OPERATIONS SHEET

Location: Tanjong Pagar / Lim Teck Kim Rd / Bernam St Int. No: 106

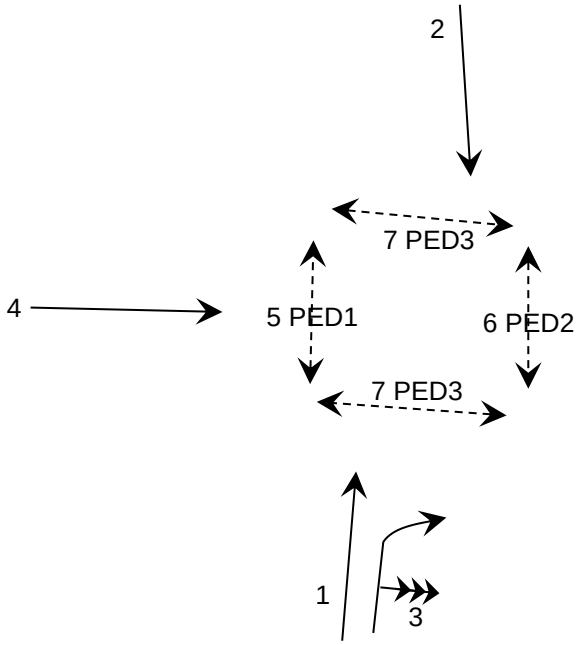
Prepared by: Lang Jie Date: 06 / 06 / 2023 Signal ID: 843

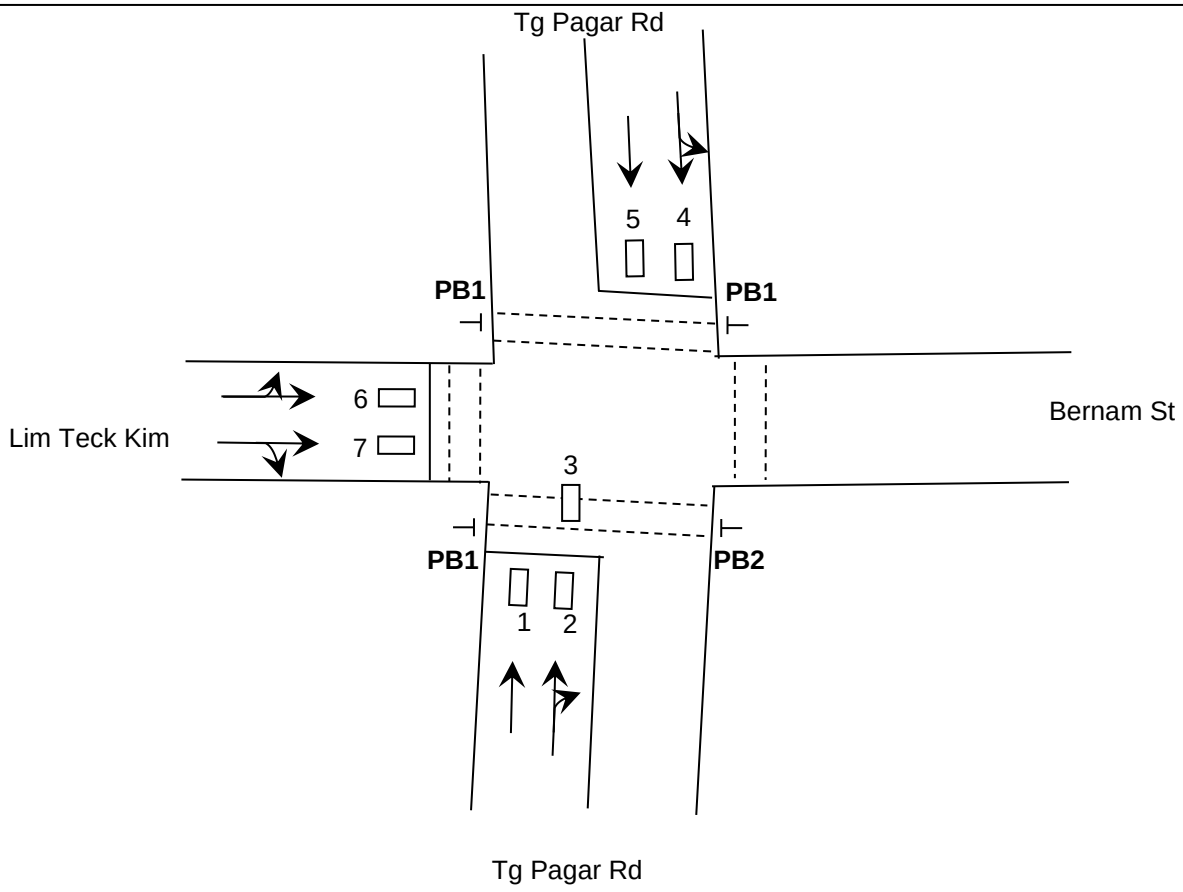
Checked by: Jeremy Chung

Approved by: Simon Ho

GOMS: 20230512-0321

1. Add RAG in B phase
2. Add PC crossing & PBs at Tg Pagar
3. Reduce 1 lane at Lim Teck Kim
4. Re-arranged Loops (8 to 7)
5. Ban SG1 in B phase





REMARKS

Location: _____ Int. No: 106

☑ If phase change switch is equal or more than TSM15, controller is to send out MSS15 flag

☐ If phase _____ is not introduced, SG _____ will flash for 3 seconds (TSM 14) in All-Red.

☐ If phase _____ is not introduced, SG _____ will flash for 3 seconds (TSM 14) in All-Red.

☑ B, C phase(s) is/are demand dependent.

☑ A phase(s) is/are placed on permanent demand in all Modes.

☑ PED 3 is introduced when Push Button PB1 is activated.

☐ PED _____ is introduced when Push Button _____ is activated.

☐ PED _____ is introduced when Push Button _____ is activated.

☐ PED _____ is introduced when Push Button _____ is activated.

☐ During _____ phase, disable detector loop(s) _____ call for _____ phase.

☐ During _____ phase, after the lock call timer has expired (more than TSM ___), detector loop(s) _____ will cancel demand for _____ phase.

☐ During _____ phase, after the lock call timer has expired (more than TSM _____), detector loop(s) _____ will cancel demand for _____ phase.

☐ During _____ phase, after the lock call timer has expired (more than TSM _____), detector loop(s) _____ will cancel demand for _____ phase.

☐ Left Turn Green Arrow SG _____

1. It is introduced in _____ phase.
2. SG _____ terminates with SG/Phase _____with green arrow flashing for 3 seconds.

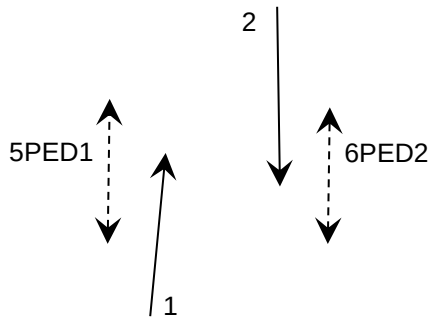
☐ Left Turn Green Arrow SG _____

1. It is introduced in _____ phase.
2. SG _____ terminates with SG/Phase _____ with green arrow flashing for 3 seconds.

PHASING DIAGRAM

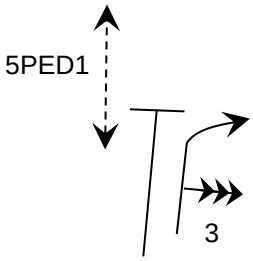
Location: _____ Int. No: 106

A

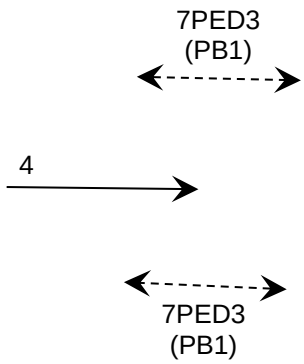


PHASE	PROHIBITED PHASE CHANGES TO	REVERSION ON MAXIMUM	MAXIMUM V. I. G. ON MAXIMUN
A			
B			
C			
D			
E			
F			
G			

B



C



- If PED3 is introduced,
  C phase Min Green = TSM22 =24 Sec

D

V. A. Sequence: _____

DETECTOR FUNCTION

Location:_____ Int. No: 106

DETECTOR NO	CALL PHASE	LOCKING	NON LOCKING	SET VIG ON PHASE	EXTEND PHASE	SPECIAL	DETECTOR ALARMS FAULT SIMULATION			PLAN REFERENCE
							CALL & EXTEND	CALL ONLY	DISABLE	
1	A	✓			A		✓			
2	B	B			A, B		✓			
3	A	B			B		✓			
4	A	✓			A		✓			
5	A	✓			A		✓			
6	C	✓			C		✓			
7	C	✓			C		✓			
8										
9										
10										
11										
12										
13										
14										
15						PHASE CHANGE SWITCH			✓	
16						POLICE CONTROL SWITCH			✓	
PB1	C	✓				PED1		✓		
PB2										
PB3										
PB4										

APPROACH TIMING

Location:_____ Int. No: 106

APPROACH	EXTENDING DETECTORS	SIGNAL GROUP	COMMENTS
A1	1	2	
A2	2	2	
A3	4	2	
A4	5	2	
B1	2	3	
B2	3	3	
B3			
B4			
C1	6	4	
C2	7	4	
C3			
C4			
D1			
D2			
D3			
D4			
E1			
E2			
E3			
E4			
F1			
F2			
F3			
F4			
G1			
G2			
G3			
G4			

NOTE: MAXIMUM NUMBER OF APPROACHES IS 16

INTERGREEN, PEDESTRIAN TIMES AND SPECIAL FUNCTIONS

Location: _____ Int. No: 106

PHASE	CLEARANCE MOVEMENT	CLEARANCE DISTANCE	INTERGREEN		
			AMBER	RED	TOTAL
A			3	2	5
B			3	3	6
C			3	3	6
D					
E					
F					
G					

PED NO.	PHASE	WALK		CLEARANCE TIME	
		DISTANCE (m)	GREEN TIME	1	2
1	AB	14	6	14	
2	A	14	6	14	
3	C	15	6	15	
4					
5					
6					
7					

Pedestrian Walking Speed: **1.0** m/s

SPECIAL FACILITIES

SIGNAL GROUP	HOUR	MINUTE	SECOND	FUNCTION		

PRE-EMPTION

SIGNAL GROUP	PHASE	FUNCTION	REMARKS

CONTROLLER TIMESETTING

Location:_____ Int. No: 106

SPECIAL MOVEMENT (S. M.) TIME
('B' ENTER)

	S. M. INTERVAL	1	2	3	4	5	6	7	8
MINIMUM GREEN	1								
AMBER	2								
RED	3								
GAP	4								
HEADWAY	5								
WASTE	6								
MAXIMUM	7								
SIGNAL GROUP									
DETECTORS									

PRESENCE (RANGE 0 –5)
('D' ENTER)

DET. NO	PRESENCE TIME
1	Secs
2	Secs
3	Secs
4	Secs
5	Secs
6	Secs
7	Secs
8	Secs
9	Secs
10	Secs
11	Secs
12	Secs

DET. NO	PRESENCE TIME
13	Secs
14	Secs
15	Secs
16	Secs
17	Secs
18	Secs
19	Secs
20	Secs
21	Secs
22	Secs
23	Secs
24	Secs

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

ALT. NO	TIME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	50 Sec
16	

ALT. NO	TIME
17	
18	
19	
20	*5 Sec
21	
22 C Min G	24 Sec
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	

***Note:** During start-up of controller, there will be a 5 seconds All Red (TSM20)

CONTROLLER TIMESETTING

Location: _____ Int. No: 106

	PHASE	A	B	C	D	E	F	G	H	
	INTERVAL	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Range**
RED/YELLOW	1									0 – 5
LATE START	2									0 – 20
MINIMUM GREEN	3	10	7	7						5 – 20
INCREMENT	4									0 – 5
MAX. V. I. G.	5									0 – 40
MAX. EXT. GREEN	6	40	26	30						0 – 150
EARLY CUT-OFF	7									0 – 20
AMBER	8	3	3	3						3 – 7
ALL RED	9	6	6	6						0 – 15
SPECIAL ALL RED	10	2	3	3						0 – 15
GAP 1	11	3	3	3						0 –10
GAP 2	12	3	3	3						0 –10
GAP 3	13	3								0 –10
GAP 4	14	3								0 –10
HEADWAY 1	15	1.2	1.2	1.2						0 – 5
HEADWAY 2	16	1.2	1.2	1.2						0 – 5
HEADWAY 3	17	1.2								0 – 5
HEADWAY 4	18	1.2								0 – 5
WASTE 1	19	7	7	7						0 – 50
WASTE 2	20	7	7	7						0 – 50
WASTE 3	21	7								0 – 50
WASTE 4	22	7								0 – 50
MAXIMUM 1	23									0 – 150
MAXIMUM 2	24									0 – 150
MAXIMUM 3	25									0 – 150
MAXIMUM 4	26									0 – 150

☑ Use Special All Red if going from A phase to B phase

☑ Use Special All Red if going from B phase to C phase

☑ Use Special All Red if going from C phase to A phase

☐ Use Special All Red if going from _____ phase to _____ phase

	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	6						0 – 40
CLEARANCE 1	3	14	14	15						0 – 40
CLEARANCE 2	4		2							0 – 10
PAC		7	7	7						

CO-ORDINATION DATA

Location: _____ I nt. No: 106

MASTERLINK & FLEXILINK SPECIAL FLAGS

SIGNAL	FUNCTION
Y− FLEXI	CONTINUOUS
Y− MASTER	AUTO CALL PUSH BUTTON **PED1, 2, 3**
Y+ FLEXI	
Z− FLEXI	
Z− MASTER	
Z+ FLEXI	
Z+ MASTER	
R− FLEXI	**B** PHASE RELEASE PULSE
R+ FLEXI	**C** PHASE RELEASE PULSE
Q− FLEXI	**A** PHASE RELEASE PULSE
Q+ FLEXI	
Z1 MASTER	
Z MASTER	
Z MASTER	
Z MASTER	

LOOK AHEADS AND RELEASES

Phase Sequence 1		
PHASE	**LOOK AHEAD**	**RELEASE**
A	No	Q-
B	No	R−
C	Yes, to A	R+
D		
E		
F		
G		

Phase Sequence 2		
PHASE	**LOOK AHEAD**	**RELEASE**
A		
B		
C		
D		
E		
F		
G		

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

NO	PHASE SEQUENCE
1 (No Z−)	A B C
2 (Z−)	

GLIDE INTERSECTION DATA

Location:_____ Int. No: 106

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 14 = 3, 4, 3	E.g. x, y, z. x = No of Phases y = No of Split Plans z = No of PEDs
INT =106	
VC =	
CS =	
COM =	
PK =	
S# =	
LM = MF	**Note:** Always LM = F initially
RMN =	
DCL =	
VOLS = 1 – 7	
VP# =	
AT = 5	
BT = 6	
CT = 6	
DT =	
ET =	
FT =	
GT =	

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

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 =

W1 = 0AB*			W4 =	
W1T = 20	P–		W4T =	P– P+
W2 = 6			W5 =	
W2T = 19	P–	P+	W5T =	P– P+
W3 = 6			W6 =	
W3T =21	P–	P+	W6T =	P– P+

SPLIT PLANS

	SF / FEATURES	1	2	3	4	SF / FEATURES	5	6	7	8
A	PD B	<0>	<0>	<0>	<0>					
B	C	24	24	28	32					
C	TG A	46	42	38	34					
D										
E										
F										
G										

PLAN DATA

Location:_____ Int. No: 106

PLAN

('E' ENTER)

		1	2	3	4	5	6	7	8	9	10
0	**CL**	124	114		124	104	114	114			
1	**A**	0	0		0	0	0	0			
2	**B**	54	53		54	43	53	53			
3	**C**	86	79		86	69	79	79			
4	**D**										
5	**E**										
6	**F**										
7	**G**										
8	**R−**	C	C		C	C	C	C			
9	**R+**	C	C		C	C	C	C			
10	**Y−**	C	C		C	C	C	C			
11	**Y+**										
12	**Z−**										
13	**Z+**										
14	**Q−**	44	43		44	38	43	43			
15	**Q+**										
16	**XSF (9-16)***										
17	**XSF (1-8)***										

* A digit hexadecimal number which signifies which XSF bits are used; e.g. AO 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	6
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: _____ Int. No: 106

	Phase A	Phase B	Phase C	Phase D	Phase E	Phase F	Phase G
SG 1	SGAR	RED	RED				
SG 2	GAR	RED	RED				
SG 3	RED	GAR	RED				
SG 4	RED	RED	GAR				
SG 5	SWALK	SWALK	DON'T				
SG 6	WALK	DON'T	DON'T				
SG 7	DON'T	DON'T	WALK				
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:_____ Int. No: 106

('C16' ENTER)

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