

		ACTION	DATE
TO	1. SENIOR ENGINEER, CONTROLLER APPLICATIONS		
	2. STEVE BELZ, PROGRAM DELIVERY		
FROM	NADANAA NADANAKUMAR	DATE	3/07/18
SITE	NORTHERN HIGHWAY NR QUEEN STREET	SITE NO.	6313
REGION	NORTHERN	MUNICIPALITY	MITCHELL

GENERAL

Works Program Job?	Yes	Project Number	457219A15234
Classification	SIMPLE	Works Order Number	4A006018
Description	<input type="checkbox"/> New intersection signals <input checked="" type="checkbox"/> New pedestrian operated signals <input type="checkbox"/> Controller swap. Reason for swap		

CONTROLLER DETAILS

Type	ATSC 4	Software Version & Release	V6 R20.1	Lanterns	LED
Number of Signal Groups	Vehicle	2	Pedestrians	1	Total 3
Number of special outputs / Pedestrian Wait State Outputs					
Controller capacity	4				
Number of detectors	Vehicle	2	Pedestrians	1	Total 3
	Tram		Other		

CONTROLLER APPLICATIONS

Target Date for Draft Opsheet	6 JULY 2018
Target Date for completion of Program	27 JULY 2018
Prepare Interlocking	

PERSONALITY CHECKSUMS

	Hex	Octal
Total	10	20
Times	12	22
Pers	2	2
Dispatched	29/08/18	

PROGRAM DELIVERY - SIGNAL INSTALLATION

If switch-on of a metro site is to occur without a Telstra line, seek approval of the T/L Signal Services

SCATS connection	Controller must be connected to SCATS at switch-on
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PRIOR NOTICE

A job must be entered into RAI Action database before this switch on will be allowed.

<input checked="" type="checkbox"/>	SCATS data changes - notify	DARREN VAUGHAN	Ext	1210
	OR	NADANAA NADANAKUMAR	Ext	1210
before 3:00pm on the day before switch on.				

SCATS Data Changes - Slot data and Graphics

TRAFFIC MANAGEMENT CENTRE

<input checked="" type="checkbox"/>	Please notify DARREN VAUGHAN (x1210) on job completion.
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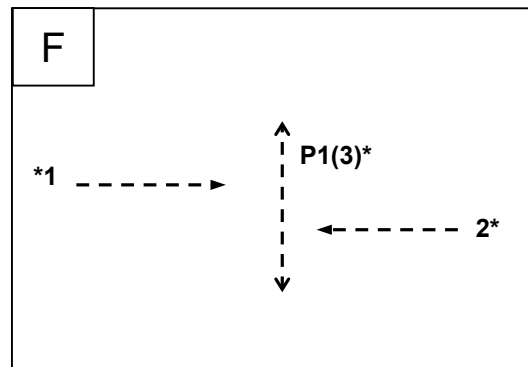
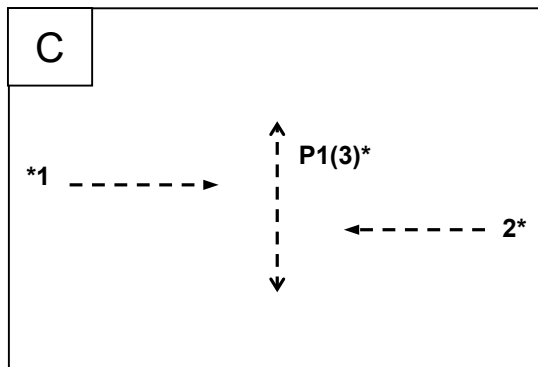
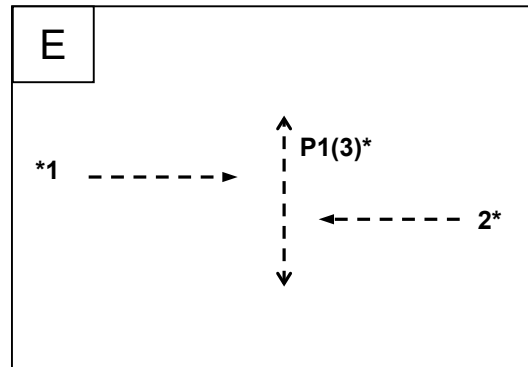
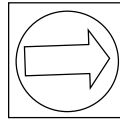
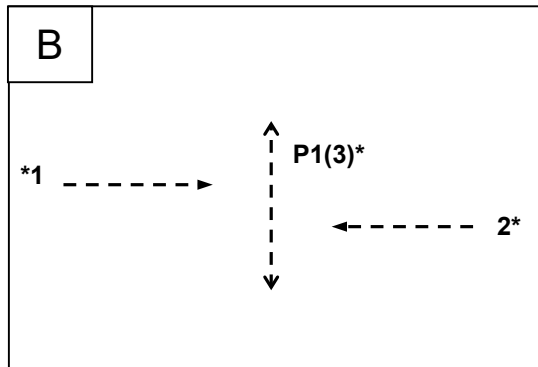
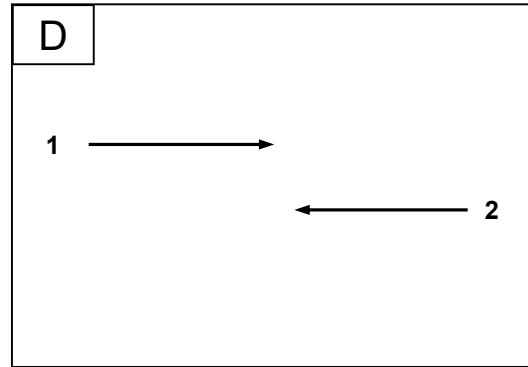
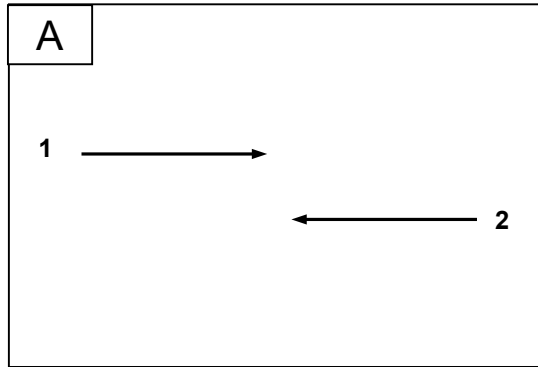
DATE OF NEW CONTROLLER SWITCH ON

SITE NAME	NORTHERN HIGHWAY NR QUEEN STREET			SITE NO.	6313
MUNICIPALITY	MITCHELL	DESIGNED BY	NADANAA NADANAKUMU	DATE	3/07/18
PLAN NO.	778211	DESIGN CHECKED		DATE	
CONTROLLER TYPE	ATSC 4	PROM CHECKED		DATE	

A diagram illustrating a 1D lattice. A vertical dashed line with arrows at both ends represents the lattice. Two particles, labeled 1 and 2, are positioned on opposite sides of the lattice. Particle 1 is on the left, with a solid arrow pointing right towards the lattice. Particle 2 is on the right, with a solid arrow pointing left towards the lattice. The label $P1(3)$ is placed to the right of the lattice line.

The diagram illustrates a T-junction where a road from the left meets a road from the bottom labeled "NORTHERN HIGHWAY". The speed limit for both roads is 60 km/h. The junction is divided into three lanes by two vertical lines. The left lane has a rectangular detection zone labeled "1". The middle lane has a circular detection zone labeled "3" at the top and a square detection zone labeled "3" at the bottom. The right lane has a rectangular detection zone labeled "2". A thick black vertical bar is located at the start of the left lane, and another thick black vertical bar is at the start of the right lane. A pedestrian push button symbol (a circle with a vertical line) is located at the bottom center of the junction, below the middle lane. A square symbol with an 'X' is located at the bottom left of the junction, below the left lane.

PHASING DIAGRAM



OPERATION IN LINK MODE

1. Signal groups are independent of phasing. All phases have a permanent demand in Masterlink & Flexilink
2. SG1 & SG2 cannot close down during AØ (refer note 6 below for the exception).
- * 3. SG1 & SG2 can close down at any time during BØ green, provided SG1 & SG2 minimum green has expired and both approaches gap or waste. If SG1 & SG2 close down at the end of BØ green (i.e. at the start of BØ yellow), P1 introduces at the start of CØ
- * 4. SG1 & SG2 cannot close down during CØ
5. Any ped demand placed during BØ intergreen or during CØ will not be serviced until the next cycle.
6. If BØ is left out of the sequence in Masterlink or Flexilink, SG1 & SG2 can close down at the start of AØ yellow and P1 introduces at the start of CØ.
7. The operation of DØ, EØ, FØ are the same as for AØ, BØ, CØ respectively. DØ, EØ and FØ are only used when double phasing.
8. When XSF3 (Master & Flexi) is set, P1 uses Special Purpose Timesetting No. 9 for its walk time.

OPERATION IN V.A. AND FLEXI ISOLATED MODES

1. Controller runs AØ and CØ.
2. AØ is extended by the vehicle detectors. When AØ gaps or wastes, AØ and SG1 & SG2 close down together.
3. CØ is called by P1. P1 introduces at the start of CØ (SG1 & SG2 close down at the start of AØ yellow). CØ runs for the duration of P1 walk, clearance and solid don't walk time.

V.A. SEQUENCE AC

DETECTOR FUNCTIONS

DETECTOR No.	Internal / External	Input Number	SPECIAL FUNCTION	DETECTOR ALARMS					
				DA Category	Disable	DA on S/C only	Fault Simulation		
							Call & Extend	Call Only	Ignore
1	I	1	Extend SG1, Approach 1 *	0			✓		
2	I	2	Extend SG2, Approach 2 *	0			✓		
3	E	1	Call CØ. Places demand for Ped 1**.	6		✓			
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									

* For Queuing Feature, refer notes on page 6.

** MSS11 is set for the duration of P1 demand.

INTERGREEN AND PEDESTRIAN TIMES

INTERGREEN TIMES

	LEGAL SPEED	DESIGN SPEED		INTERGREEN		
		YELLOW	RED	YELLOW	RED	TOTAL
SG1 & SG2	60	60	-	4.0	2.0	6.0

SG1 & SG2 are special movements that use AØ yellow and BØ all red timesettings.

PEDESTRIAN TIMES

	WALK			CLEARANCE			MINIMUM SOLID DON'T WALK
	DISTANCE (m)	TIME		DISTANCE (m)	TIME		
		GRAPH	ADOPTED		GRAPH	ADOPTED	
P1	16.0	8	8	16.0	11	11	3.0

CONTROLLER TIMESETTINGS - 1

PHASE TIMESETTINGS

Front Panel Command: Phase No.Timesetting No (e.g. 1.6 accesses A phase maximum extension green)

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 (1)	3	3.0	0.0	3.0	3.0	0.0	3.0	-
INCREMENT	4	-	-	-	-	-	-	-
MAXIMUM INITIAL GREEN	5	-	-	-	-	-	-	-
MAXIMUM EXTENSION GREEN (4)	6	40	-	-	-	-	-	-
EARLY CUT OFF	7	-	-	-	-	-	-	-
YELLOW (2)	8	4.0	4.0	3.0	4.0	4.0	3.0	-
ALL RED (2)	9	2.0	2.0	0.0	2.0	2.0	0.0	-
SPECIAL ALL RED	10	0*	-	-	-	-	-	-
GAP 1 (3)	11	3.0	-	-	-	-	-	-
GAP 2 (3)	12	3.0	-	-	-	-	-	-
GAP 3	13	-	-	-	-	-	-	-
GAP 4	14	-	-	-	-	-	-	-
HEADWAY 1	15	1.2	-	-	-	-	-	-
HEADWAY 2	16	1.2	-	-	-	-	-	-
HEADWAY 3	17	-	-	-	-	-	-	-
HEADWAY 4	18	-	-	-	-	-	-	-
WASTE 1	19	7	-	-	-	-	-	-
WASTE 2	20	7	-	-	-	-	-	-
WASTE 3	21	-	-	-	-	-	-	-
WASTE 4	22	-	-	-	-	-	-	-

1. For SG1 & SG2 minimum green in Isolated mode, refer Special Purpose Timesetting 10.

* Special all red for AØ → BØ, DØ → EØ.

For SG1 & SG2 minimum green in link mode, refer Special Purpose Timesetting 11.

2. When SG1 & SG2 close down they use AØ yellow and BØ all-red.

3. SG1 & SG2 use the gap, headway and waste times specified in AØ timesettings.

4. AØ maximum extension green is used only in Isolated mode.

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	-	-	-	-	-	-	-
CLEARANCE 1	3	11	-	-	-	-	-	-	-
CLEARANCE 2	4	0	-	-	-	-	-	-	-

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	8	P1 WALK TIME SUBSTITUTION
10	10	SG1 & SG2 MINIMUM GREEN IN ISOLATED MODE
11	10	SG1 & SG2 MINIMUM GREEN IN LINK MODE
12		
13		
14		
15		
16		
17		
18	0	LIMIT GREEN WATCHDOG TIMER
19	0	SPECIAL FACILITY CONTROLS ALARM TIMER
20		
21		
22		
23		
24		
25		
26		
27		
28		
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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	6.0
2	6.0
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

QUEUING FEATURE

APPROACH 1:

- If XSF9 (Masterlink) or R- (Flexilink) is set, and the presence time for detector 1 is expired in BØ, and there is a demand for P1, expire approach 1
- If XSF9 (Masterlink) or Q- (Flexilink) is set, and the presence time for detector 1 is expired in EØ, and there is a demand for P1, expire approach 1

APPROACH 2:

- If XSF10 (Masterlink) or R+ (Flexilink) is set, and the presence time for detector 2 is expired in BØ, and there is a demand for P1, expire approach 2
- If XSF10 (Masterlink) or Q+ (Flexilink) is set, and the presence time for detector 2 is expired in EØ, and there is a demand for P1, expire approach 2

DAILY EVENT TIMESETTINGS

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

CONTROLLER TIMESETTINGS - 4**SPECIAL MOVEMENT TIMESETTINGS**

GROUP No	STAGE 1 TIMESETTINGS (Yellow Timing)	STAGE 2 TIMESETTINGS (Red Timing)
1	4.0 (AØ yellow)	2.0 (BØ all red)
2	4.0 (AØ yellow)	2.0 (BØ all red)
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
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+)	ABCDEF (Only ABC run)
2 (Y+)	ABCDEF

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	No
B	No	No
C	No	No
D	No	No
E	No	No
F	No	No
G	No	No

PHASE SEQUENCE 2		
PHASE	LOOK AHEAD*	RELEASE
A	No	No
B	No	No
C	No	No
D	No	No
E	No	No
F	No	No
G	No	No

* 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 B, E

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	Double phasing, i.e. Run ABCDEF
Z- Flexi	
Z- Master	
Z+ Flexi	
Z+ Master	
R- Flexi	Queuing Feature (refer notes on page 6)
R+ Flexi	Queuing Feature (refer notes on page 6)
Q- Flexi	Queuing Feature (refer notes on page 6)
Q+ Flexi	Queuing Feature (refer notes on page 6)

DESIGNED BY: NADANAA NADANAKUMAR

DATE 3/07/18

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

PHYSICAL SLOT DATA						
SLOT <i>n</i>	=	6	,	1	,	0
		(phases)		(split plans)		(walks)
INT	=	6313				
VC	=	6				
CS	=					
COM	=	NET				
PK	=	!				
S#	=					
LM	=					
RMN	=	0				
DCL	=	0				
AT	=	4				
BT	=	6				
CT	=	3				
DT	=	4				
ET	=	6				
FT	=	3				
PP1	=	0,0A				
PP2	=	0,0A				
PP3	=	0,0A				
PP4	=	0,0A				

TYPICAL SPLIT PLAN DATA

PHASE SEQUENCE 1	
A =	0PDB
B =	50NGC
C* =	22#NGA
D =	1E
E =	1F
F =	1A

PED NO	PED NO			P1
	GROUP NO	1	2	3
	1			X
	2			X
P1	3	X	X	

* CØ = WALK + CLEARANCE + 3 SECONDS

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 =			