

TO	1. SENIOR ENGINEER, CONTROLLER APPLICATIONS	ACTION	DATE
	2. DAVID TRAN, PROGRAM DELIVERY		
FROM	ELIZABETH LEE	DATE	1/07/21
SITE	PRINCES HIGHWAY (LONSDALE STREET) / FOSTER STREET	SITE NO.	196
REGION	METRO SOUTH EAST	MUNICIPALITY	GREATER DANDENONG

GENERAL

Works Program Job?	Yes	Project Number	A568L
Classification	STANDARD	Works Order Number	4A007176

EXISTING CONTROLLER DETAILS

Type	Eclipse	Software Version & Release	V5R20	Lanterns	LED
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CONTROLLER APPLICATIONS

Target Date for Draft Opsheet	EARLY JULY
Target Date for completion of Program	MID JULY

PERSONALITY CHECKSUMS

	Hex	Octal
Total	7F	177
Times	25	45
Pers	5A	132

Prepare Interlocking

Dispatched 15/07/21

Update Graphics, Site Notes Yes

☐ Site ID Revision updated to

Description of changes ADD TWO EXTERNAL INPUTS FOR WALK DETECTORS.
UPGRADE TO VC6.1 & CHANGES AS PER HIGHLIGHTED.

PROGRAM DELIVERY - SIGNAL INSTALLATION

<input checked="" type="checkbox"/> Changes to signal hardware	<input type="checkbox"/> Changes to interlocking
<input type="checkbox"/> Additional detectors	<input type="checkbox"/> Changes to existing detector numbering
<input checked="" type="checkbox"/> Upgrade controller software to V6.1 R20	
<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	ELIZABETH LEE	Ext	8062
	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 ELIZABETH LEE (x8062) on job completion.

DATE PROM INSTALLED

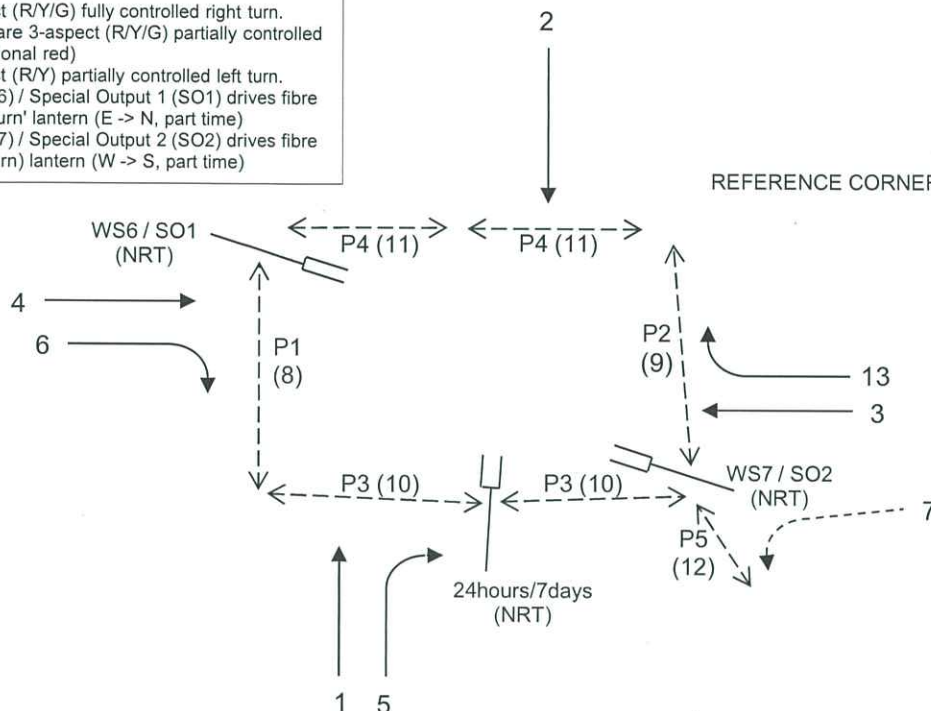
SITE NAME	PRINCES HIGHWAY (LONSDALE STREET) / FOSTER STREET		SITE NO.	196
MUNICIPALITY	GREATER DANDENONG	DESIGNED BY	ELIZABETH LEE	DATE 1/07/21
PLAN NO.	669198 C	DESIGN CHECKED	<i>Chris Ser</i>	DATE 5/7/2021
CONTROLLER TYPE	Eclipse	PROM CHECKED	<i>Dea</i>	DATE 15/7/2021

GROUP ALLOCATION

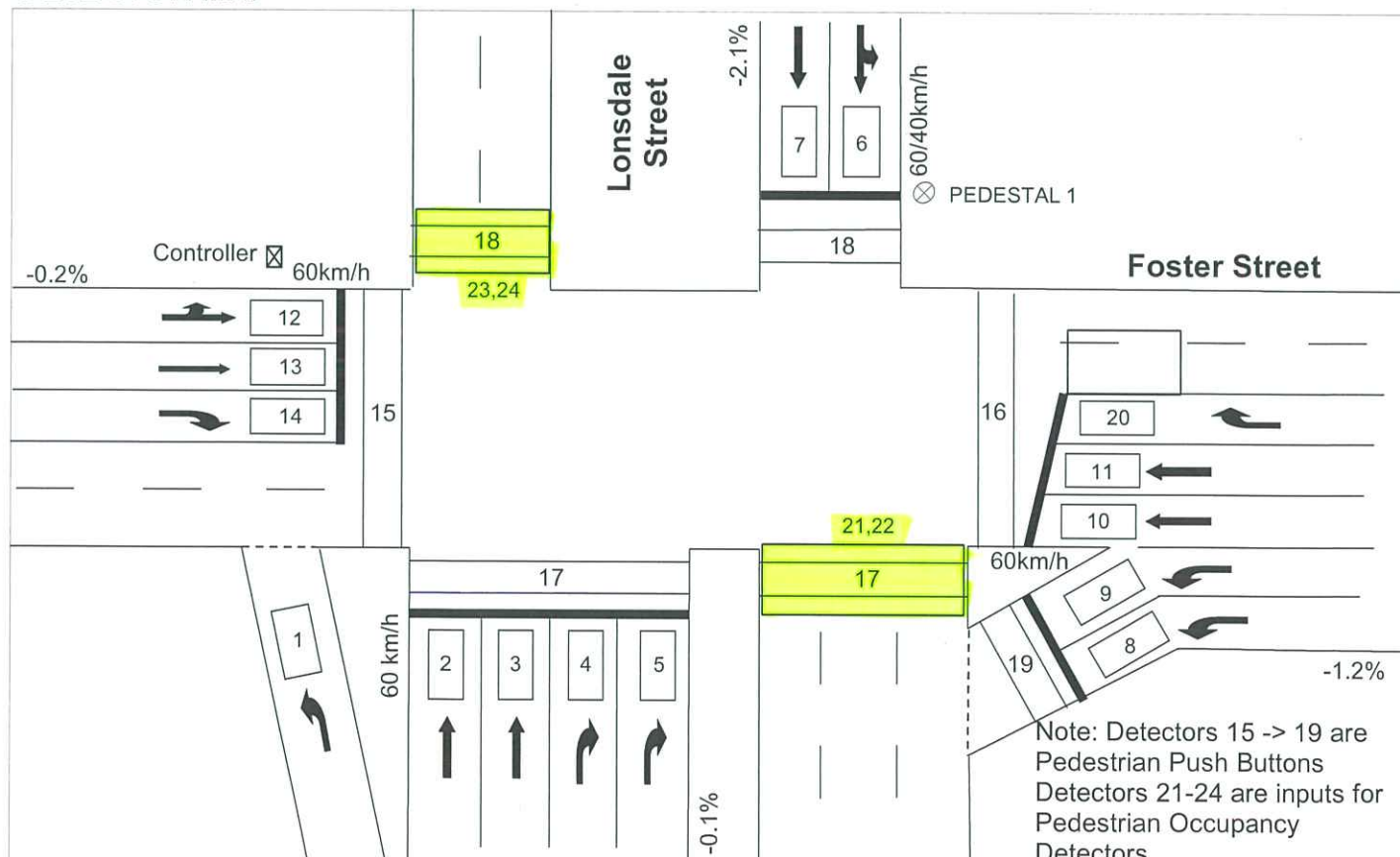
NOTES:

- SG 5 is a 3-aspect (R/Y/G) fully controlled right turn.
- SG 6 and SG 13 are 3-aspect (R/Y/G) partially controlled right turns (conditional red)
- SG 7 is a 2-aspect (R/Y) partially controlled left turn.
- Wait State 6 (WS6) / Special Output 1 (SO1) drives fibre optic 'No Right Turn' lantern (E -> N, part time)
- Wait State 7 (WS7) / Special Output 2 (SO2) drives fibre optic 'No Right Turn' lantern (W -> S, part time)

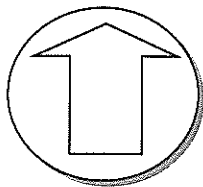
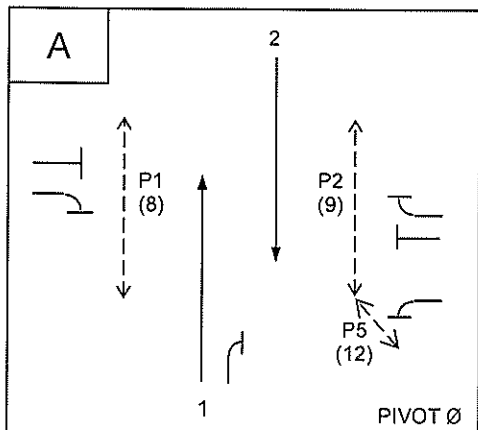
REFERENCE CORNER



DETECTOR MAP

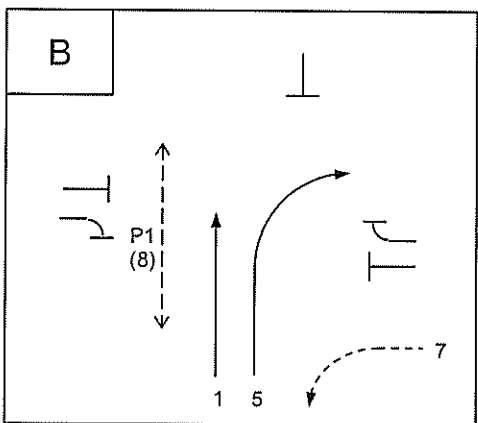


PHASING DIAGRAM

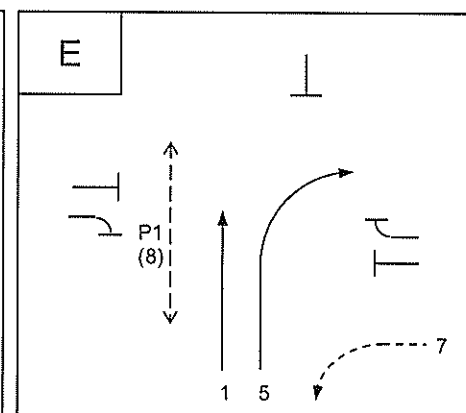
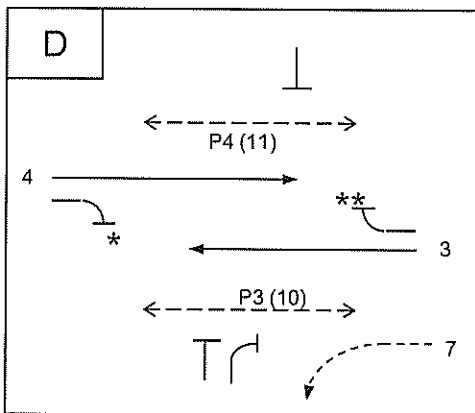
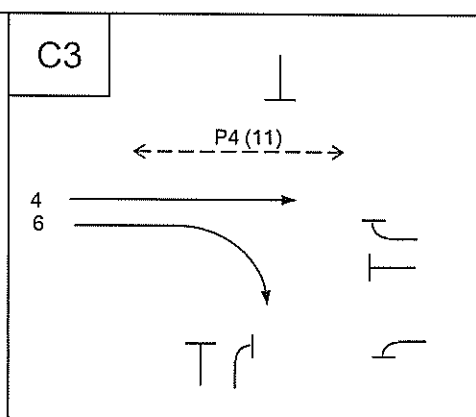
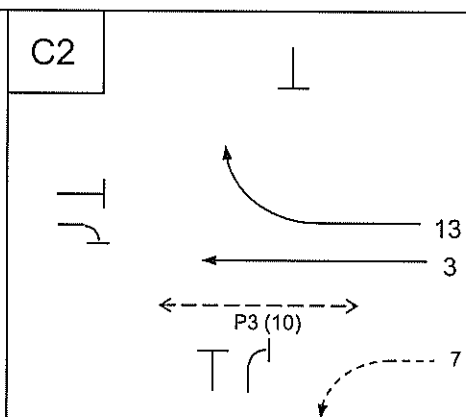
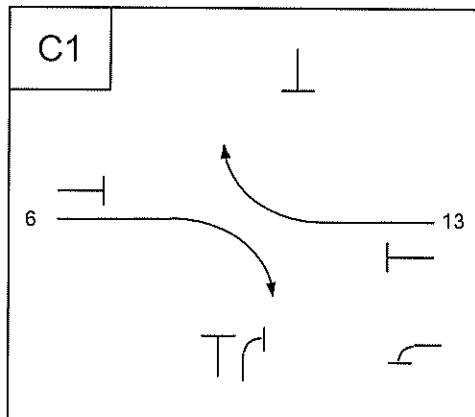


Refer General Notes

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



* SG 6 red arrow drop-out, except when banned (15:30 -> 18:30 Monday -> Friday)
 **SG 13 red arrow drop-out, except when banned (07:00 -> 09:00, 15:30 -> 18:30)



V.A. SEQUENCE **ABCD**

DESIGNED BY: **ELIZABETH LEE**

DATE **1/07/21**

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
1	I	1	-				-		Counting Loop		0					✓
2	I	2	A	✓			A,B				0			✓		
3	I	3	A	✓			A,B				0			✓		
4	I	4	B,E	✓			B,E			✓	0			✓		
5	I	5	B,E	✓			B,E			✓	0			✓		
6	I	6	A	✓			A				0			✓		
7	I	7	A	✓			A				0			✓		
8	I	8	B,E	✓			B,D,E			✓	0			✓		
9	I	9	B,E	✓			B,D,E			✓	0			✓		
10	I	10	D	✓			D				0			✓		
11	I	11	D	✓			D				0			✓		
12	I	12	D	✓			D				0			✓		
13	I	13	D	✓			D				0			✓		
14	I	14	C,D	D	C		C				0			✓		
15	E	1	A		✓			P1		✓	6		✓			
16	E	2	A		✓			P2		✓	6		✓			
17	E	3	D		✓			P3		✓	6		✓			
18	E	4	D		✓			P4		✓	6		✓			
19	E	5	A		✓			P5		✓	6		✓			
20	I	15	C,D	D	C		C				0					
21	E	6						P.Occ	Low(Opto1-ON Opto2-OFF)	✓	0		✓			✓
22	E	7						P.Occ	Medium(Opto1-OFF Opto2-ON)	✓	0		✓			✓
23	E	8						P.Occ	Low(Opto1-ON Opto2-OFF)	✓	0		✓			✓
24	E	9						P.Occ	Medium(Opto1-OFF Opto2-ON)	✓	0		✓			✓
25																
26																
27																
28																
29																
30																
31																
32																

DESIGNED BY: ELIZABETH LEE

DATE 1/07/21

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
33																
34																
35																
36																
37																
38																
39																
40																
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DESIGNED BY: ELIZABETH LEE

DATE 1/07/21

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, B11	1	AØ ↔ BØ	
2	6, 7	A22	2		
3	4, 5	B22, E11	5		
4	8, 9	B33, D11, E22	(7)	BØ → DØ, EØ ; DØ → EØ	
5	14	C11	6		
6	10, 11	D22	3		
7	12, 13	D33	4		
8	20	C22	13		
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					

DESIGNED BY: ELIZABETH LEE

DATE

1/07/21

APPROACH DEFINITIONS**PHASE APPROACHES**

Approach No	EXTENDING DETECTORS	APPROACH TIMER AND TIMESETTING DEFINITION*	SIGNAL GROUP	APPROACH EXPIRY (EXPAP)	Refer Special Notes
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					

* 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.

GENERAL NOTES

SUMMARY OF XSF FLAGS

(Communications Operation of XSF flags is required)

- XSF1** - For late introduction of P1 in AØ (*Masterlink only*).
- XSF2** - Auto introduce Pedestrian 2 and Pedestrian 5 in AØ.
- XSF3** - For auto introduction of P1 at the start of SG1.
- XSF4** - Inhibit P4 to introduce anytime in C3Ø and at the start of DØ.
- XSF6** - Select special maximum for SG6 in CØ via Special Purpose Timesetting No. 12.
- XSF7** - Only allow partially controlled SG6 to introduce every second cycle.
- XSF8** - Inhibit inputs from Detectors 21 & 22.
- XSF9** - Inhibit inputs from Detectors 23 & 24.
- XSF13** - Select special maximum for SG13 in CØ via Special Purpose Timesetting No. 13.
- XSF14** - Only allow partially controlled SG13 to introduce every second cycle.

SUMMARY OF MSS FLAGS

- MSS1** - Set when Detector 21 is occupied while P3 operating.
- MSS2** - Set when Detector 22 is occupied while P3 operating.
- MSS3** - Set when Detector 23 is occupied while P4 operating.
- MSS4** - Set when Detector 24 is occupied while P4 operating.

GENERAL OPERATION

- REVn. – first scan after start-up demands BØ, C1Ø, DØ
- Clear vehicle demands during associated phase green and yellow.
- EØ only operates in Masterlink or Flexilink.
- In DØ clear demands for CØ.
- Detectors 4 & 5 place locking calls for BØ and EØ. Clear calls for BØ & EØ from Detectors 4 & 5 during SG5 green and yellow.
- Detectors 8 & 9 place locking calls for BØ and EØ. Clear calls for BØ & EØ from Detectors 8 & 9 while SG7 is not red.
- Substitute EØ Yellow for BØ Yellow when going from BØ to AØ.
- Substitute DØ Yellow for CØ Yellow when going from C2Ø or C3Ø to any phase other than DØ.
- Expire AØ Late Start if from CØ or DØ (affects P2 & P5 introduction in AØ).
- Late start SG7 (*blank display*) in BØ & EØ when transitioning from AØ -> BØ or AØ -> EØ (*if there are concerns about conflicts between SG2 to SG7*).
- Late start SG7 (*blank display*) in DØ after Timer 5 (*Special Purpose Timesetting No. 14*) has expired when transitioning from AØ -> DØ. Timer 5 starts timing from the start of DØ (*if there are concerns about conflicts between SG2 to SG7*).

SIGNAL GROUP OPERATION

SIGNAL GROUP 7

- SG7 is a 2-aspect (Red/Yellow) left turn display.
- SG7 is held red in AØ (irrespective of P5 operating) and C1Ø and C3Ø.
- SG7 remains "blank-(Green on the Controller)" during BØ, C2Ø, DØ and EØ
- **SG7 uses BØ min green for its minimum green.**
- SG7 closes down if going:
 - BØ to AØ, C1Ø or C3Ø.
 - DØ to AØ
 - EØ to AØ, C1Ø or C3Ø
 - C2Ø to AØ

SIGNAL GROUP 6

General

SG6 is controlled by Special Movement Timer No 1 within CØ. CØ all-red timesetting is substituted for Special Movement Time No. 1.

Signal Group 6, Detector 14, Wait State 7 (WS7) & Special Output 2 (SO2) Operation

SG6 operates as a 3-aspect (R/Y/G) partially controlled right turn display at all times as described below, except for the periods 15:30 -> 18:30, Monday to Friday where it will be inhibited.

In normal operation, SG6 operates green / yellow / red in CØ and is switched to "blank" during DØ as described below.

- SG6 red will be switched to blank at the end of DØ Late Start period if P3 is not operating.
- If P3 runs in DØ, SG6 is held red in DØ while Timer 1 is timing. Timer 1 starts timing at the start of P3 Walk using Special Purpose Timesetting No. 9. When Timer 1 expires, SG6 red will be switched off in AØ the moment both Detector 21 & Detector 22 (AGD inputs) are not occupied during P3 Walk or Clearance. SG6 will switch off at the end of P3 clearance if Detector 21 and/or Detector 22 is occupied for the whole duration of P3 clearance.
- DØ ECO is used to guarantee a minimum blank period for SG6 in DØ. Timer 2 starts timing at the start of SG6's blank period using Special Purpose Timesetting No. 11. If SG13 is inhibited, when Timer 2 expires DØ Early Cut Off will be expired. If SG13 is operating, DØ ECO will be expired when both Timer 2 and Timer 4 are expired.
** Do not alter one of DØ ECO or Special Purpose Timesetting No. 11 without regard for the other.
- DØ ECO will be expired if both SG 6 and SG 13 are inhibited.
- If going from DØ to AØ, BØ or EØ, SH6 will be switched to red at the start of SG4 Red (DØ Red) and will be held red throughout AØ, C2Ø, BØ and EØ.

If **XSF 7** is set, Signal Group 6 may only introduce every second cycle.

Wait State 7 (WS7) & Special Output 2 (SO2)

Wait State 7 / Special Output 2 drives a part time FONRT ("No Right Turn") sign facing the Foster Street west approach.

Wait State 7 & Special Output 2 will be set during the hours 15:30 -> 18:30, Monday to Friday.

When the Right Turn Ban is due to commence (15:30, Monday to Friday), Wait State 7 & Special Output 2 will be activated at the next start of Signal Group 6 All-Red. If there is not a demand for SG6 at this changeover time, then a once only demand for CØ and Signal Group 6 will be placed.

While Wait State 7 & Special Output 2 are operating, Detector 14 will be inhibited from calling CØ & DØ, and SG6 will be held red.

When the Right Turn Ban is due to end (18:30, Monday to Friday), Wait State 7 & Special Output 2 will be cleared immediately and Detector 14 and SG6 will resume normal operating conditions. If this occurs in DØ, SG6 will remain red throughout DØ.

Detector 14

In normal operation (Wait State 7 & Special Output 2 not operating), Detector 14 places locking calls for DØ as well as non-locking calls for CØ when its presence time expires.

Control of Signal Group 6 via XSF 6

XSF 6 controls SG6. XSF 6 is used to set the maximum time for SG6 in CØ. This time is accessible in Special Purpose Timesetting No 12. The operation is that SG6 is forced off after this maximum time.

SIGNAL GROUP 13

General

SG13 is controlled by Special Movement Timer No 2 within CØ. CØ all-red timesetting is substituted for Special Movement Time No 2.

Signal Group 13, Detector 20, Wait State 6 (WS6) & Special Output 1 (SO1) Operation

SG13 operates as a 3-aspect (R/Y/G) partially controlled right turn display at all times as described below, except for the following periods when it will be inhibited:

- 07:00 -> 09:00, Monday to Friday
- 15:30 -> 18:30, Monday to Friday

In normal operation, SG13 operates green / yellow / red in CØ and is switched to "blank" during DØ as described below.

- SG13 red will be switched to blank at the end of DØ Late Start period if P4 is not operating.
- If P4 runs in DØ, SG13 is held red in DØ while Timer 3 is timing. Timer 3 starts timing at the start of P4 Walk using Special Purpose Timesetting No. 10. When Timer 3 expires, SG13 red will be switched off in AØ the moment both Detector 23 & Detector 24 (AGD inputs) are not occupied during P4 Walk or Clearance. SG13 will switch off at the end of P4 clearance if Detector 23 and/or Detector 24 is occupied for the whole duration of P4 clearance.
- DØ ECO is used to guarantee a minimum blank period for SG13 in DØ. Timer 4 starts timing at the start of SG13's blank period using Special Purpose Timesetting No. 11. When Timer 2 & Timer 4 expires, DØ Early Cut Off will be expired.
** Do not alter one of DØ ECO or Special Purpose Timesetting No. 11 without regard for the other.
DØ ECO will be expired if both SG6 and SG13 are inhibited.
- If going from DØ to AØ, BØ or EØ, SG13 will be switched to red at the start of SG3 Red (DØ Red) and will be held red throughout AØ, C3Ø, BØ and EØ.

If XSF14 is set, SG13 may only introduce every second cycle.

Wait State 6 (WS6) & Special Output 1 (SO1)

Wait State 6 / Special Output 1 drives a part time FONRT ("No Right Turn") sign facing the Foster Street east approach.

Wait State 6 & Special Output 1 will be set during the following periods:

- 07:00 -> 09:00, Monday to Friday
- 15:30 -> 18:30, Monday to Friday

When the Right Turn Ban is due to commence (7:00 - Monday to Friday, 15:30 - Monday to Friday), Wait State 6 & Special Output 1 will be activated at the next start of SG13 All-Red. If there is not a demand for SG13 at this changeover time, then a once only demand for CØ and SG13 will be placed.

While Wait State 6 & Special Output 1 are operating, Detector 20 will be inhibited from calling CØ & DØ, and SG13 will be held red.

When the Right Turn Ban is due to end (9:00 - Monday to Friday, 18:30 - Monday to Friday), Wait State 6 & Special Output 1 will be cleared immediately and Detector 20 and SG13 will resume normal operating conditions. If this occurs in DØ, SG13 will remain red throughout DØ.

Detector 20

In normal operation (Wait State 6 & Special Output 1 not operating), Detector 20 places locking calls for DØ as well as non-locking calls for CØ when its presence time expires.

Control of Signal Group 13 via XSF 13

XSF13 controls SG13. XSF13 is used to set the maximum time for SG13 in CØ. This time is accessible in Special Purpose Timesetting No 13. The operation is that SG13 is forced off after this maximum time.

SITE NAME: PRINCES HIGHWAY (LONSDALE ROAD) / FOSTER STREET

PEDESTRIAN GROUP OPERATION

Pedestrian 1

- P1 demands AØ.
- P1 can introduce at any time in EØ and at the start of AØ
- P1 is hidden in EØ
- P1 can overlap from EØ -> AØ, AØ -> BØ, AØ -> EØ, BØ -> EØ and BØ -> AØ
- P1 can introduce at any time in AØ provided XSF1 is set (*Masterlink only*).

Pedestrian 2

- P2 demands AØ and also calls P5.
- P2 can introduce at the start of AØ Minimum Green (P2 Late Starts in AØ)
- P2 auto introduces at the start of AØ Minimum Green if XSF2 is set.

Pedestrian 3

- P3 demands DØ.
- P3 can introduce anytime in C2Ø & at the start of DØ and can overlap from C2Ø -> DØ..

Pedestrian 4

- P4 demands DØ.
- If XSF4 is not set:
 - P4 can introduce at anytime in C3Ø & at the start of DØ and can overlap from C3Ø -> DØ.
- If XSF4 is set:
 - P4 can only introduce at the start of SG4 and can overlap from C3Ø -> DØ.

Pedestrian 5

- P5 demands AØ and also calls P2.
- P5 can introduce at the start of AØ Minimum Green (P5 Late Starts in AØ)
- P5 will auto introduce at the start of AØ Minimum Green if XSF2 is set.

Note: P5 is held in solid red "Don't Walk" in AØ Late Start in order to prevent "see through" effects on P2.

DETECTION OPERATION

Detector 21 & 22

- Detector 21 & 22 are inputs from a video Pedestrian Occupancy Detectors (PODs).
- The two inputs (Detector 21 & Detector 22) which use a binary-encoding scheme to describe four occupancy levels: (No-detect, low, medium and high) for the detectors.

Occupancy level	Opto1	Opto2
No-detect	Off	Off
Low	On	Off
Medium	Off	On
High	On	On

- The POD will be set up on the crossing and measure the occupancy of the conflict zone shown on Detector map (Page 1).
- The occupancy levels are decoded by the controller and outputs via MSS1 & MSS2.
- MSS1 or MSS2 are inhibited when Detector 21 or Detector 22 is alarmed respectively. MSS1 or MSS2 are inhibited when Detector 21 or Detector 22 is alarmed respectively.

SITE NAME: PRINCES HIGHWAY (LONSDALE ROAD) / FOSTER STREET

- Detector 21 and/or Detector 22 which hold the right turn red arrows if pedestrians are detected during P3 walk and clearance.
- Ignore detector 21 if the detector does not change state after Time 6 expires (*Special Purpose Timesetting No. 15*) or it is alarmed.
- Ignore detector 22 if the detector does not change state after Time 6 expires (*Special Purpose Timesetting No. 15*) or it is alarmed.
- Ignore the inputs from Detector 21 and Detector 22 when XSF8 is set and clear MSS1 & MSS2 if set.

Detector 23 & 24

- Detector 23 & 24 are inputs from a video Pedestrian Occupancy Detectors (PODs).
- The two inputs (Detector 23 & Detector 24), which use a binary-encoding scheme to describe four occupancy levels: (No-detect, low, medium and high) for the detectors.

Occupancy level	Opto1	Opto2
No-detect	Off	Off
Low	On	Off
Medium	Off	On
High	On	On

- The POD will be set up on the crossing and measure the occupancy of the conflict zone shown on Detector map (Page 1).
- The occupancy levels are decoded by the controller and outputs via MSS3 & MSS4. MSS3 or MSS4 are inhibited when Detector 23 or Detector 24 is alarmed respectively.
- Ignore detector 23 if the detector does not change state after Time 7 expires (*Special Purpose Timesetting No. 15*) or it is alarmed.
- Ignore detector 24 if the detector does not change state after Time 7 expires (*Special Purpose Timesetting No. 15*) or it is alarmed.
- Ignore the inputs from Detector 23 and Detector 24 when XSF9 is set and clear MSS3 & MSS4 if set.

TIMESETTING CHANGES DUE TO VARIABLE SPEED LIMIT OF LONSDALE STREET

Variable Speed Limit on Lonsdale Street (North approach) during the hours 08:00AM -> 24:00, Monday to Sunday, when the default 60 kph speed zone will change to 40 kph has impacted on the red time for AØ.

During the hours 08:00 -> 24:00, Monday to Sunday, carry out following change:-

- Substitute AØ Special All Red for AØ Red.

SITE NAME **PRINCES HIGHWAY (LONSDALE STREET) / FOSTER STREET**

SITE NO. **196**
DESIGN OF INTERGREEN AND PEDESTRIAN TIMES
INTERGREEN TIMES
**** Late start SG7 in BØ**

PHASE	CLEARANCE DETAILS			LEGAL SPEED	DESIGN SPEED		INTERGREEN		
	GROUP TRANSITION	DISTANCE	GRADE (%)*		YELLOW	RED	YELLOW	RED	TOTAL
A	2 → P3**	34.0	-2.1	60/40	60	60	4.0	2.0	6.0
B	5 → 13	23.0	-0.1	60	60	45	4.0	2.0	6.0
C	13 → P4	43.0	-1.2	60	45	45	3.0	3.5	6.5
D	3 → P1	42.0	-1.2	60	60	60	4.0	2.5	6.5
E	5 → 2*	26.0	-0.1	60	45	45	3.0	2.5	5.5
F	→								
A	2 → 7	44.0	-2.07	60/40	60	60	4.0	3.0	7.0

*Positive grade indicates an uphill approach & negative grade indicates a downhill approach. Specify negative grade values with a "-" prefix

PHASE SPECIAL ALL REDS AND SPECIAL MOVEMENT ALL REDS
*** Late start P2 by 1.0 second**

FROM PHASE	TO PHASE	CLEARANCE DETAILS		DESIGN SPEED	ALL RED	PHASE or S.M. No**
		GROUP TRANSITION	DISTANCE			
A	B	2 → P3**	34.0	40	3.5	BØ special red
A	B	2 → 7	44.0	40	4.0	
C1	C2	6 → 7	43.0	45	3.5	SM1
C1	C3	13 → P4	43.0	45	3.5	SM2
		→				
		→				

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

PEDESTRIAN TIMES

PED		WALK			CLEARANCE				MINIMUM SOLID DON'T WALK
PED	PHASE(S)	DISTANCE (m)	TIME		DISTANCE (m)	TIME			
			GRAPH	ADOPTED		GRAPH	CL1	CL2	
P1	A	20.0	8	8	20.0	13	11.0	2.0	4.0
P2	A	19.5	8	8	19.5	13	12.0	1.0	5.0
P3	D	18.5	17	15	14.5	10	10.0	0.0	6.5
P4	D	13.5	13	13	9.0	6	6.0	0.0	6.5
P5	A	9.0	8	8	9.0	6	3.0	3.0	3.0

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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	1	0	-	2	0		
MINIMUM GREEN	3	10	6	6	8	6		
INCREMENT	4	-	-	-	-	-		
MAXIMUM INITIAL GREEN*	5	-	-	-	-	-		
MAXIMUM EXTENSION GREEN	6	30	20	10	20	0		
EARLY CUT OFF	7				4.0			
YELLOW	8	4.0	4.0	3.0	4.0	3.0		
ALL RED	9	2.0	2.0	3.5	2.5	2.5		
SPECIAL ALL RED	10	3.0	-	-	-	-		
GAP 1	11	2.5	2.5	2.5	2.5	2.5		
GAP 2	12	2.5	2.5	2.5	2.5	2.5		
GAP 3	13	-	2.5	-	2.5	-		
GAP 4	14	-	-	-	-	-		
HEADWAY 1	15	0.6	0.6	1.2	0.6	0.6		
HEADWAY 2	16	0.6	0.6	1.2	0.6	0.6		
HEADWAY 3	17	-	0.6	-	0.6	-		
HEADWAY 4	18	-	-	-	-	-		
WASTE 1	19	7	7	7	7	7		
WASTE 2	20	7	7	7	7	7		
WASTE 3	21	-	7	-	7	-		
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	8.0	8.0	15.0	13.0	8.0			
CLEARANCE 1	3	11.0	12.0	10.0	6.0	3.0			
CLEARANCE 2	4	2.0	1.0			3.0			

* Minimum walk time - used in Isolated and Flexilink operation

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

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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		
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	15	Timer 1 : FOR HOLDING SG6 RED IN DØ WITH P3 OPERATING
10	13	Timer 3 : FOR HOLDING SG13 RED IN DØ WITH P4 OPERATING
11	4	Timers 2 & 4 : Minimum blank period for SG6 & SG13 in DØ
12	4	SG6 maximum extension green in CØ when XSF6 is set
13	4	SG13 maximum extension green in CØ when XSF13 is set
14	1	Timer 5 (which starts timing from start of DØ when transitioning from AØ -> DØ)
15	200	Timer 6 & 7: Inhibit Detectors 21, 22, 23 & 24
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		
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33		
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35		
36		
37		
38		
39		
40		

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SITE NAME **PRINCES HIGHWAY (LONSDALE STREET) / FOSTER STREET**SITE NO. **196****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: 0-15)	DETECTOR No	TIMESETTING (Range: 0-10)
1		25	
2		26	
3		27	
4		28	
5		29	
6		30	
7		31	
8		32	
9		33	
10		34	
11		35	
12		36	
13		37	
14	3.0	38	
15		39	
16		40	
17		41	
18		42	
19		43	
20	3.0	44	
21		45	
22		46	
23		47	
24		48	

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

NOTE: No support for presence timesettings for dets 25-48

Use presence timesettings for dets 1 - 24 or
special movement timesettings for dets 1 - 40**DAILY EVENT TIMESETTINGS**

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

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CONTROLLER TIMESETTINGS - 4

SPECIAL MOVEMENT TIMESETTINGS

GROUP No	STAGE 1 TIMESETTINGS (Yellow Timing)	STAGE 2 TIMESETTINGS (Red Timing)
1		
2		
3		
4		
5		
6	3.0 (CØ Yellow)	3.5 (CØ All Red)
7		
8		
9		
10		
11		
12		
13	3.0 (CØ Yellow)	3.5 (CØ All Red)
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		

NOTE:

Stage 1: Timesetting (Yellow Time)

Default is zero, uses phase yellow if special movement is activated

Can specify phase timesettings, eg. A phase yellow, or a time value, eg. 3 secs

Stage 2: Timesetting (Red Time)

Default is zero, Traff will use 2 secs red as default if special movement is activated

Can specify phase timesettings or other timesettings, eg. A phase red, or a time value, eg. 2.5 secs

FLEXILINK OPERATION**PHASE SEQUENCES**

No	PHASE SEQUENCE
1 (No Y+)	ABCDE
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	Q-
C	Yes (to D, E, A)	Auto
D	Yes (to E, A)	R+
E	Yes (to A)	Q+
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

BØ, EØ

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	DØ RELEASE PULSE
Q- Flexi	BØ RELEASE PULSE
Q+ Flexi	EØ RELEASE PULSE

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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>	=	5	,	1	,	5
(phases) (split plans) (walks)						
INT	=	196				
VC	=	6.1				
CS	=					
COM	=	NET				
PK	=	!				
S#	=	2				
LM	=	MF^				
RMN	=	0				
DCL	=	0				
AT	=	6				
BT	=	6				
CT	=	7				
DT	=	7				
ET	=	6				
FT	=					
GT	=	0				
W1	=	0ABE	W1 T	=	17	
W2	=	0	W2 T	=	18	
W3	=	2D	W3 T	=	17	
W4	=	2D	W4 T	=	13	
W5	=	0	W5 T	=	9	
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 =	0PDNGB	A =		A =	
B =	15NGC	B =		B =	
C =	12D	C =		C =	
D =	25E	D =		D =	
E =	15A	E =		E =	
G =		G =		G =	

TYPICAL VARIATION PARAMETERS

VP1	=	3	VP22	=		VP43	=	
VP2	=	0	VP23	=		VP44	=	
VP3	=	1	VP24	=		VP45	=	
VP4	=	45	VP25	=		VP46	=	
VP5	=	155	VP26	=		VP47	=	
VP6	=	1	VP27	=		VP48	=	
VP7	=	8	VP28	=		VP49	=	
VP8	=	0	VP29	=		VP50	=	
VP9	=	100	VP30	=		VP51	=	
VP10	=	25	VP31	=		VP52	=	
VP11	=	2	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	P5	m																					
	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	25
	1			X	X		X				X	X		X																			
	2			X	X	X	X	X			X	X		X																			
	3		X	X			X	X		X	X																						
	4		X	X			X			X	X				X																		
	5			X	X	X		X				X	X			X																	
m	6		X	X	X		X		X	X		X																					
	7			X				X						X																			
P1	8				X	X		X																									
P2	9				X	X	X								X																		
P3	10		X	X			X	X																									
P4	11		X	X										X																			
P5	12							X																									
m	13		X	X		X	X				X		X																				
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CHECKED: Co Duong DATE: 18/11/11

Conflict Table remains unchanged with this reprogram -EL, 29/06/2021

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DATE 1/07/21


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PAGE
***  MAPPING TABLES
***  Input translation map
IMAP EQU  *
SECT1 EQU  *
FDB  INT1+1      ( COUNTING LOOP )
FDB  INT2+2      ( APP A 2 )
FDB  INT3+3      ( APP A 3 )
FDB  INT4+4      ( APP BE 4 )
FDB  INT5+5      ( APP BE 5 )
FDB  INT6+6      ( APP A 6 )
FDB  INT7+7      ( APP A 7 )
FDB  INT8+8      ( APP BE 8 )
FDB  INT9+9      ( APP BE 9 )
FDB  INT10+10    ( APP CD 10 )
FDB  INT11+11    ( APP CD 11 )
FDB  INT12+12    ( APP CD 12 )
FDB  INT13+13    ( APP CD 13 )
FDB  INT14+14    ( APP CD 14 )
FDB  EXT1+P1     ( P1 P.B. )
FDB  EXT2+P2     ( P2 P.B. )
FDB  EXT3+P3     ( P3 P.B. )
FDB  EXT4+P4     ( P4 P.B. )
FDB  EXT5+P5     ( P5 P.B. )
FDB  INT15+20    ( APP CD 20 )
FDB  EXT6+21     ( OPTO - P3 21 )
FDB  EXT7+22     ( OPTO - P3 22 )
FDB  EXT8+23     ( OPTO - P4 23 )
FDB  EXT9+24     ( OPTO - P4 24 )
FDB  END

SECT2 EQU  *
FDB  END

```