

TO	1. SENIOR ENGINEER, CONTROLLER APPLICATIONS 2. STEVE BELZ, PROGRAM DELIVERY	ACTION	DATE
FROM	GERALD TAMARAY	DATE	8/02/19
SITE	BENDIGO-REDESDALE ROAD / TANNERY LANE / CLUB COURT	SITE NO.	6267
REGION	RRV - NORTHERN	MUNICIPALITY	GREATER BENDIGO

GENERAL

Works Program Job?	Yes	Project Number	BG199MMC
Classification	MINOR	Works Order Number	4A006299

EXISTING CONTROLLER DETAILS

Type	Eclipse	Software Version & Release	V5R20	Lanterns	LED
------	---------	----------------------------	-------	----------	-----

CONTROLLER APPLICATIONS

Target Date for Draft Opsheet	13 February 2019
Target Date for completion of Program	27 February 2019

Prepare Interlocking

PERSONALITY CHECKSUMS

	Hex	Octal
Total	E0	340
Times	75	165
Pers	95	225

Dispatched 5/04/19

Update Graphics, Site Notes Yes ☒ Site ID Revision updated to B

Description of changes Full control of SG5 and changes to P2 operation

PROGRAM DELIVERY - SIGNAL INSTALLATION

<input type="checkbox"/>	Changes to signal hardware	Changes to interlocking
<input type="checkbox"/>	Additional detectors	Changes to existing detector numbering
<input type="checkbox"/>	Upgrade controller software to	
<input type="checkbox"/>	Other changes	
<input checked="" type="checkbox"/>	Place new operation specification in controller	

PRIOR NOTICE

A job must be entered into RAI Action database before this PROM change will be allowed.

<input checked="" type="checkbox"/>	SCATS data changes - notify	DARREN VAUGHAN	Ext	1210
	OR	GERALD TAMARAY	Ext	1210

before 3:00pm on the day before switch on.

SCATS Data Changes - Checksum Update

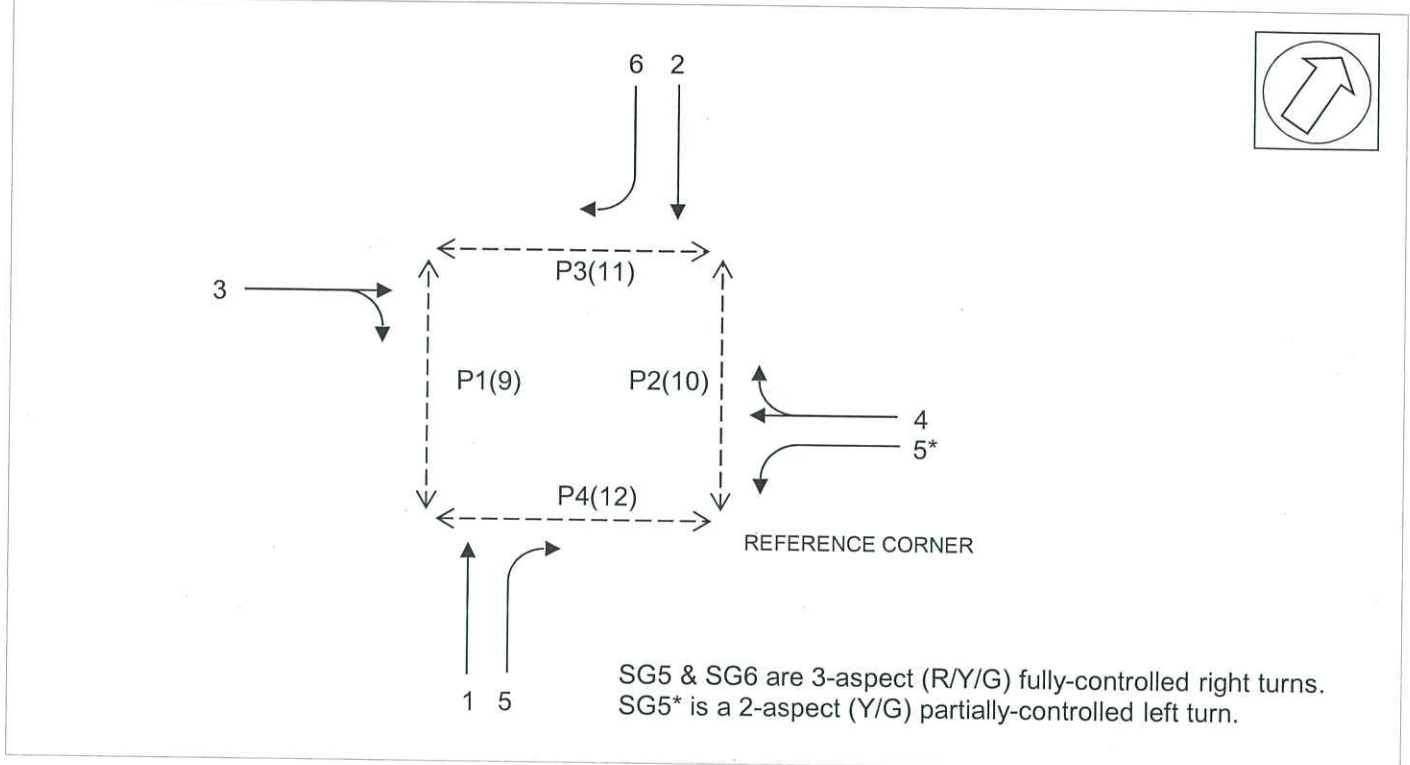
TRAFFIC MANAGEMENT CENTRE

<input checked="" type="checkbox"/>	Checksum update only
<input type="checkbox"/>	Changes to trim or manual intervention features required
<input checked="" type="checkbox"/>	Please notify DARREN VAUGHAN (x1197) on job completion.

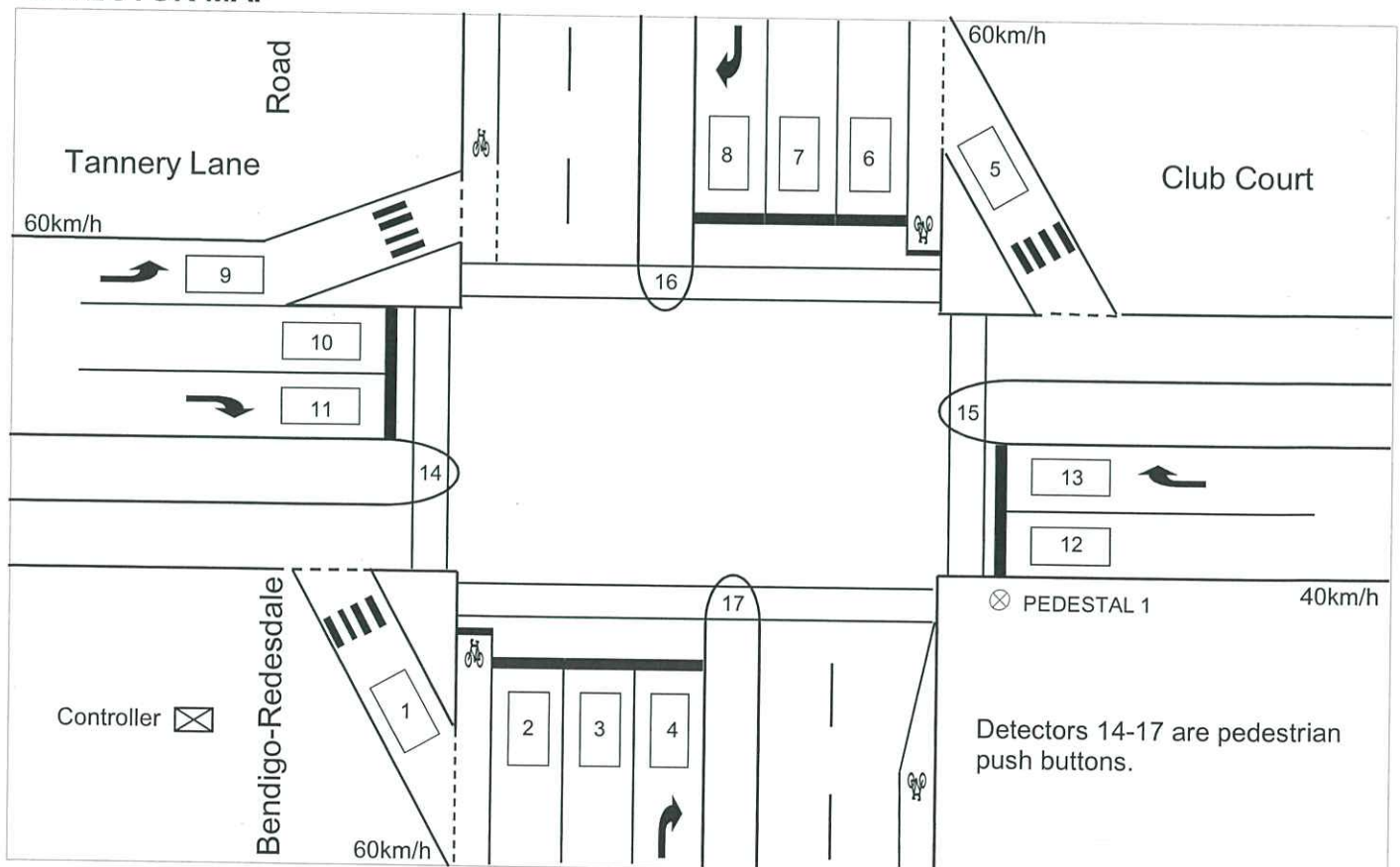
DATE PROM INSTALLED

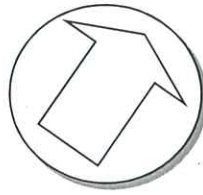
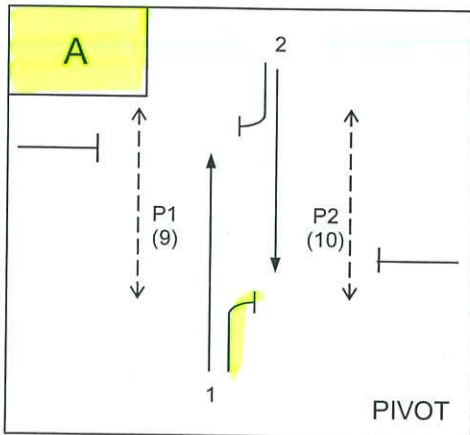
SITE NAME	BENDIGO-REDESDALE ROAD / TANNERY LANE / CLUB COURT		SITE NO.	6267
MUNICIPALITY	GREATER BENDIGO	DESIGNED BY	GERALD TAMARAY	DATE
PLAN NO.	779763	DESIGN CHECKED	<i>[Signature]</i>	DATE
CONTROLLER TYPE	Eclipse	PROM CHECKED		DATE

GROUP ALLOCATION



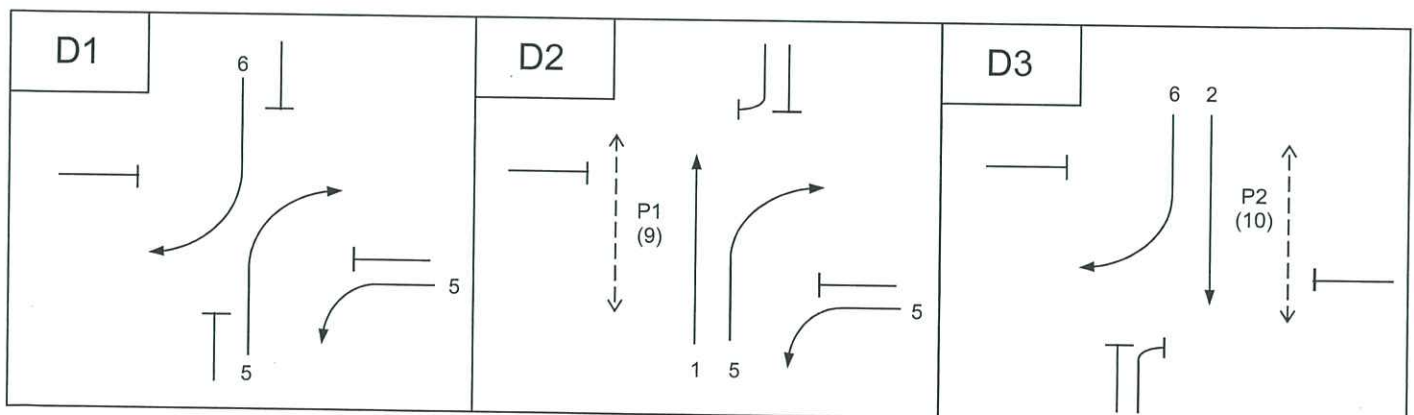
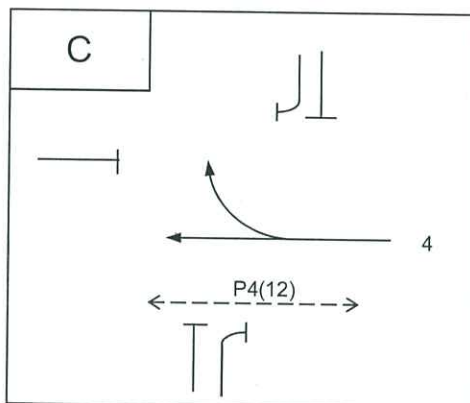
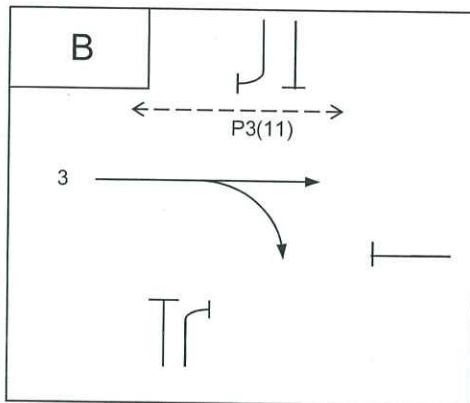
DETECTOR MAP



PHASING DIAGRAM

Refer General Notes

PHASE	PROHIBITED PHASE CHANGES TO	REVERSION ON MAXIMUM	MAXIMUM V.I.G ON REVERSION

REVn. & V.A. SEQUENCE ABCD

DESIGNED BY: GERALD TAMARAY

DATE 8/02/19

Document Number: 15337670 6267aRNWOpsheet

DETECTOR FUNCTIONS

DETECTOR No.	Internal / External	Input Number	CALL PHASE	LOCKING CALL	NON-LOCKING CALL	SET VIG ON PHASE	EXTEND PHASE	SPECIAL FUNCTION			DETECTOR ALARMS						
								Detector Type	Description	Refer Special Notes	DA Category	Disable	DA on S/C only	Fault Simulation			
														Call & Extend	Call Only	Ignore Alarm	Refer Special Notes
1	I	1							Counting Detector		0		✓				
2	I	2	A	✓			A				0			✓			
3	I	3	A	✓			A				0			✓			
4	I	4	D	✓			D			✓	0		✓	✓			
5	I	5							Counting Detector		0		✓				
6	I	6	A	✓			A				0			✓			
7	I	7	A	✓			A				0			✓			
8	I	8	D	✓			D			✓	0		✓	✓			
9	I	9							Counting Detector		0		✓				
10	I	10	B	✓			B				0		✓	✓			
11	I	11	B	✓			B				0		✓	✓			
12	I	12	C	✓			C				0		✓	✓			
13	I	13	C	✓			C				0		✓	✓			
14	E	1	A		✓			P1		✓	6		✓				
15	E	2	A		✓			P2		✓	6		✓				
16	E	3	B		✓			P3		✓	6		✓				
17	E	4	C		✓			P4		✓	6		✓				
18																	
19																	
20																	
21																	
22																	
23																	
24																	
25																	
26																	
27																	
28																	
29																	
30																	
31																	
32																	

DESIGNED BY: GERALD TAMARAY

DATE 8/02/19

APPROACH DEFINITIONS**PHASE APPROACHES**

Approach No	EXTENDING DETECTORS	APPROACH TIMER AND TIMESETTING DEFINITION*	SIGNAL GROUP	APPROACH EXPIRY (EXPAP)	Refer Special Notes
1	2, 3	A11	1		
2	6, 7	A22	2		
3	4	D11	5		
4	10	B11	3		
5	11	B22	3		
6	12	C11	4		
7	13	C22	4		
8	8	D22	6		
9					
10					
11					
12					
13					
14					
15					
16					

* There are 8 approach timers and 4 approach timesettings available per phase:

- Where there are 4 or fewer approaches per phase, allocate one timesetting to each timer.

For example: A11, A22, A33, B11, C11.

- Where there are more than 4 approaches per phase, two or more timers must have the same timesetting.

For example: A11, A21, A32, A43, A54, B11.

SPECIAL APPROACHES

Approach No	EXTENDING DETECTORS	APPROACH TIMESETTING	SIGNAL GROUP	DESCRIPTION	Refer Special Notes
1					
2					
3					
4					

GENERAL NOTES

SUMMARY OF XSF FLAGS

(Communications Operation of XSF flags is required)

XSF5 – Selects Special Maximum for SG5 in DØ (Special Purpose Timesetting no. 9) (All modes).

XSF6 – Selects Special Maximum for SG6 in DØ (Special Purpose Timesetting no. 10) (All modes).

GENERAL OPERATION

1. REVn. – first scan after start-up demands BØ, CØ and DØ.

SIGNAL GROUP OPERATION

Signal Group 5

1. SG5 is controlled by Special Movement Timesetting no. 1 in DØ.
DØ All Red timesetting is substituted for Special Movement Timesetting no. 1.
2. XSF5 is used to set the maximum extension green time for SG5 in DØ.
This time is stored in Special Purpose Timesetting no. 9.
SG5 is forced off after this maximum extension green time.

Signal Group 6

1. SG6 is controlled by Special Movement Timesetting no. 2 in DØ.
DØ Special All Red timesetting is substituted for Special Movement Timesetting no. 2.
2. XSF6 is used to set the maximum extension green time for SG6 in DØ.
This time is stored in Special Purpose Timesetting no. 10.
SG6 is forced off after this maximum extension green time.

PEDESTRIAN GROUP OPERATION

Pedestrian 1

P1 calls AØ.

P1 is hidden in DØ.

P1 can introduce at the start of AØ and anytime in D2Ø, and overlap D2Ø→AØ.

Pedestrian 2

P2 calls AØ.

P2 is hidden in DØ.

P2 can introduce at the start of AØ and anytime in D3Ø, and overlap D3Ø→AØ.

Pedestrian 3

P3 calls BØ.

P3 can introduce at the start of BØ.

Pedestrian 4

P4 calls CØ.

P4 can introduce at the start of CØ.

DETECTOR OPERATION**General**

Clear vehicle demands during associated phase green and yellow.

Detector 4

Clear demands for DØ from detector 4 during SG5 green and yellow.

Detector 8

Clear demands for DØ from detector 8 during SG6 green and yellow.

DESIGN OF INTERGREEN AND PEDESTRIAN TIMES**INTERGREEN TIMES**

PHASE	CLEARANCE DETAILS		LEGAL SPEED	DESIGN SPEED		INTERGREEN		
	GROUP TRANSITION	DISTANCE		YELLOW	RED	YELLOW	RED	TOTAL
A	1 → P3	31.5	60	60	50	4.0	2.5	6.5
B	3 → P4	35.0	60	60	45	4.0	3.0	7.0
C	4 → P1	35.0	40	40	40	3.0	3.5	6.5
D	5 → P2	35.0	60	45	45	3.0	3.0	6.0
E	→							
F	→							
G	→							

PHASE SPECIAL ALL REDS AND SPECIAL MOVEMENT ALL REDS

FROM PHASE	TO PHASE	CLEARANCE DETAILS		DESIGN SPEED	ALL RED	PHASE or S.M. No*
		GROUP TRANSITION	DISTANCE			
B	D, A	3 → P2	38.0	50	3.0	B AR
C	D, A	4 → P1	40.0	40	3.5	C AR
D	A	6 → P1	31.0	45	2.5	SM2
		→				
		→				
		→				

* Specify where the timesetting is stored (the phase special all red or the special movement time setting number)

PEDESTRIAN TIMES

PED	PHASE(S)	WALK			CLEARANCE				MINIMUM SOLID DON'T WALK
		DISTANCE (m)	TIME		DISTANCE (m)	TIME			
			GRAPH	ADOPTED		GRAPH	CL1	CL2	
P1	A	12.0	12	12	8.0	5	5.0		6.5
P2	A	10.5	11	11	7.5	5	5.0		6.5
P3	B	16.0	15	15	12.5	8	8.0		7.0
P4	C	16.0	15	15	12.5	8	8.0		6.5

CONTROLLER TIMESETTINGS - 1**PHASE TIMESETTINGS**

Front Panel Command: Phase No.Timesetting No (e.g. 3.2 accesses C phase late start)

DESCRIPTION	Timesetting No	PHASE						
		A (1)	B (2)	C (3)	D (4)	E (5)	F (6)	G (7)
RED / YELLOW	1	-	-	-	-	-	-	-
LATE START	2							
MINIMUM GREEN	3	10	8	8	6			
INCREMENT	4							
MAXIMUM INITIAL GREEN*	5							
MAXIMUM EXTENSION GREEN	6	40	20	15	15			
EARLY CUT OFF	7							
YELLOW	8	4.0	4.0	3.0	3.0			
ALL RED	9	2.5	3.0	3.5	3.0			
SPECIAL ALL RED	10				2.5			
GAP 1	11	2.5	2.5	2.5	2.5			
GAP 2	12	2.5	2.5	2.5	2.5			
GAP 3	13							
GAP 4	14							
HEADWAY 1	15	0.6	1.2	1.2	1.2			
HEADWAY 2	16	0.6	1.2	1.2	1.2			
HEADWAY 3	17							
HEADWAY 4	18							
WASTE 1	19	7	7	7	7			
WASTE 2	20	7	7	7	7			
WASTE 3	21							
WASTE 4	22							

* Maximum Initial Green = Minimum Green + V.I.G.

PEDESTRIAN TIMESETTINGS

Front Panel Command: Pedestrian No.Timesetting No (e.g. 18.2 accesses P2 walk)

DESCRIPTION	Timesetting No	PEDESTRIAN							
		P1 (17)	P2 (18)	P3 (19)	P4 (20)	P5 (21)	P6 (22)	P7 (23)	P8 (24)
DELAY	1	-	-	-	-	-	-	-	-
WALK*	2	12.0	11.0	15.0	15.0				
CLEARANCE 1	3	5.0	5.0	8.0	8.0				
CLEARANCE 2	4								

* Minimum walk time - used in Isolated and Flexilink operation

For walk times in Masterlink operation, refer to slot data.

CONTROLLER TIMESETTINGS - 2**SPECIAL MOVEMENT TIMESETTINGS**

Front Panel Command: B.Timesetting No (e.g. B.5 accesses Special Movement Timesetting No 5)

Timesetting No	Timesetting (Range: 0-5)	FUNCTION
1	3.0	SG5 ALL RED (SUBSTITUTE DØ ALL RED)
2	2.5	SG6 ALL RED (SUBSTITUTE DØ SPECIAL ALL RED)
3		
4		
5		
6		
7		
8		

SPECIAL PURPOSE TIMESETTINGS

Front Panel Command: B.Timesetting No (e.g. B.19 accesses Special Movement Timesetting No 19)

Timesetting No	Timesetting (Range: 0-200)	FUNCTION
9	5	SG5 MAXIMUM EXTENSION GREEN IN DØ (XSF5) (ALL MODES)
10	5	SG6 MAXIMUM EXTENSION GREEN IN DØ (XSF6) (ALL MODES)
11		
12		
13		
14		
15		
16		
17		
18	0	LIMIT GREEN WATCHDOG TIMER
19	0	SPECIAL FACILITY CONTROLS ALARM TIMER
20	10	ALL RED START UP INTERVAL
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		

CONTROLLER TIMESETTINGS - 3**PRESENCE TIMESETTINGS**

Front Panel Command: D.Detector No (e.g. D.7 accesses presence time for detector 7)

DETECTOR No	TIMESETTING (Range: 0-10)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	

NOTE: Set presence time to zero if the detector is not a presence detector

DAILY EVENT TIMESETTINGS

FUNCTION	TIMESETTING
Daily start time (Hours)	
Daily start time (Minutes)	
Daily finish time (Hours)	
Daily finish time (Minutes)	

FLEXILINK OPERATION**PHASE SEQUENCES**

No	PHASE SEQUENCE
1 (No Y+)	ABCD
2 (Y+)	

NOTES:

1. All phases must be specified in the phase sequence
2. Only specify phase sequence 2 if it is different from phase sequence 1.

LOOK AHEADS & RELEASES

PHASE SEQUENCE 1		
PHASE	LOOK AHEAD*	RELEASE
A	No	R-
B	Yes (to C, D, A)	R+
C	Yes (to D, A)	Q-
D	Yes (to A)	Auto
E		
F		
G		

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

* Specify the phases to which look ahead is permitted, e.g. Yes (to E, F, G, A)

INHIBIT PHASES

The following phases can be inhibited in flexilink by setting the call pulse one step before the call pulse of the next phase in sequence

PULSE STEP LENGTH

☐ One Second ☒ Two Second

MASTERLINK & FLEXILINK SPECIAL FLAGS

FLAG	FUNCTION
Y- Flexi	The site will operate in flexilink mode if the signal is continuously sent (C) or is used as an offset (e.g. 25)
Y- Master	
Y+ Flexi	
Z- Flexi	
Z- Master	
Z+ Flexi	
Z+ Master	
R- Flexi	AØ RELEASE PULSE
R+ Flexi	BØ RELEASE PULSE
Q- Flexi	CØ RELEASE PULSE
Q+ Flexi	

SCATS INTERSECTION DATA

The data shown on this page is typical data that can be used for testing controller operations.
This data is not necessarily applicable when the site is switched on in the field.

TYPICAL SLOT DATA

SLOT <i>n</i>	=	4	,	4	,	4
		(phases)		(split plans)		(walks)
INT	=	6267				
VC	=	5				
CS	=					
COM	=	NET				
PK	=	!				
S#	=					
LM	=					
RMN	=	0				
DCL	=	0				
AT	=	7				
BT	=	7				
CT	=	7				
DT	=	6				
ET	=					
FT	=					
GT	=					
W1	=	12	W1 T	=	12	
W2	=	11	W2 T	=	12	
W3	=	15	W3 T	=	15	
W4	=	15	W4 T	=	15	
W5	=		W5 T	=		
W6	=		W6 T	=		
W7	=		W7 T	=		
W8	=		W8 T	=		
PP1	=	0,0A				
PP2	=	0,0A				
PP3	=	0,0A				
PP4	=	0,0A				

TYPICAL SPLIT PLAN DATA

PHASE SEQUENCE 1		PHASE SEQUENCE 2		PHASE SEQUENCE 3	
A	= 0PDB	A	=	A	=
B	= 20C	B	=	B	=
C	= 15D	C	=	C	=
D	= 15A	D	=	D	=

TYPICAL VARIATION PARAMETERS

VP1	=		VP22	=		VP43	=	
VP2	=		VP23	=		VP44	=	
VP3	=		VP24	=		VP45	=	
VP4	=		VP25	=		VP46	=	
VP5	=		VP26	=		VP47	=	
VP6	=		VP27	=		VP48	=	
VP7	=		VP28	=		VP49	=	
VP8	=		VP29	=		VP50	=	
VP9	=		VP30	=		VP51	=	
VP10	=		VP31	=		VP52	=	
VP11	=		VP32	=		VP53	=	
VP12	=		VP33	=		VP54	=	
VP13	=		VP34	=		VP55	=	
VP14	=		VP35	=		VP56	=	
VP15	=		VP36	=		VP57	=	
VP16	=		VP37	=		VP58	=	
VP17	=		VP38	=		VP59	=	
VP18	=		VP39	=		VP60	=	
VP19	=		VP40	=		VP61	=	
VP20	=		VP41	=		VP62	=	
VP21	=		VP42	=				

GROUP CONFLICT TABLE

PED NO	PED NO				(m)					P1	P2	P3	P4												
	GROUP NO	1	2	3		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	1			X	X		X					X	X												
	2			X	X	X						X	X												
	3	X	X		X	X	X			X	X		X												
	4	X	X	X		X	X			X	X	X													
(m)	5		X	X	X						X		X												
	6	X		X	X					X		X													
	7																								
	8																								
P1	9			X	X		X																		
P2	10			X	X	X																			
P3	11	X	X		X		X																		
P4	12	X	X	X		X																			
	13																								
	14																								
	15																								
	16																								
	17																								
	18																								
	19																								
	20																								
	21																								
	22																								
	23																								
	24																								

CHECKED: Tien Vu DATE: 13/10/17

DESIGNED BY: GERALD TAMARAY

DATE 8/02/19