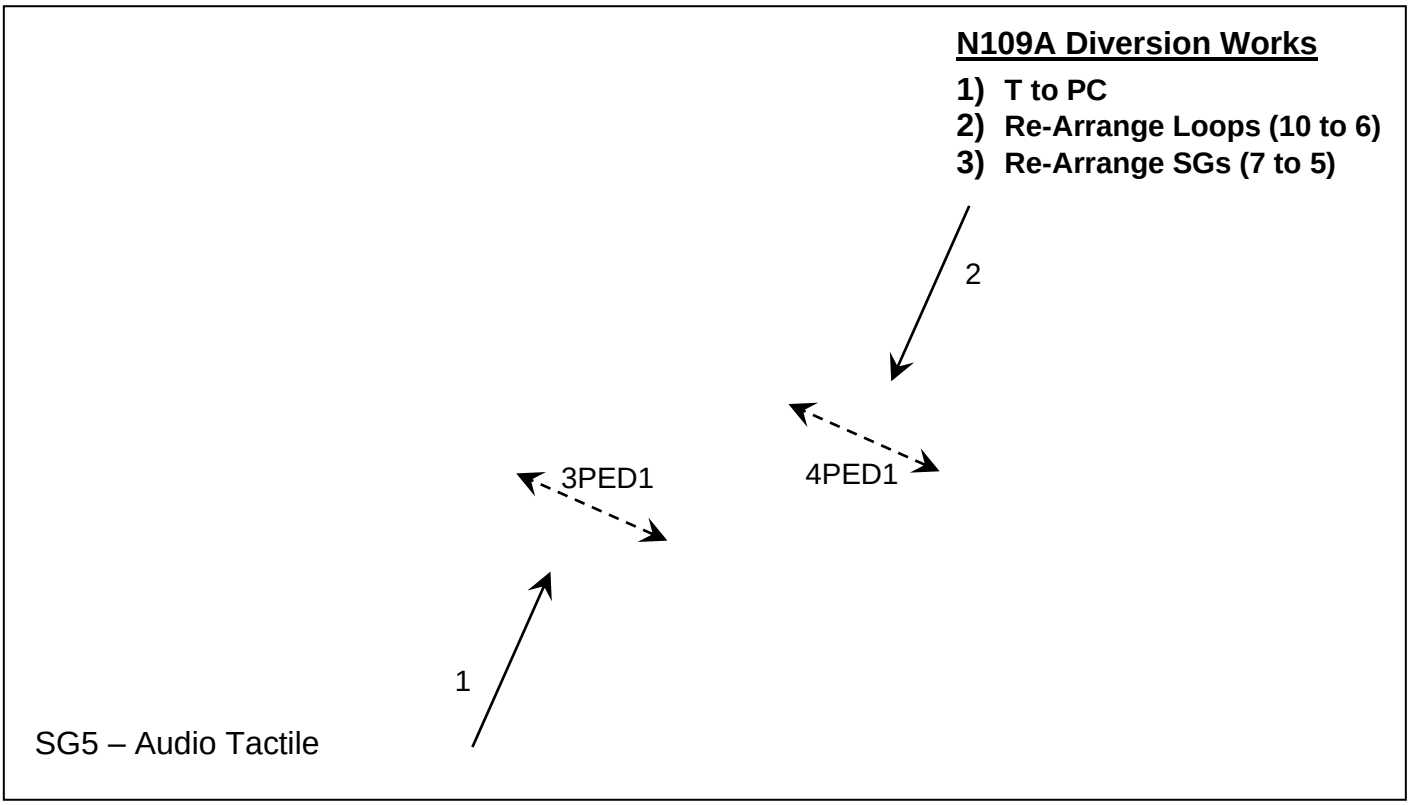
OPERATIONS SHEET

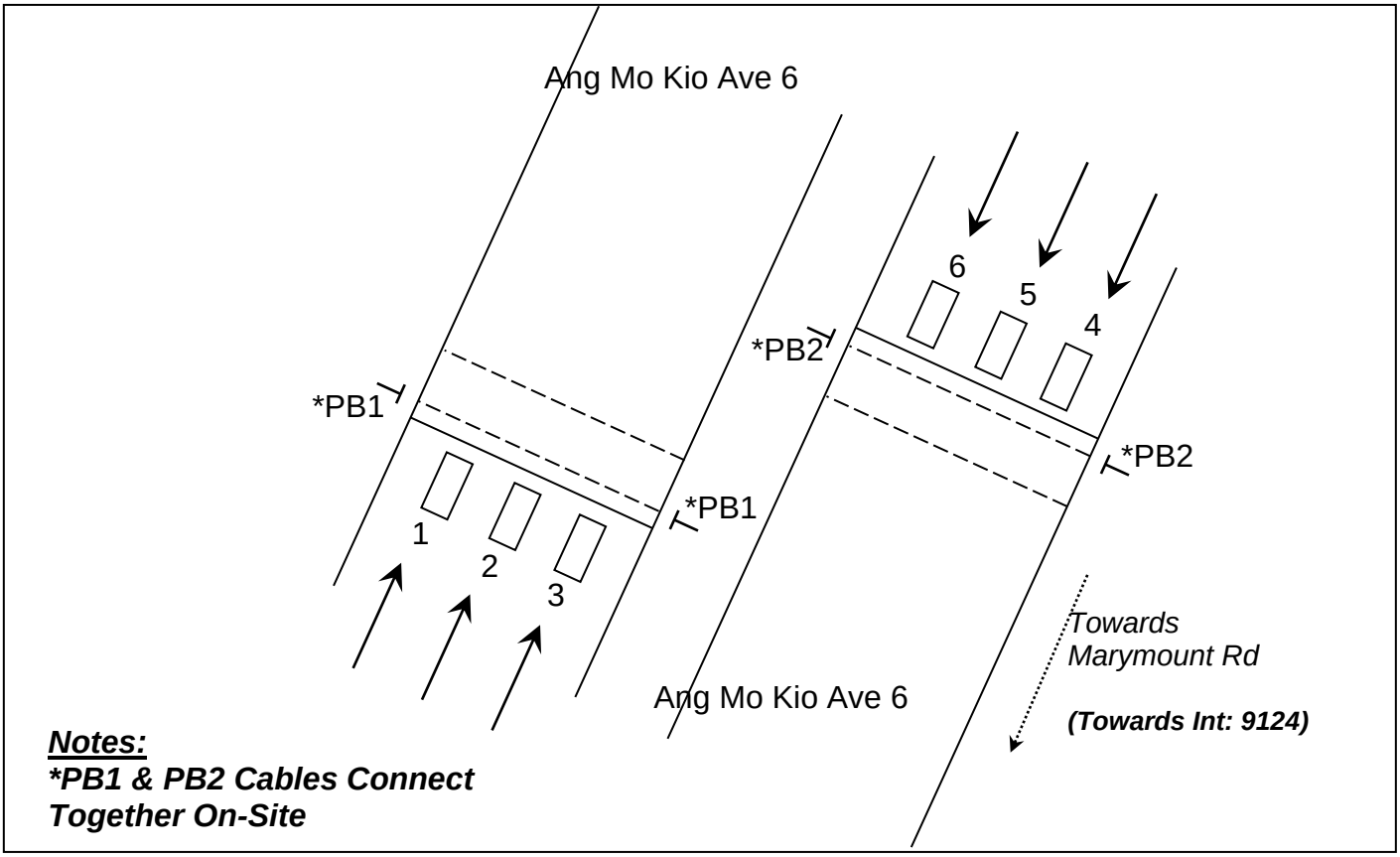
Location: Ang Mo Kio Ave 6 / Ang Mo Kio ST 24 Int. No: 9123

Prepared by: Chen Eng Heng Date: 19 / 08 / 2022 Signal ID: 1755

Checked by: Carissa Ma

Approved by: Simon Ho

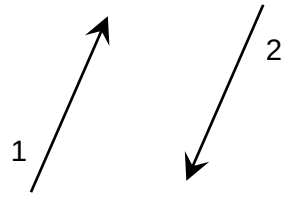




PHASING DIAGRAM

Location: Ang Mo Kio Ave 6 / Ang Mo Kio ST 24 Int. No: 9123

A



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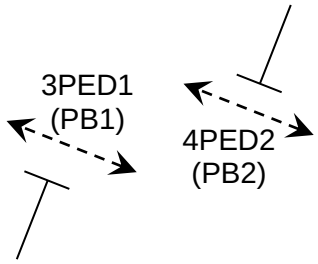

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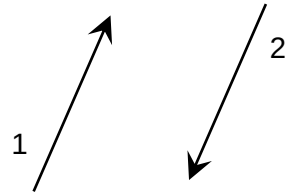

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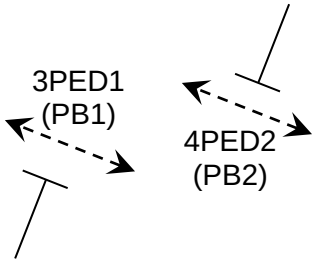

NOTES:

- If phase change switch is equal or more than TSM 15, controller will send out MSS15 flag.
- A & C phases are placed on permanent demand in all modes.
- PED1 is introduced when Push Button **PB1** is activated.
- PED2 is introduced when Push Button **PB2** is activated.
- In Police Control Mode, running A and B phase only.
- In Masterlink Mode, PED1 is Auto Called if Y- flag is on.
- In Flexilink Mode, PED1 is Auto Called if Y+ flag is on.
- SG **5** Audio Tactile is controlled by **Z+** Flag.

PB1 Control:

1. ***PB1 Call 3PED1***
2. ***PB1 "ON" send MSS11***
3. ***3PED1 introduce by PB1 or XSF11***
4. ***3PED1 WK, clear MSS11***

PB2 Control:

5. ***PB2 Call 4PED2***
6. ***PB2 "ON" send MSS12***
7. ***4PED2 introduce by PB2 or XSF12***
8. ***4PED2 WK, clear MSS12***

Notes:

****PB1 & PB2 Cables Connect Together On-Site***

DETECTOR FUNCTION

Location: Ang Mo Kio Ave 6 / Ang Mo Kio ST 24 Int. No: 9123

DETECTOR /PUSH BUTTON NO	CALL PHASE	LOCKING	NON LOCKING	SET VIG ON PHASE	EXTEND PHASE	SPECIAL	DETECTOR ALARMS			PLAN REFERENCE
							FAULT SIMULATION			
							CALL & EXTEND	CALL ONLY	DISABLE	
1	A	A				For Traffic Counts				
2	A	A				For Traffic Counts				
3	A	A				For Traffic Counts				
4	A	A				For Traffic Counts				
5	A	A				For Traffic Counts				
6	A	A				For Traffic Counts				
7										
8										
9										
10										
11										
12										
13										
14										
15						PHASE CHANGE SWITCH			✓	
16						POLICE CONTROL SWITCH			✓	
PB1	B, D	✓				***PUSH BUTTON PED1***		✓		
PB2	B, D	✓				***PUSH BUTTON PED2***		✓		
PB3										
PB4										
PB5										
PB6										
PB7										
PB8										

Notes:
****PB1 & PB2 Cables Connect Together On-Site***

TICK IF DETECTOR FAILURE CAUSES AN ALARM ON DET. 16.

INTERGREEN, PEDESTRIAN TIMES AND SPECIAL FUNCTIONS

Location: Ang Mo Kio Ave 6 / Ang Mo Kio ST 24 Int. No: 9123

PHASE	CLEARANCE MOVEMENT	CLEARANCE DISTANCE	INTERGREEN		
			AMBER	RED	TOTAL
A			3	3	6
B			3		3
C			3	3	6
D			3		3
E					
F					
G					

PED NO.	PHASE	WALK		CLEARANCE TIME	
		DISTANCE (m)	GREEN TIME	1	2
1	B/D	10	6	13	
2	B/D	9.8	6	13	
3					
4					
5					
6					
7 (GM+)					

Pedestrian Walking Speed: **0.8** m/s

SPECIAL FACILITIES

SIGNAL GROUP	HOUR	MINUTE	SECOND	FUNCTION	REMARKS
SG5	21	00	00	Audio Tactile “OFF”	Controlled by Z+ Flag
	07	00	00	Audio Tactile “ON”	

PRE-EMPTION

SIGNAL GROUP	PHASE	FUNCTION	REMARKS

CONTROLLER TIMESETTING

Location: Ang Mo Kio Ave 6 / Ang Mo Kio ST 24 Int. No: 9123

	PHASE	A	B	C	D	
	INTERVAL	1	2	3	4	Range
RED/YELLOW	1					0 – 5
LATE START	2					0 – 20
MINIMUM GREEN	3	20	6	14	6	5 – 20
INCREMENT	4					0 – 5
MAX. V. I. G.	5					0 – 40
MAX. EXT. GREEN	6	60		24		0 – 150
EARLY CUT-OFF	7					0 – 20
AMBER	8	3	3	3	3	3 – 7
ALL RED	9	3		3		0 – 15
SPECIAL ALL RED	10					0 – 15
GAP 1	11					0 –10
GAP 2	12					0 –10
GAP 3	13					0 –10
GAP 4	14					0 –10
HEADWAY 1	15					0 – 5
HEADWAY 2	16					0 – 5
HEADWAY 3	17					0 – 5
HEADWAY 4	18					0 – 5
WASTE 1	19					0 – 50
WASTE 2	20					0 – 50
WASTE 3	21					0 – 50
WASTE 4	22					0 – 50
MAXIMUM 1	23					0 – 150
MAXIMUM 2	24					0 – 150
MAXIMUM 3	25					0 – 150
MAXIMUM 4	26					0 – 150

ALTERNATE TIME SETTING (RANGE 0-200)
('B' ENTER)

ALT. NO	TIME
11	40 Sec
12	
13	16 Sec
14	
15	50 Sec
16	
17	
18	
19	
20	5 sec

In A∅ subs TSM 13 (16 sec) to PED 1,2 WALK

Maximum V. A. Cycle Time: _____

☑ In Flexilink Operation,

If Z− flag = C (255), A phase's Max Extension Green = TSM 11

☑ In Isolated Operation,
A and C phase = Max. Ext. Green

Key RAM = 16 sec (TSM13)

	PEDESTRIAN NO.	1	2	3	4	5	6	7	8	
	INTERVAL	17	18	19	20	21	22	23	24	Range
DELAY	1									0 – 20
WALK	2	6	6							0 – 40
CLEARANCE 1	3	13	13							0 – 40
CLEARANCE 2	4									0 – 10
PAC		7	7							

CO-ORDINATION DATA

Location: Ang Mo Kio Ave 6 / Ang Mo Kio St 24 Int. No: 9123

SPECIAL FUNCTIONS

SIGNAL	FUNCTION
Y− FLEXI	CONTINUOUS
Y− MASTER	AUTO CALL PUSH BUTTON PED1
Y+ FLEXI	
Z− FLEXI	A PHASE ALTERNATE MAXIMUM EXTENSION GREEN (TSM11)
Z− MASTER	
Z+ FLEXI	SET SG5 AUDIO TACTILE “ON”
Z+ MASTER	
R− FLEXI	
R+ FLEXI	
Q− FLEXI	
Q+ FLEXI	
Z1 MASTER	
Z MASTER	
Z MASTER	
Z MASTER	

LOOK AHEADS AND RELEASES

Phase Sequence 1			Phase Sequence 2		
PHASE	LOOK AHEAD	RELEASE	PHASE	LOOK AHEAD	RELEASE
A	NO		A	NO	
B	NO	Auto	B		
C	NO		C		
D	Yes, To A	Auto	D		
E			E		
F			F		
G			G		

The following phases can be inhibited in Flexilink by omitting the call pulses in the plan data _____

NO	PHASE SEQUENCE
1 (No)	A B C D
2 ( )	

GLIDE INTERSECTION DATA

Location: Ang Mo Kio Ave 6 / Ang Mo Kio St 24 Int. No: 9123

Note: The data shown on this page should be entered when the intersection is first placed on line. This data is not necessarily used for Master Link operation.

SLOT = 119 (RC9) = 4, 1, 2	E.g. x, y, z. x = No of Phases y = No of Split Plans z = No of PEDs

INT = 9123
VC = 5
CS =
COM = *(Port) 7 / 8*
PK =
S# = 52
LM = MF
RMN =
DCL = 130
VOLS = 1 – 6
VP# =
AT = 6
BT = 3
CT = 6
DT = 3
ET =
FT =
GT =
W1 = 0
W1T = 16
W2 = 0
W2T = 16
W3 =
W3T =

Date:	Date:
PP1 = 0, 0 ^A	PP1 =
PP2 = 0, 0 ^A	PP2 =
PP3 = 0, 0 ^A	PP3 =
PP4 = 0, 0 ^A	PP4 =

Note: Always LM = F initially

Variation Parameter (VP)

VP1 =	VP8 =	VP15 =	VP22 =	VP29 =
VP2 =	VP9 =	VP16 =	VP23 =	VP30 =
VP3 =	VP10 =	VP17 =	VP24 =	VP31 =
VP4 =	VP11 =	VP18 =	VP25 =	VP32 =
VP5 =	VP12 =	VP19 =	VP26 =	VP33 =
VP6 =	VP13 =	VP20 =	VP27 =	VP34 =
VP7 =	VP14 =	VP21 =	VP28 =	VP35 =

	P–	
	P–	P+
	P–	P+
	P–	P+

W4 =		
W4T =	P–	P+
W5 =		
W5T =	P–	P+
W6 =		
W6T =	P–	P+

23+6 = 26m
+6 = 32m

SPLIT PLANS

	SF / FEATURES	1	2	3	4
A	0 FG NG PD B	0 B			
B	FS C	32# C			
C	FG NG PD D	30# D			
D	A	32# C			
E					
F					
G					

SF / FEATURES	5	6	7	8

PLAN DATA

Location: Ang Mo Kio Ave 6 / Ang Mo Kio St 24 Int. No: 9123

PLAN

('E' ENTER)

		1	2	3	4	5	6	7	8	9	10
0	**CL**	178	150		178	100	130	150			
1	**A**	4	102		4	40	15	113			
2	**B**	82	2		82	16	45	13			
3	**C**	117	37		117	17	80	48			
4	**D**	147	67		147	18	110	78			
5	**E**										
6	**F**										
7	**G**										
8	**R−**										
9	**R+**										
10	**Y−**	C	C		C	C	C	C			
11	**Y+**										
12	**Z−**	N	N		N	N	N	N			
13	**Z+**	C	C		C	N	N	C			
14	**Q−**										
15	**Q+**										
16	**XSF (9-16)***										
17	**XSF (1-8)***										

* A digit hexadecimal number which signifies which XSF bits are used; e.g. A0 signifies bits 14 & 16 are set.

NOTE: C = Continuous (255) N = Not Used (254)

PLAN SCHEDULE

('F' ENTER)

CODE	HOUR	MINUTE	PLAN
8	0	0	5
8	**7**	**0**	**1**
8	9	0	7
8	12	0	2
8	17	0	4
8	**21**	**0**	**6**
8	23	0	5
7	0	0	5
7	**7**	**0**	**7**
7	9	0	7

CODE	HOUR	MINUTE	PLAN
7	12	0	4
7	15	0	2
7	**21**	**0**	**6**
7	23	0	5
1	0	0	5
1	**7**	**0**	**7**
1	9	0	7
1	14	0	2
1	**21**	**0**	**6**
1	23	0	5

Pedestrian and Vehicle Signal Groups Interlock Table

Location: Ang Mo Kio Ave 6 / Ang Mo Kio St 24 Int. No: 9123

	Phase A	Phase B	Phase C	Phase D	Phase E	Phase F	Phase G
SG 1	SGAR	RED	SGAR	RED			
SG 2	SGAR	RED	SGAR	RED			
SG 3	DON'T	WALK	DON'T	WALK			
SG 4	DON'T	WALK	DON'T	WALK			
SG 5	AUDIO TACTILE						
SG 6							
SG 7							
SG 8							
SG 9							
SG 10							
SG 11							
SG 12							
SG 13							
SG 14							
SG 15							
SG 16							

Legend:

GAR	Green, Amber, Red
GEAR	Green, Amber, Red (With ECO)
RED	Red
SGRN	Special Green
SOFF	Special Off
WALK	PED Walk, Clearance 1 and Clearance 2
SWALK	Special PED Walk, Clearance 1 and Clearance 2
DON'T	PED Red

Appendix A

Signal Groups Conflict Matrix

Location: Ang Mo Kio Ave 6 / Ang Mo Kio St 24 Int. No: 9123

('C16' ENTER)

SG	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1			X	X												
2			X	X												
3	X	X														
4	X	X														
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																