

# OPERATIONS SHEET

Location: Clementi Ave 3 PC near Blk 453

Int. No: 4138

Prepared by: Chen Eng Heng

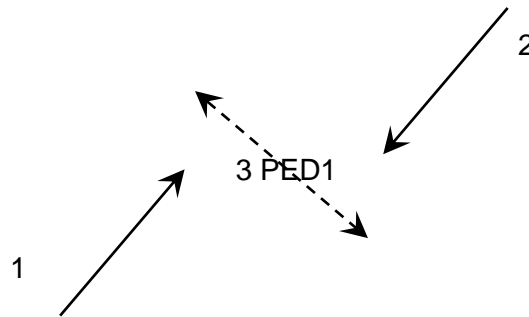
Date: 28 / 04 / 2020

Signal ID: 2653

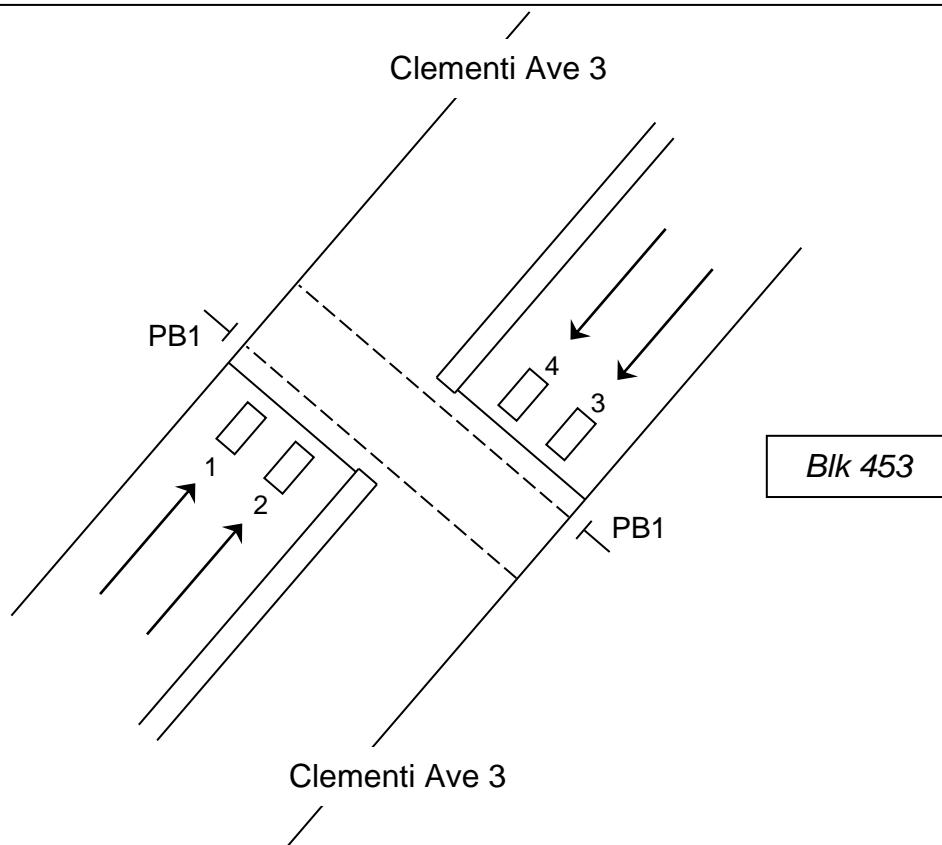
Checked by: Chia Hee Lan

Approved by: Simon Ho

**2 PC to 1 PC  
(Silver Zone Scheme)**



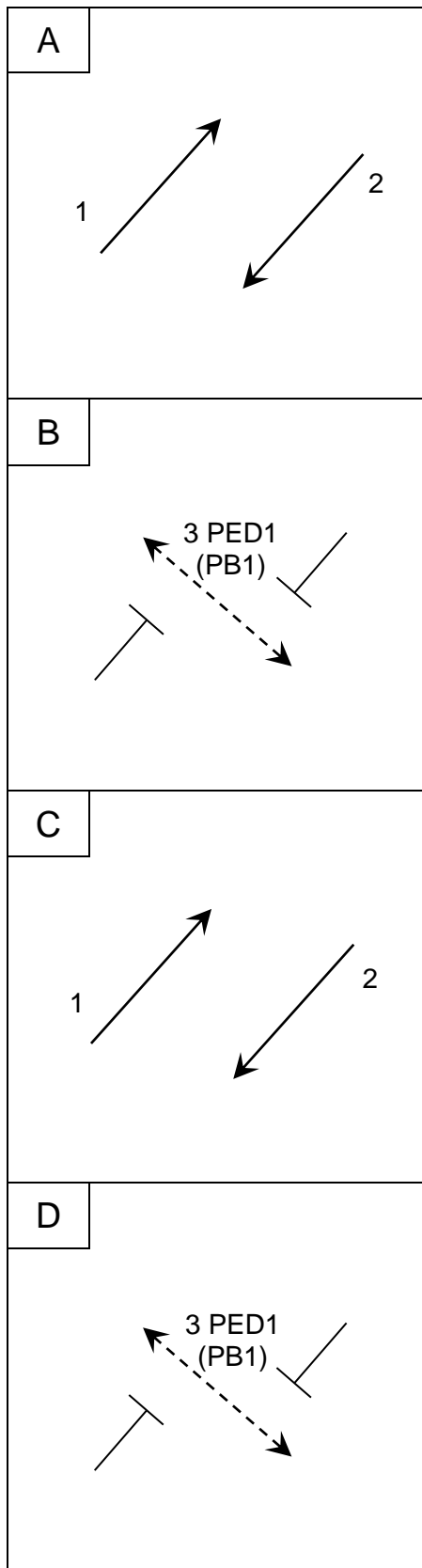
SG4 – Audio Tactile



## PHASING DIAGRAM

Location: Clementi Ave 3 PC near Blk 453

Int. No: 4138



### NOTES:

- IF PHASE CHANGE SWITCH IS EQUAL OR MORE THAN TSM15, CONTROLLER IS TO SEND OUT MSS15 FLAG
- A & C PHASES ARE PLACED ON PERMANENT DEMAND IN ALL MODES.
- PED 1 IS INTRODUCED WHEN PUSH BUTTON **PB1** IS ACTIVATED
- IN POLICE CONTROL MODE, RUN A AND B PHASE ONLY
- IN MASTERLINK MODE, IF Y- FLAG IS ON PED 1 IS AUTO CALLED
- IN FLEXILINK MODE, IF Y+ FLAG IS ON PED 1 IS AUTO CALLED
- DURING PED1'S WALK, CLEAR PUSH BUTTON 1'S DEMAND
- SG **4** AUDIO TACTILE IS CONTROLLED BY **Z+** FLAG

## DETECTOR FUNCTION

Location: Clementi Ave 3 PC near Blk 453

Int. No: 4138

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			A			✓			
2	A	A			A			✓			
3	A	A			A			✓			
4	A	A			A			✓			
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15						PHASE CHANGE SWITCH				✓	
16						POLICE CONTROL SWITCH				✓	
PB1	BD	✓				PUSH BUTTON PED 1			✓		
PB2											
PB3											
PB4											
PB5											
PB6											
PB7											
PB8											

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

## **APPROACH TIMING**

Location: Clementi Ave 3 PC near Blk 453 Int. No: 4138

<b>APPROACH</b>	<b>EXTENDING DETECTORS</b>	<b>SIGNAL GROUP</b>	<b>COMMENTS</b>
A1	1, 2	1	
A2	3, 4	2	
A3			
A4			
B1			
B2			
B3			
B4			
C1			
C2			
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: Clementi Ave 3 PC near Blk 453 Int. No: 4138

PHASE	CLEARANCE MOVEMENT	CLEARANCE DISTANCE	INTERGREEN			PED NO.	PHASE	WALK		CLEARANCE TIME	
			AMBER	RED	TOTAL			DISTANCE (m)	GREEN TIME	1	2
A			3	3	6	1	B/D	15	6	19	
B			3		3	2					
C			3	3	6	3					
D			3		3	4					
E						5					
F						6					
G						7					

Pedestrian Walking Speed: 0.8 m/s  
(Sliver Zone Scheme)

### SPECIAL FACILITIES

SIGNAL GROUP	HOUR	MINUTE	SECOND	FUNCTION	REMARKS
SG4	21	00	00	Audio Tactile "OFF"	Controlled by Z+ Flag
	7	00	00	Audio Tactile "ON"	

### PRE-EMPTION

SIGNAL GROUP	PHASE	FUNCTION	REMARKS

## CONTROLLER TIMESETTING

Location: Clementi Ave 3 PC near Blk 453

Int. No: 4138

	PHASE	A	B	C	D	
	INTERVAL	1	2	3	4	<u>Range</u>
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	32		0		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	3				0 – 10
GAP 2	12	3				0 – 10
GAP 3	13					0 – 10
GAP 4	14					0 – 10
HEADWAY 1	15	0.6				0 – 5
HEADWAY 2	16	0.6				0 – 5
HEADWAY 3	17					0 – 5
HEADWAY 4	18					0 – 5
WASTE 1	19	7				0 – 50
WASTE 2	20	7				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	
12	
13	
14	
15	50 Sec
16	
17	
18	
19	
20	5 Sec

Maximum V. A. Cycle Time: \_\_\_\_\_

- ☐ In Flexilink Operation,  
If Z- flag = C (255), A phase = TSM 11
- ☐ In Isolated Operation,  
A phase = Max. Ext. Green

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

## CO-ORDINATION DATA

Location: Clementi Ave 3 PC near Blk 453

Int. No: 4138

### 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 SG4 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: Clementi Ave 3 PC near Blk 453

Int. No: 4138

**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 =                      = 4, 1, 2      E.g. x, y, z. x = No of Phases y = No of Split Plans z = No of PEDs

INT = 4138

VC =

CS =

COM =

PK =

S# = 34

LM = MF

RMN =

DCL = 110

VOLS = 1 – 4

VP# =

AT = 6

BT = 3

CT = 6

DT = 3

ET =

FT =

GT =

W1 = 0

W1T = 22      P-

W2 =

W2T =      P-    P+

W3 =

W3T =      P-    P+

Date:

PP1 = 0, 0 ^A

PP2 = 0, 0 ^A

PP3 = 0, 0 ^A

PP4 = 0, 0 ^A

Date:

PP1 =

PP2 =

PP3 =

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 =

W4 =

W4T =      P-    P+

W5 =

W5T =      P-    P+

W6 =

W6T =      P-    P+

### SPLIT PLANS

		1	2	3	4		5	6	7	8
	SF						SF			
FEATURES						FEATURES				
A	0 FG NG PD B	0 B								
B	FS C	28# C								
C	FG NG PD D	28# D								
D	A	28# A								
E										
F										
G										



## PLAN DATA

Location: Clementi Ave 3 PC near Blk 453

Int. No: 4138

### PLAN

('E' ENTER)

		1	2	3	4	5	6	7	8	9	10
0	<b>CL</b>										
1	<b>A</b>										
2	<b>B</b>										
3	<b>C</b>										
4	<b>D</b>										
5	<b>E</b>										
6	<b>F</b>										
7	<b>G</b>										
8	<b>R-</b>										
9	<b>R+</b>										
10	<b>Y-</b>	C	C		C	C	C	C			
11	<b>Y+</b>										
12	<b>Z-</b>	N	N		N	C	N	N			
13	<b>Z+</b>	C	C		C	N	N	C			
14	<b>Q-</b>										
15	<b>Q+</b>										
16	<b>XSF (9-16)*</b>										
17	<b>XSF (1-8)*</b>										

\* 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
<b>8</b>	<b>7</b>	<b>0</b>	<b>1</b>
8	9	0	7
8	12	0	2
8	17	0	4
<b>8</b>	<b>21</b>	<b>0</b>	<b>6</b>
8	23	0	5
7	0	0	5
<b>7</b>	<b>7</b>	<b>0</b>	<b>1</b>
7	9	0	7

CODE	HOUR	MINUTE	PLAN
7	12	0	4
7	15	0	2
<b>7</b>	<b>21</b>	<b>0</b>	<b>6</b>
7	23	0	5
1	0	0	5
<b>1</b>	<b>7</b>	<b>0</b>	<b>7</b>
1	9	0	7
1	14	0	2
<b>1</b>	<b>21</b>	<b>0</b>	<b>6</b>
1	23	0	5

## **Pedestrian and Vehicle Signal Groups Interlock Table**

Location: Clementi Ave 3 PC near Blk 453

Int. No: 4138

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

### **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

**Signal Groups Conflict Matrix**Location: Clementi Ave 3 PC near Blk 453 Int. No: 4138

('C16' ENTER)

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