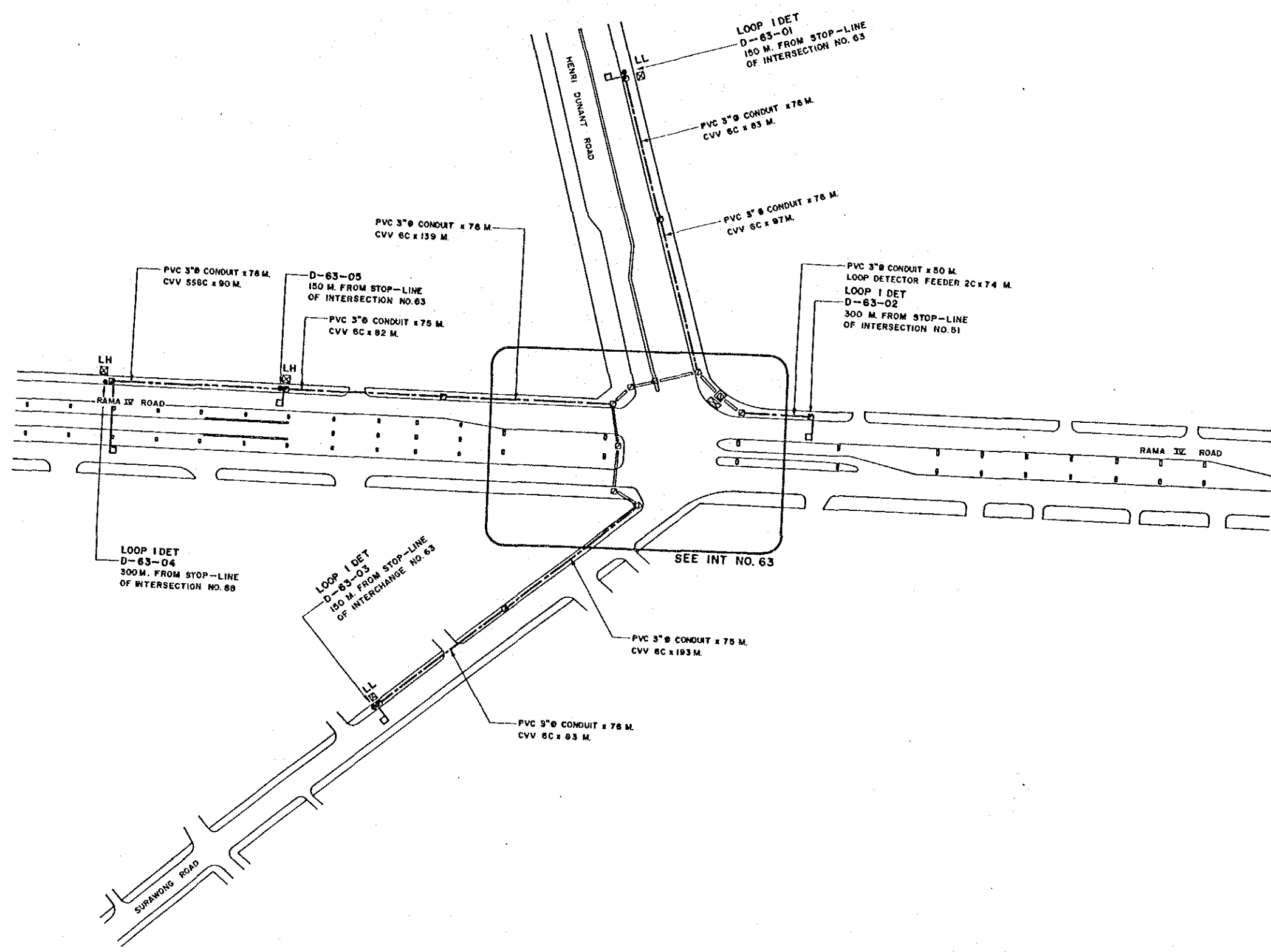


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Jure Kudera JICA Study Team Leader	Approved By : Boonyawat Titipus BMA Study Team Leader
INTERSECTION NO. 57		Designed By : Yasuo Nabeshima JICA Study Member	Checked By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
Scale		1 / 1,000	Drawing No. 4057
Date		SEPTEMBER '90	Total 32 / 86

Detector Equipments List		
Drawing NO. 4059		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	3
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	-
5	Loop Coil Cable	-
6	Loop Coil Feeder Cable	-
7	Ultrasonic Detector Unit	3
8	Ultrasonic Detector Head	3
9	Ultrasonic Detector Feeder Cable	24
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	3
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	611
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 38mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	511
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	7
26	Aerial Cable Supporter	-
27	Detector Cable 6c	671
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	-
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	3
36	Grounding Cable	15



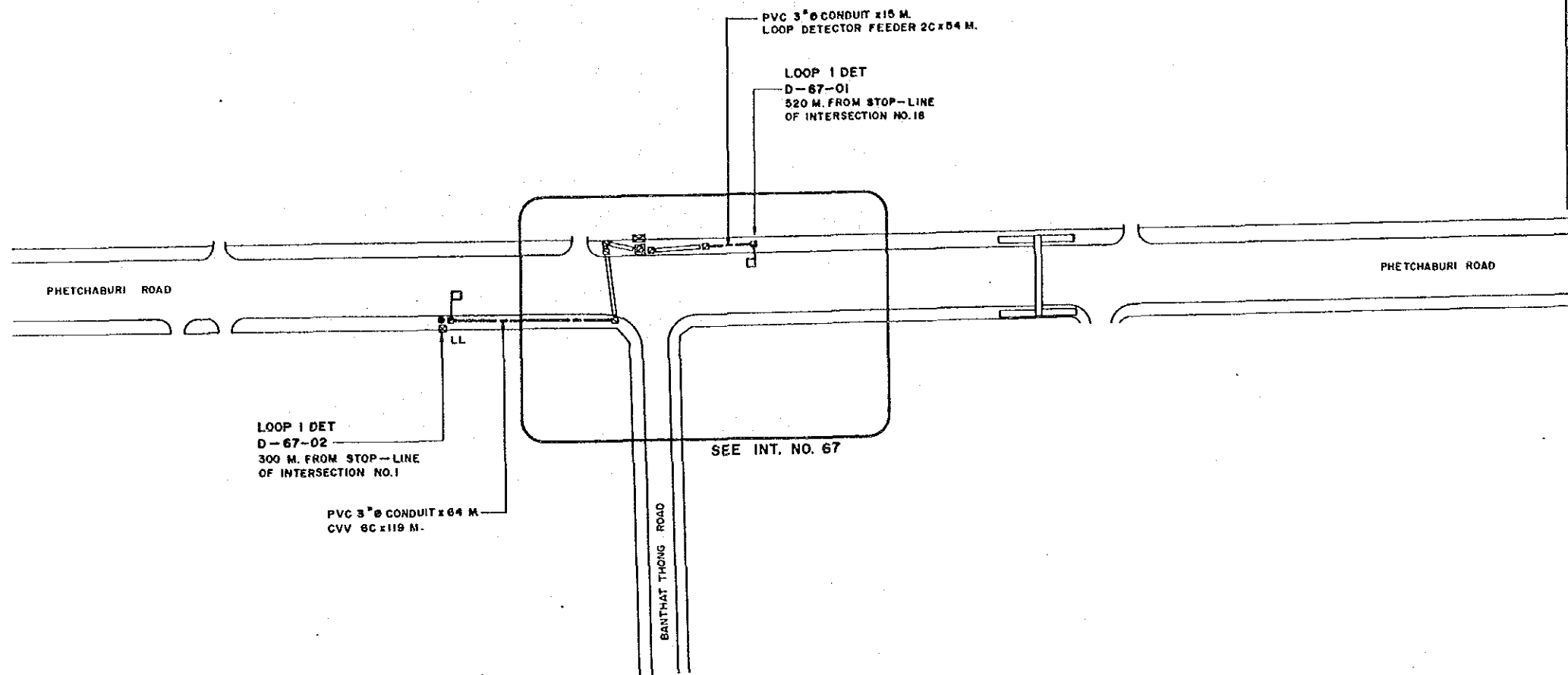
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN			
Submitted By :		Approved By :	
Jura Kadero JICA Study Team Leader		Boonsawat Tiptua BMA Study Team Leader	
Designed By :		Checked By :	
Yanus Kshobhina JICA Study Member		TED.BMA	
INTERSECTION NO 59			
Code	Revision	Date	Initial
Associated Plan No. :		JICA	BMA
		Japan International Cooperation Agency	Bangkok Metropolitan Administration
Scale 1 / 1,000		Drawing NR 4059	
Date SEPTEMBER '80		Total 33 / 86	



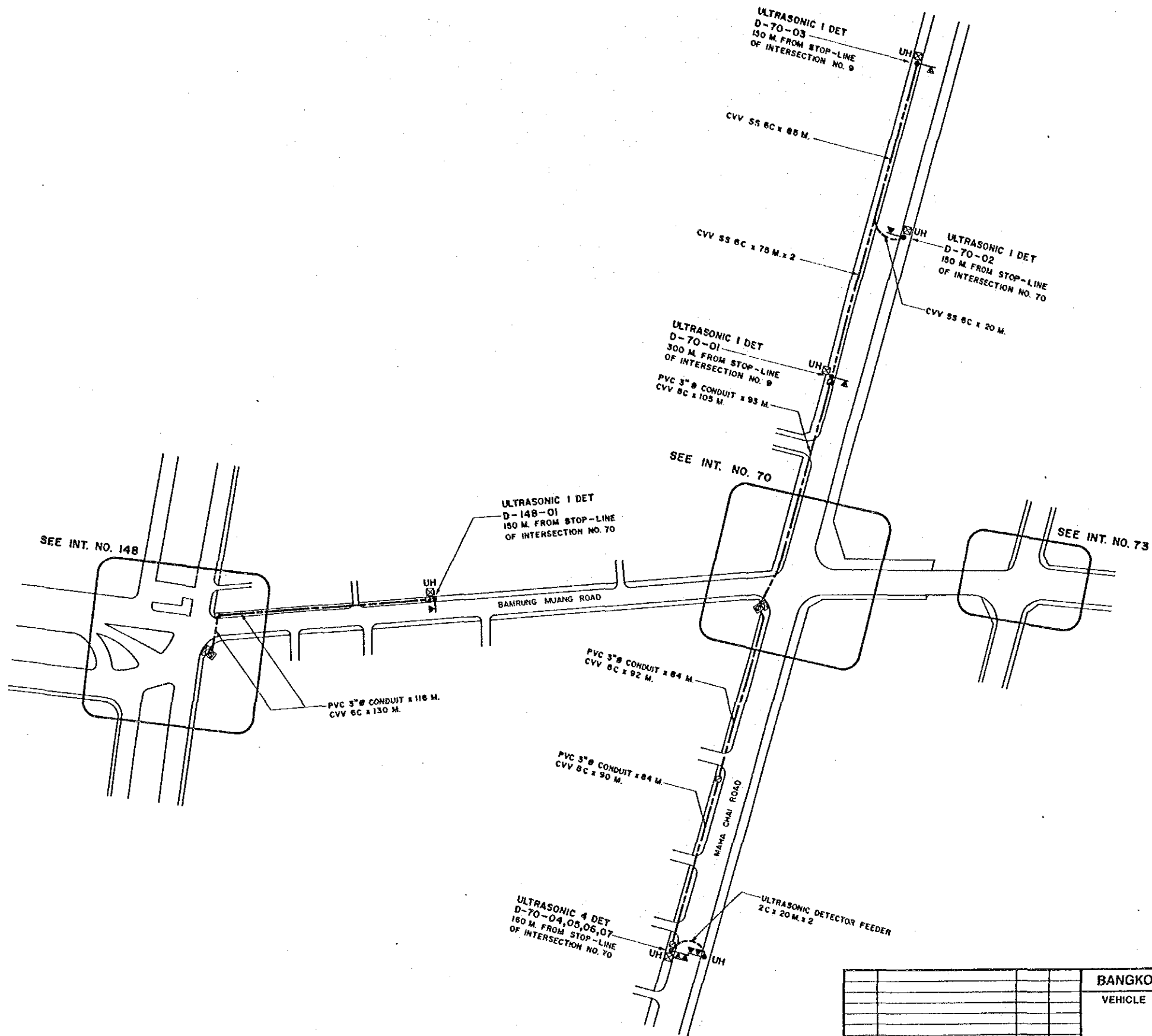
Detector Equipments List		
Drawing NO. 4063		
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	4
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	6
5	Loop Coil Cable	40
6	Loop Coil Feeder Cable	99
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	2
13	Type B Pole	2
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	528
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	528
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	7
26	Aerial Cable Supporter	3
27	Detector Cable 6c	677
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	80
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT Line (CPV, 0.65mm, 1P)	4
35	Grounding Rod	-
36	Grounding Cable	20

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Jure Kadera JICA Study Team Leader	Approved By : Boonyawat Tiptua BMA Study Team Leader
INTERSECTION NO 63		Designed By : Yasuo Nishikubo 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 / 1,000	Drawing NO 4063
		Date SEPTEMBER '90	Total 34 / 86

Detector Equipments List		
Drawing NO. 4067		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	1
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	5
5	Loop Coil Cable	40
6	Loop Coil Feeder Cable	99
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	2
13	Type B Pole	2
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	828
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 89mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	828
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on River Support pole	-
25	Handhole Type C	7
26	Aerial Cable Supporter	3
27	Detector Cable 8c	877
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	80
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	4
36	Grounding Cable	20



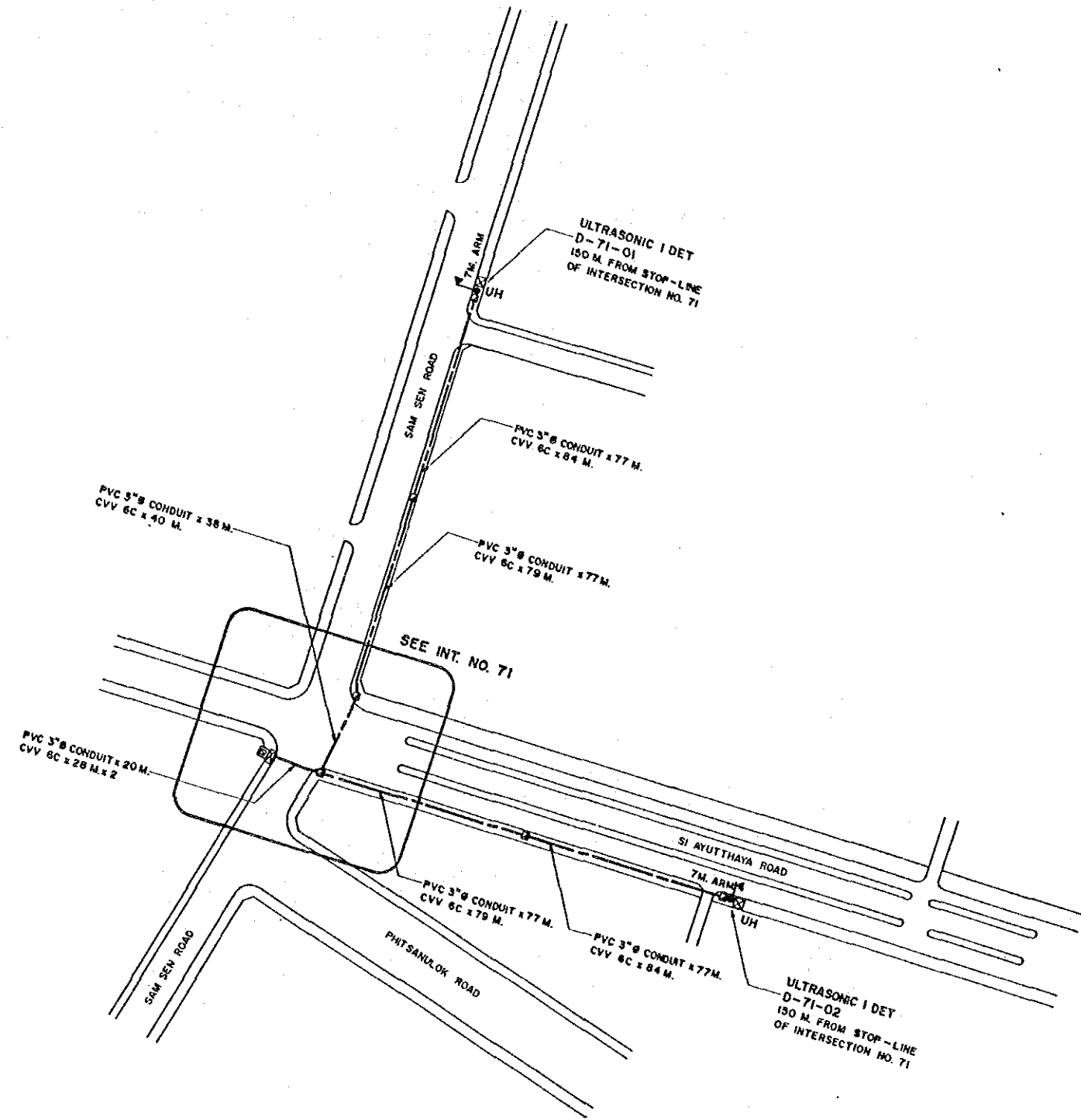
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN INTERSECTION NO. 67		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonyarat Tiptus BMA Study Team Leader
		Designed By : Yasuo Nishizima JICA Study Member	Checked By : TED.BMA
Code	Revision	Date	INITIAL
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale 1 / 1,000	Drawing No. 4067
		Date SEPTEMBER '90	Total 35 / 86



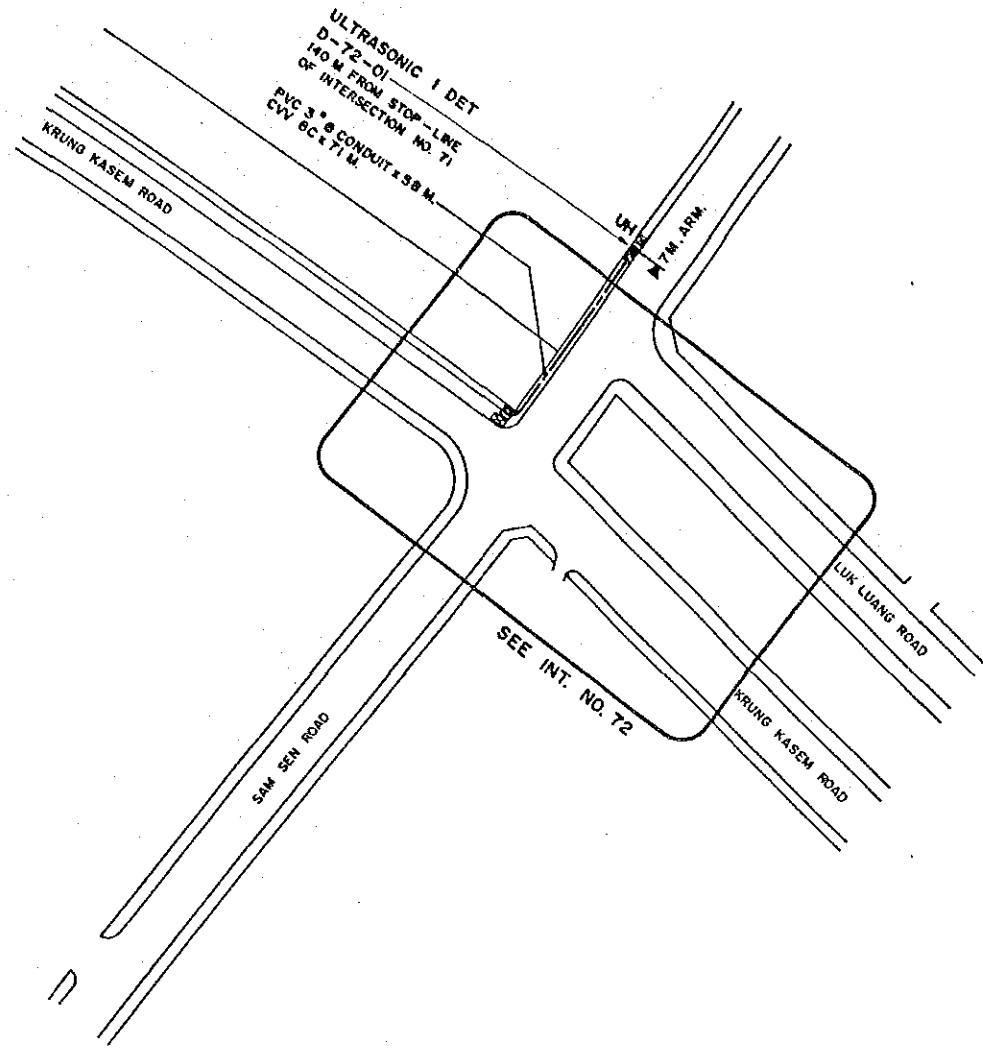
Detector Equipments List		
Drawing NO. 4070		
Qty	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	6
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	-
5	Loop Coil Cable	-
6	Loop Coil Feeder Cable	-
7	Ultrasonic Detector Unit	8
8	Ultrasonic Detector Head	8
9	Ultrasonic Detector Feeder Cable	104
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	6
15	Type C Pole with 6.6m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	373
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	42
22	Install Conduit under Concrete Pavement or Sidewalk	331
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	5
26	Aerial Cable Supporter	7
27	Detector Cable 6c	130
28	Detector Cable 8c	287
29	Detector Cable 12c	-
30	Detector Cable SS 6c	255
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	6
36	Grounding Cable	30

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Juta Kudara JICA Study Team Leader	Approved By : Boonyawat Tiplus BMA Study Team Leader
INTERSECTION NO 70.148		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 / 1,000	Drawing No 4070
		Date SEPTEMBER '90	Total 36 / 86

Detector Equipments List		
Drawing NO. 4071		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet with TTR Unit	-
2	Detector Cabinet (without TTR Unit)	2
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	-
5	Loop Coil Cable	-
6	Loop Coil Feeder Cable	-
7	Ultrasonic Detector Unit	2
8	Ultrasonic Detector Head	2
9	Ultrasonic Detector Feeder Cable	16
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	2
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	568
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	568
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	8
26	Aerial Cable Supporter	-
27	Detector Cable 6c	399
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	-
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT Line (CPV, 0.65mm, 1P)	2
35	Grounding Rod	2
36	Grounding Cable	10



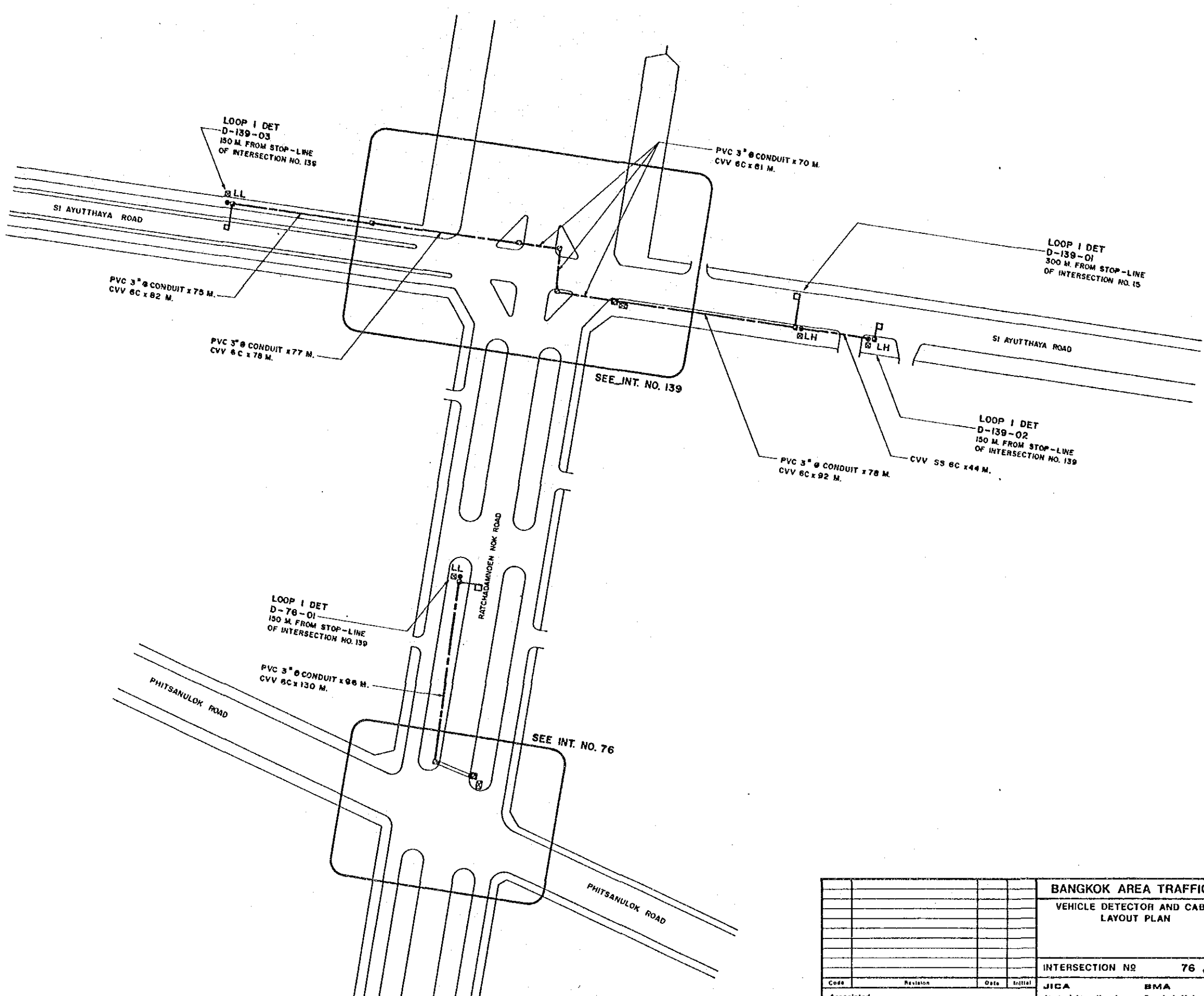
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonyawat Tipius BMA Study Team Leader
DESIGNED BY : Tasuo Kobayashi JICA Study Member		Checked By : TED.GMA	
INTERSECTION NO. 71		Scale : 1 / 1,000	Drawing NO. 4071
Associated Plan No. :		Date : SEPTEMBER '90	Total 37 / 86
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	



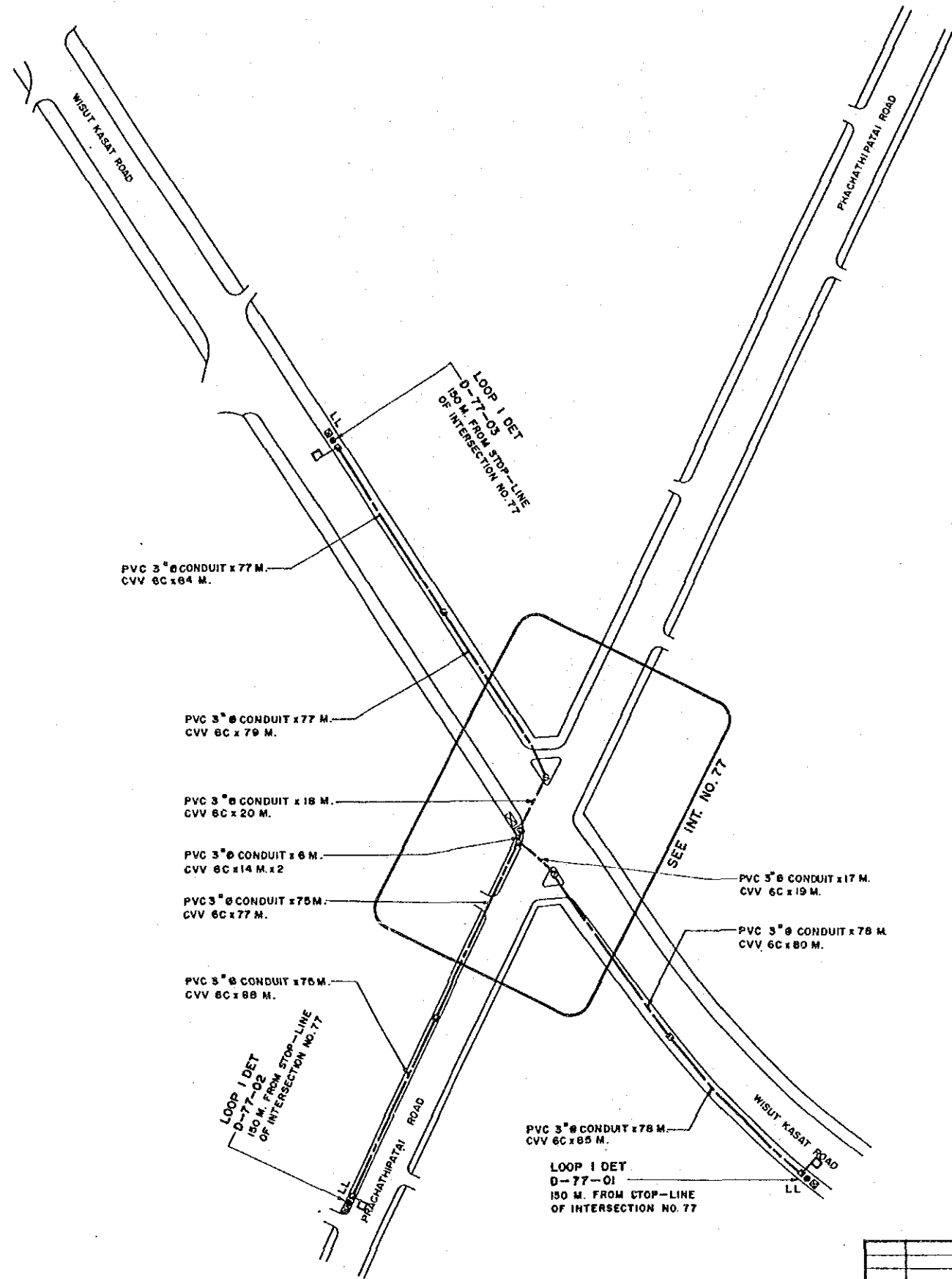
Detector Equipments List		
Drawing NO. 4072		
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	1
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	-
5	Loop Coil Cable	-
6	Loop Coil Feeder Cable	-
7	Ultrasonic Detector Unit	1
8	Ultrasonic Detector Head	1
9	Ultrasonic Detector Feeder Cable	8
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	1
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	58
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 38mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	58
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	1
26	Aerial Cable Supporter	-
27	Detector Cable 6c	71
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	-
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT Line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	1
36	Grounding Cable	5

				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Jun Kodera JICA Study Team Leader	Approved By : Weonyawal Tiplus BMA Study Team Leader
				INTERSECTION NO. 72		Designed By : Yasuo Mabeashima JICA Study Member	Checked By : TED, BMA
Code	Revision	Date	Initial	JICA	BMA	Scale : 1 / 1,000	Drawing No. 4072
Associated Plan No. :				Japan International Cooperation Agency	Bangkok Metropolitan Administration	Date SEPTEMBER '80	Total 38 / 86

Detector Equipments List		
Drawing NO. 4076		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	4
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	4
5	Loop Coil Cable	32
6	Loop Coil Feeder Cable	20
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	2
13	Type B Pole	2
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	396
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 38mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	96
22	Install Conduit under Concrete Pavement or Sidewalk	300
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	5
26	Aerial Cable Supporter	4
27	Detector Cable 6c	463
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	44
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	4
36	Grounding Cable	20

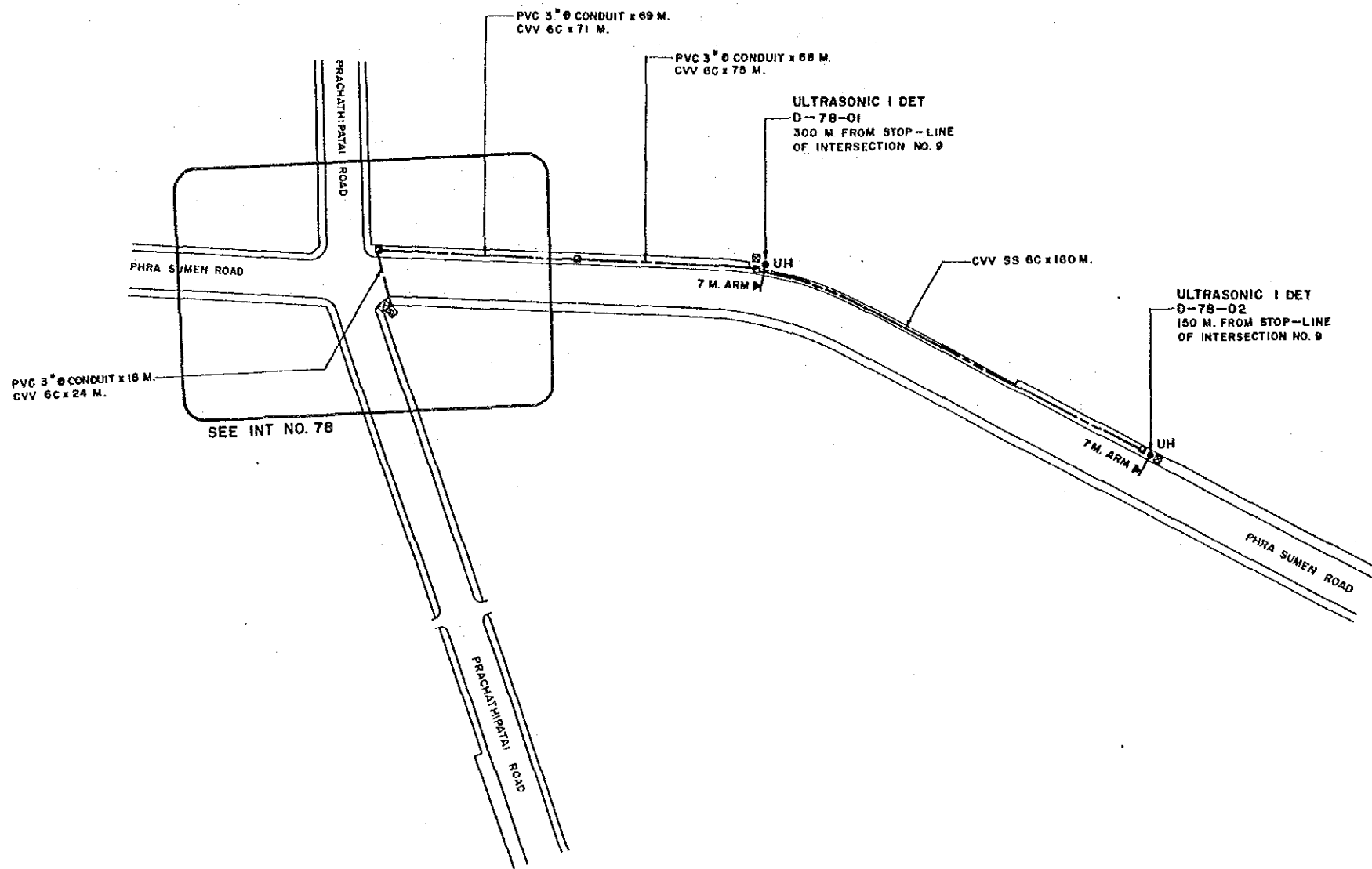


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonyawat Titus BMA Study Team Leader
INTERSECTION NO. 76, 139		Designed By : Yasuo Nabeshima JICA Study Member	Checked By : TED, BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale 1 / 1,000	Drawing NO. 4076
		Date SEPTEMBER '80	Total 39 / 86



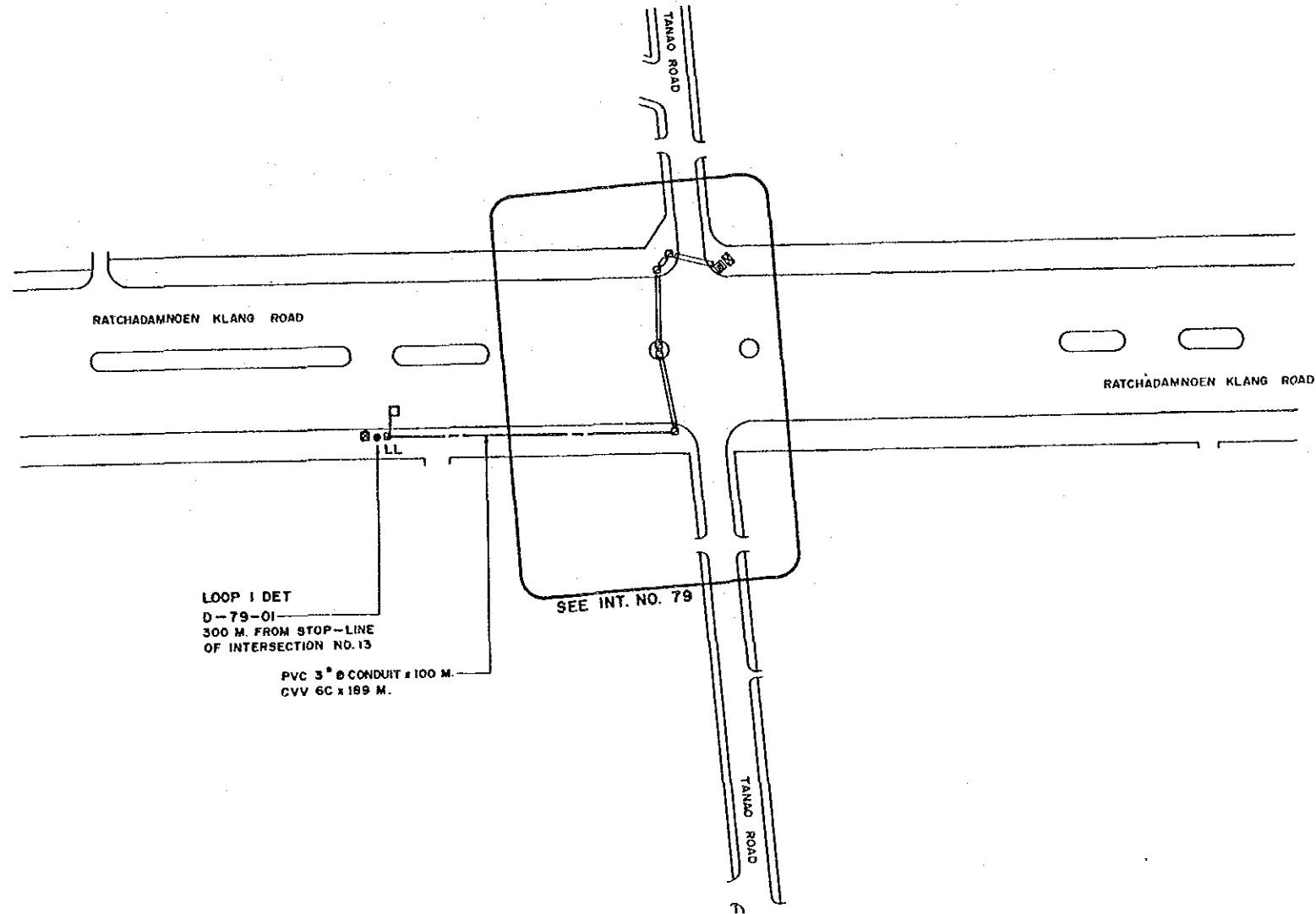
Detector Equipments List		
Drawing NO. 4077		
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	--
2	Detector Cabinet (without TTR Unit)	3
3	Pre-Processor of Detector Pulse	--
4	Loop Coil Detector Unit	3
5	Loop Coil Cable	24
6	Loop Coil Feeder Cable	15
7	Ultrasonic Detector Unit	--
8	Ultrasonic Detector Head	--
9	Ultrasonic Detector Feeder Cable	--
10	Supply Power Switch Box with Power Breaker	--
11	TOT Line Box	--
12	Type A Pole	3
13	Type B Pole	--
14	Type C Pole with 7.0m Arm	--
15	Type C Pole with 8.5m Arm	--
16	Assembly for Installation on Pedestrian Overpass	--
17	Conduit PVC 3" or 70mm	503
18	Conduit Steel 3" or 70mm	--
19	Conduit Steel 39mm	--
20	Conduit Steel 28mm	--
21	Install Conduit under Asphalt Pavement	--
22	Install Conduit under Concrete Pavement or Sidewalk	503
23	Install Conduit on Pedestrian Overpass	--
24	Install Conduit on Riser Support pole	--
25	Handhole Type C	6
26	Asial Cable Supporter	--
27	Detector Cable 5c	560
28	Detector Cable 8c	--
29	Detector Cable 12c	--
30	Detector Cable SS 6c	--
31	Detector Cable SS 8c	--
32	Detector Cable SS 12c	--
33	Power Cable	--
34	TOT line (CPV, 0.65mm, 1P)	--
35	Grounding Rod	3
36	Grounding Cable	15

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By :	Approved By :
		Juro Kodala JICA Study Team Leader	Manynawal Tiptas BMA Study Team Leader
		Designed By :	Checked By :
		Yasue Nobuhiko JICA Study Member	TEO.BMA
INTERSECTION NO 77		Scale 1 / 1,000	Drawing NO 4077
Associated Plan No. :		Date SEPTEMBER '90	Total 40 / 86



Detector Equipments List		
Drawing NO. 4078		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	2
2	Detector Cabinet (without TTR Unit)	2
3	Pre-Processor of Detector Pulse	2
4	Loop Coil Detector Unit	2
5	Loop Coil Cable	2
6	Loop Coil Feeder Cable	2
7	Ultrasonic Detector Unit	2
8	Ultrasonic Detector Head	2
9	Ultrasonic Detector Feeder Cable	16
10	Supply Power Switch Box with Power Breaker	2
11	TOT Line Box	2
12	Type A Pole	2
13	Type B Pole	2
14	Type C Pole with 7.0m Arm	2
15	Type C Pole with 8.5m Arm	2
16	Assembly for Installation on Pedestrian Overpass	2
17	Conduit PVC 3" or 70mm	153
18	Conduit Steel 3" or 70mm	2
19	Conduit Steel 39mm	2
20	Conduit Steel 28mm	2
21	Install Conduit under Asphalt Pavement	13
22	Install Conduit under Concrete Pavement or Sidewalk	140
23	Install Conduit on Pedestrian Overpass	2
24	Install Conduit on Riser Support pole	2
25	Handhole Type C	4
26	Aerial Cable Supporter	5
27	Detector Cable 6c	2
28	Detector Cable 8c	170
29	Detector Cable 12c	2
30	Detector Cable SS 6c	2
31	Detector Cable SS 8c	160
32	Detector Cable SS 12c	2
33	Power Cable	2
34	TOT line (CPV, 0.65mm, 1P)	2
35	Grounding Rod	2
36	Grounding Cable	10

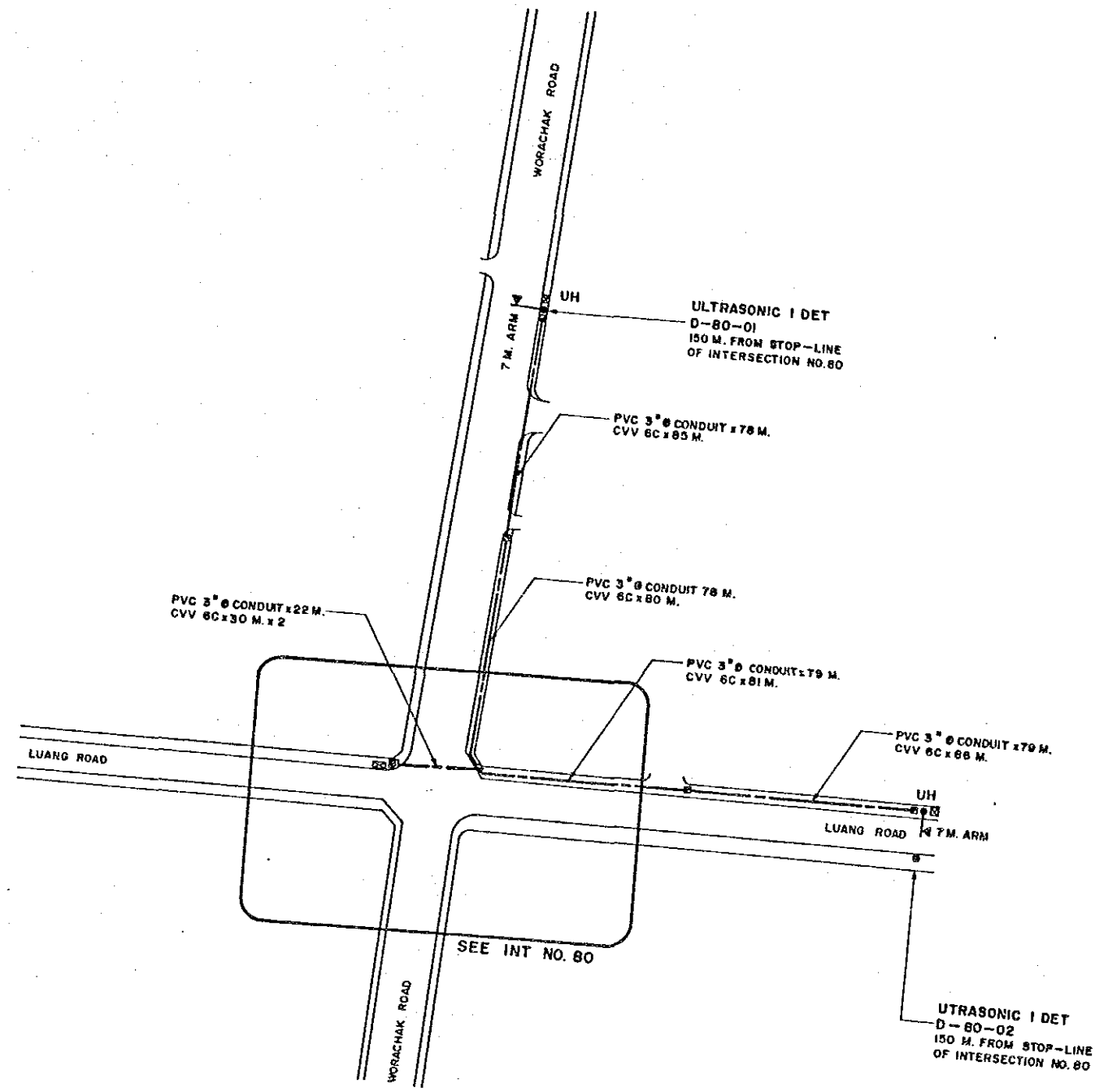
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Jura Kobara JICA Study Team Leader	Approved By : Boonyasri Tiptue BMA Study Team Leader
INTERSECTION NO 78		Designed By : Yasue Hasehima JICA Study Member	Checked By : TED, BMA
Code	Revision	Date	Issued
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale 1 / 1,000	Drawing No 4078
		Date SEPTEMBER '90	Total 41 / 86



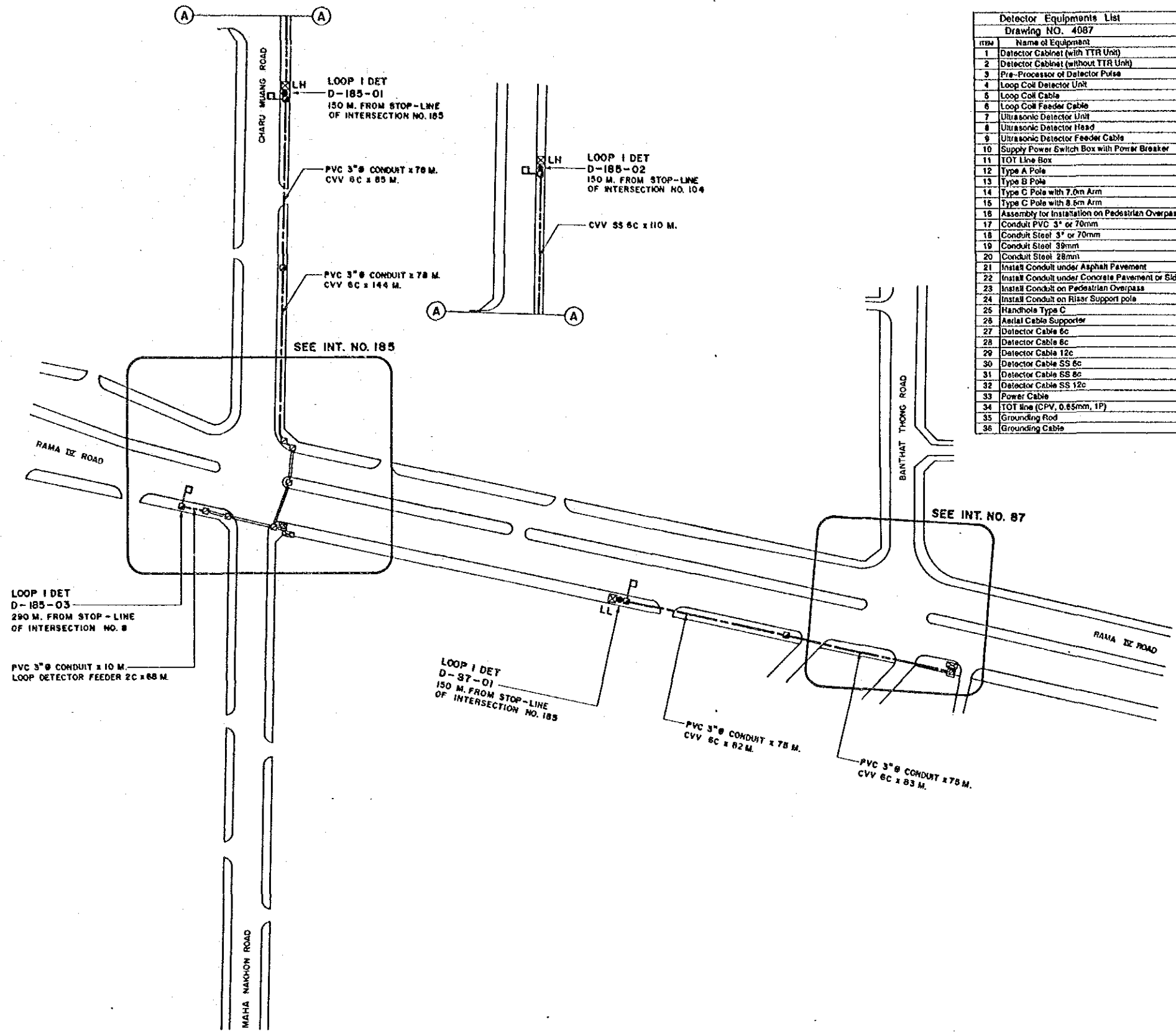
Detector Equipments List		
Drawing NO. 4079		
NO.	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	1
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	1
5	Loop Coil Cable	8
6	Loop Coil Feeder Cable	8
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	1
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	100
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 38mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	100
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Mandhole Type C	1
26	Aerial Cable Supporter	-
27	Detector Cable 6c	189
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable 6S 6c	-
31	Detector Cable 6S 8c	-
32	Detector Cable 6S 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	1
36	Grounding Cable	5

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I							
VEHICLE DETECTOR AND CABLE LAYOUT PLAN				Submitted By :	Approved By :		
				Jura Kodera JICA Study Team Leader		Boonyawat Tiptus BMA Study Team Leader	
INTERSECTION NO 79				Designed By :	Checked By :		
				Yasu Nabeshima JICA Study Member		TED, BMA	
Code	Revision	Date	Initial	JICA	BMA	Scale	1 / 1,000
Associated Plan No. :				Japan International Cooperation Agency	Bangkok Metropolitan Administration	Date	SEPTEMBER '90
						Drawing NO	4079
						Total	42 / 86

Detector Equipments List		
Drawing NO. 4080		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	2
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	-
5	Loop Coil Cable	-
6	Loop Coil Feeder Cable	-
7	Ultrasonic Detector Unit	2
8	Ultrasonic Detector Head	2
9	Ultrasonic Detector Feeder Cable	16
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	2
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	336
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	25
22	Install Conduit under Concrete Pavement or Sidewalk	311
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	6
26	Aerial Cable Supporter	-
27	Detector Cable 6c	374
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	-
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	2
36	Grounding Cable	10



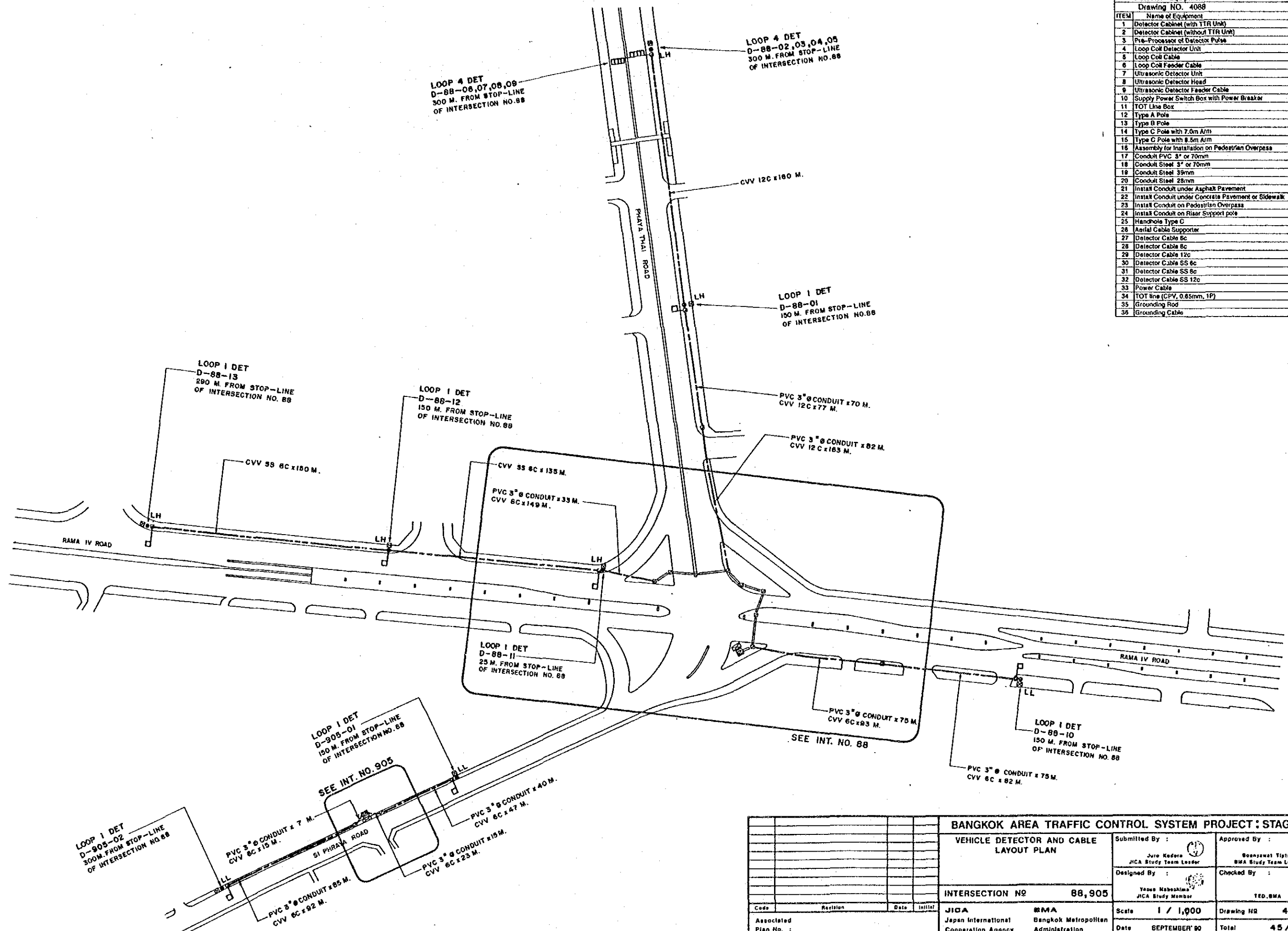
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN			
Submitted By :		Approved By :	
Juro Nadara JICA Study Team Leader		Boonyawat Titlus BMA Study Team Leader	
Designed By :		Checked By :	
Yasuo Nishizawa JICA Study Member		TED, BMA	
INTERSECTION NO 80		Scale 1 / 1,000	Drawing NO 4080
Associated Plan No. :		Date SEPTEMBER '80	Total 43 / 86
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	



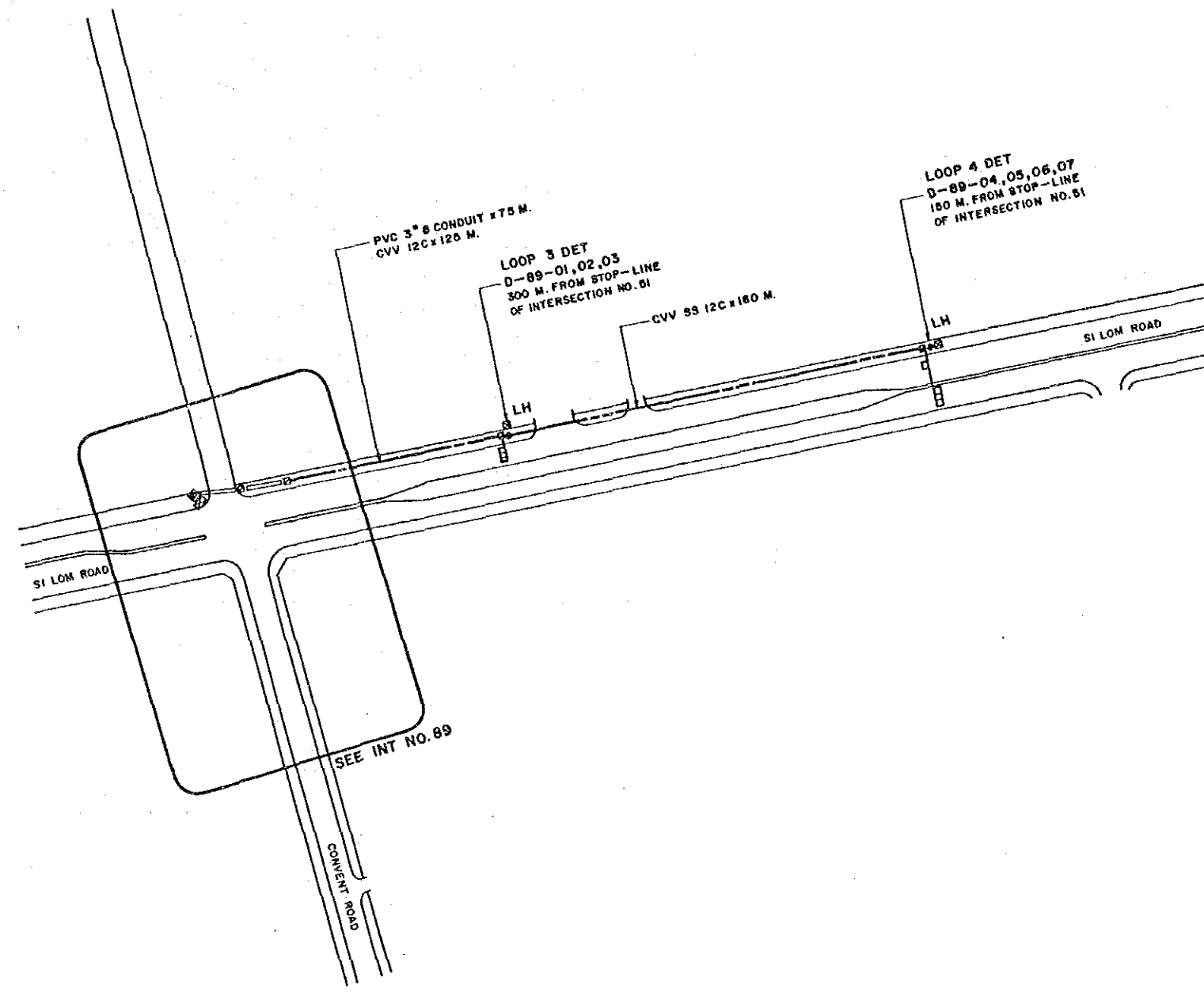
Detector Equipments List		
Drawing NO. 4087		
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	3
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	4
5	Loop Coil Cable	32
6	Loop Coil Feeder Cable	83
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	1
13	Type B Pole	2
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	318
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	318
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	6
26	Aerial Cable Supporter	4
27	Detector Cable 8c	394
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	110
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.85mm, 1P)	3
35	Grounding Rod	-
36	Grounding Cable	15

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I					
VEHICLE DETECTOR AND CABLE LAYOUT PLAN			Submitted By : Jiro Kabeira JICA Study Team Leader	Approved By : Boonyawat Tiptus BMA Study Team Leader	
INTERSECTION NO 87, 185			Designed By : Tasue Nabehkha JICA Study Member	Checked By : YED, BMA	
Code	Revision	Date	Initial	JICA	BMA
Associated Plan No. :			Japan International Cooperation Agency	Bangkok Metropolitan Administration	Scale 1 / 1,000
					Drawing NO 4087
					Date SEPTEMBER '80
					Total 44 / 86

Detector Equipments List		
Drawing NO. 4088		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	8
2	Detector Cabinet (without TTR Unit)	0
3	Pre-Processor of Detector Pulse	15
4	Loop Coil Detector Unit	15
5	Loop Coil Cable	120
6	Loop Coil Feeder Cable	150
7	Ultrasonic Detector Unit	0
8	Ultrasonic Detector Head	0
9	Ultrasonic Detector Feeder Cable	0
10	Supply Power Switch Box with Power Breaker	0
11	TOT Line Box	0
12	Type A Pole	3
13	Type B Pole	5
14	Type C Pole with 7.0m Arm	0
15	Type C Pole with 8.5m Arm	0
16	Assembly for Installation on Pedestrian Overpass	0
17	Conduit PVC 3" or 70mm	482
18	Conduit Steel 3" or 70mm	0
19	Conduit Steel 39mm	0
20	Conduit Steel 28mm	0
21	Install Conduit under Asphalt Pavement	0
22	Install Conduit under Concrete Pavement or Sidewalk	482
23	Install Conduit on Pedestrian Overpass	0
24	Install Conduit on Riser Support pole	0
25	Handhole Type C	10
26	Aerial Cable Supporter	15
27	Detector Cable 6c	357
28	Detector Cable 8c	149
29	Detector Cable 12c	240
30	Detector Cable SS 6c	295
31	Detector Cable SS 8c	0
32	Detector Cable SS 12c	180
33	Power Cable	0
34	TOT line (CPV, 0.65mm, 1P)	0
35	Grounding Rod	8
36	Grounding Cable	40

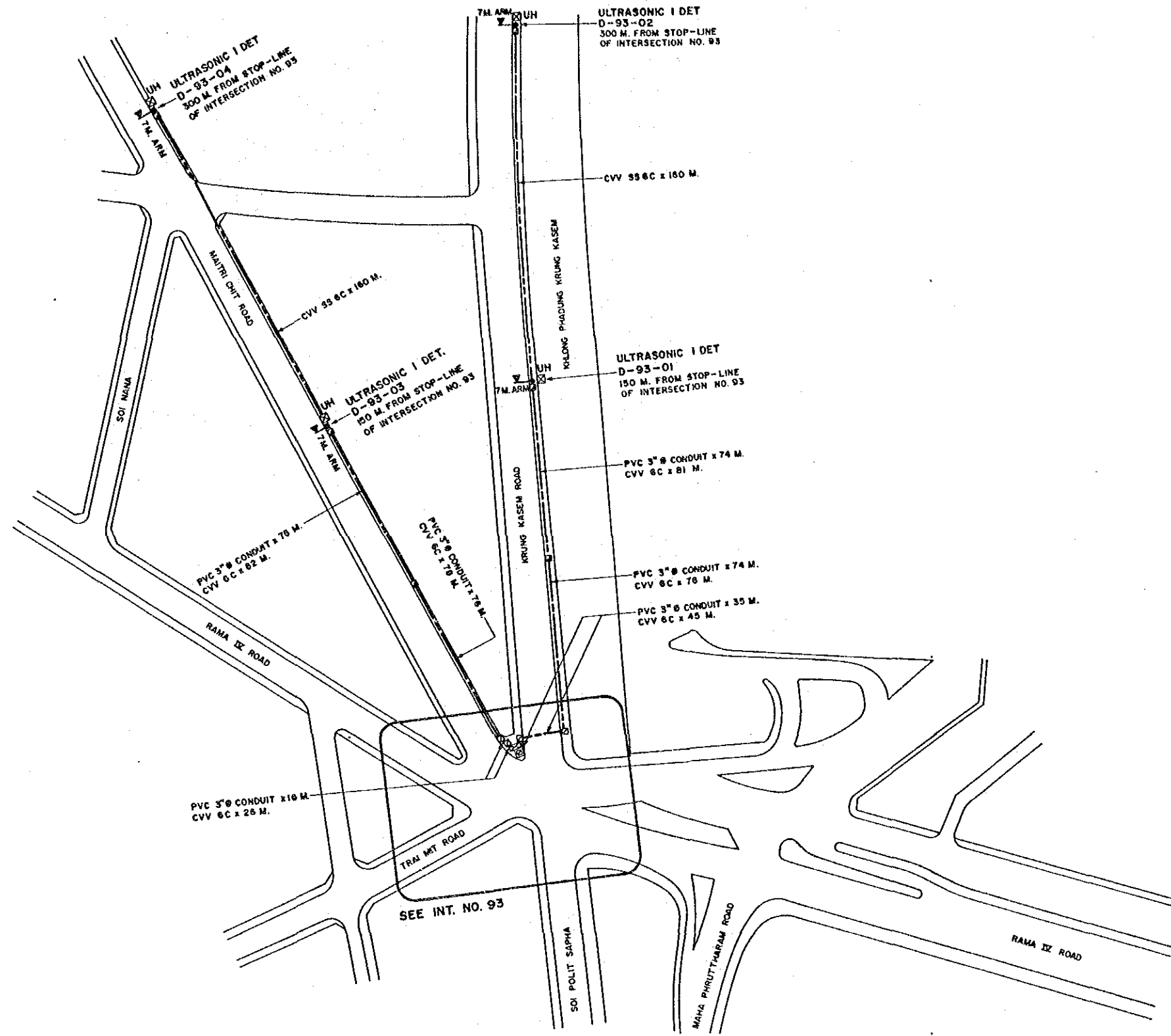


BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT: STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN			
Submitted By :		Approved By :	
Jira Kudara JICA Study Team Leader		Boonyawat Tiptan BMA Study Team Leader	
Designed By :		Checked By :	
Yasuo Nabeshima JICA Study Member		TED.BMA	
INTERSECTION NO 88,905		Scale 1 / 1,000	
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	
Date SEPTEMBER '90		Drawing NR 4088	
Total 45 / 86			



Detector Equipments List		
Drawing NO. 4089		
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	2
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	7
5	Loop Cable	66
6	Loop Coil Feeder Cable	35
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	2
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 6.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	76
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	76
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	2
26	Aerial Cable Supporter	8
27	Detector Cable 6c	-
28	Detector Cable 8c	-
29	Detector Cable 12c	125
30	Detector Cable 5S 6c	-
31	Detector Cable 5S 8c	-
32	Detector Cable 5S 12c	160
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	2
36	Grounding Cable	10

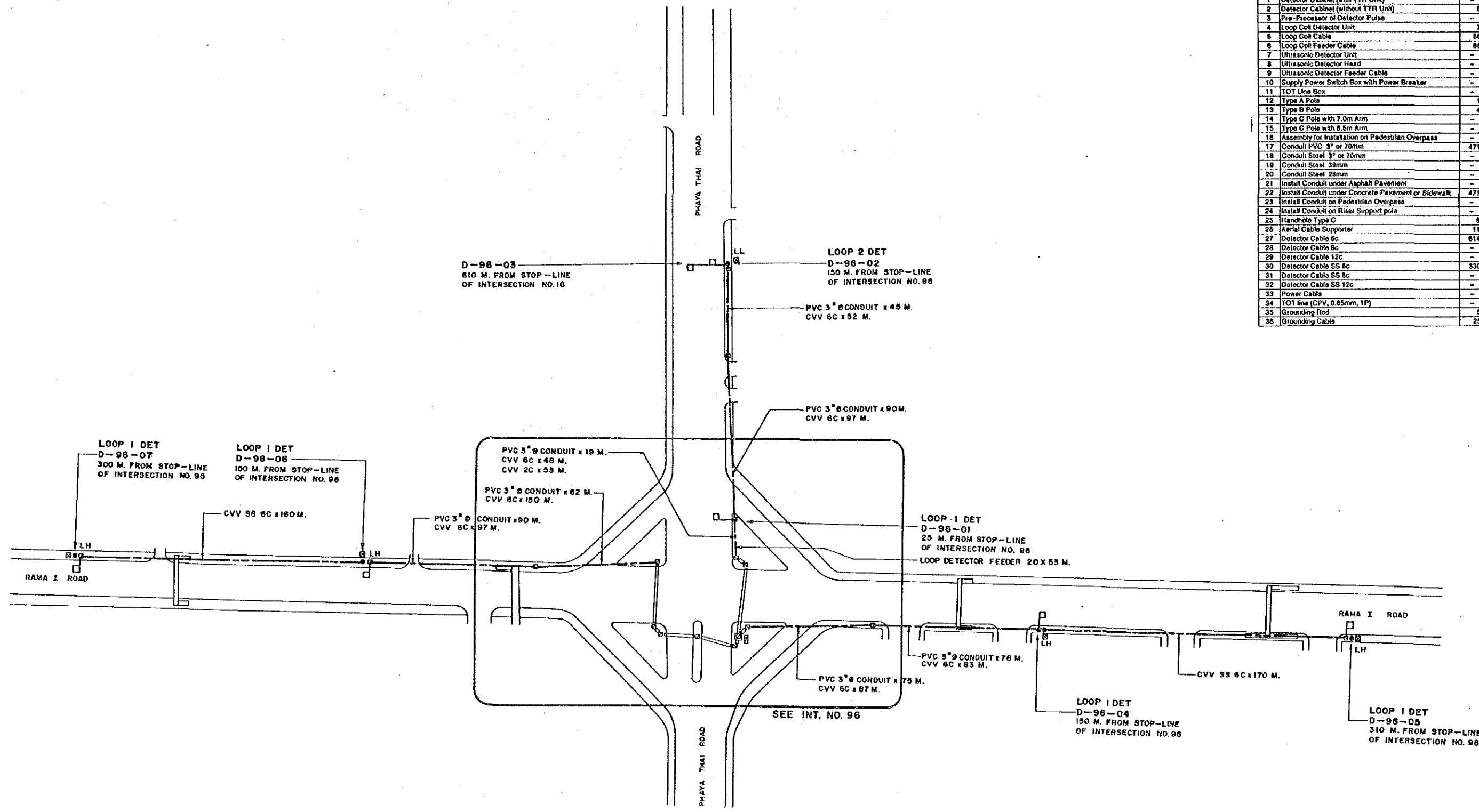
BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN			
Submitted By :		Approved By :	
Juro Kodera JICA Study Team Leader		Sanyawat Tiplua BMA Study Team Leader	
Designed By :		Checked By :	
Yasuo Nabeshima JICA Study Member		TED_BMA	
INTERSECTION NO. 89		Scale 1 / 1,000	
Associated Plan No. :		Drawing No. 4089	
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	
Date SEPTEMBER '90		Total 46 / 86	



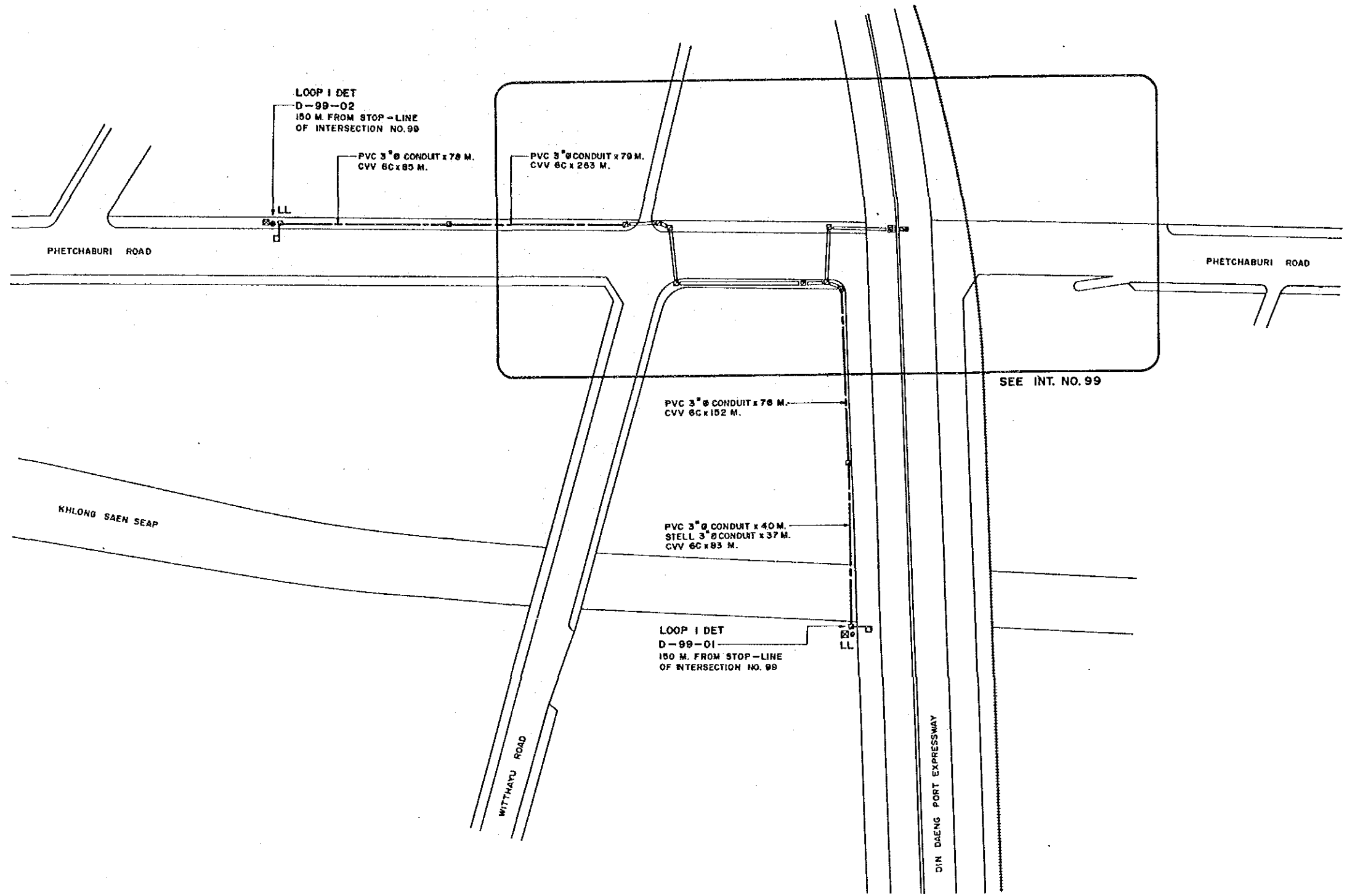
Detector Equipments List		
Drawing NO. 4093		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	4
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	-
5	Loop Coil Cable	-
6	Loop Coil Feeder Cable	-
7	Ultrasonic Detector Unit	4
8	Ultrasonic Detector Head	4
9	Ultrasonic Detector Feeder Cable	32
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	-
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	4
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	350
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 33mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	350
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	6
26	Aerial Cable Supporter	10
27	Detector Cable 6c	388
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	320
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	4
36	Grounding Cable	20

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Jiro Kaida JICA Study Team Leader	Approved By : Boonyawat Tiptas BMA Study Team Leader
INTERSECTION NO 93		Designed By : Yasuo Hoshizawa JICA Study Member	Checked By : TZO.BMA
Code	Revision	Date	Initial
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration
		Scale 1 / 1,000	Drawing No 4093
		Date SEPTEMBER '90	Total 47 / 86

Detector Equipments List		
Drawing NO. 4096		
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	6
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	7
5	Loop Coil Cable	56
6	Loop Coil Feeder Cable	88
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	1
13	Type B Pole	4
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	471
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 38mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	471
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	9
26	Aerial Cable Supporter	11
27	Detector Cable 6c	614
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	330
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	5
36	Grounding Cable	25



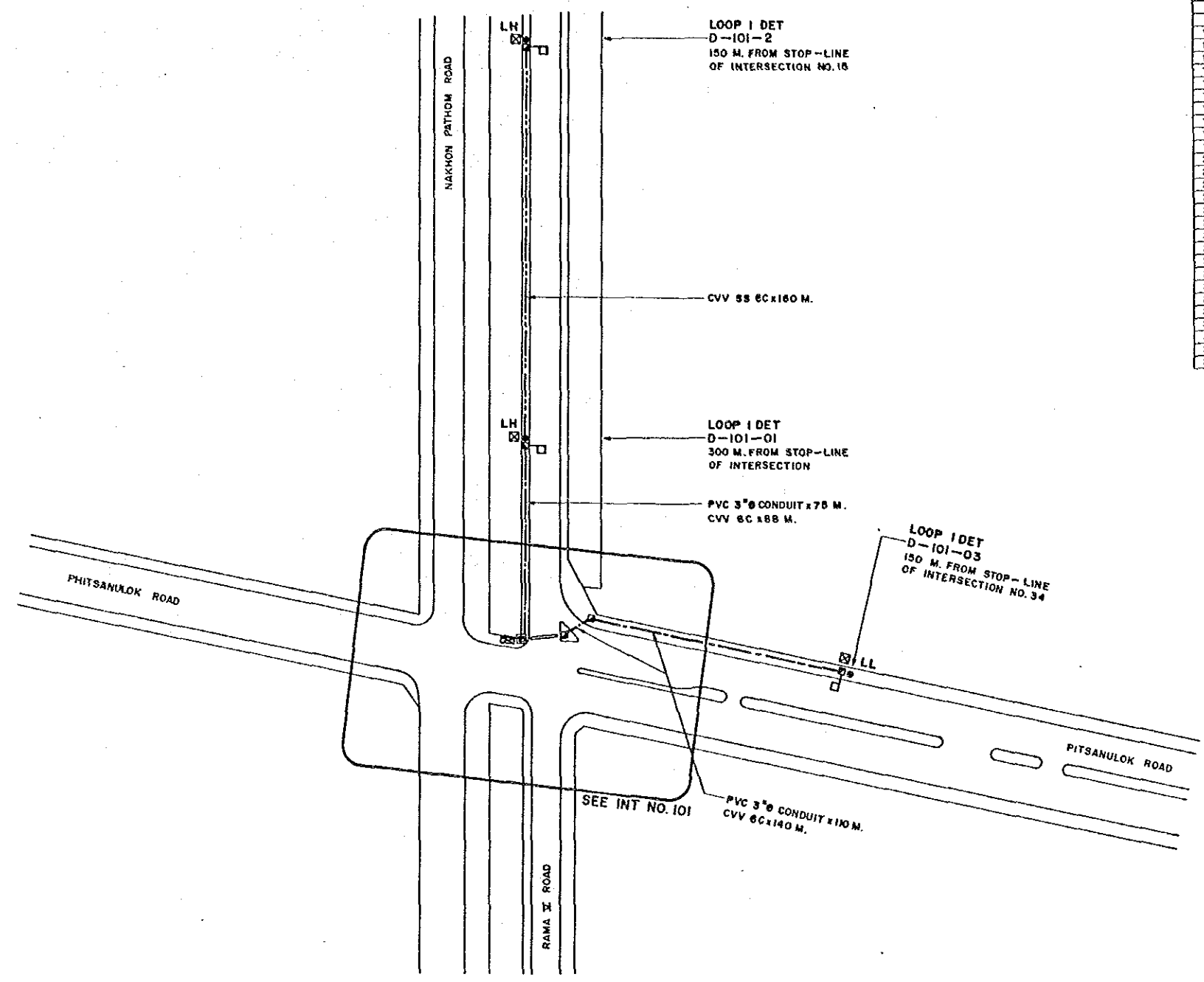
				BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
				VEHICLE DETECTOR AND CABLE LAYOUT PLAN		Submitted By : Jiro Kodera JICA Study Team Leader	Approved By : Boonyawat Titipus BMA Study Team Leader
				Designed By : Yasuo Mabeshima JICA Study Member	Checked By : TED, BMA		
		INTERSECTION NO. 96		Scale : 1 / 1,000	Drawing NO. 4096		
Associated Plan No. :		JICA Japan International Cooperation Agency	BMA Bangkok Metropolitan Administration	Date : SEPTEMBER '90	Total : 48 / 86		







Detector Equipments List		
Drawing NO. 4099		
ITEM	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	2
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	2
5	Loop Coil Cable	16
6	Loop Coil Feeder Cable	10
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	2
13	Type B Pole	-
14	Type C Pole with 7.0m Arm	-
15	Type C Pole with 8.5m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	273
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	273
23	Install Conduit on Pedestrian Overpass	37
24	Install Conduit on Riser Support pole	-
25	Handhole Type C	4
26	Aerial Cable Supporter	-
27	Detector Cable 6c	583
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	-
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT Line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	2
36	Grounding Cable	10

BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I					
VEHICLE DETECTOR AND CABLE LAYOUT PLAN			Submitted By : Juro Kodera JICA Study Team Leader	Approved By : Boonyawat Tiplus BMA Study Team Leader	
INTERSECTION NO 99			Designed By : Yasue Nobuhisa JICA Study Member	Checked By : TED, BMA	
Code	Revision	Date	Initial	JICA	BMA
Associated Plan No. :			Japan International Cooperation Agency	Bangkok Metropolitan Administration	Scale 1 / 1,000
					Date SEPTEMBER '90
					Drawing HQ 4099
					Total 49 / 86

Detector Equipments List		
Drawing NO. 4101		
Item	Name of Equipment	Qty.
1	Detector Cabinet (with TTR Unit)	-
2	Detector Cabinet (without TTR Unit)	3
3	Pre-Processor of Detector Pulse	-
4	Loop Coil Detector Unit	3
5	Loop Coil Cable	24
6	Loop Coil Feeder Cable	15
7	Ultrasonic Detector Unit	-
8	Ultrasonic Detector Head	-
9	Ultrasonic Detector Feeder Cable	-
10	Supply Power Switch Box with Power Breaker	-
11	TOT Line Box	-
12	Type A Pole	1
13	Type B Pole	2
14	Type C Pole with 7.6m Arm	-
15	Type C Pole with 8.6m Arm	-
16	Assembly for Installation on Pedestrian Overpass	-
17	Conduit PVC 3" or 70mm	185
18	Conduit Steel 3" or 70mm	-
19	Conduit Steel 39mm	-
20	Conduit Steel 28mm	-
21	Install Conduit under Asphalt Pavement	-
22	Install Conduit under Concrete Pavement or Sidewalk	185
23	Install Conduit on Pedestrian Overpass	-
24	Install Conduit on Riser Support pole	-
25	Handhole Type G	4
26	Aerial Cable Supporter	5
27	Detector Cable 6c	228
28	Detector Cable 8c	-
29	Detector Cable 12c	-
30	Detector Cable SS 6c	180
31	Detector Cable SS 8c	-
32	Detector Cable SS 12c	-
33	Power Cable	-
34	TOT line (CPV, 0.65mm, 1P)	-
35	Grounding Rod	3
36	Grounding Cable	15



BANGKOK AREA TRAFFIC CONTROL SYSTEM PROJECT : STAGE I			
Code Revision Date Initial Associated Plan No. :		VEHICLE DETECTOR AND CABLE LAYOUT PLAN Submitted By :  JICA Study Team Leader Approved By :  BMA Study Team Leader Designed By :  JICA Study Member Checked By :  TED, BMA	
JICA Japan International Cooperation Agency		BMA Bangkok Metropolitan Administration	
Scale 1 / 1,000		Drawing No 4101	
Date SEPTEMBER '90		Total 50 / 86	