

	ACTION	DATE
TO	1. SENIOR ENGINEER, CONTROLLER APPLICATIONS	
	2. NATALIJA CVETKOVIC, IMPROVEMENT PROJECTS	
FROM	FRED VAN GORP	DATE 30/09/13
SITE	PRINCESS HIGHWAY EAST / TRAMWAY ROAD / ALEXANDER ROAD	SITE NO. 6675
REGION	EASTERN	MUNICIPALITY LATROBE

GENERAL

Works Program Job?	Yes	Project Number	43BB262C
Classification	STANDARD	Works Order Number	4A002891

EXISTING CONTROLLER DETAILS

Type	Eclipse	Software Version & Release	V5R20	Lanterns	LED
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CONTROLLER APPLICATIONS

Target Date for Draft Opsheet	Mid Oct 13
Target Date for completion of Program	ASAP

Prepare Interlocking	
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Update Graphics, Site Notes	Yes
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Description of changes	LED upgrade & SCATS loops. Other changes as per highlighted
------------------------	---

PERSONALITY CHECKSUMS

	Hex	Octal
Total	26	46
Times	72	162
Pers	54	124
Dispatched	17/12/13	

<input type="checkbox"/>	Site ID Revision updated to
--------------------------	-----------------------------

IMPROVEMENT PROJECTS - SIGNAL INSTALLATION

<input type="checkbox"/>	Changes to signal hardware	<input type="checkbox"/>	Changes to interlocking
<input checked="" type="checkbox"/>	Additional detectors (VEHICLE)	<input checked="" type="checkbox"/>	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	FRED VAN GORP	Ext	8885
	OR	CHRIS EER	Ext	8711

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

SCATS Data Changes -

TRAFFIC MANAGEMENT CENTRE

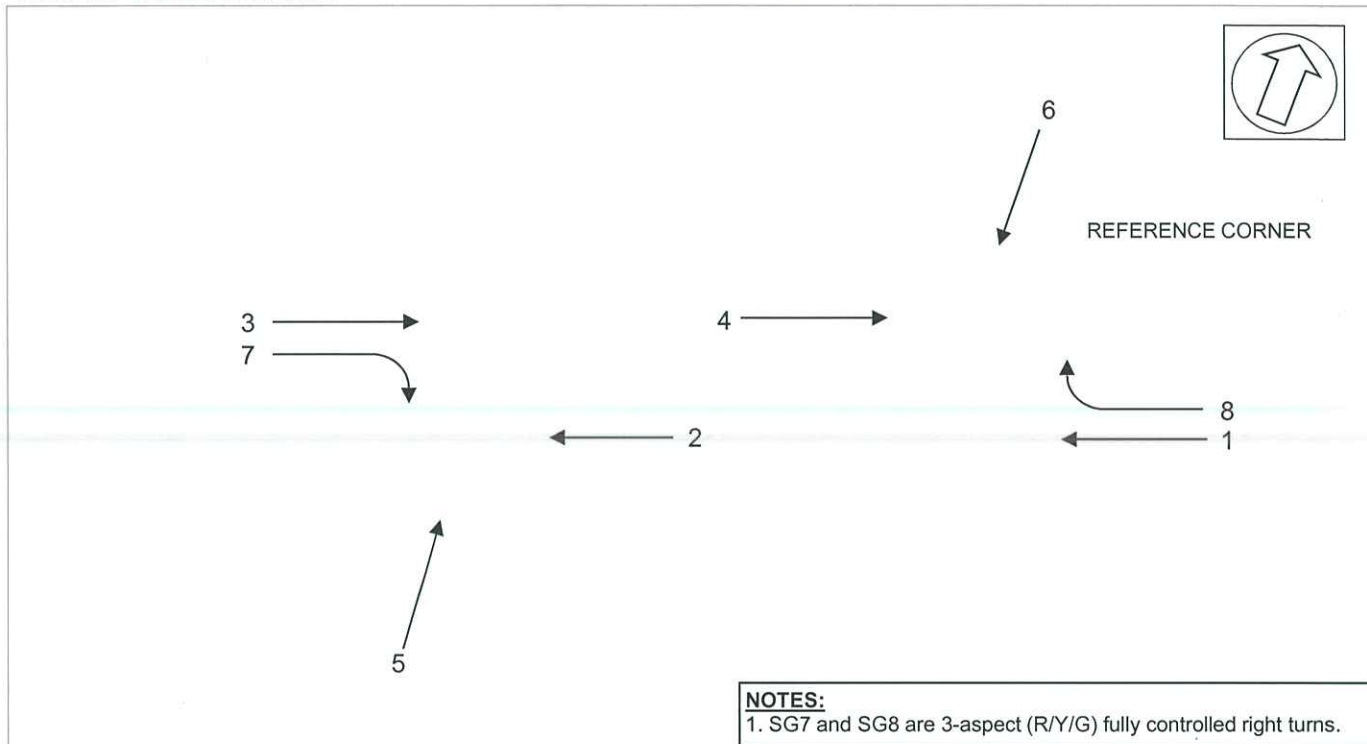
<input type="checkbox"/>	Checksum update only
<input type="checkbox"/>	Changes to trim or manual intervention features required
<input checked="" type="checkbox"/>	Please notify FRED VAN GORP (x8885) on job completion.

DATE PROM INSTALLED 14/5/14

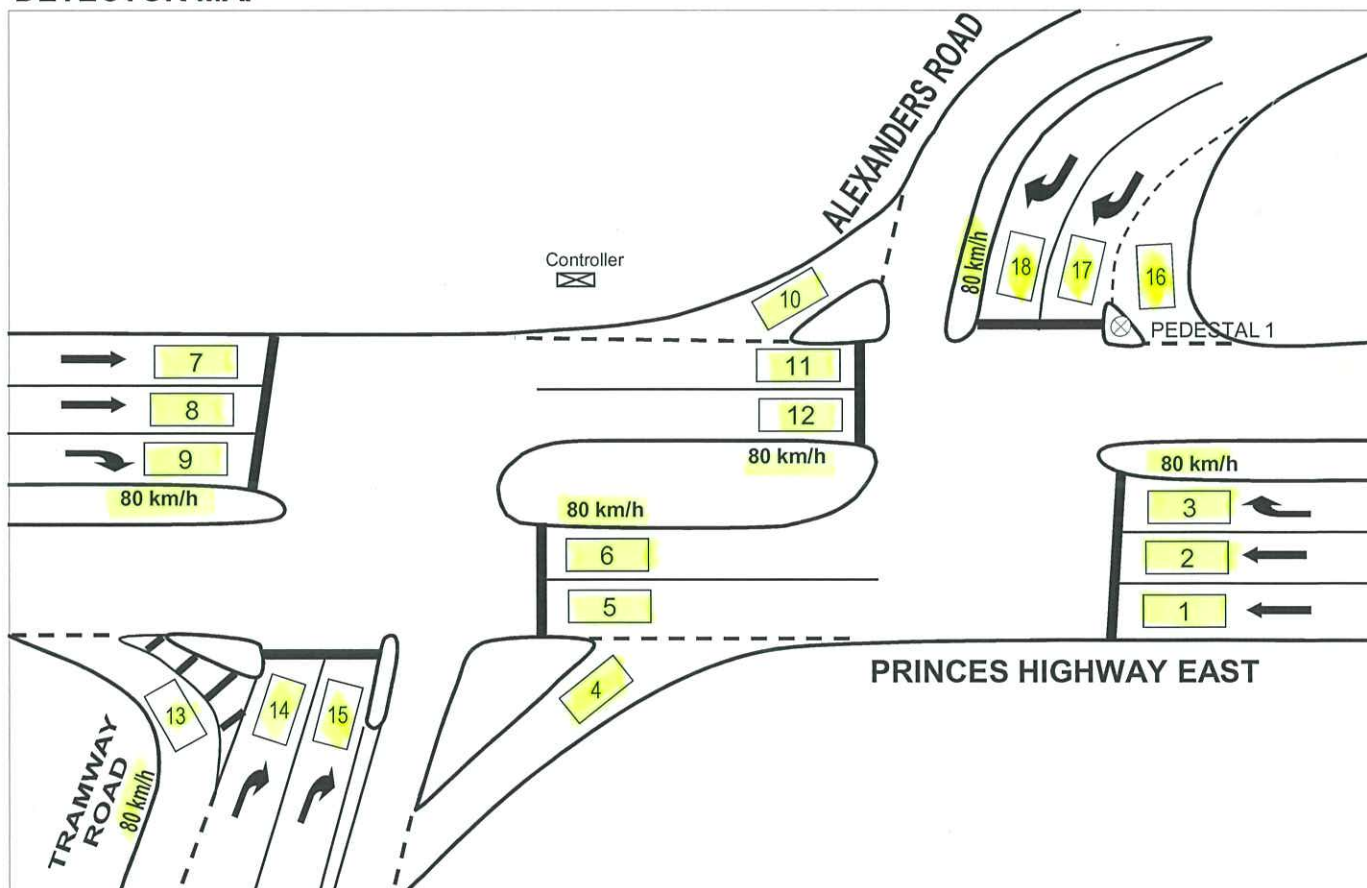
CONTROLLER OPERATION SPECIFICATION

SITE NAME	PRINCESS HIGHWAY EAST / TRAMWAY ROAD / ALEXANDER ROAD			SITE NO.	6675
MUNICIPALITY	<u>LATROBE</u>	DESIGNED BY	<u>FRED VAN GORP</u>	DATE	<u>30/09/13</u>
PLAN NO.	<u>896049 A & 950014 F</u>	DESIGN CHECKED	<i>Chris Ren</i>	DATE	<u>10/12/2013</u>
CONTROLLER TYPE	<u>Eclipse</u>	PROM CHECKED	<i>[Signature]</i>	DATE	<u>16/12/13</u>

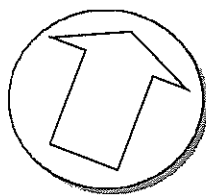
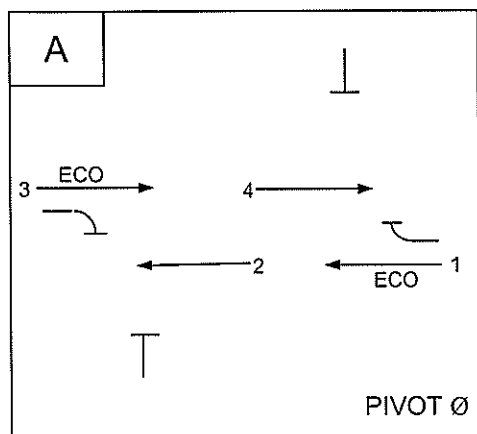
GROUP ALLOCATION



DETECTOR MAP



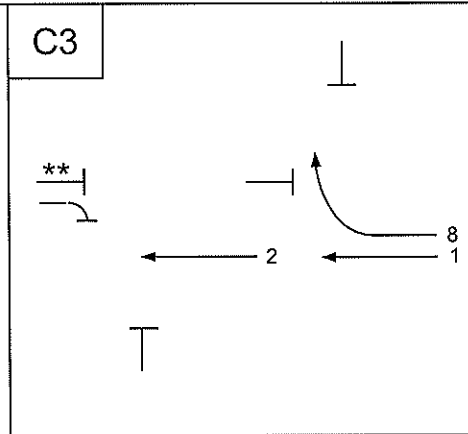
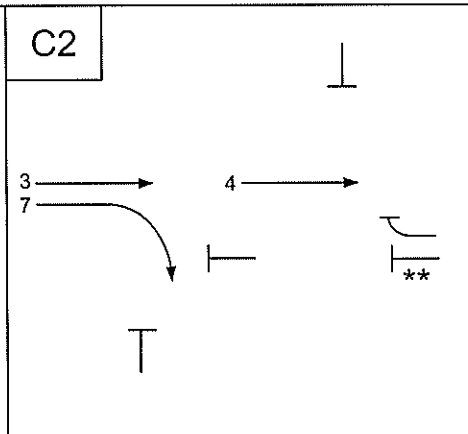
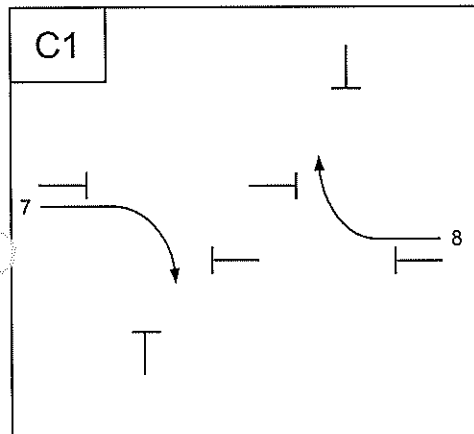
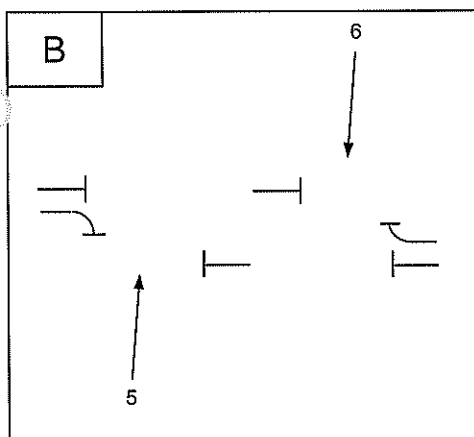
PHASING DIAGRAM



Refer General Notes

** Refer to notes on page 4/1 for detailed description of SG1 and SG3 early start operation.

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



V.A. SEQUENCE ABC

DESIGNED BY: FRED VAN GORP

DATE 30/09/13

Document Number: 2210540 6675_02_FvG

SITE NAME

PRINCESS HIGHWAY EAST / TRAMWAY ROAD / ALEXANDER ROAD

SITE NO.

6675

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	A	✓			A				0			A			
2	I	2	A	✓			A				0			A			
3	I	3	C	✓			C				0			C			
4	I	4	-				-		Count loop		0					✓	
5	I	5	-				-		Count loop		0					✓	
6	I	6	-				-		Count loop		0					✓	
7	I	7	A	✓			A				0			A			
8	I	8	A	✓			A				0			A			
9	I	9	C	✓			C				0			C			
10	I	10	-				-		Count loop		0					✓	
11	I	11	-				-		Count loop		0					✓	
12	I	12	-				-		Count loop		0					✓	
13	I	13	-				B		Count loop	✓	0		✓			✓	
14	I	14	B	✓			B				0			B			
15	I	15	B	✓			B				0			B			
16	I	16	-				B		Count loop	✓	0		✓			✓	
17	I	17	B	✓			B				0			B			
18	I	18	B	✓			B				0			B			
19																	
20																	
21																	
22																	
23																	
24																	
25																	
26																	
27																	
28																	
29																	
30																	
31																	
32																	

DESIGNED BY: FRED VAN GORP

DATE 30/09/13

APPROACH DEFINITIONS**PHASE APPROACHES**

Approach No	EXTENDING DETECTORS	APPROACH TIMER AND TIMESETTING DEFINITION*	SIGNAL GROUP	APPROACH EXPIRY (EXPAP)	Refer Special Notes
1	1,2	A11	1		
2	7,8	A22	3		
3	14,15	B11	5		
4	17,18	B22	6		
5	13	B33	5		✓
6	16	B44	6		✓
7	9	C11	7		
8	3	C22	8		
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					

SITE NAME: PRINCES HWY EAST / TRAMWAY ROAD / ALEXANDERS ROAD NO. 6675

GENERAL NOTES

SUMMARY OF XSF FLAGS

(Communications Operation of XSF flags is required)

- XSF 5** - Place a permanent demand for SG 7 in CØ (*For Event use*).
- XSF 6** - Place a permanent demand for SG 8 in CØ (*For Event use*).
- XSF 7** - Selects special maximum for SG 7 in CØ via Special Purpose Timesetting No. 15.
- XSF 8** - Selects special maximum for SG 8 in CØ via Special Purpose Timesetting No. 16.

GENERAL OPERATION

- Clear vehicle demands during associated phase green and yellow.
- Use AØ yellow for CØ yellow if transitioning from C2Ø -> BØ or C3Ø -> BØ.

SIGNAL GROUP OPERATION

SIGNAL GROUP 7

- Signal Group 7 is controlled by Special Movement Timer No.1 within CØ. CØ All Red timesetting is substituted for Special Movement Time No.1.
- **Maximum Time for SG7 Using XSF7 Flag**
XSF7 is used to set the maximum time for SG7 in CØ. This time is accessible in Special Purpose Timesetting No. 15. When XSF7 is set, SG7 may run for a green period equal to the CØ minimum green plus the time stored in *Special Purpose Timesetting No. 15*.

SIGNAL GROUP 8

- Signal Group 8 is controlled by Special Movement Timer No.2 within CØ. CØ All Red timesetting is substituted for Special Movement Time No.2.
- **Maximum Time for SG8 Using XSF8 Flag**
XSF8 is used to set the maximum time for SG8 in CØ. This time is accessible in Special Purpose Timesetting No. 16. When XSF8 is set, SG8 may run for a green period equal to the CØ minimum green plus the time stored in *Special Purpose Timesetting No. 16*.

SIGNAL GROUP – EARLY START FUNCTION

Signal Group 1

- If transitioning from C2Ø -> AØ, early start SG1. Start Timer 1 (*Special Purpose Timesetting No.9*) at the beginning of SG7 yellow. SG1 turns green when the Timer 1 expires.
- If Z- (*Masterlink & Flexilink*) is set, use Special Purpose Timesetting No.11 as the Timer 1.
- If Z+ (*Masterlink & Flexilink*) is set, use Special Purpose Timesetting No.13 as the Timer 1.

Signal Group 3

- If transitioning from C3Ø -> AØ, early start SG3. Start Timer 2 (*Special Purpose Timesetting No.10*) at the beginning of SG8 yellow. SG3 turns green when the Timer 2 expires.
- If Z- (*Masterlink & Flexilink*) is set, use Special Purpose Timesetting No.12 as the Timer 2.
- If Z+ (*Masterlink & Flexilink*) is set, use Special Purpose Timesetting No.14 as the Timer 2.

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	2 → 5	29.0	80	80	80	4.5	2.0 *	6.5
B	5 → 3	35.0	80	45	45	3.0	3.0	6.0
C	8 → 4	31.0	60	45	45	3.0	2.5	5.5
D	→							
E	→							
F	→							
G	→							

* Increased from 1.5s to 2.0s, due to high speed environment

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			
C1	C3	7 → 2	27.0	45	2.5	SM1
C1	C2	8 → 4	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

PEDESTRIAN TIMES									
PED	PHASE(S)	WALK			CLEARANCE				MINIMUM SOLID DON'T WALK
		DISTANCE (m)	TIME		DISTANCE (m)	TIME			
			GRAPH	ADOPTED		GRAPH	CL1	CL2	

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				
INCREMENT	4	-	-	-				
MAXIMUM INITIAL GREEN*	5	-	-	-				
MAXIMUM EXTENSION GREEN	6	34	15	20				
EARLY CUT OFF	7	8.0						
YELLOW	8	4.5	3.0	3.0				
ALL RED	9	2.0	3.0	2.5				
SPECIAL ALL RED	10	-	-	-				
GAP 1	11	2.5	2.5	3.5				
GAP 2	12	2.5	2.5	3.5				
GAP 3	13	-	2.5	-				
GAP 4	14	-	2.5	-				
HEADWAY 1	15	0.6	0.6	1.2				
HEADWAY 2	16	0.6	0.6	1.2				
HEADWAY 3	17	-	1.2	-				
HEADWAY 4	18	-	1.2	-				
WASTE 1	19	7	7	7				
WASTE 2	20	7	7	7				
WASTE 3	21	-	7	-				
WASTE 4	22	-	7	-				

* 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								
CLEARANCE 1	3								
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	2.5	SG7 ALL RED (SUBSTITUTE CØ ALL RED)
2	2.5	SG8 ALL RED (SUBSTITUTE CØ 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	NORMAL EARLY START TIMESETTING FOR SG1	
10	5	NORMAL EARLY START TIMESETTING FOR SG3	
11	0.5	ALTERNATE EARLY START TIMESETTING FOR SG1	AM PEAK Z-, No Z+
12	3	ALTERNATE EARLY START TIMESETTING FOR SG3	
13	3	ALTERNATE EARLY START TIMESETTING FOR SG1	PM PEAK No Z-, Z+
14	0.5	ALTERNATE EARLY START TIMESETTING FOR SG3	
15	4	SG7 MAXIMUM EXTENSION GREEN IN CØ (XSF7)	
16	4	SG8 MAXIMUM EXTENSION GREEN IN CØ (XSF8)	
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+)	ABC
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	No	R+
C	Yes (To A)	Q-
D		
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 None

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	} Alternate Early Start timesettings for SG1 & SG3 (Refer Special Purpose Timesettings No. 11 & 12 respectively)
Z- Master	
Z+ Flexi	} Alternate Early Start timesettings for SG1 & SG3 (Refer Special Purpose Timesettings No. 13 & 14 respectively)
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

PHASE SLOT DATA

SLOT <i>n</i>	=	3	,	4	,	0
		(phases)		(split plans)		(walks)
INT	=	6675				
VC	=	5				
CS	=					
COM	=	NET				
PK	=	!				
S#	=	0				
LM	=					
RMN	=	0				
DCL	=	0				
AT	=	15				
BT	=	6				
CT	=	6				
DT	=					
ET	=					
FT	=					
GT	=					
W1	=		W1 T	=		
W2	=		W2 T	=		
W3	=		W3 T	=		
W4	=		W4 T	=		
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	= 30C	B	=	B	=
C	= 15TGA	C	=	C	=

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																								
	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	24
	1						X																		
	2					X		X																	
	3					X																			
	4						X		X																
	5		X	X				X																	
	6	X			X				X																
	7		X			X																			
	8				X		X																		
	9																								
	10																								
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	23																								
	24																								

CHECKED: Martin Chelini DATE: 13/06/89

INT=6675

06/01/2014

PAGE

*** MAPPING TABLES

*** Input translation map

IMAP EQU *

SECT1 EQU *

FDB	INT1+1	(APP A1 L)
FDB	INT2+2	(APP A1 C)
FDB	INT3+3	(APP6)
FDB	INT4+4	(APP A12 L)
FDB	INT5+5	(APP A12 C)
FDB	INT6+6	(APP A12 R)
FDB	INT7+7	(APP A2 L)
FDB	INT8+8	(APP A2 C)
FDB	INT9+9	(APPC1)
FDB	INT10+10	(APP A22 L)
FDB	INT11+11	(APP A22 C)
FDB	INT12+12	(APP A22 R)
FDB	INT13+13	(APP B1 L)
FDB	INT14+14	(APP B1 C)
FDB	INT15+15	(APP B1 R)
FDB	INT16+16	(APP B2 L)
FDB	INT17+17	(APP B2 C)
FDB	INT18+18	(APP B2 R)
FDB	END	

SECT2 EQU *

FDB END