

TO	1. SENIOR ENGINEER, CONTROLLER APPLICATIONS 2. STEVE BELZ, PROGRAM DELIVERY - NORTHERN	ACTION	DATE
FROM	KRIS SADOWSKI	DATE	31/07/19
SITE	CALDER HIGHWAY/ALDER STREET	SITE NO.	6256
REGION	NORTHERN	MUNICIPALITY	GREATER BENDIGO

GENERAL

Works Program Job?	Yes	Project Number	BC122C
Classification	SIMPLE	Works Order Number	4A006480

EXISTING CONTROLLER DETAILS

Type	PSC2003	Software Version & Release	V5R82	Lanterns	LED
------	---------	----------------------------	-------	----------	-----

CONTROLLER APPLICATIONS

Target Date for Draft Opsheet	
Target Date for completion of Program	1/8/2019

Prepare Interlocking	No
----------------------	----

Update Graphics	No
-----------------	----

Description of changes	LED upgrades, changes to P2
------------------------	-----------------------------

PERSONALITY CHECKSUMS

	Hex	Octal
Total	A9	251
Times	28	50
Pers	81	201
Dispatched	26/09/19	

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 type="checkbox"/> Upgrade controller software to	
<input type="checkbox"/> Other changes	
<input checked="" type="checkbox"/> Place new operation specification in controller	

PRIOR NOTICE

At least 24 hour notice must be given to the TMC prior to switch-on

<input checked="" type="checkbox"/> SCATS data changes - notify	Kris Sadowski	Ext	1837
	OR	Darren Vaughan	Ext
			1197

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

SCATS Data Changes - Slot data.

TRAFFIC MANAGEMENT CENTRE

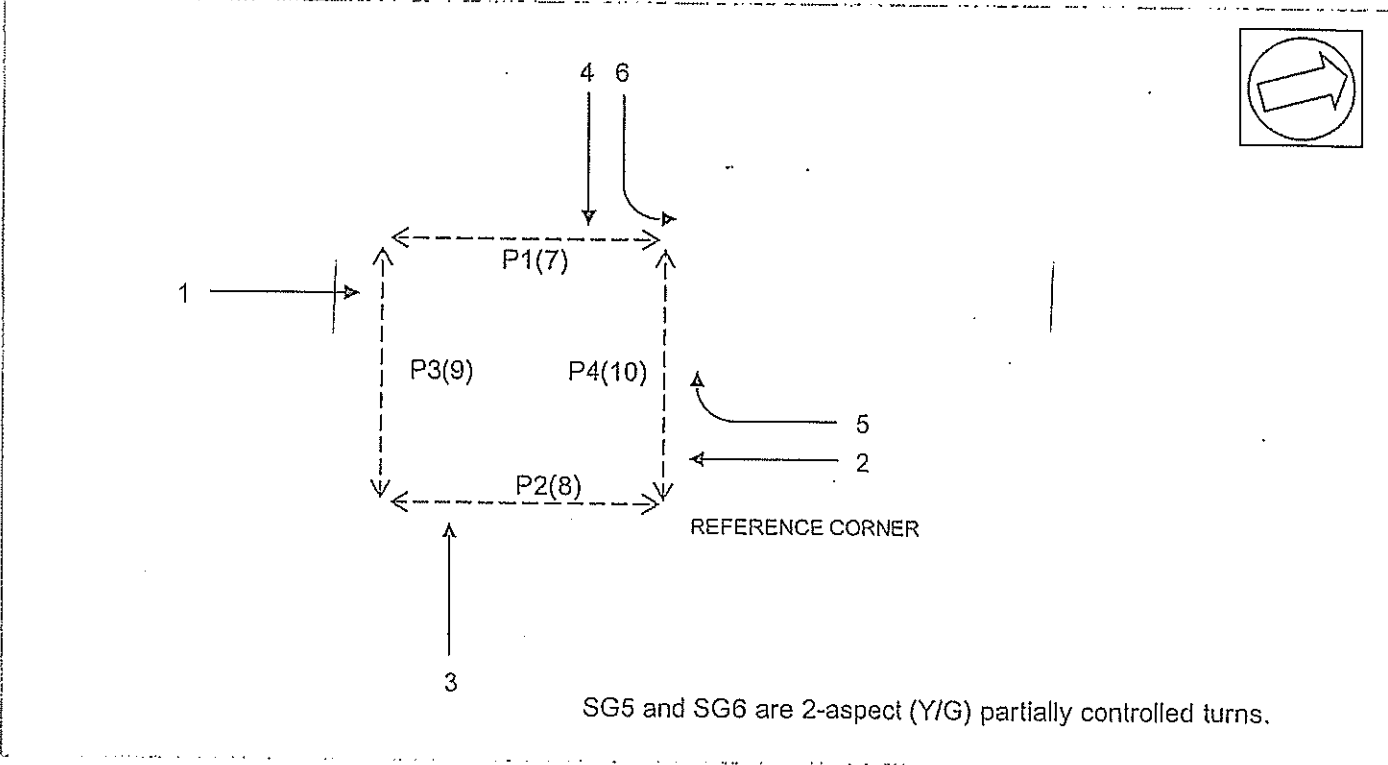
<input type="checkbox"/> Checksum update only
<input type="checkbox"/> Changes to trim or manual intervention features required

DATE PROM INSTALLED

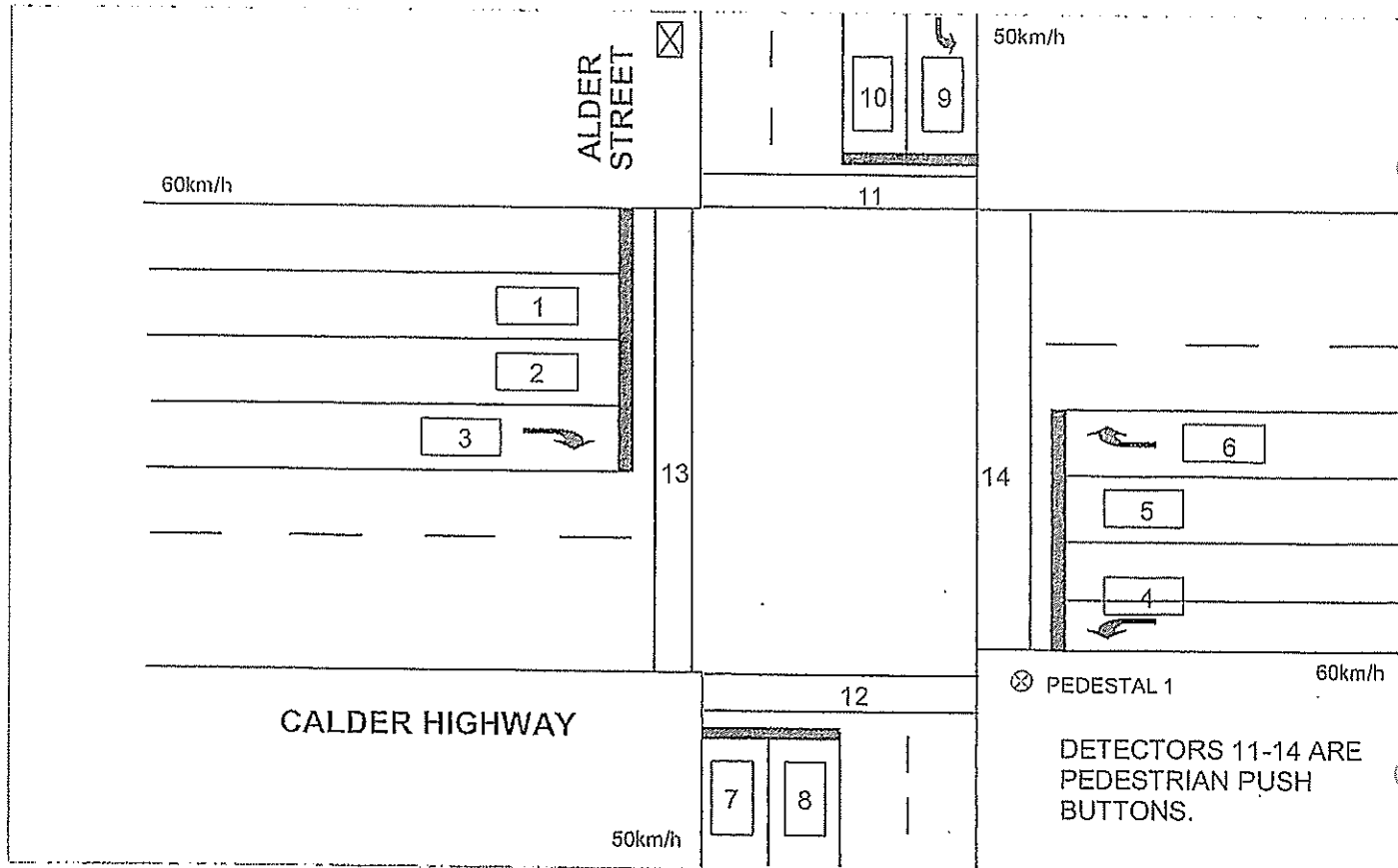
CONTROLLER OPERATION SPECIFICATION

SITE NAME	CALDER HIGHWAY/ALDER STREET		SITE NO.	6256
MUNICIPALITY	GREATER BENDIGO	DESIGNED BY	KRIS SADOWSKI	DATE
PLAN NO.	778213	DESIGN CHECKED	<i>N. J. Belhel</i>	DATE
CONTROLLER TYPE	PSC2003	PROM CHECKED	<i>K. Sadowski</i>	DATE
				26/9/19

GROUP ALLOCATION



DETECTOR MAP

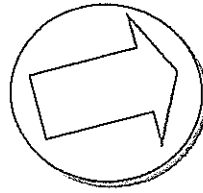
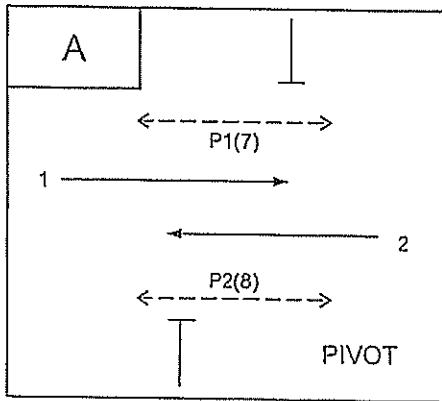


SITE NAME CALDER HIGHWAY/ALDER STREET

SITE NO.

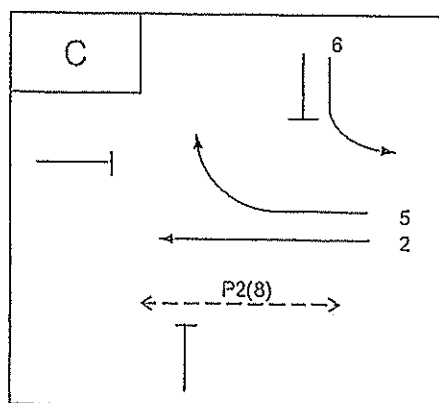
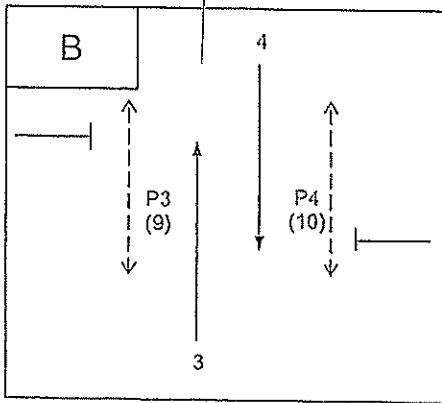
6256

PHASING DIAGRAM



Refer General Notes

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



V.A. SEQUENCE ABC

KRIS SADOWSKI

DATE 31/07/19

SITE NAME CALDER HIGHWAY/ALDER STREET

SITE NO. 6256

DETECTOR FUNCTIONS

DETECTOR No.	Internal / External	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
1	I	A	✓			A				0			✓		
2	I	A	✓			A				0			✓		
3	I	A	✓							0				✓	
4	I	A	✓			A				0			✓		
5	I	A	✓			A				0			✓		
6	I	A,C	A	C		C		✓		0			C		
7	I	B	✓			B				0			✓		
8	I	B	✓			B				0			✓		
9	I	C	✓			B,C		✓		0			C		
10	I	B	✓			B				0			✓		
11	E	A		✓			P1	✓		6		✓			
12	E	A		✓			P2	✓		6		✓			
13	E	B		✓			P3	✓		6		✓			
14	E	B		✓			P4	✓		6		✓			
15															
16															
17															
18															
19															
20															
21															
22															
23															
24															
25															
26															
27															
28															
29															
30															
31															
32															

DESIGNED BY: KRIS SADOWSKI

DATE 31/07/19

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	4, 5	A22	2		
3	7, 8	B11	3		
4	9	B22	4	B→C	
5	10	B33	4		
6	6	C11	5		
7	9	C22	6		
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 less 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)

XSF1 - Allows the late introduction of P1 in AØ (Master).

XSF2 - Allows the late introduction of P2 in AØ (Master).

SIGNAL GROUP OPERATION

Signal Group 2

If going AØ → CØ, SG2 closes down with SG1 in AØ and re-introduces at the end of CØ late start.

Signal Group 6

Late start SG6 in CØ if going BØ → CØ

PEDESTRIAN GROUP OPERATION

Pedestrian 1

P1 calls AØ.

P1 can introduce at the start of AØ.

In Master P1 can introduce at any time in AØ while XSF1 is set.

Pedestrian 2

P2 calls AØ.

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

In Master P2 can introduce at any time in AØ while XSF2 is set.

Late start P2 in CØ if going AØ → CØ.

P2 is hidden in CØ.

Pedestrian 3

P3 calls BØ.

P3 can introduce at the start of BØ.

Pedestrian 4

P4 calls BØ.

P4 can introduce at the start of BØ.

DETECTOR OPERATION

General

Clear vehicle demands during associated phase green and yellow.

Detector 6

Detector 6 places a non-locking call for CØ when its presence time expires.

Detector 9

Clear demands for CØ from detector 9 during SG4 and SG6 green and yellow.

SITE NAME **CALDER HIGHWAY/ALDER STREET**

SITE NO. **6256**

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 → P4	33.0	60	60	60	4.0	2.0	6.0
B	4 → P2	33.0	50	50	50	3.5	2.5	6.0
C	5 → P1	27.0	60	45	45	3.0	2.5	5.5
D	→							
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			
		→				
		→				
		→				
		→				
		→				
		→				

* 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	18.0	8	8	18.0	12	12.0		6.0
P2	A	18.0	8	8	18.0	12	12.0		6.0
P3	B	23.0	8	8	23.0	15	15.0		6.0
P4	B	23.0	8	8	23.0	15	15.0		6.0

DESIGNED BY: KRIS SADOWSKI

DATE 31/07/19

SITE NAME CALDER HIGHWAY/ALDER STREET

SITE NO. 6256

CONTROLLER TIMESETTINGS - 1

PHASE TIMESETTINGS

Front Panel Command: Phase No. Timesetting No (eg 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			2				
MINIMUM GREEN	3	10	8	6				
INCREMENT	4							
MAXIMUM INITIAL GREEN*	5							
MAXIMUM EXTENSION GREEN	6	30	10	10				
EARLY CUT OFF	7							
YELLOW	8	4.0	3.5	3.0				
ALL RED	9	2.0	2.5	2.5				
SPECIAL ALL RED	10							
GAP 1	11	4.0	2.5	2.5				
GAP 2	12	4.0	2.5	2.5				
GAP 3	13		2.5					
GAP 4	14							
HEADWAY 1	15	0.6	0.6	1.2				
HEADWAY 2	16	0.6	1.2	1.2				
HEADWAY 3	17		1.2					
HEADWAY 4	18							
WASTE 1	19	10	7	7				
WASTE 2	20	10	7	7				
WASTE 3	21		7					
WASTE 4	22							

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

PEDESTRIAN TIMESETTINGS

Front Panel Command: Pedestrian No. Timesetting No (eg 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	8.0	8.0				
CLEARANCE 1	3	12.0	12.0	15.0	15.0				
CLEARANCE 2	4								

* Minimum walk time - used in Isolated and Flexilink operation

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

DESIGNED BY: KRIS SADOWSKI

DATE 31/07/19

SITE NAME CALDER HIGHWAY/ALDER STREET

SITE NO. 6256

CONTROLLER TIMESETTINGS - 2

SPECIAL MOVEMENT TIMESETTINGS Front Panel Command: B.Timesetting No (eg 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 (eg B.19 accesses Special Movement Timesetting No 19)

Timesetting No	Timesetting (Range: 0-200)	FUNCTION
9	8	P1 WALK TIME SUBSTITUTION
10	8	P2 WALK TIME SUBSTITUTION
11	8	P3 WALK TIME SUBSTITUTION
12	8	P4 WALK TIME SUBSTITUTION
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		

DESIGNED BY: KRIS SADOWSKI

DATE 31/07/19

SITE NAME CALDER HIGHWAY/ALDER STREET

SITE NO. 6256

CONTROLLER TIMESETTINGS - 3

PRESENCE TIMESETTINGS

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

DETECTOR No	TIMESETTING (Range: 0-10)
1	
2	
3	
4	
5	
6	2.0
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)	

DESIGNED BY: KRIS SADOWSKI

DATE 31/07/19

SITE NAME CALDER HIGHWAY/ALDER STREET

SITE NO. 6256

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, eg. 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 (eg 25)
Y- Master	
Y+ Flexi	P1, P2, P3 and P4 Walk Time Substitution (Refer to Special Purpose Timesetting Nos. 9, 10, 11 and 12)
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	

DESIGNED BY: KRIS SADOWSKI

DATE 31/07/19

SITE NAME CALDER HIGHWAY/ALDER STREET

SITE NO. 6256

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> =	3	1	4
	(phases)	(split plans)	(peds)
INT =	6256		
VC =	5		
CS =			
COM =	NET		
PK =	!		
S# =			
LM =			
RMN =	0		
DCL =	0		
VP# =			
AT =	6		
BT =	6		
CT =	6		
DT =			
ET =			
FT =			
GT =			
W1 =	0	W1 T =	18
W2 =	0	W2 T =	18
W3 =	8	W3 T =	21
W4 =	8	W4 T =	21
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 =	25A	C =		C =	

TYPICAL VARIATION PARAMETERS

VP1 =	3	VP22 =		VP43 =	
VP2 =	0	VP23 =		VP44 =	
VP3 =	1	VP24 =		VP45 =	
VP4 =	45	VP25 =		VP46 =	
VP5 =	156	VP26 =		VP47 =	
VP6 =	1	VP27 =		VP48 =	
VP7 =	45	VP28 =		VP49 =	
VP8 =	156	VP29 =		VP50 =	
VP9 =	2	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 =			

DESIGNED BY: KRIS SADOWSKI

DATE 31/07/19

SITE NAME CALDER HIGHWAY/ALDER STREET

SITE NO. 6256

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	X	X	X			X	X														
	2			X	X					X	X														
	3	X	X			X		X	X																
	4	X	X			X		X	X																
m	5	X		X	X			X			X														
m	6	X						X			X														
P1	7			X	X	X	X																		
P2	8			X	X																				
P3	9	X	X																						
P4	10	X	X			X	X																		
	11																								
	12																								
	13																								
	14																								
	15																								
	16																								
	17																								
	18																								
	19																								
	20																								
	21																								
	22																								
	23																								
	24																								

CHECKED: Sean Kelloway DATE: 2/11/06

DESIGNED BY: KRIS SADOWSKI

DATE 31/07/19

