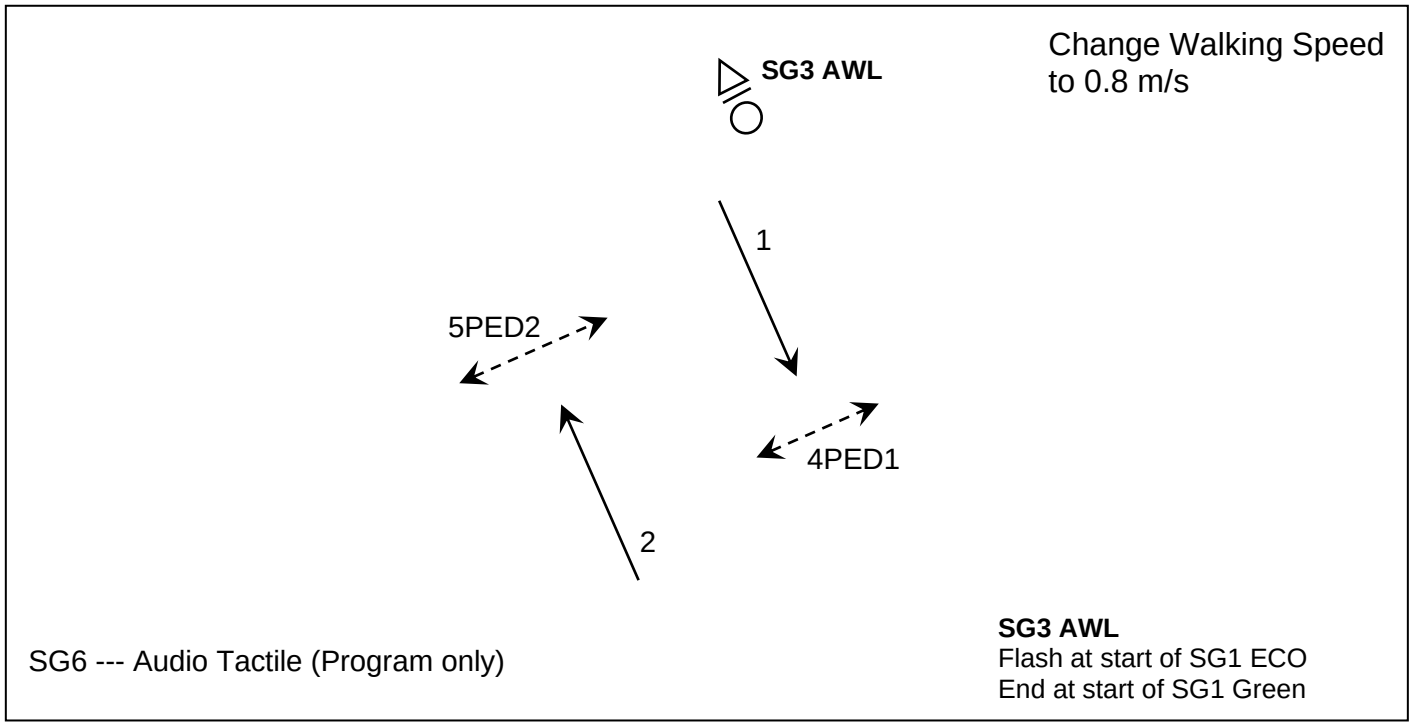
OPERATIONS SHEET

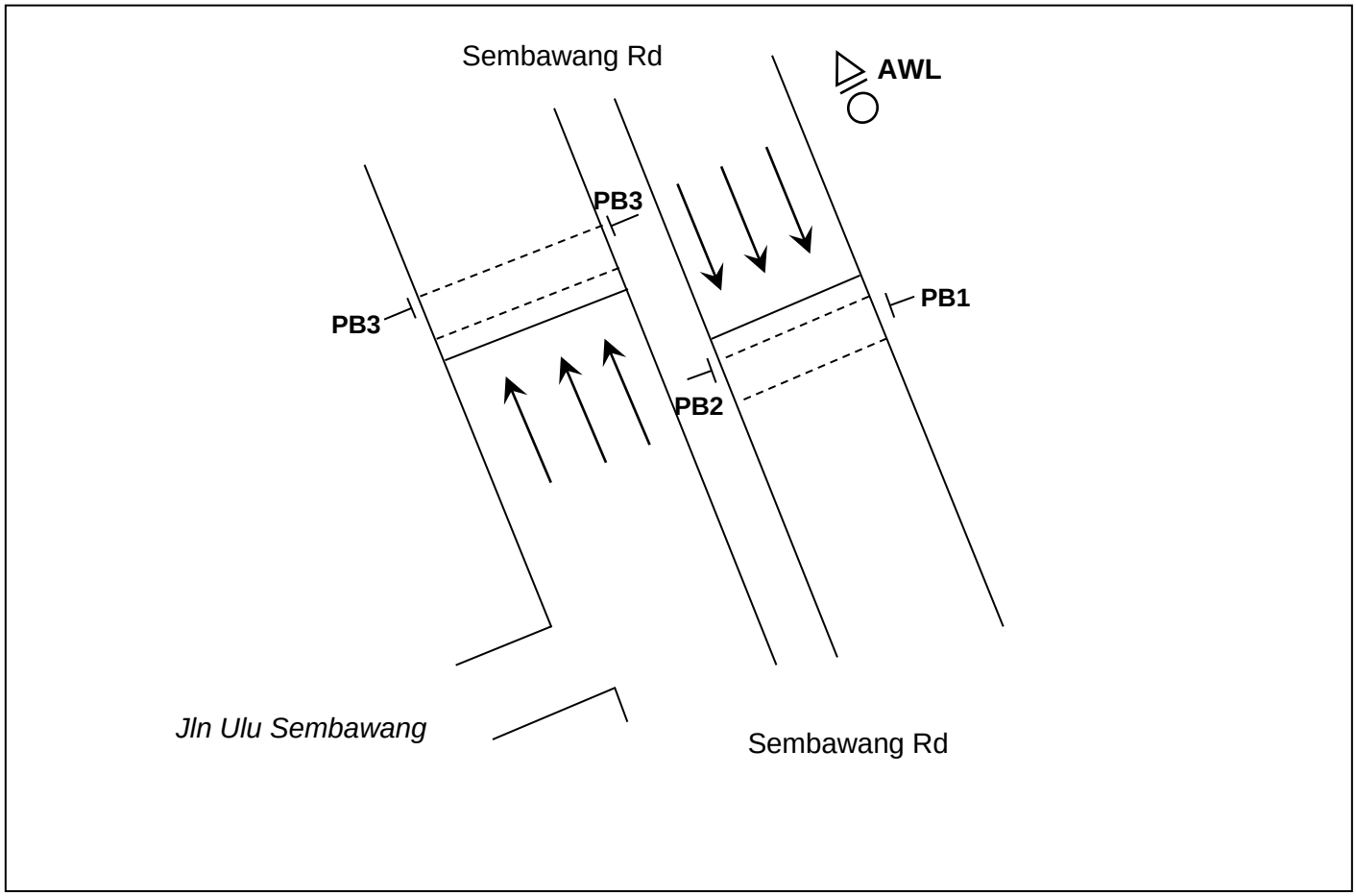
Location: Sembawang Rd PC Near Jln Ulu Sembawang Int. No: 1120

Prepared by: Lang Jie / Chen Eng Heng Date: 21 / 08 / 2022 Signal ID: 2267

Checked by: Teo Wei Yong

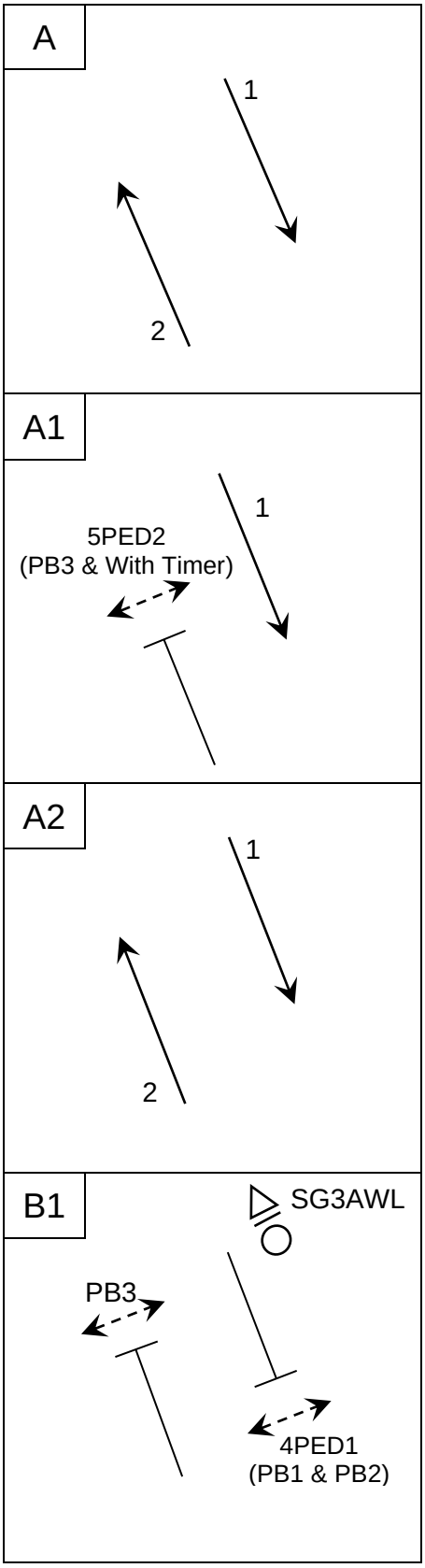
Approved by: Simon Ho





PHASING DIAGRAM

Location: _____ Int. No: 1120



NOTES:

- If phase change switch is equal or more then TSM15, controller will send out MSS15 flag.
- A and B phases are placed on permanent demand in all modes.
- In Isolated mode, A phase has permanent extension.

PED1 Control

- PED1 is introduced on demand at the start of B phase.
- SG1 will be closed during A phase intergreen only if PED1 is demanded.
- In Masterlink, PED is terminated by P-.

PED2 Control

- PED2 is controlled by special Timer1 (T1).
- T1 (TSM11) starts to count at A phase Amber.
- When T1 (TSM11) expires, SG2 will be closed if PED2 is demanded.
- After SG2 closed, PED2 will be introduced.
- SG5PED2 terminates with “3 Sec All Red” before SG2 goes green.
- By removing the secret walk for PED2, remains always release PED.
- PED2: W2=6, W2T=6

SG2 Control

- SG2 has “3 Sec Amber & 3 Sec All Red” before SG5 goes Green Man.

Police Control

- PED1 & PED2 are placed on permanent demand.
- Both PEDs are introduced at the start of B phase.

Audio Tactile

- Audio tactile (SG6) is controlled by Z+ flag.

SG2 Control

- Substitute SG2 Min GREEN with TSM13 (20 Sec).

DETECTOR FUNCTION

Location: _____ Int. No: 1120

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

TICK IF DETECTOR FAILURE CAUSES AN ALARM ON DET. 16 & PB 8

INTERGREEN, PEDESTRIAN TIMES AND SPECIAL FUNCTIONS

Location: _____ Int. No: 1120

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

PED NO.	PHASE	WALK		CLEARANCE TIME	
		DISTANCE (m)	GREEN TIME	1	2
1	B	11	6	14	
2	A, B	14	6	18	
3					
4					
5					
6					
7					

Pedestrian Walking Speed: **0.8** m/s
(Near to School)

SPECIAL FACILITIES

SIGNAL GROUP	HOUR	MINUTE	SECOND	FUNCTION	REMARKS
SG6 (Program only)	21	00	00	Audio Tactile “OFF”	Controlled by Z+
	07	00	00	Audio Tactile “ON”	

PRE-EMPTION

SIGNAL GROUP	PHASE	FUNCTION	REMARKS

CONTROLLER TIMESETTING

Location: _____ Int. No: 1120

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)

PED1, PED2 All Red

DET. NO	PRESENCE TIME	DET. NO	PRESENCE TIME
1	Sec	13	Sec
2	Sec	14	Sec
3	Sec	15	Sec
4	Sec	16	Sec
5	Sec	17	Sec
6	Sec	18	Sec
7	Sec	19	Sec
8	Sec	20	Sec
9	Sec	21	Sec
10	Sec	22	Sec
11	Sec	23	Sec
12	Sec	24	Sec

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

ALT. NO	TIME	ALT. NO	TIME
1	3 Sec	17	
2		18	
3		19	
4		20	*5 Sec
5		21	
6		22	
7		23	
8		24	
9 SG1 ECO	3 Sec	25	
10		26	
11 Timer 1	30 Sec	27	
12		28	
13 SG2 Min GRN	20 Sec	29	
14		30	
15	50 Sec	31	
16		32	

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

CONTROLLER TIMESETTING

Location: _____ Int. No: 1120

	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	6							5 – 20
INCREMENT	4									0 – 5
MAX. V. I. G.	5									0 – 40
MAX. EXT. GREEN	6	42	0							0 – 150
EARLY CUT-OFF	7	3								0 – 20
AMBER	8	3	3							3 – 7
ALL RED	9	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

Maximum V. A. Cycle Time: _____

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

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

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

SG2 All Red

	PEDESTRIAN NO.	1	2	3	4	5	6	7	8	
	INTERVAL	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**Range**
DELAY	1		**3**							0 – 20
WALK	2	6	6							0 – 40
CLEARANCE 1	3	14	18							0 – 40
CLEARANCE 2	4									0 – 10
PAC		7								

CO-ORDINATION DATA

Location: _____ Int. No: 1120

SPECIAL FUNCTIONS

SIGNAL	FUNCTION
Y− FLEXI	CONTINUOUS
Y− MASTER	AUTO CALL PUSH BUTTON PED 1, 2
Y+ FLEXI	
Z− FLEXI	
Z− MASTER	
Z+ FLEXI	Set SG6 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			C		
D			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
2 ( )	

GLIDE INTERSECTION DATA

Location: _____ Int. No: 1120

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 **110** = 2, 1, 2	E.g. x, y, z. x = No of Phases y = No of Split Plans z = No of PEDs

INT = 1120
VC =
CS =
COM =
PK =
S# =
LM = **MF**
RMN =
DCL =
VOLS =
VP# =
AT = 9
BT = 3
CT =
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 =

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 =

W1 = 0		
W1T = 17	**P–**	
W2 = 6		
W2T = 21	P–	**P+**
W3 =		
W3T =	P–	P+

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

SPLIT PLANS

	SF / FEATURES	1	2	3	4
A	FG NG PD B	DC <0> B			
B	A	23# A			
C					
D					
E					
F					
G					

	SF / FEATURES	5	6	7	8
A					
B					
C					
D					
E					
F					
G					

PLAN DATA

Location: _____ Int. No: 1120

PLAN

('E' ENTER)

		1	2	3	4	5	6	7	8	9	10
0	**CL**	124	104		124	90	104	104			
1	**A**	119	99		119	80	99	99			
2	**B**	93	73		93	54	73	73			
3	**C**										
4	**D**										
5	**E**										
6	**F**										
7	**G**										
8	**R−**										
9	**R+**										
10	**Y−**	C	C		C	C	C	C			
11	**Y+**										
12	**Z−**										
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. 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	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: _____ Int. No: 1120

	Phase A	Phase B	Phase C	Phase D	Phase E	Phase F	Phase G
SG 1	GAR	RED					
SG 2	SGRN	SGRN					
SG 3	AWL						
SG 4	DON'T	WALK					
SG 5	SWALK	SWALK					
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: _____ Int. No: 1120

('C16' ENTER)

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