

Revised (Copy)
(2012/2024)

OPERATIONS SHEET

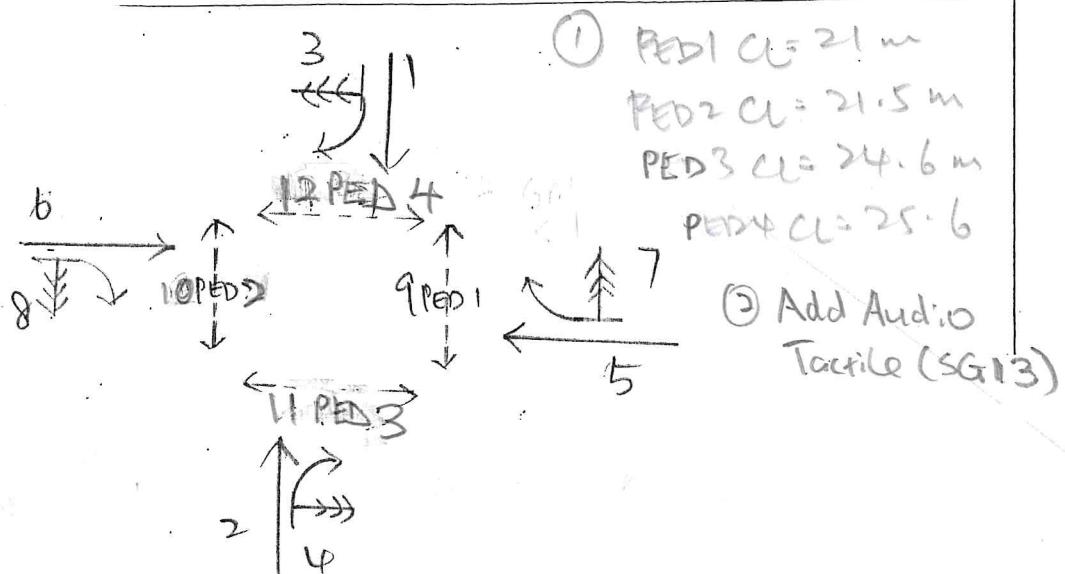
Location: Aljunied Rd Sims Dr | Geylang East Central Int. No: 6421

Prepared by: Lee Cheok Fai Date: 17/8/2023 Signal ID: 22

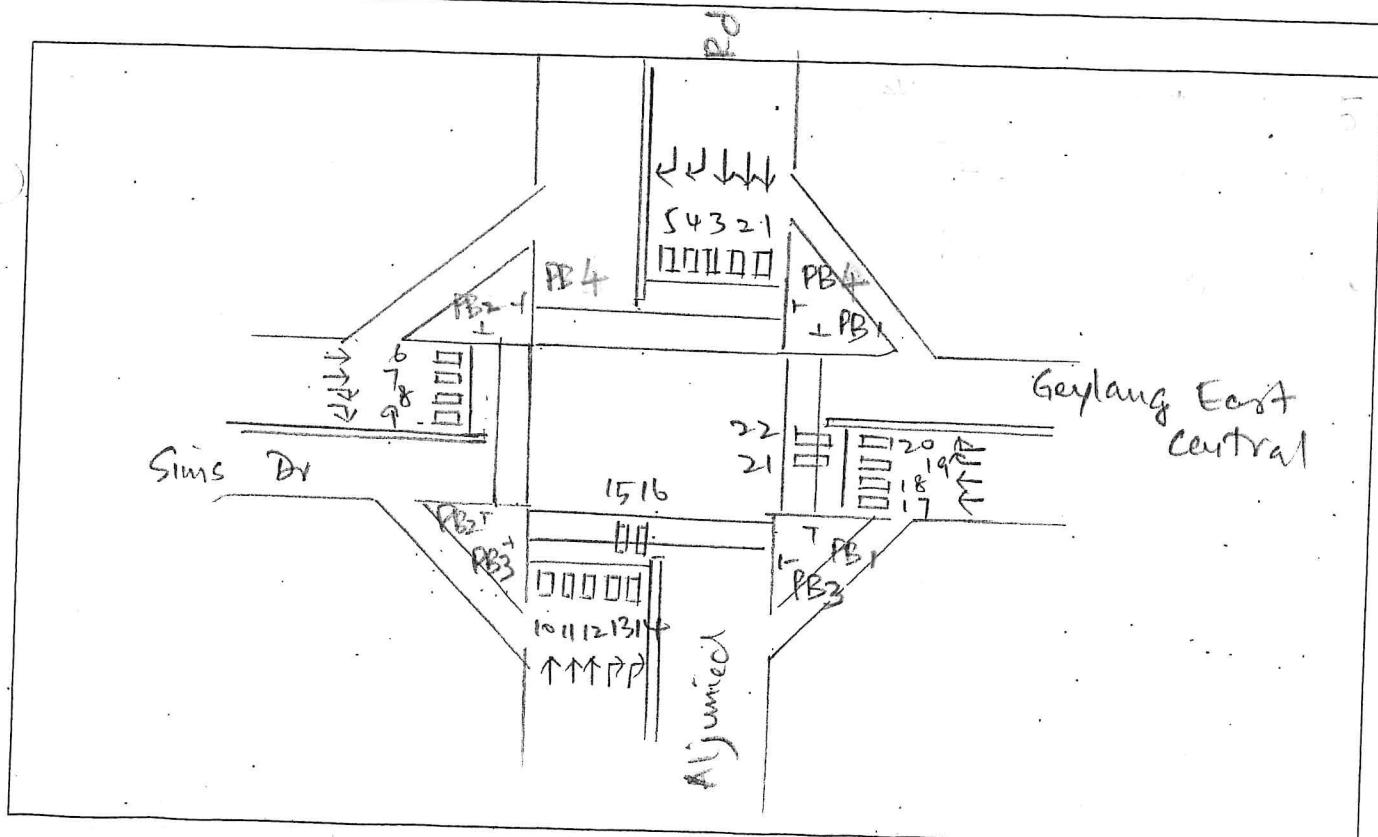
Checked by: Mohd Farhan

Approved by: Simon Ho

#20230816 - 0537



*SG13 - Audio Tactile.



REMARKSInt. No: 6421

Location: _____

 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, D phase(s) is/are demand dependent. A phase(s) is/are placed on permanent demand in all Modes. PED 1 is introduced when Push Button PB 1 is activated. PED 2 is introduced when Push Button PB 2 is activated. PED 3 is introduced when Push Button PB 3 is activated. PED 4 is introduced when Push Button PB 4 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 _____

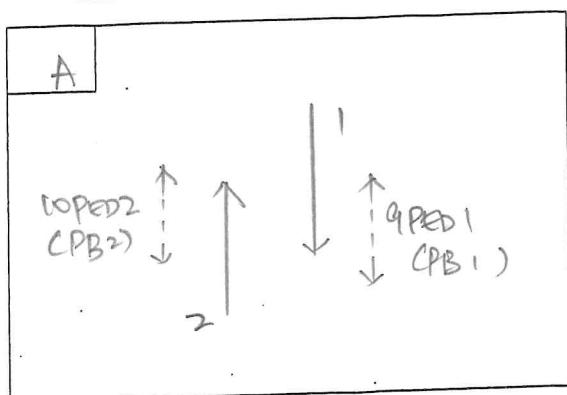
1. It is introduced in _____ phase.

2. SG _____ terminates with SG/Phase _____ with green arrow flashing for 3 seconds.

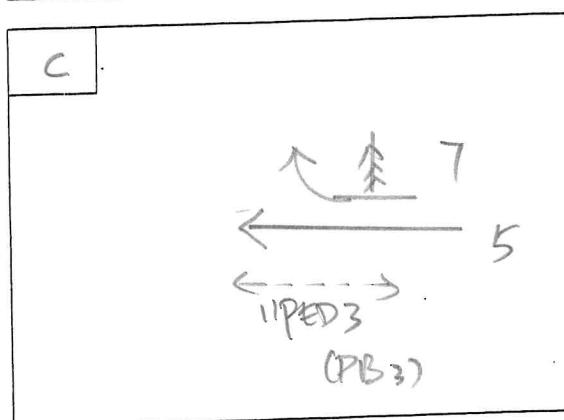
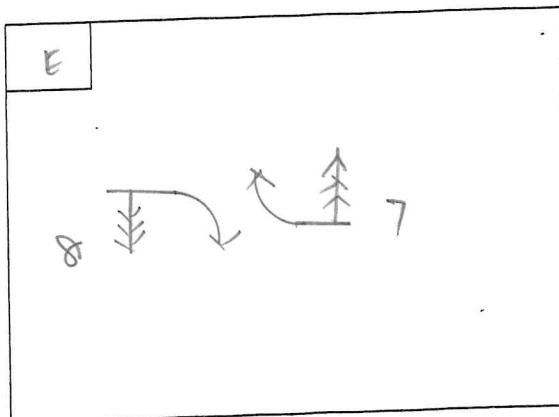
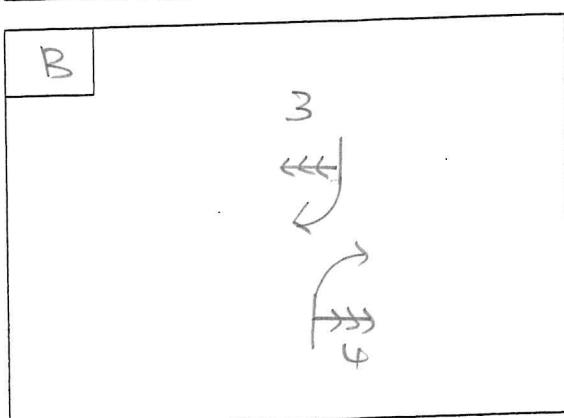
PHASING DIAGRAM

Location: _____

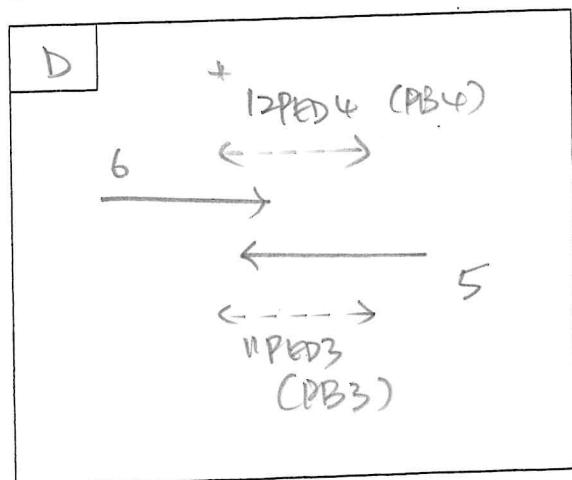
Int. No: 6421



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



* IF C φ → D φ
Subst TSM 1 (> su)
to 12 PED2 Delay.



* II PED3 WK & CL can φ
 ① onelmp C → D φ
 ② IF C φ skips II PED3
can introduce in D φ.

V. A. Sequence: _____

DETECTOR FUNCTION

Int. No: 6421

Location: _____

DETECTOR/PUSH BUTTON NO	CALL PHASE	LOCKING	NON LOCKING	SET VIG ON PHASE	EXTEND PHASE	SPECIAL	DETECTOR ALARMS		PLAN REFERENCE	
							FAULT SIMULATION			
							CALL ONLY	DISABLE		
1	A	✓					✓			
2	A	✓					✓			
3	A	✓					✓			
4	B	✓					✓			
5	B	✓					✓			
6	D	✓					✓			
7	D	✓					✓			
8	E	✓					✓			
9	E	✓					✓			
10	A	✓					✓			
11	A	✓					✓			
12	A	✓					✓			
13	B	✓					✓			
14	B	✓					✓			
15	B	✓					✓			
16	B	✓					✓			
17	D	✓					✓			
18	D	✓					✓			
19	CE	✓	C	CE			✓			
20	CE	✓	C	CE			✓			
21	CE	✓	C	CE			✓			
22	CE	✓	C	CE			✓			
23					PHASE CHANGE SWITCH			✓		
24					POLICE CONTROL SWITCH			✓		
PB1	A	✓			PED1		✓			
PB2	A	✓			PED2		✓			
PB3	D	✓			PED3		✓			
PB4	D	✓			PED4		✓			
PB5										
PB6										
PB7										
PB8										

APPROACH TIMING

Location: _____

Intersection No: 642

APPROACH	EXTENDING DETECTORS	SIGNAL GROUP	COMMENTS
A1	1, 2, 3	1	
A2	10, 11, 12	1	
A3			
A4			
B1	4	3	
B2	5	3	
B3	13, 14	3	
B4	15, 16	3	
C1	19, 20	7	
C2	21, 22	7	
C3			
C4			
D1	6	5	
D2	7	5	
D3	17	5	
D4	18	5	
E1	8	8	
E2	9	8	
E3	19, 20	8	
E4	21, 22	8	
F1			
F2			
F3			
F4			
G1			
G2			
G3			
G4			

NOTE: MAXIMUM NUMBER OF APPROACHES IS 16

INTERGREEN, PEDESTRIAN TIMES AND SPECIAL FUNCTIONS

Int. No: 6421

Location: _____

PHASE	CLEARANCE MOVEMENT	CLEARANCE DISTANCE	INTERGREEN		
			AMBER	RED	TOTAL
A			3	2	5
B			3	3	6
C			3	5	8
D			3	2	5
E			3	3	6
F					
G					

PED NO.	PHASE	WALK		CLEARANCE TIME	
		DISTANCE (m)	GREEN TIME	1	2
1	A	21	6	21	
2	A	21.5	6	22	
3	CD	24.6	6	25	
4	D	25.6	6	26	
5					
6					
7					

Pedestrian Walking Speed: 1.0 m/s

SPECIAL FACILITIES

SIGNAL GROUP	HOUR	MINUTE	SECOND	FUNCTION	REMARKS
SG13	21	0	0	Audio Tactile "OFF"	Controlled
	7	0	0	Audio Tactile "ON"	By Z+

PRE-EMPTION

SIGNAL GROUP	PHASE	FUNCTION	REMARKS

CONTROLLER TIMESetting

Int. No: 6421

Location: _____

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

	S. M.	1	2	3	4	5	6	7	8
	INTERVAL								
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	Sec
2	Sec
3	Sec
4	Sec
5	Sec
6	Sec
7	Sec
8	Sec
9	Sec
10	Sec
11	Sec
12	Sec

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

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

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

P2D4 Delay

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

CO-ORDINATION DATA

Int. No: 6421

Location: _____

MASTERLINK & FLEXILINK SPECIAL FLAGS

SIGNAL	FUNCTION
Y- FLEXI	CONTINUOUS
Y- MASTER	AUTO CALL PUSH BUTTON PED 1, 2, 3, 4
Y+ FLEXI	AUTO CALL PUSH BUTTON PED 1, 2, 3, 4
Z- FLEXI	Auto call PED 1, 2
Z- MASTER	Auto call PED 1, 2
Z+ FLEXI	Set SG13 Audio Tactile "ON"
Z+ MASTER	Set SG13 Audio Tactile "ON"
R- FLEXI	B PHASE RELEASE PULSE
R+ FLEXI	C PHASE RELEASE PULSE
Q- FLEXI	D PHASE RELEASE PULSE
Q+ FLEXI	E PHASE RELEASE PULSE
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	R-	B		
C	Yes to D	R+	C		
D	Yes to A	Q-	D		
E	Yes to A	Q+	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 E
2 ()	A B C D E

CONTROLLER TIMESetting

날씨 습관

Int. No:

6421

Location:

	PHASE	A	B	C	D	E	F	G	H	Range
	INTERVAL	1	2	3	4	5	6	7	8	
RED/YELLOW	1									0 - 5
LATE START	2									0 - 20
MINIMUM GREEN	3	20	7	7	10	7				5 - 20
INCREMENT	4									0 - 5
MAX. V. I. G.	5									0 - 40
MAX. EXT. GREEN	6	40	20	20	20	20				0 - 150
EARLY CUT-OFF	7									0 - 20
AMBER	8	3	3	3	3	3				3 - 7
ALL RED	9	6	6	6	6	6				0 - 15
SPECIAL ALL RED	10	2	3	5	2	3				0 - 10
GAP 1	11	3	3	3	3	3				0 - 10
GAP 2	12	3	3	3	3	3				0 - 10
GAP 3	13		3		3	3				0 - 10
GAP 4	14		3		3	3				0 - 5
HEADWAY 1	15	0.4	1.2	0.6	1.2	1.2				0 - 5
HEADWAY 2	16	0.4	1.2	0.6	1.2	1.2				0 - 5
HEADWAY 3	17		0.6		1.2	0.6				0 - 5
HEADWAY 4	18		0.6		1.2	0.6				0 - 50
WASTE 1	19	7	7	7	7	7				0 - 50
WASTE 2	20	7	7	7	7	7				0 - 50
WASTE 3	21		7		7	7				0 - 50
WASTE 4	22		7		7	7				0 - 150
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 A phase to B phase
- Use Special All Red if going from B phase to C phase, B → D
- Use Special All Red if going from C phase to D phase, C → A
- Use Special All Red if going from D phase to E phase, E → A

	PEDESTRIAN NO.	1	2	3	4	5	6	7	8	Range
	INTERVAL	17	18	19	20	21	22	23	24	
DELAY	1				0.2					0 - 20
WALK	2	6	6	6	6					0 - 40
CLEARANCE 1	3	21	22	25	26					0 - 40
CLEARANCE 2	4									0 - 10
DAC							7			

GLIDE INTERSECTION DATA

Location: _____

Int. No: 6421

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 57 = 8,5,4

E.g. x, y, z. x = No of Phases y = No of Split Plans z = No of PEDs

INT =	<u>6421</u>
VC =	<u>5</u>
CS =	
COM =	<u>9/4</u>
PK =	
S# =	<u>31</u>
LM =	<u>MF</u>
RMN =	
DCL =	
VOLS =	<u>1-22</u>
VP# =	
AT =	<u>5</u>
BT =	<u>6</u>
CT =	<u>8</u>
DT =	<u>5</u>
ET =	<u>6</u>
FT =	
GT =	
W1 =	<u>-35</u>
W1T =	<u>26</u>
W2 =	<u>-35</u>
W2T =	<u>27</u>
W3 =	<u>60</u>
W3T =	<u>30</u>

Date:	Date:
PP1 =	<u>0^A</u>
PP2 =	<u>0^A</u>
PP3 =	<u>0^A</u>
PP4 =	<u>0^A</u>

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 =

W4 =	<u>-40</u>	
W4T =	<u>31</u>	(P-) (P+)
W5 =		
W5T =		(P-) (P+)
W6 =		
W6T =		(P-) (P+)

other & pm

SPLIT PLANS

FEATURES \ SF	1	2	3	4
A	<u>0PPFG</u>	<u>OB</u>	<u>OB</u>	<u>OB</u>
B		<u>22</u>	<u>18</u>	<u>14</u>
C		<u>12</u>	<u>12</u>	<u>12</u>
D		<u>—</u>	<u>>18</u>	<u>—</u>
E	<u>TG</u>	<u>14</u>	<u>14</u>	<u>14</u>
F				
G				

FEATURES \ SF	5	6	7	8
	<u>OB</u>	<u>OB</u>	<u>OB</u>	<u>OB</u>
	<u>26</u>	<u>18</u>	<u>14</u>	<u>22</u>
slip		<u>slip</u>		
	<u>—</u>	<u>28</u>	<u>—</u>	
	<u>20</u>	<u>16</u>	<u>16</u>	<u>20</u>

MCL=100 SCL=126 XCL=144 HCL=158 Pg. 10

PLAN DATA

Location: _____ Int. No: 6421

('E' ENTER)		<u>PLAN</u>									
		1	2	3	4	5	6	7	8	9	10
0	CL	144	130		144	100	130	130			
1	A	15	54		54	93	54	60			
2	B	57	100		97	29	100	108			
3	C	83	127		123	49	127	4			
4	D	103	128		124	50	128	5			
5	E	139	34		30	80	34	40			
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	C			
11	Y+										
12	Z-										
13	Z+	C	C		C			C			
14	Q-	C	C		C	C	C	C			
15	Q+	C	C		C	C	C	C			
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	6	30	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: 6421

	Phase A	Phase B	Phase C	Phase D	Phase E	Phase F	Phase G
SG 1	GAR	RED	RED	RED -	RED		
SG 2	GAR	RED	RED	RED	RED		
SG 3	RED	GAR	RED	RED	RED	-RAG	
SG 4	Red	GAR	RED	RED	RED	-RAG	
SG 5	RED	RED	SGAR	SGAR	RED		
SG 6	RED	RED	RED	GAR	RED		
SG 7	RED	RED	GAR	RED	GAR	- RAG	
SG 8	RED	RED	RED	RED	GAR	-RAG	
SG 9	WALK	DON'T	DON'T	DON'T	DON'T		
SG 10	WALK	DON'T	DON'T	DON'T	DON'T		
SG 11	DON'T	DON'T	SWALK	SWALK	DON'T		
SG 12	DON'T	DON'T	DON'T	SWALK	DON'T	- Delay	
SG 13	— Audio Tactile —						
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 MatrixLocation: _____ Int. No: 6421

(C16' ENTER)

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