Bunn, Nick

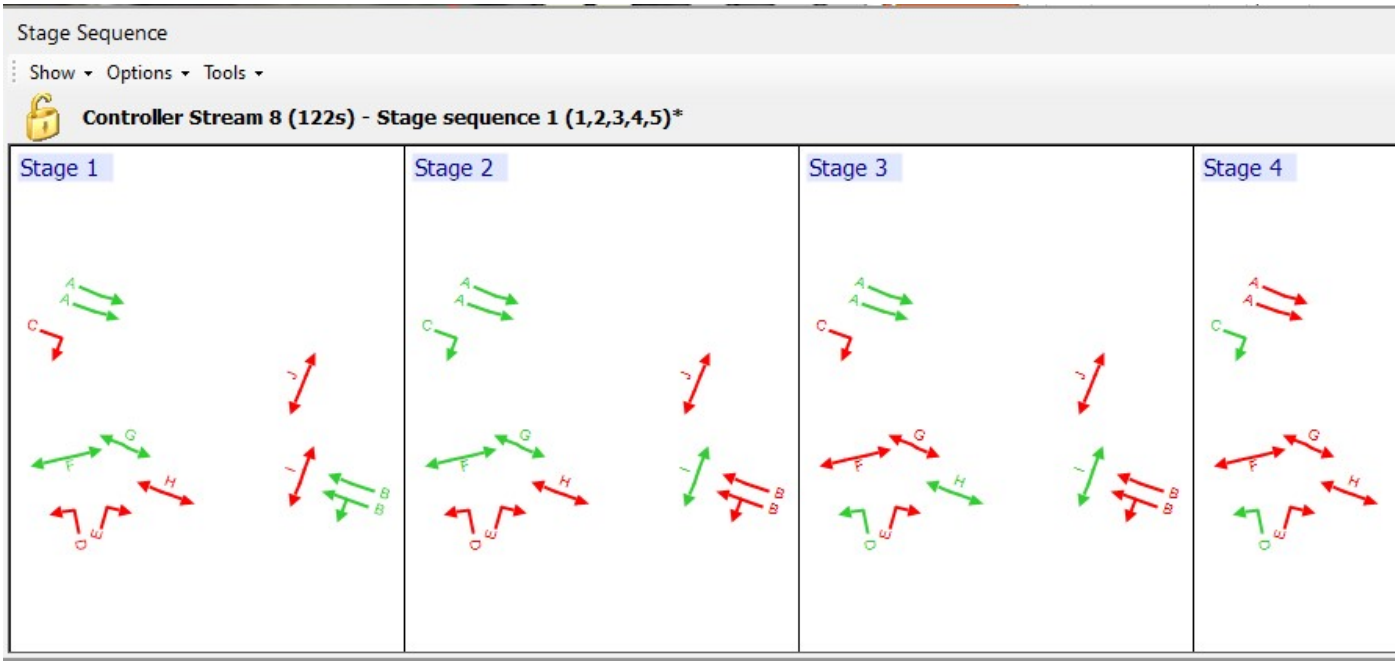
From: Wakenshaw, Gareth
Sent: 30 October 2023 16:17
To: [redacted]
Cc: Thomas, Patrick; Chadha, Adrian; Bunn, Nick
Subject: RE: Land NE of M42 J10 2023 - Baseline Transyt Validation Report & Consildated Modelling Strategy Note NH review
Attachments: Core 42 Controller Configuration Report.pdf; Core 42 Drawing.pdf; MHC-110-23 Signal Cycle Count Survey - Sites 1 - 3.xlsx

Hi Chris,

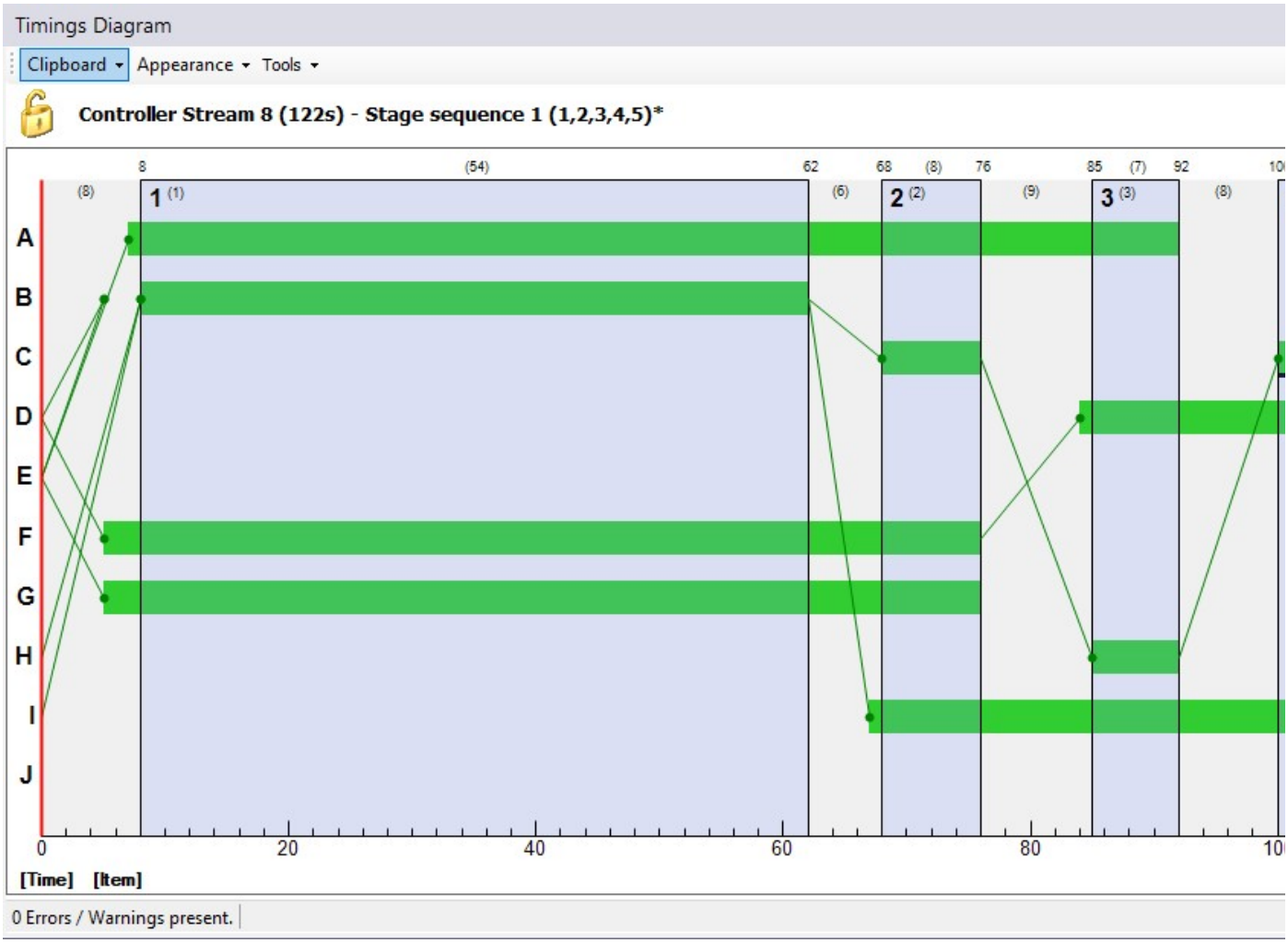
Hope you are well.

I have been reviewing the email below from Patrick and a Teams meet might help, however in advance of that I have looked the A5/ Core 42 junction and provided a response. I am off tomorrow and back in Wednesday (also off Thurs and Friday) so hopefully you could have had a look over this before Wednesday. From reviewing the drawing and signal spec I see what you mean that the stages are different. To progress the final item that needs resolving, please see screenshots below from the updated TRANSYT model. Based on your review of the signal data and frequency of stage calls, stage 6 is only called once, therefore I have omitted it from the staging sequence.

The proposed staging plan to use in the TRANSYT model is shown below and matches that in the signal controller specs and not the drawing specs.

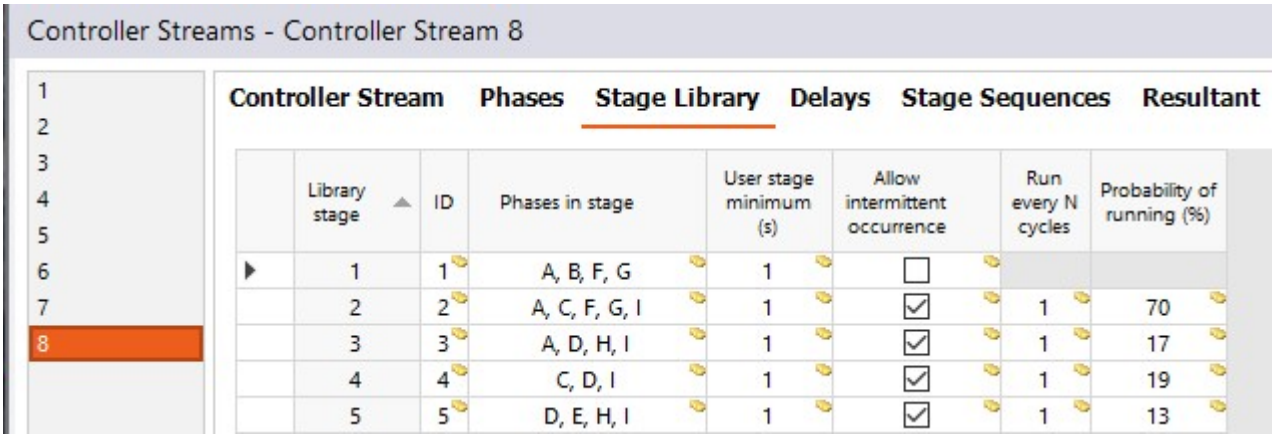


The signal timings below are based on the typical average green time of each phase, taken from the signal timing observations (see attached). Note that Stage D exceeds the typical average cycle time of 10 secs, however that is because Phase D is called in stages 3, 4 and 5 which are each called relatively infrequently, but cumulatively they have to be put into the stage sequence plan.



The screenshot below shows the proposed intermittent occurrence to use in the frequency of stage calls, based on your observations listed immedtaley below. After running the model with the proposed frequency assumptions, the signals log out put from the model looks reasonable and representative of the cycles observed.

- Stage 1 – 47 times
- Stage 2 – 33
- Stage 3 – 8
- Stage 4 – 9
- Stage 5 – 6
- Stage 6 – 1



	Library stage	ID	Phases in stage	User stage minimum (s)	Allow intermittent occurrence	Run every N cycles	Probability of running (%)
▶	1	1	A, B, F, G	1	☐		
	2	2	A, C, F, G, I	1	☑	1	70
	3	3	A, D, H, I	1	☑	1	17
	4	4	C, D, I	1	☑	1	19
	5	5	D, E, H, I	1	☑	1	13

Happy to have a call on Teams to look over this in detail if you think that is necessary, or if the above changes are acceptable, we can then update the model results and re-issue.

Kind Regards

Gareth Wakenshaw
Associate Transport Planner

Tetra Tech
[redacted]yside, Newcastle Upon Tyne, NE1 3DY
[redacted]

TETRA TECH

From: Patrick Thomas <[redacted]
Sent: Thursday, October 26, 2023 1:01 PM
To: Wakenshaw, Gareth [redacted]
[redacted]
Subject: RE: Land NE of M42 J10 2023 - Baseline Transyt Validation Report & Consildated Modelling Strategy Note NH review [Filed 26 Oct 2023 13:03]

Hi Gareth,

We have undertaken a review of the suitability of the applicant's response to previous NH comments on the TRANSYT Baseline model for the site. We thank the applicant for the latest model submission, and have included the following documents as part of our review:

- M42 Jn10 and A5 – Exist With Ref Case Pen Way & Dordon v5.t16
- TRANSYT 2023 Baseline Model – Response to NH 2023-10-09.pdf
- Level 1 Baseline.dwg

Context
The applicant has provided sufficient information to close out most comments, with the model being validated to a reasonable level. The following text highlights a need for the applicant to supply further information around how signal timings and demand dependency have been derived, as our calculations based upon the signal specifications provided do not produce the same signal timings and demand dependency parameters as those modelled. Though the model validates reasonably well, our comments request the applicant's workings to arrive at these signal timings as this discrepancy in signal timings could mask other issues if used as a basis for future year modelling.

Can the applicant confirm that the signal specifications supplied by the applicant are the most recently available for the SRN junctions at A5/Birch Coppice & A5/Hall End Lane, where signal specifications are dated May 2011 and November 2016 respectively?

A5/ Core 42 Signal Timings Survey

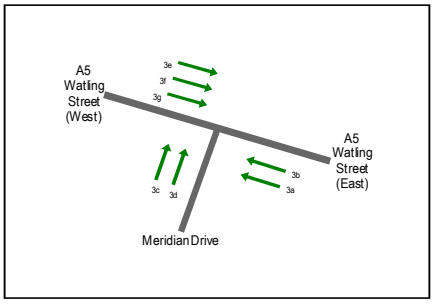
Tamworth
Signal Cycle Count Survey

Site 3 of 6
A5 Watling Street (East)
Meridien Drive
A5 Watling Street (West)

Date
Tuesday 04 July 2023

Weather
Sunny Interval
Temp: 18°C

0700 - 1000 (Weekday AM Peak)



	Approach 3a, 3b			Phase B		Approach 3c			Phase D
Sample	Start of Green Time	End of Green Time	Duration	Cycle Time	Sample	Start of Green Time	End of Green Time	Duration	Cycle Time
7	07:08:25	07:08:38	00:00:13		7	07:12:28	07:12:39	00:00:11	
8	07:08:55	07:12:12	00:03:17		8	07:13:26	07:13:37	00:00:11	
9	07:12:44	07:13:11	00:00:27		9	07:15:44	07:15:52	00:00:08	
10	07:13:43	07:13:58	00:00:15		10	07:17:15	07:17:27	00:00:12	
11	07:14:15	07:15:37	00:01:22		11	07:17:53	07:18:01	00:00:08	
12	07:15:59	07:16:21	00:00:22		12	07:19:02	07:19:10	00:00:08	
13	07:16:38	07:17:07	00:00:29		13	07:21:11	07:21:19	00:00:08	
14	07:17:32	07:17:46	00:00:14		14	07:24:36	07:24:44	00:00:08	
15	07:18:05	07:18:55	00:00:50		15	07:31:07	07:31:15	00:00:08	
16	07:19:14	07:21:03	00:01:49		16	07:34:35	07:34:46	00:00:11	00:03:28
17	07:21:23	07:21:58	00:00:35		17	07:37:54	07:38:01	00:00:07	00:03:19
18	07:22:17	07:22:43	00:00:26		18	07:42:03	07:42:14	00:00:11	00:04:09
19	07:23:03	07:24:28	00:01:25		19	07:43:43	07:43:54	00:00:11	00:01:40
20	07:24:49	07:26:12	00:01:23		20	07:47:17	07:47:28	00:00:11	00:03:34
21	07:26:28	07:27:16	00:00:48		21	07:50:07	07:50:18	00:00:11	00:02:50
22	07:27:36	07:30:21	00:02:45		22	07:51:28	07:51:36	00:00:08	00:01:21
23	07:30:40	07:31:00	00:00:20		23	07:54:03	07:54:09	00:00:06	00:02:35
24	07:31:20	07:34:28	00:03:08	00:00:40	24	07:54:47	07:54:55	00:00:08	00:00:44
25	07:34:51	07:35:27	00:00:36	00:03:31	25	07:56:42	07:56:51	00:00:09	00:01:55
26	07:35:45	07:36:41	00:00:56	00:00:54	26	07:58:12	07:58:20	00:00:08	00:01:30
27	07:37:00	07:37:09	00:00:09	00:01:15	27	08:01:46	08:01:55	00:00:09	00:03:34
28	07:37:28	07:37:48	00:00:20	00:00:28	28	08:12:48	08:13:00	00:00:12	00:11:02
29	07:38:07	07:38:33	00:00:26	00:00:39	29	08:14:42	08:14:48	00:00:06	00:01:54
30	07:38:50	07:40:00	00:01:10	00:00:43	30	08:15:28	08:15:36	00:00:08	00:00:46
31	07:40:18	07:40:39	00:00:21	00:01:28	31	08:20:09	08:20:27	00:00:18	00:04:41
32	07:40:57	07:41:30	00:00:33	00:00:39	32	08:23:08	08:23:15	00:00:07	00:02:59
33	07:41:49	07:41:56	00:00:07	00:00:52	33	08:25:02	08:25:21	00:00:19	00:01:54
34	07:42:20	07:43:36	00:01:16	00:00:31	34	08:28:03	08:28:16	00:00:13	00:03:01
35	07:44:00	07:44:22	00:00:22	00:01:40	35	08:29:17	08:29:25	00:00:08	00:01:14
36	07:44:42	07:45:18	00:00:36	00:00:42	36	08:32:22	08:32:32	00:00:10	
37	07:45:37	07:47:02	00:01:25	00:00:55	37	08:33:20	08:33:26	00:00:06	
38	07:47:35	07:48:16	00:00:41	00:01:58	38	08:33:54	08:34:02	00:00:08	
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42	07:52:26	07:52:55	00:00:29	00:00:43	42	08:41:21	08:41:30	00:00:09	
43	07:53:13	07:53:54	00:00:41	00:00:47	43	08:42:32	08:42:43	00:00:11	
44	07:54:15	07:54:40	00:00:25	00:01:02	44	08:43:22	08:43:29	00:00:07	
45	07:55:00	07:55:49	00:00:49	00:00:45	45	08:46:30	08:46:53	00:00:23	
46	07:56:08	07:56:34	00:00:26	00:01:08	46	08:47:32	08:47:38	00:00:06	
47	07:56:56	07:57:32	00:00:36	00:00:48	47	08:48:34	08:48:43	00:00:09	
48	07:57:51	07:58:05	00:00:14	00:00:55	48	08:49:18	08:49:39	00:00:21	
49	07:58:26	08:00:39	00:02:13	00:00:35	49	08:51:42	08:51:49	00:00:07	
50	08:01:00	08:01:38	00:00:38	00:02:34	50	08:54:02	08:54:10	00:00:08	
51	08:02:00	08:03:00	00:01:00	00:01:00	51	08:54:51	08:54:58	00:00:07	
52	08:03:20	08:03:56	00:00:36	00:01:20	52	08:56:03	08:56:12	00:00:09	
53	08:04:15	08:07:58	00:03:43	00:00:55	53	08:59:07	08:59:14	00:00:07	
54	08:08:17	08:08:42	00:00:25	00:04:02	54	09:00:02	09:00:13	00:00:11	
55	08:09:01	08:11:21	00:02:20	00:00:44	55	09:01:05	09:01:13	00:00:08	
56	08:11:40	08:12:41	00:01:01	00:02:39	56	09:01:36	09:01:51	00:00:15	
57	08:13:08	08:14:34	00:01:26	00:01:28	57	09:07:46	09:07:53	00:00:07	
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59	08:15:41	08:16:16	00:00:35	00:00:48	59	09:12:26	09:12:42	00:00:16	
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61	08:17:26	08:18:12	00:00:46	00:00:50	61	09:14:45	09:14:53	00:00:08	
62	08:18:30	08:20:02	00:01:32	00:01:04	62	09:16:16	09:16:23	00:00:07	
63	08:20:32	08:21:44	00:01:12	00:02:02	63	09:23:18	09:23:26	00:00:08	
64	08:22:03	08:23:00	00:00:57	00:01:31	64	09:25:01	09:25:10	00:00:09	
65	08:23:21	08:24:06	00:00:45	00:01:18	65	09:31:58	09:32:10	00:00:12	
66	08:24:25	08:24:57	00:00:32	00:01:04	66	09:33:00	09:33:09	00:00:09	
67	08:25:26	08:26:03	00:00:37	00:01:01	67	09:33:38	09:33:46	00:00:08	
68	08:26:22	08:27:46	00:01:24	00:00:56	68	09:34:08	09:34:15	00:00:07	
69	08:28:21	08:29:10	00:00:49	00:01:59	69	09:34:35	09:34:47	00:00:12	
70	08:29:30	08:32:07	00:02:37	00:01:09	70	09:41:19	09:41:33	00:00:14	
71	08:32:38	08:33:10	00:00:32		71	09:46:04	09:46:12	00:00:08	
72	08:33:33	08:33:47	00:00:14		72	09:47:31	09:47:40	00:00:09	
	07:30 to 08:30	00:00:54	00:01:15	Cycle Time		07:30 to 08:30	00:00:10	00:02:55	Cycle Time
	Stages in peak hc		47			Stages in peak hc		20	

1600 - 1900 (Weekday PM Peak)

	Approach 3a, 3b			Phase B		Approach 3c			Phase D
Sample	Start of Green Time	End of Green Time	Duration	Cycle Time	Sample	Start of Green Time	End of Green Time	Duration	Cycle Time
1	16:00:18	16:01:12	00:00:54		1	16:00:04	16:00:12	00:00:08	
2	16:01:42	16:01:49	00:00:07		2	16:01:19	16:01:36	00:00:17	
3	16:02:08	16:04:51	00:02:43		3	16:01:57	16:02:04	00:00:07	
4	16:05:35	16:05:46	00:00:11		4	16:04:58	16:05:29	00:00:31	
5	16:06:06	16:06:34	00:00:28		5	16:05:53	16:06:00	00:00:07	
6	16:06:55	16:08:13	00:01:18		6	16:06:42	16:06:49	00:00:07	
7	16:08:41	16:09:16	00:00:35		7	16:08:21	16:08:35	00:00:14	
8	16:09:34	16:10:14	00:00:40		8	16:09:22	16:09:29	00:00:07	
9	16:10:29	16:10:47	00:00:18		9	16:10:54	16:11:00	00:00:06	
10	16:11:06	16:11:38	00:00:32		10	16:11:45	16:11:52	00:00:07	
11	16:11:58	16:12:32	00:00:34		11	16:12:41	16:13:03	00:00:22	
12	16:13:08	16:14:34	00:01:26		12	16:14:41	16:15:10	00:00:29	
13	16:15:14	16:15:51	00:00:37		13	16:15:57	16:16:05	00:00:08	
14	16:16:10	16:16:56	00:00:46		14	16:17:03	16:17:14	00:00:11	
15	16:17:24	16:17:40	00:00:16		15	16:17:47	16:18:00	00:00:13	
16	16:18:06	16:18:29	00:00:23		16	16:18:34	16:18:43	00:00:09	
17	16:18:47	16:19:28	00:00:41		17	16:20:01	16:20:07	00:00:06	
18	16:19:45	16:19:53	00:00:08		18	16:27:35	16:27:44	00:00:09	
19	16:20:13	16:21:05	00:00:52		19	16:28:20	16:28:29	00:00:09	
20	16:21:23	16:21:36	00:00:13		20	16:29:19	16:29:25	00:00:06	
21	16:21:54	16:22:03	00:00:09		21	16:29:51	16:29:59	00:00:08	
22	16:22:20	16:23:51	00:01:31		22	16:30:49	16:30:55	00:00:06	
23	16:24:09	16:25:52	00:01:43		23	16:31:54	16:32:01	00:00:07	
24	16:26:09	16:26:52	00:00:43		24	16:33:32	16:33:39	00:00:07	
25	16:27:10	16:27:31	00:00:21		25	16:35:45	16:35:51	00:00:06	
26	16:27:49	16:28:15	00:00:26		26	16:36:36	16:37:11	00:00:35	
27	16:28:33	16:29:11	00:00:38		27	16:39:10	16:39:17	00:00:07	
28	16:29:31	16:29:46	00:00:15		28	16:39:50	16:39:56	00:00:06	
29	16:30:04	16:30:42	00:00:38		29	16:41:20	16:41:28	00:00:08	
30	16:31:01	16:31:49	00:00:48		30	16:42:03	16:42:11	00:00:08	
31	16:32:07	16:33:26	00:01:19		31	16:43:54	16:44:09	00:00:15	
32	16:33:45	16:33:53	00:00:08		32	16:47:30	16:47:38	00:00:08	
33	16:34:11	16:34:54	00:00:43		33	16:50:36	16:50:52	00:00:16	00:03:06
34	16:35:12	16:35:38	00:00:26		34	16:51:29	16:51:37	00:00:08	00:00:53
35	16:35:56	16:36:30	00:00:34		35	16:52:32	16:52:49	00:00:17	00:01:03
36	16:37:17	16:39:03	00:01:46		36	16:53:37	16:53:46	00:00:09	00:01:05
37	16:39:21	16:39:43	00:00:22		37	16:54:50	16:54:56	00:00:06	00:01:13
38	16:40:00	16:41:13	00:01:13		38	16:55:42	16:55:48	00:00:06	00:00:52
39	16:41:33	16:41:58	00:00:25		39	16:56:25	16:56:33	00:00:08	00:00:43
40	16:42:17	16:43:49	00:01:32		40	16:59:33	16:59:47	00:00:14	00:03:08
41	16:44:15	16:47:24	00:03:09		41	17:00:59	17:01:22	00:00:23	00:01:26
42	16:47:43	16:48:46	00:01:03		42	17:01:47	17:02:11	00:00:24	00:00:48
43	16:49:04	16:49:32	00:00:28	00:01:21	43	17:02:51	17:03:00	00:00:09	00:01:04
44	16:49:49	16:50:31	00:00:42	00:00:45	44	17:04:26	17:04:32	00:00:06	00:01:35
45	16:50:58	16:51:24	00:00:26	00:01:09	45	17:05:03	17:05:12	00:00:09	00:00:37
46	16:51:42	16:52:25	00:00:43	00:00:44	46	17:05:36	17:06:23	00:00:47	00:00:33
47	16:52:53	16:53:31	00:00:38	00:01:11	47	17:07:29	17:07:36	00:00:07	00:01:53
48	16:53:53	16:54:43	00:00:50	00:01:00	48	17:08:27	17:08:42	00:00:15	00:00:58
49	16:55:02	16:55:34	00:00:32	00:01:09	49	17:09:24	17:09:30	00:00:06	00:00:57
50	16:55:53	16:56:20	00:00:27	00:00:51	50	17:10:40	17:10:48	00:00:08	00:01:16
51	16:56:39	16:57:13	00:00:34	00:00:46	51	17:11:26	17:11:33	00:00:07	00:00:46
52	16:57:30	16:59:28	00:01:58	00:00:51	52	17:15:05	17:15:37	00:00:32	00:03:39
53	16:59:51	17:00:53	00:01:02	00:02:21	53	17:17:17	17:17:38	00:00:21	00:02:12
54	17:01:26	17:01:39	00:00:13	00:01:35	54	17:18:06	17:18:13	00:00:07	00:00:49
55	17:02:16	17:02:46	00:00:30	00:00:50	55	17:18:47	17:18:57	00:00:10	00:00:41
56	17:03:05	17:03:23	00:00:18	00:00:49	56	17:20:02	17:20:10	00:00:08	00:01:15
57	17:03:46	17:04:17	00:00:31	00:00:41	57	17:22:27	17:22:37	00:00:10	00:02:25
58	17:04:38	17:04:58	00:00:20	00:00:52	58	17:23:09	17:23:16	00:00:07	00:00:42
59	17:05:16	17:05:29	00:00:13	00:00:38	59	17:23:42	17:23:55	00:00:13	00:00:33
60	17:06:30	17:07:20	00:00:50	00:01:14	60	17:24:25	17:24:34	00:00:09	00:00:43
61	17:07:42	17:08:19	00:00:37	00:01:12	61	17:26:19	17:26:27	00:00:08	00:01:54
62	17:08:48	17:09:16	00:00:28	00:01:06	62	17:27:31	17:27:39	00:00:08	00:01:12
63	17:09:37	17:10:02	00:00:25	00:00:49	63	17:29:54	17:30:01	00:00:07	00:02:23
64	17:10:19	17:10:34	00:00:15	00:00:42	64	17:32:08	17:32:13	00:00:05	00:02:14
65	17:10:52	17:11:21	00:00:29	00:00:33	65	17:32:43	17:32:52	00:00:09	00:00:35
66	17:11:40	17:13:36	00:01:56	00:00:48	66	17:33:21	17:33:28	00:00:07	00:00:38
67	17:13:53	17:14:59	00:01:06	00:02:13	67	17:33:49	17:33:56	00:00:07	00:00:28
68	17:15:43	17:17:13	00:01:30	00:01:50	68	17:34:17	17:34:23	00:00:06	00:00:28
69	17:17:43	17:17:57	00:00:14	00:02:00	69	17:35:20	17:35:28	00:00:08	00:01:03
70	17:18:17	17:18:43	00:00:26	00:00:34	70	17:37:27	17:37:46	00:00:19	00:02:07
71	17:19:04	17:19:54	00:00:50	00:00:47	71	17:38:51	17:39:37	00:00:46	00:01:24
72	17:20:15	17:22:22	00:02:07	00:01:11	72	17:40:39	17:40:49	00:00:10	00:01:48
73	17:22:43	17:23:03	00:00:20	00:02:28	73	17:41:40	17:41:47	00:00:07	00:01:01
74	17:23:23	17:23:34	00:00:11	00:00:40	74	17:43:17	17:43:24	00:00:07	00:01:37
75	17:24:01	17:24:18	00:00:17	00:00:38	75	17:44:16	17:44:23	00:00:07	00:00:59
76	17:24:39	17:25:17	00:00:38	00:00:38	76	17:45:23	17:45:30	00:00:07	
77	17:25:36	17:26:09	00:00:33	00:00:57	77	17:49:00	17:49:08	00:00:08	
78	17:26:33	17:27:23	00:00:50	00:00:57	78	17:50:32	17:50:40	00:00:08	
79	17:27:43	17:28:46	00:01:03	00:01:10	79	17:51:01	17:51:08	00:00:07	
80	17:29:09	17:29:46	00:00:37	00:01:26	80	17:52:13	17:52:21	00:00:08	
81	17:30:06	17:30:21	00:00:15	00:00:57	81	17:52:47	17:52:54	00:00:07	
82	17:30:38	17:31:59	00:01:21	00:00:32	82	17:53:38	17:53:46	00:00:08	
83	17:32:19	17:32:38	00:00:19	00:01:41	83	17:54:36	17:54:43	00:00:07	
84	17:32:59	17:33:13	00:00:14	00:00:40	84	17:55:12	17:55:20	00:00:08	
85	17:33:33	17:33:40	00:00:07	00:00:34	85	17:55:41	17:55:49	00:00:08	
86	17:34:01	17:34:08	00:00:07	00:00:28	86	17:57:01	17:57:09	00:00:08	
87	17:34:28	17:35:14	00:00:46	00:00:27	87	17:57:54	17:58:21	00:00:27	
88	17:35:34	17:36:18	00:00:44	00:01:06	88	17:59:00	17:59:10	00:00:10	
89	17:36:35	17:37:22	00:00:47	00:01:01	89	18:00:35	18:00:44	00:00:09	
90	17:37:51	17:38:45	00:00:54	00:01:16	90	18:01:34	18:01:41	00:00:07	
91	17:39:43	17:40:33	00:00:50	00:01:52	91	18:03:24	18:03:37	00:00:13	
92	17:40:56	17:41:28	00:00:32	00:01:13	92	18:03:58	18:04:26	00:00:28	
93	17:41:58	17:42:18	00:00:20	00:01:02	93	18:05:16	18:05:24	00:00:08	
94	17:42:35	17:43:04	00:00:29	00:00:37	94	18:06:28	18:06:38	00:00:10	
95	17:43:30	17:44:06	00:00:36	00:00:55	95	18:07:15	18:07:25	00:00:10	
96	17:44:30	17:45:17	00:00:47	00:01:00	96	18:07:55	18:08:01	00:00:06	
97	17:45:36	17:45:57	00:00:21		97	18:08:46	18:08:54	00:00:08	
	16:45 to 17:45		00:00:39	00:01:03		16:45 to 17:45		00:00:12	00:01:19
	Stages in peak ho			Cycle Time 54		Stages in peak ho			Cycle Time 43
	Approach 3a, 3b			Phase B		Approach 3c			Phase D

	Approach 3d			Phase E
Sample	Start of Green Time	End of Green Time	Duration	Cycle Time
7	07:21:10	07:21:18	00:00:08	
8	07:37:54	07:38:02	00:00:08	
9	07:47:22	07:47:28	00:00:06	00:09:28
10	07:50:12	07:50:19	00:00:07	00:02:50
11	08:12:54	08:13:01	00:00:07	00:22:42
12	08:25:15	08:25:22	00:00:07	00:12:21
13	08:28:07	08:28:15	00:00:08	00:02:52
14	08:32:25	08:32:33	00:00:08	
15	08:33:54	08:34:02	00:00:08	
16	08:41:21	08:41:31	00:00:10	
17	08:42:35	08:42:42	00:00:07	
18	08:46:44	08:46:53	00:00:09	
19	09:00:06	09:00:14	00:00:08	
20	09:16:17	09:16:24	00:00:07	
21	09:46:04	09:46:11	00:00:07	
22	09:53:15	09:53:23	00:00:08	
23	09:54:23	09:54:32	00:00:09	
24			00:00:00	
25			00:00:00	
26			00:00:00	
27			00:00:00	
28			00:00:00	
29			00:00:00	
30			00:00:00	
31			00:00:00	
32			00:00:00	
33			00:00:00	
34			00:00:00	
35			00:00:00	
36			00:00:00	
37			00:00:00	
38			00:00:00	
39			00:00:00	
40			00:00:00	
41			00:00:00	
42			00:00:00	
43			00:00:00	
44			00:00:00	
45			00:00:00	
46			00:00:00	
47			00:00:00	
48			00:00:00	
49			00:00:00	
50			00:00:00	
51			00:00:00	
52			00:00:00	
53			00:00:00	
54			00:00:00	
55			00:00:00	
56			00:00:00	
57			00:00:00	
58			00:00:00	
59			00:00:00	
60			00:00:00	
61			00:00:00	
62			00:00:00	
63			00:00:00	
64			00:00:00	
65			00:00:00	
66			00:00:00	
67			00:00:00	
68			00:00:00	
69			00:00:00	
70			00:00:00	
71			00:00:00	
72			00:00:00	
	07:30 to 08:30		00:00:07	00:10:03
			Stages in peak ho	Cycle Time 5

	Approach 3e, 3f			Phase A
Sample	Start of Green Time	End of Green Time	Duration	Cycle Time
7	07:21:24	07:37:45	00:16:21	
8	07:38:07	07:47:18	00:09:11	
9	07:47:34	07:50:07	00:02:33	00:09:27
10	07:50:25	08:03:28	00:13:03	00:02:51
11	08:03:47	08:12:52	00:09:05	00:13:22
12	08:13:07	08:25:09	00:12:02	00:09:20
13	08:25:28	08:28:04	00:02:36	00:12:21
14	08:28:22	08:32:21	00:03:59	00:02:54
15	08:32:43	08:33:49	00:01:06	
16	08:34:09	08:41:17	00:07:08	
17	08:41:36	08:42:31	00:00:55	
18	08:42:50	08:45:46	00:02:56	
19	08:46:13	08:46:41	00:00:28	
20	08:46:59	09:00:00	00:13:01	
21	09:00:19	09:16:11	00:15:52	
22	09:16:30	09:23:46	00:07:16	
23	09:24:05	09:45:59	00:21:54	
24	09:46:19	09:53:12	00:06:53	
25	09:53:30	09:54:22	00:00:52	
26	09:54:37	10:02:52	00:08:15	
27			00:00:00	
28			00:00:00	
29			00:00:00	
30			00:00:00	
31			00:00:00	
32			00:00:00	
33			00:00:00	
34			00:00:00	
35			00:00:00	
36			00:00:00	
37			00:00:00	
38			00:00:00	
39			00:00:00	
40			00:00:00	
41			00:00:00	
42			00:00:00	
43			00:00:00	
44			00:00:00	
45			00:00:00	
46			00:00:00	
47			00:00:00	
48			00:00:00	
49			00:00:00	
50			00:00:00	
51			00:00:00	
52			00:00:00	
53			00:00:00	
54			00:00:00	
55			00:00:00	
56			00:00:00	
57			00:00:00	
58			00:00:00	
59			00:00:00	
60			00:00:00	
61			00:00:00	
62			00:00:00	
63			00:00:00	
64			00:00:00	
65			00:00:00	
66			00:00:00	
67			00:00:00	
68			00:00:00	
69			00:00:00	
70			00:00:00	
71			00:00:00	
72			00:00:00	
	07:30 to 08:30		00:08:05	00:08:22
			Stages in peak ho	Cycle Time 6

	Approach 3d			Phase E
Sample	Start of Green Time	End of Green Time	Duration	Cycle Time
1	16:01:29	16:01:37	00:00:08	
2	16:05:21	16:05:29	00:00:08	
3	16:08:29	16:08:36	00:00:07	
4	16:12:55	16:13:03	00:00:08	
5	16:15:01	16:15:08	00:00:07	
6	16:33:31	16:33:39	00:00:08	
7	16:37:03	16:37:11	00:00:08	
8	16:41:18	16:41:26	00:00:08	
9	16:42:02	16:42:10	00:00:08	
10	16:44:01	16:44:09	00:00:08	
11	16:47:28	16:47:36	00:00:08	
12	16:55:40	16:55:48	00:00:08	00:08:12
13	16:59:38	16:59:45	00:00:07	00:03:58
14	17:01:13	17:01:20	00:00:07	00:01:35
15	17:02:04	17:02:12	00:00:08	00:00:51
16	17:02:50	17:02:58	00:00:08	00:00:46
17	17:05:02	17:05:10	00:00:08	00:02:12
18	17:06:13	17:06:22	00:00:09	00:01:11
19	17:15:30	17:15:38	00:00:08	00:09:17
20	17:17:29	17:17:37	00:00:08	00:01:59
21	17:32:05	17:32:13	00:00:08	00:14:36
22	17:37:39	17:37:47	00:00:08	00:05:34
23	17:39:30	17:39:38	00:00:08	00:01:51
24	17:51:00	17:51:08	00:00:08	
25	17:55:11	17:55:19	00:00:08	
26	17:58:14	17:58:21	00:00:07	
27	18:04:18	18:04:26	00:00:08	
28	18:06:28	18:06:36	00:00:08	
29	18:07:14	18:07:24	00:00:10	
30	18:08:45	18:08:53	00:00:08	
31	18:10:05	18:10:12	00:00:07	
32	18:17:40	18:17:48	00:00:08	
33	18:18:26	18:18:34	00:00:08	
34	18:21:27	18:21:35	00:00:08	
35	18:23:59	18:24:08	00:00:09	
36	18:27:53	18:28:02	00:00:09	
37	18:35:06	18:35:15	00:00:09	
38	18:38:34	18:38:42	00:00:08	
39	18:48:40	18:48:48	00:00:08	
40	18:53:02	18:53:09	00:00:07	
41			00:00:00	
42			00:00:00	
43			00:00:00	
44			00:00:00	
45			00:00:00	
46			00:00:00	
47			00:00:00	
48			00:00:00	
49			00:00:00	
50			00:00:00	
51			00:00:00	
52			00:00:00	
53			00:00:00	
54			00:00:00	
55			00:00:00	
56			00:00:00	
57			00:00:00	
58			00:00:00	
59			00:00:00	
60			00:00:00	
61			00:00:00	
62			00:00:00	
63			00:00:00	
64			00:00:00	
65			00:00:00	
66			00:00:00	
67			00:00:00	
68			00:00:00	
69			00:00:00	
70			00:00:00	
71			00:00:00	
72			00:00:00	
73			00:00:00	
74			00:00:00	
75			00:00:00	
76			00:00:00	
77			00:00:00	
78			00:00:00	
79			00:00:00	
80			00:00:00	
81			00:00:00	
82			00:00:00	
83			00:00:00	
84			00:00:00	
85			00:00:00	
86			00:00:00	
87			00:00:00	
88			00:00:00	
89			00:00:00	
90			00:00:00	
91			00:00:00	
92			00:00:00	
93			00:00:00	
94			00:00:00	
95			00:00:00	
96			00:00:00	
97			00:00:00	

16:45 to 17:45	00:00:08	00:04:20	Cycle Time
	Stages in peak ho	12	

Approach 3d	Phase E

	Approach 3e, 3f			Phase A
Sample	Start of Green Time	End of Green Time	Duration	Cycle Time
1	15:58:52	16:01:27	00:02:35	
2	16:01:43	16:05:15	00:03:32	
3	16:05:36	16:08:25	00:02:49	
4	16:08:41	16:12:53	00:04:12	
5	16:13:09	16:15:00	00:01:51	
6	16:15:15	16:33:27	00:18:12	
7	16:33:47	16:34:25	00:00:38	
8	16:34:48	16:37:01	00:02:13	
9	16:37:18	16:41:16	00:03:58	
10	16:41:34	16:41:59	00:00:25	
11	16:42:17	16:44:03	00:01:46	
12	16:44:16	16:47:24	00:03:08	
13	16:47:43	16:52:51	00:05:08	
14	16:53:10	16:55:36	00:02:26	00:05:27
15	16:55:55	16:59:37	00:03:42	00:02:45
16	16:59:52	17:01:10	00:01:18	00:03:57
17	17:01:27	17:02:01	00:00:34	00:01:35
18	17:02:17	17:02:48	00:00:31	00:00:50
19	17:03:05	17:04:58	00:01:53	00:00:48
20	17:05:18	17:06:09	00:00:51	00:02:13
21	17:06:47	17:07:45	00:00:58	00:01:29
22	17:08:06	17:13:06	00:05:00	00:01:19
23	17:13:28	17:15:29	00:02:01	00:05:22
24	17:15:44	17:17:28	00:01:44	00:02:16
25	17:17:44	17:32:01	00:14:17	00:02:00
26	17:32:22	17:37:36	00:05:14	00:14:38
27	17:37:52	17:39:27	00:01:35	00:05:30
28	17:39:43	17:50:57	00:11:14	00:01:51
29	17:51:16	17:55:07	00:03:51	
30	17:55:26	17:58:11	00:02:45	
31	17:58:29	18:04:17	00:05:48	
32	18:04:32	18:06:23	00:01:51	
33	18:06:43	18:07:10	00:00:27	
34	18:07:31	18:08:40	00:01:09	
35	18:08:59	18:10:01	00:01:02	
36	18:10:36	18:17:38	00:07:02	
37	18:17:53	18:18:22	00:00:29	
38	18:18:44	18:21:23	00:02:39	
39	18:21:42	18:23:55	00:02:13	
40	18:24:15	18:27:50	00:03:35	
41	18:28:08	18:35:03	00:06:55	
42	18:35:21	18:38:32	00:03:11	
43	18:38:48	18:48:36	00:09:48	
44	18:49:14	18:52:58	00:03:44	
45	18:53:16	19:23:21	00:30:05	
46			00:00:00	
47			00:00:00	
48			00:00:00	
49			00:00:00	
50			00:00:00	
51			00:00:00	
52			00:00:00	
53			00:00:00	
54			00:00:00	
55			00:00:00	
56			00:00:00	
57			00:00:00	
58			00:00:00	
59			00:00:00	
60			00:00:00	
61			00:00:00	
62			00:00:00	
63			00:00:00	
64			00:00:00	
65			00:00:00	
66			00:00:00	
67			00:00:00	
68			00:00:00	
69			00:00:00	
70			00:00:00	
71			00:00:00	
72			00:00:00	
73			00:00:00	
74			00:00:00	
75			00:00:00	
76			00:00:00	
77			00:00:00	
78			00:00:00	
79			00:00:00	
80			00:00:00	
81			00:00:00	
82			00:00:00	
83			00:00:00	
84			00:00:00	
85			00:00:00	
86			00:00:00	
87			00:00:00	
88			00:00:00	
89			00:00:00	
90			00:00:00	
91			00:00:00	
92			00:00:00	
93			00:00:00	
94			00:00:00	
95			00:00:00	
96			00:00:00	
97			00:00:00	

16:45 to 17:45	00:03:09	00:03:28	Cycle Time
	Stages in peak ho	15	

Approach 3e, 3f	Phase A

	Approach 3g			Phase C
Sample	Start of Green Time	End of Green Time	Duration	Cycle Time
7	07:12:18	07:12:25	00:00:07	
8	07:13:16	07:13:24	00:00:08	
9	07:14:03	07:14:11	00:00:08	
10	07:15:40	07:15:52	00:00:12	
11	07:16:25	07:16:32	00:00:07	
12	07:22:04	07:22:10	00:00:06	
13	07:22:51	07:22:57	00:00:06	
14	07:26:17	07:26:22	00:00:05	
15	07:27:21	07:27:30	00:00:09	
16	07:30:26	07:30:33	00:00:07	
17	07:35:33	07:35:49	00:00:16	00:05:07
18	07:36:47	07:36:54	00:00:07	00:01:14
19	07:37:14	07:37:21	00:00:07	00:00:27
20	07:38:36	07:38:44	00:00:08	00:01:22
21	07:40:04	07:40:12	00:00:08	00:01:28
22	07:40:44	07:40:52	00:00:08	00:00:40
23	07:41:36	07:41:43	00:00:07	00:00:52
24	07:43:48	07:43:55	00:00:07	00:02:12
25	07:44:28	07:44:35	00:00:07	00:00:40
26	07:45:23	07:45:30	00:00:07	00:00:55
27	07:47:08	07:47:16	00:00:08	00:01:45
28	07:48:22	07:48:33	00:00:11	00:01:14
29	07:50:02	07:50:07	00:00:05	00:01:40
30	07:51:27	07:51:36	00:00:09	00:01:25
31	07:52:13	07:52:19	00:00:06	00:00:46
32	07:52:58	07:53:07	00:00:09	00:00:45
33	07:53:59	07:54:07	00:00:08	00:01:01
34	07:54:45	07:54:54	00:00:09	00:00:46
35	07:55:55	07:56:03	00:00:08	00:01:10
36	07:56:41	07:56:49	00:00:08	00:00:46
37	07:57:37	07:57:45	00:00:08	00:00:56
38	07:58:10	07:58:19	00:00:09	00:00:33
39	08:00:45	08:00:52	00:00:07	00:02:35
40	08:01:46	08:01:54	00:00:08	00:01:01
41	08:03:05	08:03:12	00:00:07	00:01:19
42	08:04:01	08:04:09	00:00:08	00:00:56
43	08:08:03	08:08:11	00:00:08	00:04:02
44	08:08:47	08:08:54	00:00:07	00:00:44
45	08:11:26	08:11:34	00:00:08	00:02:39
46	08:15:27	08:15:36	00:00:09	00:04:01
47	08:16:23	08:16:29	00:00:06	00:00:56
48	08:17:11	08:17:19	00:00:08	00:00:48
49	08:18:17	08:18:24	00:00:07	00:01:06
50	08:20:21	08:20:26	00:00:05	00:02:04
51	08:21:49	08:21:57	00:00:08	00:01:28
52	08:24:11	08:24:18	00:00:07	00:02:22
53	08:25:00	08:25:09	00:00:09	00:00:49
54	08:26:07	08:26:15	00:00:08	00:01:07
55	08:27:51	08:28:02	00:00:11	00:01:44
56	08:29:14	08:29:23	00:00:09	00:01:23
57	08:32:12	08:32:19	00:00:07	
58	08:33:15	08:33:27	00:00:12	
59	08:35:24	08:35:32	00:00:08	
60	08:37:28	08:37:34	00:00:06	
61	08:38:17	08:38:27	00:00:10	
62	08:40:47	08:40:59	00:00:12	
63	08:42:21	08:42:28	00:00:07	
64	08:43:18	08:43:30	00:00:12	
65	08:45:07	08:45:15	00:00:08	
66	08:45:34	08:45:42	00:00:08	
67	08:46:28	08:46:39	00:00:11	
68	08:47:29	08:47:37	00:00:08	
69	08:48:33	08:48:42	00:00:09	
70	08:49:31	08:49:39	00:00:08	
71	08:50:40	08:50:52	00:00:12	
72	08:51:38	08:51:49	00:00:11	
		07:30 to 08:30	00:00:08	00:01:28
		Stages in peak ho		Cycle Time 40

	Approach 3g			Phase C
Sample	Start of Green Time	End of Green Time	Duration	Cycle Time
1	16:00:01	16:00:11	00:00:10	
2	16:04:56	16:05:13	00:00:17	
3	16:10:16	16:10:23	00:00:07	
4	16:12:38	16:12:48	00:00:10	
5	16:14:49	16:14:56	00:00:07	
6	16:17:53	16:18:00	00:00:07	
7	16:19:31	16:19:39	00:00:08	
8	16:21:08	16:21:15	00:00:07	
9	16:21:41	16:21:47	00:00:06	
10	16:22:07	16:22:14	00:00:07	
11	16:23:54	16:24:02	00:00:08	
12	16:25:55	16:26:02	00:00:07	
13	16:26:57	16:27:04	00:00:07	
14	16:29:14	16:29:25	00:00:11	
15	16:33:57	16:34:05	00:00:08	
16	16:35:00	16:35:05	00:00:05	
17	16:36:34	16:36:58	00:00:24	
18	16:48:49	16:48:56	00:00:07	
19	16:49:36	16:49:43	00:00:07	00:00:47
20	16:50:44	16:50:49	00:00:05	00:01:08
21	16:52:31	16:52:46	00:00:15	00:01:47
22	16:53:40	16:53:46	00:00:06	00:01:09
23	16:56:26	16:56:34	00:00:08	00:02:46
24	16:57:15	16:57:23	00:00:08	00:00:49
25	17:01:02	17:01:07	00:00:05	00:03:47
26	17:01:45	17:01:57	00:00:12	00:00:43
27	17:03:29	17:03:39	00:00:10	00:01:44
28	17:04:23	17:04:31	00:00:08	00:00:54
29	17:05:36	17:06:07	00:00:31	00:01:13
30	17:07:25	17:07:35	00:00:10	00:01:49
31	17:08:25	17:08:45	00:00:20	00:01:00
32	17:10:06	17:10:14	00:00:08	00:01:41
33	17:11:24	17:11:34	00:00:10	00:01:18
34	17:13:39	17:13:47	00:00:08	00:02:15
35	17:15:03	17:15:25	00:00:22	00:01:24
36	17:18:51	17:18:57	00:00:06	00:03:48
37	17:20:01	17:20:08	00:00:07	00:01:10
38	17:22:28	17:22:36	00:00:08	00:02:27
39	17:23:08	17:23:17	00:00:09	00:00:40
40	17:23:46	17:23:54	00:00:08	00:00:38
41	17:24:24	17:24:33	00:00:09	00:00:38
42	17:25:24	17:25:31	00:00:07	00:01:00
43	17:26:14	17:26:26	00:00:12	00:00:50
44	17:28:52	17:29:03	00:00:11	00:02:38
45	17:30:24	17:30:31	00:00:07	00:01:32
46	17:32:45	17:32:52	00:00:07	00:02:21
47	17:36:22	17:36:29	00:00:07	00:03:37
48	17:37:26	17:37:33	00:00:07	00:01:04
49	17:40:39	17:40:48	00:00:09	00:03:13
50	17:41:32	17:41:47	00:00:15	00:00:53
51	17:42:21	17:42:29	00:00:08	00:00:49
52	17:43:07	17:43:23	00:00:16	00:00:46
53	17:44:08	17:44:23	00:00:15	00:01:01
54	17:45:21	17:45:30	00:00:09	
55	17:46:02	17:46:10	00:00:08	
56	17:47:02	17:47:09	00:00:07	
57	17:48:01	17:48:08	00:00:07	
58	17:48:59	17:49:07	00:00:08	
59	17:51:36	17:51:45	00:00:09	
60	17:56:57	17:57:08	00:00:11	
61	17:57:55	17:58:09	00:00:14	
62	17:59:41	17:59:48	00:00:07	
63	18:00:36	18:00:43	00:00:07	
64	18:03:30	18:03:37	00:00:07	
65	18:07:52	18:08:00	00:00:08	
66	18:09:26	18:10:00	00:00:34	
67	18:14:28	18:14:36	00:00:08	
68	18:15:13	18:15:19	00:00:06	
69	18:18:12	18:18:20	00:00:08	
70	18:22:54	18:23:09	00:00:15	
71	18:25:03	18:25:15	00:00:12	
72	18:25:58	18:26:14	00:00:16	
73	18:26:49	18:26:53	00:00:04	
74	18:28:27	18:28:34	00:00:07	
75	18:29:16	18:29:22	00:00:06	
76	18:31:05	18:31:13	00:00:08	
77	18:31:59	18:32:06	00:00:07	
78	18:37:02	18:37:09	00:00:07	
79	18:39:13	18:39:20	00:00:07	
80	18:46:15	18:46:21	00:00:06	
81	18:48:27	18:48:33	00:00:06	
82	18:50:11	18:50:19	00:00:08	
83	18:52:39	18:52:55	00:00:16	
84	18:53:51	18:53:58	00:00:07	
85	18:57:15	18:57:22	00:00:07	
86			00:00:00	
87			00:00:00	
88			00:00:00	
89			00:00:00	
90			00:00:00	
91			00:00:00	
92			00:00:00	
93			00:00:00	
94			00:00:00	
95			00:00:00	
96			00:00:00	
97			00:00:00	

16:45 to 17:45	00:00:10	00:01:35	
	Stages in peak ho	Cycle Time 35	

Approach 3g	Phase C

A5/Core 42 Controller Configuration Report

Project data

Project	A5 Hall End Lane 351570
Program date	29-11-2016
Version	1
Programmer	M.Broadhurst
Country	UK
City	Dordon
Street1	A5 Hall End Farm
Street2	
Controller type	1
Controller board	EC2 16 Mb RAM
12NC	0
Serial number	0
Report created at	12/19/2016 2:57 PM
Database filename (.cpf)	604_351570_A5_Hall_End_Farm.cpf
Configurator version	11.1.0.0

Configuration Notes
* This is memofield DESCRIPTION

FACILITIES MODES AND PRIORITIES

FACILITIES

Facility	Enabled
Manual Control	Yes
Manual Step On Mode	No
CLF	Yes
UTC Facility	Yes
Hurry Call Mode	No
Priority	No
MOVA via UTC TO bits	Yes
MOVA M-inputs / PSVP	No

Hurry call (high priority) options

Use hurry call (high priority) mode for all red moves:	Yes
Part Time shutdown HC priority movements required:	No

MODES AND PRIORITY

Mode	PRIO	Dem. set leave	Dem. set enter
Hurry call (high priority)	1	-	-
Urban Traffic Control (UTC)	4	-	-
Hurry call (std priority)	-	-	-
Manual control	2	Start-up demand set	-
Cableless linking facility (CLF)	-	-	-
Vehicle actuated (VA)	5	-	-
Simple fix time (FT)	5	-	-
Public service vehicle priority	-	-	-
Selected cableless linking	3	-	-
Selected vehicle actuated	3	Start-up demand set	-
Selected fix time	3	-	-

Revertive Demand Sets

Phase	Type	RDC	Start-up	2	3	4	5	6	7	8
A	802 T: vehicle	A	Yes	No	No	No	No	No	No	No
B	802 T: vehicle	B	Yes	No	No	No	No	No	No	No
C	802 T: vehicle	C	Yes	No	No	No	No	No	No	No
D	802 T: vehicle	D	Yes	No	No	No	No	No	No	No
E	802 T: vehicle	E	Yes	No	No	No	No	No	No	No
F	812 TN: toucan near side	-	Yes	No	No	No	No	No	No	No
G	812 TN: toucan near side	-	Yes	No	No	No	No	No	No	No
H	812 TN: toucan near side	-	Yes	No	No	No	No	No	No	No
I	812 TN: toucan near side	-	Yes	No	No	No	No	No	No	No
J	812 TN: toucan near side	-	Yes	No	No	No	No	No	No	No

STREAMS AND STAGES

STREAM

ID	Name	Type
1	STREAM1	Junction

STAGE

ID	Description	Stream No.	Demands AFTER Min Exp.	Demands BEFORE Min Exp.	Ripple Change	Startup stage	Arterial reversion stage	Switch off stage	All Red stage
1	STAGE1	1	No	Yes	No	Yes	Yes	Yes	No
2	STAGE2	1	No	Yes	No	No	No	No	No
3	STAGE3	1	No	Yes	No	No	No	No	No
4	STAGE4	1	No	Yes	No	No	No	No	No
5	STAGE5	1	No	Yes	No	No	No	No	No
6	STAGE6	1	No	Yes	No	No	No	No	No
7	STAGE7	1	No	Yes	No	No	No	No	Yes

Phases in stages

	A	B	C	D	E	F	G	H	I	J
1	X	X	-	-	-	X	X	-	-	-
2	X	-	X	-	-	X	X	-	X	-
3	X	-	-	X	-	-	-	X	X	-
4	X	-	X	X	-	-	-	-	X	-
5	-	-	-	X	X	-	-	X	X	-
6	-	X	-	-	-	X	X	-	-	X
7	-	-	-	-	-	-	-	-	-	-

PHASES

Types

Phase	Site Phase	Description	Type	Associated Phase
A	A	A5 Eastbound	802 T: vehicle	-
B	B	A5 Westbound	802 T: vehicle	-
C	C	A5 Eastbound RT	802 T: vehicle	-
D	D	Hall Farm LT	802 T: vehicle	-
E	E	Hall Farm RT	802 T: vehicle	-
F	F	Peds over Hall Farm LT	812 TN: toucan near side	-
G	G	Peds over Hall Farm RT	812 TN: toucan near side	-
H	H	Peds over Hall Farm Entry	812 TN: toucan near side	-
I	I	Peds over A5 Westbound	812 TN: toucan near side	-
J	J	Peds over A5 Eastbound	812 TN: toucan near side	-

CONDITIONS

Phase	Tactile Interlock	Appearance type	Termination type
A	No	Always	At end of stage
B	No	Always	At end of stage
C	No	Always	At end of stage
D	No	Always	At end of stage
E	No	Always	At end of stage
F	No	Demand before interstage	When minimum timer expires
G	No	Demand before interstage	When minimum timer expires
H	No	Demand before interstage	When minimum timer expires
I	No	Demand before interstage	When minimum timer expires
J	No	Demand before interstage	When minimum timer expires

TIMINGS

Phase	Type	Min green	Min red	Start Amber	Amber	Ped Period V	Ped Period VI	Ped Period VII	Ped Period VIII	Pre-time max
A	802 T: vehicle	7	1	2	3					No
B	802 T: vehicle	7	1	2	3					No
C	802 T: vehicle	7	1	2	3					No
D	802 T: vehicle	7	1	2	3					No
E	802 T: vehicle	7	1	2	3					No
F	812 TN: toucan near side	6	1			3	10	1	3	No
G	812 TN: toucan near side	6	1			3	10	1	3	No
H	812 TN: toucan near side	6	1			3	10	1	3	No
I	812 TN: toucan near side	6	1			3	10	1	3	No
J	812 TN: toucan near side	6	1			3	10	1	3	No

Note: Use of zero second blackout Ped Perod 5 on Type 814 PD: is not current DfT policy and should be discouraged

PHASE GREEN TIMING RANGES

PHASE	MIN Lower Limit	MIN Upper Limit	MAX Lower Limit	MAX Upper Limit
A	3	30	0	120
B	3	30	0	120
C	3	30	0	120
D	3	30	0	120
E	3	30	0	120
F	4	9	0	0
G	4	9	0	0
H	4	9	0	0
I	4	9	0	0
J	4	9	0	0

PHASE TIMING SETS

Regular maximums

	1	2	3	4
A	40	30	50	20
B	40	30	50	20
C	20	20	20	15
D	20	15	15	10
E	15	15	15	15
F				
G				
H				
I				
J				

Alternative maximums

	1	2	3	4
A				
B				
C				
D				
E				
F				
G				
H				
I				
J				

Variable blackout/red periods

	1	2	3	4
A				
B				
C				
D				
E				
F				
G				
H				
I				
J				

Minimum green

	1	2	3	4
A				
B				
C				
D				
E				
F				
G				
H				
I				
J				

PSVP inhibition times

	1	2	3	4
A				
B				
C				
D				

	1	2	3	4
E				
F				
G				
H				
I				
J				

PSVP maximum green times

	1	2	3	4
A				
B				
C				
D				
E				
F				
G				
H				
I				
J				

PHASE MATRICES

Settings

Starting intergreen	Handset maximum	Flashing Amber	All Red
9	30	0	0

Handset Int Offset	Default RLM Int
0	2

Opposing and conflicting

	A	B	C	D	E	F	G	H	I	J
A	-	-	-	-	C	-	-	-	-	C
B	-	-	C	C	C	-	-	C	C	-
C	-	C	-	-	C	-	-	C	-	-
D	-	C	-	-	-	C	-	-	-	-
E	C	C	C	-	-	-	C	-	-	C
F	-	-	-	C	-	-	-	-	-	-
G	-	-	-	-	C	-	-	-	-	-
H	-	C	C	-	-	-	-	-	-	-
I	-	C	-	-	-	-	-	-	-	-
J	C	-	-	-	C	-	-	-	-	-

Intergreen times

	A	B	C	D	E	F	G	H	I	J
A					5					9
B			6	8	7			9	5	
C		6			6			9		
D		5				5				
E	7	5	6				5			10
F				5						
G					5					
H		5	5							
I		5								
J	5				5					

Handset intergreen limits

	A	B	C	D	E	F	G	H	I	J
A					5					7
B			5	6	5			7	5	
C		6			5			7		
D		5				5				
E	6	5	5				5			8
F				5						
G					5					
H		5	5							
I		5								
J	5				5					

RLM additional intergreens

	A	B	C	D	E	F	G	H	I	J
A					2					2
B			2	2	2			2	2	
C		2			2			2		
D		2				2				
E	2	2	2				2			2
F										
G										
H										
I										
J										

RLM phase inhibits

	A	B	C	D	E	F	G	H	I	J
A	-	-	-	-	X	-	-	-	-	X
B	-	-	X	X	X	-	-	X	X	-
C	-	X	-	-	X	-	-	X	-	-
D	-	X	-	-	-	X	-	-	-	-
E	X	X	X	-	-	-	X	-	-	X
F	-	-	-	-	-	-	-	-	-	-
G	-	-	-	-	-	-	-	-	-	-
H	-	-	-	-	-	-	-	-	-	-
I	-	-	-	-	-	-	-	-	-	-
J	-	-	-	-	-	-	-	-	-	-

LAMP MONITORING

Applied sensing technology

Individual Monitoring Channels Used for RLUs ?	No

Lamp Switches

Phase	Type	SWR	SWA	SWG	SWWL
A	802 T: vehicle	R01	A01	G01	
B	802 T: vehicle	R02	A02	G02	
C	802 T: vehicle	R03	A03	G03	
D	802 T: vehicle	R04	A04	G04	
E	802 T: vehicle	R05	A05	G05	
F	812 TN: toucan near side	R06		G06	A06
G	812 TN: toucan near side	R07		G07	A07
H	812 TN: toucan near side	R08		G08	A08
I	812 TN: toucan near side	R09		G09	A09
J	812 TN: toucan near side	R10		G10	A10

Phase Lamp Types

Phase	Description	Type	Red	Amber	Green	Wait
A	A5 Eastbound	T	Elite TLED 48	Elite TLED 48	Elite TLED 48	-
B	A5 Westbound	T	Elite TLED 48	Elite TLED 48	Elite TLED 48	-
C	A5 Eastbound RT	T	Elite TLED 48	Elite TLED 48	Elite TLED 48	-
D	Hall Farm LT	T	Elite TLED 48	Elite TLED 48	Elite TLED 48	-
E	Hall Farm RT	T	Elite TLED 48	Elite TLED 48	Elite TLED 48	-
F	Peds over Hall Farm LT	TN	AGDMANCYCLE	-	AGDMANCYCLE	AGDWAIT
G	Peds over Hall Farm RT	TN	AGDMANCYCLE	-	AGDMANCYCLE	AGDWAIT
H	Peds over Hall Farm Entry	TN	AGDMANCYCLE	-	AGDMANCYCLE	AGDWAIT
I	Peds over A5 Westbound	TN	AGDMANCYCLE	-	AGDMANCYCLE	AGDWAIT
J	Peds over A5 Eastbound	TN	AGDMANCYCLE	-	AGDMANCYCLE	AGDWAIT

Lamp Monitor Settings

Phase	Description	Red 1	Red 2	Amber	Green
A	A5 Eastbound	Safety 1/2	None	Maintenance	Maintenance
B	A5 Westbound	Safety 1/2	None	Maintenance	Maintenance
C	A5 Eastbound RT	Safety 1/2	None	Maintenance	Maintenance
D	Hall Farm LT	Safety 1/2	None	Maintenance	Maintenance
E	Hall Farm RT	Safety 1/2	None	Maintenance	Maintenance
F	Peds over Hall Farm LT	Maintenance	None	None	Maintenance
G	Peds over Hall Farm RT	Maintenance	None	None	Maintenance
H	Peds over Hall Farm Entry	Maintenance	None	None	Maintenance
I	Peds over A5 Westbound	Maintenance	None	None	Maintenance
J	Peds over A5 Eastbound	Maintenance	None	None	Maintenance

Safety Lamp Monitor Shutdown Action

Phase	Description	Red 1	Red 2	Amber
A	A5 Eastbound	None	None	None
B	A5 Westbound	None	None	None
C	A5 Eastbound RT	None	None	None
D	Hall Farm LT	None	None	None
E	Hall Farm RT	None	None	None
F	Peds over Hall Farm LT	None	None	None
G	Peds over Hall Farm RT	None	None	None
H	Peds over Hall Farm Entry	None	None	None
I	Peds over A5 Westbound	None	None	None
J	Peds over A5 Eastbound	None	None	None

PHASE DELAYS

ID	Phase	From	To	Delay Time	Associated Phase	Delay Type
1	B	5	1	2	-	Delay phase gaining Right of way

FIXED TIME

FIXED TIME TO CURRENT MAXIMUM

STREAM	Fixed
STREAM1	Yes

Phase	Demand	Extend
A	Yes	Yes
B	Yes	Yes
C	Yes	Yes
D	Yes	Yes
E	Yes	Yes
F	No	No
G	No	No
H	No	No
I	No	No
J	No	No

STAGE MOVES

Move sets

Mode	SET
Hurry call (high priority)	1
Urban Traffic Control (UTC)	1
Hurry call (std priority)	0
Manual control	1
Cableless linking facility (CLF)	0
Vehicle actuated (VA)	1
Simple fix time (FT)	1
Public service vehicle priority	0

Set 1

	1	2	3	4	5	6	7
1	-	A	A	A	A	A	A
2	A	-	P	A	A	A	A
3	A	P	-	A	A	A	A
4	A	P	P	-	A	A	A
5	A	A	A	A	-	A	A
6	A	A	A	A	A	-	A
7	A	A	A	A	A	A	-

Set 2

	1	2	3	4	5	6	7
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-

Set 3

	1	2	3	4	5	6	7
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-

Set 4

	1	2	3	4	5	6	7
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-

Set 5

	1	2	3	4	5	6	7
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-

	1	2	3	4	5	6	7
7	–	–	–	–	–	–	–

Set 6

	1	2	3	4	5	6	7
1	–	–	–	–	–	–	–
2	–	–	–	–	–	–	–
3	–	–	–	–	–	–	–
4	–	–	–	–	–	–	–
5	–	–	–	–	–	–	–
6	–	–	–	–	–	–	–
7	–	–	–	–	–	–	–

Set 7

	1	2	3	4	5	6	7
1	–	–	–	–	–	–	–
2	–	–	–	–	–	–	–
3	–	–	–	–	–	–	–
4	–	–	–	–	–	–	–
5	–	–	–	–	–	–	–
6	–	–	–	–	–	–	–
7	–	–	–	–	–	–	–

Set 8

	1	2	3	4	5	6	7
1	–	–	–	–	–	–	–
2	–	–	–	–	–	–	–
3	–	–	–	–	–	–	–
4	–	–	–	–	–	–	–
5	–	–	–	–	–	–	–
6	–	–	–	–	–	–	–
7	–	–	–	–	–	–	–

MANUAL STAGE SELECTION

	1
But 1	1
But 2	2
But 3	3
But 4	4
But 5	5
But 6	6
But 7	-
But 8	-
But 9	-
But 10	-
But 11	-
But 12	-
But 13	-
But 14	-
But 15	-
But 16	-

Detectors

Application

ID	Detector	Type	Phase	Call	Cancel	Extend	Associated Det	DEM	CANCEL
1	AIN11	Vehicle loop	A				-	No	No
2	AIN12	Vehicle loop	A				-	No	No
3	AX1	Vehicle loop	A			4	-	Yes	No
4	AX2	Vehicle loop	A			4	-	Yes	No
5	BIN13	Vehicle loop	B				-	No	No
6	BIN14	Vehicle loop	B				-	No	No
7	BX3	Vehicle loop	B			4	-	Yes	No
8	BX4	Vehicle loop	B			4	-	Yes	No
9	CIN15	Vehicle loop	C				-	No	No
10	CX5	Vehicle loop	C			3.8	-	Yes	No
11	CSL25	Vehicle loop	C			0.6	-	Yes	No
12	DIN16	Vehicle loop	D				-	No	No
13	DX6	Vehicle loop	D			3.4	-	Yes	No
14	DSL26	Vehicle loop	D			0.6	-	Yes	No
15	SPARE_1	-	-				-	No	No
16	EX7	Vehicle loop	E			3.4	-	Yes	No
17	ESL27	Vehicle loop	E			0.6	-	Yes	No
18	SPARE_2	-	-				-	No	No
19	PBFU1	Push button	F				-	Yes	No
20	PBUF2	Push button	F				-	Yes	No
21	PBUF3	Push button	F				-	Yes	No
22	PBUF4	Push button	F				-	Yes	No
23	PBUG1	Push button	G				-	Yes	No
24	PBUG2	Push button	G				-	Yes	No
25	PBUG3	Push button	G				-	Yes	No
26	PBUG4	Push button	G				-	Yes	No
27	PBUH1	Push button	H				-	Yes	No
28	PBUH2	Push button	H				-	Yes	No
29	PBUH3	Push button	H				-	Yes	No
30	PBUH4	Push button	H				-	Yes	No
31	PBUI1	Push button	I				-	Yes	No
32	PBUI2	Push button	I				-	Yes	No
33	PBUI3	Push button	I				-	Yes	No
34	PBUI4	Push button	I				-	Yes	No
35	PBUJ1	Push button	J				-	Yes	No
36	PBUJ2	Push button	J				-	Yes	No
37	PBUJ3	Push button	J				-	Yes	No
38	PBUJ4	Push button	J				-	Yes	No
39	ONXH1	Pedestrian on-crossing detector	H			1	-	No	No
40	ONXH2	Pedestrian on-crossing detector	H			1	-	No	No
41	ONXI1	Pedestrian on-crossing detector	I			1	-	No	No
42	ONXI2	Pedestrian on-crossing detector	I			1	-	No	No
43	ONXJ1	Pedestrian on-crossing detector	J			1	-	No	No
44	ONXJ2	Pedestrian on-crossing detector	J			1	-	No	No

Detector Fault Monitoring

ID	Detector	DFM Active Set 1	DFM Inactive Set 2	DFM Active Set 2	DFM Inactive Set 2	DFM Active Set 3	DFM Inactive Set 3	DFM Active Set 4	DFM Inactive Set 4	Detector DFM Error State	Detector Ok Count
1	AIN11	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
2	AIN12	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
3	AX1	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
4	AX2	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
5	BIN13	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
6	BIN14	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
7	BX3	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
8	BX4	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
9	CIN15	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
10	CX5	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
11	CSL25	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8

ID	Detector	DFM Active Set 1	DFM Inactive Set 2	DFM Active Set 2	DFM Inactive Set 2	DFM Active Set 3	DFM Inactive Set 3	DFM Active Set 4	DFM Inactive Set 4	Detector DFM Error State	Detector Ok Count
12	DIN16	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
13	DX6	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
14	DSL26	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
15	SPARE_1	100:00	255:00	00:00	00:00	00:00	00:00	00:00	00:00	-	
16	EX7	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
17	ESL27	00:30	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
18	SPARE_2	100:00	255:00	00:00	00:00	00:00	00:00	00:00	00:00	-	
19	PBFU1	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
20	PBUF2	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
21	PBUF3	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
22	PBUF4	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
23	PBUG1	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
24	PBUG2	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
25	PBUG3	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
26	PBUG4	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
27	PBUH1	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
28	PBUH2	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
29	PBUH3	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
30	PBUH4	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
31	PBUI1	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
32	PBUI2	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
33	PBUI3	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
34	PBUI4	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
35	PBUJ1	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
36	PBUJ2	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
37	PBUJ3	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
38	PBUJ4	00:10	18:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	2
39	ONXH1	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
40	ONXH2	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
41	ONXI1	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
42	ONXI2	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
43	ONXJ1	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8
44	ONXJ2	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	Occupied	8

IMFLOW

Enable ImFlow	Log to TDC
No	No

Settings

Wait time on deadlock (s)	Retries on UTC deadlock	Retries on UTC conflict
300	5	1

MASTER TIME CLOCK

MTC table

ID	Function	Arg1	Arg2	Start	End	Mo	Tu	We	Th	Fr	Sa	Su	G1	G2	G3	G4	G5	G6	G7	G8	Description
1	Control plan	1	0	00:00:00	24:00:00	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	
2	Timing set	4	0	00:00:00	24:00:00	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	
3	Timing set	1	0	07:00:00	24:00:00	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Max Set A
4	Timing set	2	0	09:30:00	24:00:00	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Max Set B
5	Timing set	3	0	16:00:00	24:00:00	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Max Set C
6	Timing set	4	0	19:00:00	24:00:00	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Max Set D

CONFLICT EXTENSION RED

CABLELESS LINKING FACILITY

Global settings

Setting	Value
Sync. Mode	Daily
Sync. Day	Monday
Ref. time	06:00

Plans

Functions and actions

OTU

Units

General Integral OTU options

Discrete OTU

ID	Invert control bits	Invert reply bits
1	No	Yes

Control and reply bits

Control / Reply

Function	Arg	Label	Position ID	Label	Arg	Function
F	1	F1	1	G1	1	G
F	2	F2	2	G2	2	G
F	3	F3	3	G3	3	G
F	4	F4	4	G4	4	G
F	5	F5	5	G5	5	G
F	6	F6	6	G6	6	G
F	7	F7	7	G7	7	G
-	0		8	LE	0	LE
-	0		9		0	-
-	0		10		0	-
-	0		11		0	-
-	0		12		0	-
-	0		13		0	-
SF	1	TO1	14		0	-
-	0		15	CRB1	1	UF
-	0		16		0	-

Keep default Demand reply options

Default Stage Demand (SD) reply	No
Default Phase Demand (DR) reply	No

RTC

Synchronisation time (UTC TS input)	12:00
Confirm time (UTC RT output)	0:0:0

Special UTC Reply bits

	G1/G2	RR
Manual mode operative	No	Yes
Manual mode selected	No	Yes
No lamp power (excluding RLM and PT)	Yes	n/a
Normal not selected on the manual panel	No	Yes

CG reply bit weekday-coded	No

UG405 bit mapping

Settings

Enable UG405	No
OTU System Code Number(SCN)	

Control / Reply

ID	Label	Controller SCN	UG405 Name	Bit Index	Label	Controller SCN	UG405 name	Bit index
1	F1		-		G1		-	
2	F2		-		G2		-	
3	F3		-		G3		-	
4	F4		-		G4		-	
5	F5		-		G5		-	
6	F6		-		G6		-	
7	F7		-		G7		-	
8			-		LE		-	
9			-				-	
10			-				-	
11			-				-	

ID	Label	Controller SCN	UG405 Name	Bit Index	Label	Controller SCN	UG405 name	Bit index
12			-				-	
13			-				-	
14	TO1		-				-	
15			-		CRB1		-	
16			-				-	

HURRY CALLS

PUBLIC SERVICE VEHICLE PRIORITY

SPEED ASSESSMENT AND SPEED DISCRIMINATION

APPLICATION BUILDING BLOCKS

Event Pulses

ID	Name	Type	Input Type	On	OFF
1	CRB1	Wave	Level	2	600

Event Pulse Input Conditioning
evp1() = (macm(0)>1) && (stgc(0)!=0) && mpauto(0) && (mUTC(0)==0) && (mPSVP(0)==0);

Event Filter Input Conditioning

SPECIAL CONDITIONING - (VM Functions)

O.T.U. Control & Reply Bit Special Conditioning

```
rf_2(arg) = cfa;

rf_32(arg)
if (arg==1) then
  return ((mpauto(0) && (((mPSVP(0) || evp(CRB1)) && (mUTC(0)==0)) || (in(utciTO1) && ufac(0)))) != 1);
endif
return 0;
end

rf_34(arg) = (macm(xp) != 6);

rf_40(arg) = mPSVP(xp);

urG1() = (stgc(0)==1) && (stgr(0,0,0));

urDR1() = dr(A) || dr(B) || dr(F) || dr(G);

urG2() = (stgc(0)==2) && (stgr(0,0,0));

urDR2() = dr(A) || dr(C) || dr(F) || dr(G) || dr(I);

urG3() = (stgc(0)==3) && (stgr(0,0,0));

urDR3() = dr(A) || dr(D) || dr(H) || dr(I);

urG4() = (stgc(0)==4) && (stgr(0,0,0));

urDR4() = dr(A) || dr(C) || dr(D) || dr(I);

urG5() = (stgc(0)==5) && (stgr(0,0,0));

urDR5() = dr(D) || dr(E) || dr(H) || dr(I);

urG6() = (stgc(0)==6) && (stgr(0,0,0));

urDR6() = dr(B) || dr(F) || dr(G) || dr(J);

urG7() = (stgc(0)==7) && (stgr(0,0,0));
```

Integral O.T.U. Special Conditioning

```
otu_dstate(d) = get(h_xdet_sts, d) & DET_BEZET_MASK;

otu_dfault(d) = get(h_xdet_sts, d) & DET_FAULT_MASK;

otu_dcnt(d) = get(h_xdet_cnt, d);
```

U.T.C. (G1/G2) Special Conditioning

CLF Request & Inhibit Special Conditioning

P.S.V.P. Pre Check-in, Check-in & Check-out Special Conditioning

Hurry Call Delay, Force, Demand & Inhibit Special Conditioning

Phase Delay Appearance Special Conditioning

Stream On/Off Control Special Conditioning

```
roffsync() = okoff(0);

mac1_swon(t) = yellow_period(0,t);

macon1() = (minon(xp)==0);

macoff1() = ((macm(xp) <= 1) && (mact(xp) <= tson(7)));
```

Detector Count Activity Window Special Conditioning

```
nokbs()

var det;
for det=0 to (nrel(h_dfunc) -1) do
  if ddo(det) && fcr(get(h_dsg,det)) && (ddr(det)!=1) && (geti(h_dfunc,det) & 16)  then
    put(h_dfunc, det, 65);
  endif
  if  (get(h_dfunc,det)==65) &&  fcg(get(h_dsg,det)) then
    put(h_dfunc, det, geti(h_dfunc,det));
  endif
endfor
end

dact_ONXH1() = fcg(H) || fcr(H) || (fcbo(H) >= 3);

dact_ONXH2() = fcg(H) || fcr(H) || (fcbo(H) >= 3);

dact_ONXI1() = fcg(I) || fcr(I) || (fcbo(I) >= 3);

dact_ONXI2() = fcg(I) || fcr(I) || (fcbo(I) >= 3);

dact_ONXJ1() = fcg(J) || fcr(J) || (fcbo(J) >= 3);

dact_ONXJ2() = fcg(J) || fcr(J) || (fcbo(J) >= 3);
```

Phase Control Special Conditioning

```
latch(ph) = dx(ph) && (fcg(ph)==0);

pd_ALL(ph)

if ((xsf(XSF_PSET_ERR) != AUTOSET_STATE_DONE) && (xsf(XSF_PSET_ERR) != AUTOSET_STATE_ERROR)) then return (1); endif
end

pe_ALL(ph) = ngp1(ph);

wl_F() = dr(F) || fci(F);

pa_F() = dr(F) && (stgt(xp) == 0);

pt_F() = fcg(F);

wl_G() = dr(G) || fci(G);

pa_G() = dr(G) && (stgt(xp) == 0);

pt_G() = fcg(G);

wl_H() = dr(H) || fci(H);

pa_H() = dr(H) && (stgt(xp) == 0);

pt_H() = fcg(H);

pvbo_H() = ((dact(ONXH1)==0) || dde(ONXH1) || (ddg1(ONXH1)==0)) || ((dact(ONXH2)==0) || dde(ONXH2) || (ddg1(ONXH2)==0));

wl_I() = dr(I) || fci(I);

pa_I() = dr(I) && (stgt(xp) == 0);

pt_I() = fcg(I);

pvbo_I() = ((dact(ONXI1)==0) || dde(ONXI1) || (ddg1(ONXI1)==0)) || ((dact(ONXI2)==0) || dde(ONXI2) || (ddg1(ONXI2)==0));

wl_J() = dr(J) || fci(J);

pa_J() = dr(J) && (stgt(xp) == 0);

pt_J() = fcg(J);

pvbo_J() = ((dact(ONXJ1)==0) || dde(ONXJ1) || (ddg1(ONXJ1)==0)) || ((dact(ONXJ2)==0) || dde(ONXJ2) || (ddg1(ONXJ2)==0));
```

Phase Timing Set Selection Special Conditioning

Dummy Detector Special Conditioning

Mode Control Special Conditioning

Mode Control Special Conditioning

```
rHCH() = rar(xp);

rUTC()
if (xp==0) then
  return ufac(xp) && in(utciTO1);
endif
return ufav(xp)||ufpv(xp);
end

rMAN() = mpman(xp);

rVA() = 1;

rFT() = 1;

rSCLF() = clfp && (mpclf(xp) || clfmp);

rSVA() = mpva(xp);

rSFT() = mpft(xp);
```

All Red Detection Operation Special Conditioning

Manual Panel Stage LED Conditions

Manual Panel Stage LED Conditions

```
MpStageLEDsNoDefault()
mpdiso(20,1);
mpdiso(21,1);
mpdiso(22,1);
mpdiso(23,1);
mpdiso(24,1);
mpdiso(25,1);
mpdiso(26,1);
mpdiso(27,1);
mpdiso(28,1);
mpdiso(29,1);
mpdiso(30,1);
mpdiso(31,1);
mpdiso(32,1);
mpdiso(33,1);
mpdiso(34,1);
mpdiso(35,1);
end

DriveMpStageLEDs()
MpStageLEDsNoDefault();
mpledfunc20();
mpledfunc21();
mpledfunc22();
mpledfunc23();
mpledfunc24();
mpledfunc25();
mpledfunc26();
mpledfunc27();
mpledfunc28();
mpledfunc29();
mpledfunc30();
mpledfunc31();
mpledfunc32();
mpledfunc33();
mpledfunc34();
mpledfunc35();
end

mpledfunc20() = cmled(20,(stgc(0)==1)*(2-stgr(0,1,0)));

mpledfunc21() = cmled(21,(stgc(0)==2)*(2-stgr(0,1,0)));

mpledfunc22() = cmled(22,(stgc(0)==3)*(2-stgr(0,1,0)));

mpledfunc23() = cmled(23,(stgc(0)==4)*(2-stgr(0,1,0)));

mpledfunc24() = cmled(24,(stgc(0)==5)*(2-stgr(0,1,0)));

mpledfunc25() = cmled(25,(stgc(0)==6)*(2-stgr(0,1,0)));

mpledfunc26() = cmled(26,(stgc(0)==7)*(2-stgr(0,1,0)));

mpledfunc27() = 0;

mpledfunc28() = 0;

mpledfunc29() = 0;

mpledfunc30() = 0;

mpledfunc31() = 0;

mpledfunc32() = 0;

mpledfunc33() = 0;

mpledfunc34() = 0;

mpledfunc35() = 0;
```

Initialisation & General Special Conditioning

```
init()
open_handles();
return 1;
end

dfm_f() = sf1(-1) || fci(-1);
```

User Defined VM Functions

User Defined VM Functions

```
post_100ms() = mova_outputs();

mova_outputs()
cout(MDET1,ddo(AX1));
cout(MDET2,ddo(AX2));
cout(MDET3,ddo(BX3));
cout(MDET4,ddo(BX4));
cout(MDET5,ddo(CX5));
cout(MDET6,ddo(DX6));
cout(MDET7,ddo(EX7));
cout(MDET11,ddo(AIN11));
cout(MDET12,ddo(AIN12));
cout(MDET13,ddo(BIN13));
cout(MDET14,ddo(BIN14));
cout(MDET15,ddo(CIN15));
cout(MDET16,ddo(DIN16));
cout(MDET20,dr(F));
cout(MDET21,dr(G));
cout(MDET22,dr(H));
cout(MDET23,dr(I));
cout(MDET24,dr(J));
cout(MDET25,ddo(CSL25));
cout(MDET26,ddo(DSL26));
cout(MDET27,ddo(ESL27));
cout(SISPWR,in(sispwr));
cout(SISFLT,in(sisflt));
end
```

Stage Moves

Hurry Call High Mode - HCH (Normally for Part Time / Prom Swap Facility)

```
mHCH1_7d() = rar(xp);

mHCH2_7d() = rar(xp);

mHCH3_7d() = rar(xp);

mHCH4_7d() = rar(xp);

mHCH5_7d() = rar(xp);

mHCH6_7d() = rar(xp);
```

Hurry Call Standard Mode - HCL

Vehicle Actuated Mode - VA

```
mVA1_2d() = dSTGd(1, 2);

mVA1_2e() = dSTGe(1, 2);

mVA1_2i() = FALSE;

mVA1_3d() = dSTGd(1, 3);

mVA1_3e() = dSTGe(1, 3);

mVA1_3i() = FALSE;

mVA1_4d() = dSTGd(1, 4);

mVA1_4e() = dSTGe(1, 4);

mVA1_4i() = FALSE;

mVA1_5d() = dSTGd(1, 5);

mVA1_5e() = dSTGe(1, 5);

mVA1_5i() = FALSE;

mVA1_6d() = dSTGd(1, 6);

mVA1_6e() = dSTGe(1, 6);

mVA1_6i() = FALSE;

mVA1_7d() = dSTGd(1, 7);

mVA1_7e() = dSTGe(1, 7);

mVA1_7i() = FALSE;

mVA2_4d() = dSTGd(2, 4);

mVA2_4e() = dSTGe(2, 4);

mVA2_4i() = FALSE;

mVA2_5d() = dSTGd(2, 5);

mVA2_5e() = dSTGe(2, 5);

mVA2_5i() = FALSE;

mVA2_6d() = dSTGd(2, 6);

mVA2_6e() = dSTGe(2, 6);

mVA2_6i() = FALSE;

mVA2_7d() = dSTGd(2, 7);

mVA2_7e() = dSTGe(2, 7);

mVA2_7i() = FALSE;

mVA2_1d() = dSTGd(2, 1);

mVA2_1e() = dSTGe(2, 1);

mVA2_1i() = FALSE;

mVA2_1du4() = dn();

mVA2_1eu4() = dSTGe(2, 1);

mVA2_1iu4() = FALSE;

mVA3_4d() = dSTGd(3, 4);
```

Vehicle Actuated Mode - VA

```
mVA3_4e() = dSTGe(3, 4);

mVA3_4i() = FALSE;

mVA3_5d() = dSTGd(3, 5);

mVA3_5e() = dSTGe(3, 5);

mVA3_5i() = FALSE;

mVA3_6d() = dSTGd(3, 6);

mVA3_6e() = dSTGe(3, 6);

mVA3_6i() = FALSE;

mVA3_7d() = dSTGd(3, 7);

mVA3_7e() = dSTGe(3, 7);

mVA3_7i() = FALSE;

mVA3_1d() = dSTGd(3, 1);

mVA3_1e() = dSTGe(3, 1);

mVA3_1i() = FALSE;

mVA3_1du4() = dn();

mVA3_1eu4() = dSTGe(3, 1);

mVA3_1iu4() = FALSE;

mVA4_5d() = dSTGd(4, 5);

mVA4_5e() = dSTGe(4, 5);

mVA4_5i() = FALSE;

mVA4_6d() = dSTGd(4, 6);

mVA4_6e() = dSTGe(4, 6);

mVA4_6i() = FALSE;

mVA4_7d() = dSTGd(4, 7);

mVA4_7e() = dSTGe(4, 7);

mVA4_7i() = FALSE;

mVA4_1d() = dSTGd(4, 1);

mVA4_1e() = dSTGe(4, 1);

mVA4_1i() = FALSE;

mVA4_1du4() = dn();

mVA4_1eu4() = dSTGe(4, 1);

mVA4_1iu4() = FALSE;

mVA5_6d() = dSTGd(5, 6);

mVA5_6e() = dSTGe(5, 6);

mVA5_6i() = FALSE;

mVA5_7d() = dSTGd(5, 7);

mVA5_7e() = dSTGe(5, 7);

mVA5_7i() = FALSE;

mVA5_1d() = dSTGd(5, 1);

mVA5_1e() = dSTGe(5, 1);

mVA5_1i() = FALSE;

mVA5_2d() = dSTGd(5, 2);

mVA5_2e() = dSTGe(5, 2);

mVA5_2i() = FALSE;

mVA5_3d() = dSTGd(5, 3);

mVA5_3e() = dSTGe(5, 3);

mVA5_3i() = FALSE;

mVA5_4d() = dSTGd(5, 4);

mVA5_4e() = dSTGe(5, 4);

mVA5_4i() = FALSE;

mVA5_1du4() = dn();

mVA5_1eu4() = dSTGe(5, 1);
```

Vehicle Actuated Mode - VA

```
mVA5_1iu4() = FALSE;

mVA6_7d() = dSTGd(6, 7);

mVA6_7e() = dSTGe(6, 7);

mVA6_7i() = FALSE;

mVA6_1d() = dSTGd(6, 1);

mVA6_1e() = dSTGe(6, 1);

mVA6_1i() = FALSE;

mVA6_2d() = dr(C);

mVA6_2e() = dSTGe(6, 2);

mVA6_2i() = FALSE;

mVA6_3d() = dSTGd(6, 3);

mVA6_3e() = dSTGe(6, 3);

mVA6_3i() = FALSE;

mVA6_4d() = dSTGd(6, 4);

mVA6_4e() = dSTGe(6, 4);

mVA6_4i() = FALSE;

mVA6_5d() = dSTGd(6, 5);

mVA6_5e() = dSTGe(6, 5);

mVA6_5i() = FALSE;

mVA6_1du4() = dn();

mVA6_1eu4() = dSTGe(6, 1);

mVA6_1iu4() = FALSE;

mVA7_1d() = dSTGd(7, 1);

mVA7_1e() = dSTGe(7, 1);

mVA7_1i() = FALSE;

mVA7_2d() = dSTGd(7, 2);

mVA7_2e() = dSTGe(7, 2);

mVA7_2i() = FALSE;

mVA7_3d() = dSTGd(7, 3);

mVA7_3e() = dSTGe(7, 3);

mVA7_3i() = FALSE;

mVA7_4d() = dSTGd(7, 4);

mVA7_4e() = dSTGe(7, 4);

mVA7_4i() = FALSE;

mVA7_5d() = dSTGd(7, 5);

mVA7_5e() = dSTGe(7, 5);

mVA7_5i() = FALSE;

mVA7_6d() = dSTGd(7, 6);

mVA7_6e() = dSTGe(7, 6);

mVA7_6i() = FALSE;

mVA7_1du4() = dn();

mVA7_1eu4() = dSTGe(7, 1);

mVA7_1iu4() = FALSE;
```

Fixed Time Mode - FT

```
mFT1_2d() = dSTGd(1, 2);

mFT1_2e() = dSTGe(1, 2);

mFT1_2i() = FALSE;

mFT1_3d() = dSTGd(1, 3);

mFT1_3e() = dSTGe(1, 3);
```

Fixed Time Mode - FT

```
mFT1_3i() = FALSE;

mFT1_4d() = dSTGd(1, 4);

mFT1_4e() = dSTGe(1, 4);

mFT1_4i() = FALSE;

mFT1_5d() = dSTGd(1, 5);

mFT1_5e() = dSTGe(1, 5);

mFT1_5i() = FALSE;

mFT1_6d() = dSTGd(1, 6);

mFT1_6e() = dSTGe(1, 6);

mFT1_6i() = FALSE;

mFT1_7d() = dSTGd(1, 7);

mFT1_7e() = dSTGe(1, 7);

mFT1_7i() = FALSE;

mFT2_4d() = dSTGd(2, 4);

mFT2_4e() = dSTGe(2, 4);

mFT2_4i() = FALSE;

mFT2_5d() = dSTGd(2, 5);

mFT2_5e() = dSTGe(2, 5);

mFT2_5i() = FALSE;

mFT2_6d() = dSTGd(2, 6);

mFT2_6e() = dSTGe(2, 6);

mFT2_6i() = FALSE;

mFT2_7d() = dSTGd(2, 7);

mFT2_7e() = dSTGe(2, 7);

mFT2_7i() = FALSE;

mFT2_1d() = dSTGd(2, 1);

mFT2_1e() = dSTGe(2, 1);

mFT2_1i() = FALSE;

mFT2_1du4() = dn();

mFT2_1eu4() = dSTGe(2, 1);

mFT2_1iu4() = FALSE;

mFT3_4d() = dSTGd(3, 4);

mFT3_4e() = dSTGe(3, 4);

mFT3_4i() = FALSE;

mFT3_5d() = dSTGd(3, 5);

mFT3_5e() = dSTGe(3, 5);

mFT3_5i() = FALSE;

mFT3_6d() = dSTGd(3, 6);

mFT3_6e() = dSTGe(3, 6);

mFT3_6i() = FALSE;

mFT3_7d() = dSTGd(3, 7);

mFT3_7e() = dSTGe(3, 7);

mFT3_7i() = FALSE;

mFT3_1d() = dSTGd(3, 1);

mFT3_1e() = dSTGe(3, 1);

mFT3_1i() = FALSE;

mFT3_1du4() = dn();

mFT3_1eu4() = dSTGe(3, 1);

mFT3_1iu4() = FALSE;

mFT4_5d() = dSTGd(4, 5);

mFT4_5e() = dSTGe(4, 5);

mFT4_5i() = FALSE;
```

Fixed Time Mode - FT

```
mFT4_6d() = dSTGd(4, 6);

mFT4_6e() = dSTGe(4, 6);

mFT4_6i() = FALSE;

mFT4_7d() = dSTGd(4, 7);

mFT4_7e() = dSTGe(4, 7);

mFT4_7i() = FALSE;

mFT4_1d() = dSTGd(4, 1);

mFT4_1e() = dSTGe(4, 1);

mFT4_1i() = FALSE;

mFT4_1du4() = dn();

mFT4_1eu4() = dSTGe(4, 1);

mFT4_1iu4() = FALSE;

mFT5_6d() = dSTGd(5, 6);

mFT5_6e() = dSTGe(5, 6);

mFT5_6i() = FALSE;

mFT5_7d() = dSTGd(5, 7);

mFT5_7e() = dSTGe(5, 7);

mFT5_7i() = FALSE;

mFT5_1d() = dSTGd(5, 1);

mFT5_1e() = dSTGe(5, 1);

mFT5_1i() = FALSE;

mFT5_2d() = dSTGd(5, 2);

mFT5_2e() = dSTGe(5, 2);

mFT5_2i() = FALSE;

mFT5_3d() = dSTGd(5, 3);

mFT5_3e() = dSTGe(5, 3);

mFT5_3i() = FALSE;

mFT5_4d() = dSTGd(5, 4);

mFT5_4e() = dSTGe(5, 4);

mFT5_4i() = FALSE;

mFT5_1du4() = dn();

mFT5_1eu4() = dSTGe(5, 1);

mFT5_1iu4() = FALSE;

mFT6_7d() = dSTGd(6, 7);

mFT6_7e() = dSTGe(6, 7);

mFT6_7i() = FALSE;

mFT6_1d() = dSTGd(6, 1);

mFT6_1e() = dSTGe(6, 1);

mFT6_1i() = FALSE;

mFT6_2d() = dSTGd(6, 2);

mFT6_2e() = dSTGe(6, 2);

mFT6_2i() = FALSE;

mFT6_3d() = dSTGd(6, 3);

mFT6_3e() = dSTGe(6, 3);

mFT6_3i() = FALSE;

mFT6_4d() = dSTGd(6, 4);

mFT6_4e() = dSTGe(6, 4);

mFT6_4i() = FALSE;

mFT6_5d() = dSTGd(6, 5);

mFT6_5e() = dSTGe(6, 5);

mFT6_5i() = FALSE;
```

Fixed Time Mode - FT

```
mFT6_1du4() = dn();

mFT6_1eu4() = dSTGe(6, 1);

mFT6_1iu4() = FALSE;

mFT7_1d() = dSTGd(7, 1);

mFT7_1e() = dSTGe(7, 1);

mFT7_1i() = FALSE;

mFT7_2d() = dSTGd(7, 2);

mFT7_2e() = dSTGe(7, 2);

mFT7_2i() = FALSE;

mFT7_3d() = dSTGd(7, 3);

mFT7_3e() = dSTGe(7, 3);

mFT7_3i() = FALSE;

mFT7_4d() = dSTGd(7, 4);

mFT7_4e() = dSTGe(7, 4);

mFT7_4i() = FALSE;

mFT7_5d() = dSTGd(7, 5);

mFT7_5e() = dSTGe(7, 5);

mFT7_5i() = FALSE;

mFT7_6d() = dSTGd(7, 6);

mFT7_6e() = dSTGe(7, 6);

mFT7_6i() = FALSE;

mFT7_1du4() = dn();

mFT7_1eu4() = dSTGe(7, 1);

mFT7_1iu4() = FALSE;
```

Cableless Linking Mode - CLF

Urban Traffic Control Mode - UTC

```
mUTC1_2d() = dUTCd(1, 2);

mUTC1_2i() = dUTCi(1, 2);

mUTC1_3d() = dUTCd(1, 3);

mUTC1_3i() = dUTCi(1, 3);

mUTC1_4d() = dUTCd(1, 4);

mUTC1_4i() = dUTCi(1, 4);

mUTC1_5d() = dUTCd(1, 5);

mUTC1_5i() = dUTCi(1, 5);

mUTC1_6d() = dUTCd(1, 6);

mUTC1_6i() = dUTCi(1, 6);

mUTC1_7d() = dUTCd(1, 7);

mUTC1_7i() = dUTCi(1, 7);

mUTC2_4d() = dUTCd(2, 4);

mUTC2_4i() = dUTCi(2, 4);

mUTC2_5d() = dUTCd(2, 5);

mUTC2_5i() = dUTCi(2, 5);

mUTC2_6d() = dUTCd(2, 6);

mUTC2_6i() = dUTCi(2, 6);

mUTC2_7d() = dUTCd(2, 7);

mUTC2_7i() = dUTCi(2, 7);

mUTC2_1d() = dUTCd(2, 1);

mUTC2_1i() = dUTCi(2, 1);
```

Urban Traffic Control Mode - UTC

```
mUTC3_4d() = dUTCd(3, 4);

mUTC3_4i() = dUTCi(3, 4);

mUTC3_5d() = dUTCd(3, 5);

mUTC3_5i() = dUTCi(3, 5);

mUTC3_6d() = dUTCd(3, 6);

mUTC3_6i() = dUTCi(3, 6);

mUTC3_7d() = dUTCd(3, 7);

mUTC3_7i() = dUTCi(3, 7);

mUTC3_1d() = dUTCd(3, 1);

mUTC3_1i() = dUTCi(3, 1);

mUTC4_5d() = dUTCd(4, 5);

mUTC4_5i() = dUTCi(4, 5);

mUTC4_6d() = dUTCd(4, 6);

mUTC4_6i() = dUTCi(4, 6);

mUTC4_7d() = dUTCd(4, 7);

mUTC4_7i() = dUTCi(4, 7);

mUTC4_1d() = dUTCd(4, 1);

mUTC4_1i() = dUTCi(4, 1);

mUTC5_6d() = dUTCd(5, 6);

mUTC5_6i() = dUTCi(5, 6);

mUTC5_7d() = dUTCd(5, 7);

mUTC5_7i() = dUTCi(5, 7);

mUTC5_1d() = dUTCd(5, 1);

mUTC5_1i() = dUTCi(5, 1);

mUTC5_2d() = dUTCd(5, 2);

mUTC5_2i() = dUTCi(5, 2);

mUTC5_3d() = dUTCd(5, 3);

mUTC5_3i() = dUTCi(5, 3);

mUTC5_4d() = dUTCd(5, 4);

mUTC5_4i() = dUTCi(5, 4);

mUTC6_7d() = dUTCd(6, 7);

mUTC6_7i() = dUTCi(6, 7);

mUTC6_1d() = dUTCd(6, 1);

mUTC6_1i() = dUTCi(6, 1);

mUTC6_2d() = dUTCd(6, 2);

mUTC6_2i() = dUTCi(6, 2);

mUTC6_3d() = dUTCd(6, 3);

mUTC6_3i() = dUTCi(6, 3);

mUTC6_4d() = dUTCd(6, 4);

mUTC6_4i() = dUTCi(6, 4);

mUTC6_5d() = dUTCd(6, 5);

mUTC6_5i() = dUTCi(6, 5);

mUTC7_1d() = dUTCd(7, 1);

mUTC7_1i() = dUTCi(7, 1);

mUTC7_2d() = dUTCd(7, 2);

mUTC7_2i() = dUTCi(7, 2);

mUTC7_3d() = dUTCd(7, 3);

mUTC7_3i() = dUTCi(7, 3);

mUTC7_4d() = dUTCd(7, 4);

mUTC7_4i() = dUTCi(7, 4);

mUTC7_5d() = dUTCd(7, 5);
```

Urban Traffic Control Mode - UTC

```
mUTC7_5i() = dUTCi(7, 5);

mUTC7_6d() = dUTCd(7, 6);

mUTC7_6i() = dUTCi(7, 6);
```

Public Service Priority Mode - PSVP

Manual Control Mode - MAN

```
mMAN1_2d() = mstg(xp)==2;

mMAN1_3d() = mstg(xp)==3;

mMAN1_4d() = mstg(xp)==4;

mMAN1_5d() = mstg(xp)==5;

mMAN1_6d() = mstg(xp)==6;

mMAN1_7d() = mstg(xp)==7;

mMAN2_4d() = mstg(xp)==4;

mMAN2_5d() = mstg(xp)==5;

mMAN2_6d() = mstg(xp)==6;

mMAN2_7d() = mstg(xp)==7;

mMAN2_1d() = mstg(xp)==1;

mMAN3_4d() = mstg(xp)==4;

mMAN3_5d() = mstg(xp)==5;

mMAN3_6d() = mstg(xp)==6;

mMAN3_7d() = mstg(xp)==7;

mMAN3_1d() = mstg(xp)==1;

mMAN4_5d() = mstg(xp)==5;

mMAN4_6d() = mstg(xp)==6;

mMAN4_7d() = mstg(xp)==7;

mMAN4_1d() = mstg(xp)==1;

mMAN5_6d() = mstg(xp)==6;

mMAN5_7d() = mstg(xp)==7;

mMAN5_1d() = mstg(xp)==1;

mMAN5_2d() = mstg(xp)==2;

mMAN5_3d() = mstg(xp)==3;

mMAN5_4d() = mstg(xp)==4;

mMAN6_7d() = mstg(xp)==7;

mMAN6_1d() = mstg(xp)==1;

mMAN6_2d() = mstg(xp)==2;

mMAN6_3d() = mstg(xp)==3;

mMAN6_4d() = mstg(xp)==4;

mMAN6_5d() = mstg(xp)==5;

mMAN7_1d() = mstg(xp)==1;

mMAN7_2d() = mstg(xp)==2;

mMAN7_3d() = mstg(xp)==3;

mMAN7_4d() = mstg(xp)==4;

mMAN7_5d() = mstg(xp)==5;

mMAN7_6d() = mstg(xp)==6;
```

General (default) Stage Move Conditions

```
dSTGd(f,t) = drs(t);

dSTGe(f,t) = exm(t);
```

General (default) Stage Move Conditions

```
dUTCd(f,t)
if t==1 then return uF(1) || (uFD(1) && (uD(1) || in(utciTO1))); endif
if t==2 then return uF(2) || (uFD(2) && (uD(2) || in(utciTO1))); endif
if t==3 then return uF(3) || (uFD(3) && (uD(3) || in(utciTO1))); endif
if t==4 then return uF(4) || (uFD(4) && (uD(4) || in(utciTO1))); endif
if t==5 then return uF(5) || (uFD(5) && (uD(5) || in(utciTO1))); endif
if t==6 then return uF(6) || (uFD(6) && (uD(6) || in(utciTO1))); endif
if t==7 then return uF(7) || (uFD(7) && (uD(7) || in(utciTO1))); endif
return uF(t) || (uFD(t) && (uD(t) || drs(t)));
end

dUTCi(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd(f,t) = cIM(t) || (cDD(t) && drs(t)) || (cPS(t) && drs(t));

dCLFi(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dPSVPd(f,t) = drs(t);

dPSVPe(f,t) = exm(t);

dSTGd1() = dr(A) || dr(B) || dr(F) || dr(G);

dSTGe1() = er(A) || er(B) || er(F) || er(G);

dPSVPd1() = pdp(A) || pdp(B) || pdp(F) || pdp(G);

dPSVPe1() = pep(A) || pep(B) || pep(F) || pep(G);

dUTCd1(t) = uF(t) || (uFD(t) && (uD(t) || dr(A) || dr(B) || dr(F) || dr(G)));

dUTCi1(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd1(t) = cIM(t) || (cDD(t) && (dr(A) || dr(B) || dr(F) || dr(G))) || (cPS(t) && (dr(A) || dr(B) || dr(F) || dr(G)));

dCLFi1(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dSTGd2() = dr(A) || dr(C) || dr(F) || dr(G) || dr(I);

dSTGe2() = er(A) || er(C) || er(F) || er(G) || er(I);

dPSVPd2() = pdp(A) || pdp(C) || pdp(F) || pdp(G) || pdp(I);

dPSVPe2() = pep(A) || pep(C) || pep(F) || pep(G) || pep(I);

dUTCd2(t) = uF(t) || (uFD(t) && (uD(t) || dr(A) || dr(C) || dr(F) || dr(G) || dr(I)));

dUTCi2(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd2(t) = cIM(t) || (cDD(t) && (dr(A) || dr(C) || dr(F) || dr(G) || dr(I))) || (cPS(t) && (dr(A) || dr(C) || dr(F) || dr(G) || dr(I)));

dCLFi2(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dSTGd3() = dr(A) || dr(D) || dr(H) || dr(I);

dSTGe3() = er(A) || er(D) || er(H) || er(I);

dPSVPd3() = pdp(A) || pdp(D) || pdp(H) || pdp(I);

dPSVPe3() = pep(A) || pep(D) || pep(H) || pep(I);

dUTCd3(t) = uF(t) || (uFD(t) && (uD(t) || dr(A) || dr(D) || dr(H) || dr(I)));

dUTCi3(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd3(t) = cIM(t) || (cDD(t) && (dr(A) || dr(D) || dr(H) || dr(I))) || (cPS(t) && (dr(A) || dr(D) || dr(H) || dr(I)));

dCLFi3(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dSTGd4() = dr(A) || dr(C) || dr(D) || dr(I);

dSTGe4() = er(A) || er(C) || er(D) || er(I);

dPSVPd4() = pdp(A) || pdp(C) || pdp(D) || pdp(I);

dPSVPe4() = pep(A) || pep(C) || pep(D) || pep(I);

dUTCd4(t) = uF(t) || (uFD(t) && (uD(t) || dr(A) || dr(C) || dr(D) || dr(I)));

dUTCi4(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd4(t) = cIM(t) || (cDD(t) && (dr(A) || dr(C) || dr(D) || dr(I))) || (cPS(t) && (dr(A) || dr(C) || dr(D) || dr(I)));

dCLFi4(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dSTGd5() = dr(D) || dr(E) || dr(H) || dr(I);

dSTGe5() = er(D) || er(E) || er(H) || er(I);

dPSVPd5() = pdp(D) || pdp(E) || pdp(H) || pdp(I);

dPSVPe5() = pep(D) || pep(E) || pep(H) || pep(I);

dUTCd5(t) = uF(t) || (uFD(t) && (uD(t) || dr(D) || dr(E) || dr(H) || dr(I)));

dUTCi5(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd5(t) = cIM(t) || (cDD(t) && (dr(D) || dr(E) || dr(H) || dr(I))) || (cPS(t) && (dr(D) || dr(E) || dr(H) || dr(I)));

dCLFi5(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dSTGd6() = dr(B) || dr(F) || dr(G) || dr(J);
```

General (default) Stage Move Conditions

```
dSTGe6() = er(B) || er(F) || er(G) || er(J);

dPSVPd6() = pdp(B) || pdp(F) || pdp(G) || pdp(J);

dPSVPe6() = pep(B) || pep(F) || pep(G) || pep(J);

dUTCd6(t) = uF(t) || (uFD(t) && (uD(t) || dr(B) || dr(F) || dr(G) || dr(J)));

dUTCi6(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd6(t) = cIM(t) || (cDD(t) && (dr(B) || dr(F) || dr(G) || dr(J))) || (cPS(t) && (dr(B) || dr(F) || dr(G) || dr(J)));

dCLFi6(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dUTCd7(t) = uF(t) || (uFD(t) && (uD(t) || drs(t)));

dUTCi7(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd7(t) = cIM(t) || (cDD(t) && (drs(t))) || (cPS(t) && (drs(t)));

dCLFi7(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));
```

SYSTEM PARAMETERS

UK Parameters

Name	Description	Min	Max	Def	Value
MAN_TIMEOUT	Manual control timeout	60	600	600	600
MAN_DEMAND_ERROR	Duration of the manual demand error indication	0	60	5	5
MAN_ENABLE	Manual control enabled.	0	1	1	1
DFM_FUNC	Bit mask specifying behaviour of DFM indicator	0	999	1	1
CLF_TIMER_SYNC	Duration of the CLF group Timer Synchronisation Signal	0	0	0	0
UTC_TS	Time in HH:MM used for COTU_TS	0	2359	1200	1200
UTC_FORCE_TIMEOUT	The force bit watchdog timeout	120	300	200	200
UTC_FORCE_ACCEPT	The force accept timeout in system ticks.	1	10	4	4
UTC_LO_DELAY	Delay in seconds before COTU_LO changes is accepted.	0	99	10	10
UTC_RT_HOUR	Hours used for RT reply bit (-1 = any hour).	-1	23	0	0
UTC_RT_MIN	Minutes used for RT reply bit (-1 = any minute).	-1	59	0	0
UTC_RT_SEC	Seconds used for RT reply bit	-1	59	0	0
UTC_RT_DURATION	Duration of the RT reply bit in seconds	1	10	3	3
UTC_CG_DURATION	Duration of the CG reply bit in seconds	1	10	3	3
UTC_TSR_DURATION	Duration of the TSR reply bit in seconds	1	10	3	3
UTC_G1G2_FUNC	Bit mask specifying behaviour of G1/G2 reply bits	0	255	1	1
UTC_RR_FUNC	Bit mask specifying behaviour of RR reply bit	0	255	14	14
UTC_PV_ACCEPT	The PV accept time in system ticks	0	255	0	0
UTC_PV_HOLD	The PV hold time in system ticks	0	255	40	40
UKSTG_DIM_ALARM	The maximum time [in hours] for dimmed operation (-1 = solar cell disabled, 0 = enabled without timeout processing)	-1	100	24	24
UKSTG_DIM_FILTER	The call/cancel delay [in sec] for the DIM relays	0	255	15	15
UTC_CRB_PULSE_ON_TIME	CRB On Timer	0	1800	600	600
UTC_CRB_PULSE_OFF_TIME	CRB Off Timer	0	10	2	2

System Parameters

Name	Description	Min	Max	Value
MMI8408	XMMI: 8 x 40 MMI	0	1	1
XIN_L	XIN_L: Number of IN logging lines	1	999	10
XOUT_L	XOUT_L: Number of OUT logging lines	1	999	10
XDET_L	XDET_L: Number of DET logging lines	1	999	100
XDET_F	XDET_F: Status in case of fault	0	2	0
XSG_L	XSG_L: Number of SG logging lines	0	999	100
XHTTP	XHTTP: Presence of web server	0	1	1
XHTTP_PORT	XHTTP_PORT: Webserver port	0	65535	80
XLM_MAL	XLM_MAL: Go to major alarm if power reference(s) are not set	0	1	0
XLM_RLM	XLM_RLM: RLM callback interval in 0.1 [s]	0	100	10
XLM_T	XLM_T: Tracking off / on	0	20	5
XLM_TF	XLM_TF: Tracking filter	1	20	8
XLM_NV	XLM_NV: Nominal (bright) voltage	0	240	230
XLM_MON	XLM_MON: Monitoring type	0	10	3
XLM_AC	XLM_AC: Automatic calibration	0	1	1
XLM_DIM	XLM_DIM: Bright Din Calibration off / on	0	1	1
CLF_SYNC	CLF Synchronisation option.	0	3	0
CLF_SYNC_WDAY	CLF Weekly sync is done on..	1	7	1
CLF_TIMER_SYNC	Duration of the CLF group Timer Synchronisation Signal	0	2400	600
CLF_NON_BASE_TIME	Select base time or non base time (0 or 1)	0	1	1
XIOTU_RTS	RTS activated after # received characters (use 1, 2 or 3)	1	3	1
XIOTU_SCOOT	Default bit number used for scoot counted detectors (0 to 7)	0	7	0
XIOTU_CTS	CTS timeout per 10ms	4	10	6
UKMP_TYPE	UK Manual panel type (0=std, 1=ped, 2=multiple stages)	0	2	2
ENGTERM_BAUD	Engterm baudrate	0	99999	9600
HCH_ALLRED	Use HCH for all red stage moves	0	1	1
HCH_SWOFF	Use HCH for switch off stage moves	0	1	0
PT_SYNC	Synchronize move to part time mode	0	1	1
CLF_MANUAL_STEP	Enable the Manual Step	0	1	0
CLF_DEFAULT_PLAN		-1	999	0
CLF_MANUAL_MEMOS	Memo for the manual step	0	1	0
COMPRESS_HARDWARE	Compress Hardware	0	1	0
XWDS_SENSOR_TIMEOUT	Wireless Detection sensor time out value	0	65535	60
ALERTPLUS_ENABLE	Alert+: Enable the service	0	1	0
ALERTPLUS_NRSESSIONS	Alert+: Number of sessions	1	99	2
ALERTPLUS_LOGINUSERG1	Alert+: Login code for user group 1	0	9999	0

Name	Description	Min	Max	Value
ALERTPLUS_LOGINUSERG2	Alert+: Login code for user group 2	0	9999	0
ALERTPLUS_LOGINUSERG3	Alert+: Login code for user group 3	0	9999	0
ALERTPLUS_LOGINUSERG4	Alert+: Login code for user group 4	0	9999	0
IMFLOW_ENABLE	ImFlow enabled	0	1	0
IMFLOW_WDG_TIME	ImFlow: Wait time for deadlock supervision [s]	1	999	300
IMFLOW_MAX_WDG_RETRIES	ImFlow: Max. retries on deadlocks in UTC control	1	99	5
IMFLOW_MAX_CONFL_RETRIES	ImFlow: Max. retries on conflicts in UTC control	1	99	1
IMFLOW_SIM_IF	ImFlow Sim. interface	0	1	1
IMFLOW_TDC	ImFlow TDC logging	0	1	0

Traffic Data Collector (TDC)

TDC enabled	Persistent	Readonly	MF (max. files)	Assigned memory
No	0	0	0	1 Mb

MEMO FIELDS

HISTORY	
Description	Text in the History text block between: --CREDAT-- and --UPDATE--
Contents	* This is memofield HISTORY

B_HISTORY	
Description	Text in the History text block between: --CREDAT-- and --UPDATE-- (AMSEC1.CNF)
Contents	; This is memofield HISTORY_B

ABC_INC	
Description	Code at the end of the file before the end of file remark (AMSEC1.CNF)
Contents	; This is memofield AMSEC_INC

XP1_INC	
Description	Code at the begin of the file, just below History, under the heading 'XP1_INC'.
Contents	**/* This is memofield XP1_INC** */

XP2_INC	
Description	Code under the heading 'XP2_INC', just before the 'XIN INPUTS' definitions.
Contents	**/* This is memofield XP2_INC** */

XP3_INC	
Description	Code under the heading 'XP3_INC', at the end of the file.
Contents	**/* This is memofield XP3_INC** */ P("MPDISO.R1") { P(0);D(1); P(1);D(1); P(2);D(1); P(3);D(1); P(4);D(1); P(5);D(1); P(6);D(1); P(7);D(1); }

SADAT_INC	
Description	Code at end of the file. (SADAT.CNF)
Contents	**/* This is memofield SADAT_INC** */ **/* Function Stops CER Dets Extending phase A** */ P("DFUNC.R30") { **/* P(Clearance Det); D(0b00000000);** */ }

VMFUNC_INC1	
Description	VMFUNC process conditions
Contents	**/* This is memofield VMFUNC_INC1** */

VMFUNC_INC2	
Description	VMFUNC process conditions
Contents	**/* This is memofield VMFUNC_INC2** */

HARDWARE CONFIGURATION

Device counts

Lamp control devices	Count	Detection devices	Count	I/O devices	Count
VIRTUAL-LCM	3	ED316	0	IO1616	3
LCM	3	MTS4E	4	RIO	0
RLU	0	WDS	0		
RLU-9	0	FLIR-ZONE	0		
		FLIR-OUTPUT	0		
Dummy-Phase	0	Dummy-Detector	2		

Optional devices	Setting
Manual Panel Type	Multi stage
Manual Panel Flashing	Disabled
Solar Cell Monitor	24 hour time out
Dimming Operating	ELV 24V Solar Cell

Configuration - RLU / LCM

RLU	LCM
	LCM --- Physical LCM: 01 --- 001: A/Red (R01) 002: A/Amber (A01) 003: A/Green (G01) 004: B/Red (R02) 005: B/Amber (A02) 006: B/Green (G02) 007: C/Red (R03) 008: C/Amber (A03) 009: C/Green (G03) 010: D/Red (R04) 011: D/Amber (A04) 012: D/Green (G04) --- Physical LCM: 02 --- 001: E/Red (R05) 002: E/Amber (A05) 003: E/Green (G05) 004: F/Red (R06) 005: F/Wait (A06) 006: F/Green (G06) 007: G/Red (R07) 008: G/Wait (A07) 009: G/Green (G07) 010: H/Red (R08) 011: H/Wait (A08) 012: H/Green (G08) --- Physical LCM: 03 --- 001: I/Red (R09) 002: I/Wait (A09) 003: I/Green (G09) 004: J/Red (R10) 005: J/Wait (A10) 006: J/Green (G10)

Configuration - ED316 / MTS4E

ED316	MTS4E
	MTS4E --- Unit: 01 --- 001: Detector AIN11 002: Detector AIN12 003: Detector AX1 004: Detector AX2 --- Unit: 02 --- 001: Detector BIN13 002: Detector BIN14 003: Detector BX3 004: Detector BX4 --- Unit: 03 --- 001: Detector CIN15 002: Detector CX5 003: Detector CSL25 004: Detector DIN16 --- Unit: 04 --- 001: Detector DX6 002: Detector DSL26 003: Detector EX7 004: Detector ESL27

Configuration - WDS

WDS

IOT State - Lamp control

RLU	LCM
RLU Unit Addr * ======= ==== ==========	LCM Unit Addr * ======= ==== ========== 01 001 A/Red (R01) 01 002 A/Amber (A01) 01 003 A/Green (G01) 01 004 B/Red (R02) 01 005 B/Amber (A02) 01 006 B/Green (G02) 01 007 C/Red (R03) 01 008 C/Amber (A03) 01 009 C/Green (G03) 01 010 D/Red (R04) 01 011 D/Amber (A04) 01 012 D/Green (G04) 02 001 E/Red (R05) 02 002 E/Amber (A05) 02 003 E/Green (G05) 02 004 F/Red (R06) 02 005 F/Wait (A06) 02 006 F/Green (G06) 02 007 G/Red (R07) 02 008 G/Wait (A07) 02 009 G/Green (G07) 02 010 H/Red (R08) 02 011 H/Wait (A08) 02 012 H/Green (G08) 03 001 I/Red (R09) 03 002 I/Wait (A09) 03 003 I/Green (G09) 03 004 J/Red (R10) 03 005 J/Wait (A10) 03 006 J/Green (G10)

IOT State - Detection

ED316	MTS4E
ED316 Unit Addr * ======= ==== ==========	MTS4E Unit Addr * ======= ==== ========== 01 001 AIN11 01 002 AIN12 01 003 AX1 01 004 AX2 02 001 BIN13 02 002 BIN14 02 003 BX3 02 004 BX4 03 001 CIN15 03 002 CX5 03 003 CSL25 03 004 DIN16 04 001 DX6 04 002 DSL26 04 003 EX7 04 004 ESL27

WDS
WDS Unit Addr * ======= ==== ==========

FLIR-ZONE	FLIR-OUTPUT
FLIR-ZONE Unit Addr * ======= ==== ==========	FLIR-OUTPUT Unit Addr * ======= ==== ==========

IOT State - IO1616, RIO

IN	OUT

IN	OUT
IO1616-IN Unit Addr * ======= ==== ========== 01 001 UTC_I1 01 002 UTC_I2 01 003 UTC_I3 01 004 UTC_I4 01 005 UTC_I5 01 006 UTC_I6 01 007 UTC_I7 01 008 sispwr 01 009 sisflt 01 010 UTC_I10 01 011 UTC_I11 01 012 UTC_I12 01 013 UTC_I13 01 014 UTC_I14 01 015 UTC_I15 01 016 UTC_I16 02 001 PBFU1 02 002 PBUF2 02 003 PBUF3 02 004 PBUF4 02 005 PBUG1 02 006 PBUG2 02 007 PBUG3 02 008 PBUG4 02 009 PBUH1 02 010 PBUH2 02 011 PBUH3 02 012 PBUH4 02 013 PBUI1 02 014 PBUI2 02 015 PBUI3 02 016 PBUI4 03 001 PBUJ1 03 002 PBUJ2 03 003 PBUJ3 03 004 PBUJ4 03 005 ONXH1 03 006 ONXH2 03 007 ONXI1 03 008 ONXI2 03 009 ONXJ1 03 010 ONXJ2	IO1616-OUT Unit Addr * ======= ==== ========== 01 001 UTC_O1 01 002 UTC_O2 01 003 UTC_O3 01 004 UTC_O4 01 005 UTC_O5 01 006 UTC_O6 01 007 UTC_O7 01 008 UTC_O8 01 009 UTC_O9 01 010 UTC_O10 01 011 UTC_O11 01 012 UTC_O12 01 013 UTC_O13 01 014 UTC_O14 01 015 UTC_O15 01 016 UTC_O16 02 001 MDET1 02 002 MDET2 02 003 MDET3 02 004 MDET4 02 005 MDET5 02 006 MDET6 02 007 MDET7 02 008 MDET11 02 009 MDET12 02 010 MDET13 02 011 MDET14 02 012 MDET15 02 013 MDET16 02 014 MDET20 02 015 MDET21 02 016 MDET22 03 001 MDET23 03 002 MDET24 03 003 MDET25 03 004 MDET26 03 005 MDET27 03 006 SISPWR 03 007 SISFLT

IOT State - Controller connections (KOPMV)

KOPMV-IN	KOPMV-OUT
KOPMV-IN Unit Addr * ======= ==== ==========	KOPMV-OUT Unit Addr * ======= ==== ==========

INPUTS and OUTPUTS

Detectors

ID	Detector Name	Invert	Unit Type	Unit Pos.
1	AIN11	No	MTS4E-1	1
2	AIN12	No	MTS4E-1	2
3	AX1	No	MTS4E-1	3
4	AX2	No	MTS4E-1	4
5	BIN13	No	MTS4E-2	1
6	BIN14	No	MTS4E-2	2
7	BX3	No	MTS4E-2	3
8	BX4	No	MTS4E-2	4
9	CIN15	No	MTS4E-3	1
10	CX5	No	MTS4E-3	2
11	CSL25	No	MTS4E-3	3
12	DIN16	No	MTS4E-3	4
13	DX6	No	MTS4E-4	1
14	DSL26	No	MTS4E-4	2
15	SPARE_1	No	DUMMY-1	1
16	EX7	No	MTS4E-4	3
17	ESL27	No	MTS4E-4	4
18	SPARE_2	No	DUMMY-2	1
19	PBFU1	No	IO1616-2	1
20	PBUF2	No	IO1616-2	2
21	PBUF3	No	IO1616-2	3
22	PBUF4	No	IO1616-2	4
23	PBUG1	No	IO1616-2	5
24	PBUG2	No	IO1616-2	6
25	PBUG3	No	IO1616-2	7
26	PBUG4	No	IO1616-2	8
27	PBUH1	No	IO1616-2	9
28	PBUH2	No	IO1616-2	10
29	PBUH3	No	IO1616-2	11
30	PBUH4	No	IO1616-2	12
31	PBUI1	No	IO1616-2	13
32	PBUI2	No	IO1616-2	14
33	PBUI3	No	IO1616-2	15
34	PBUI4	No	IO1616-2	16
35	PBUJ1	No	IO1616-3	1
36	PBUJ2	No	IO1616-3	2
37	PBUJ3	No	IO1616-3	3
38	PBUJ4	No	IO1616-3	4
39	ONXH1	Yes	IO1616-3	5
40	ONXH2	Yes	IO1616-3	6
41	ONXI1	Yes	IO1616-3	7
42	ONXI2	Yes	IO1616-3	8
43	ONXJ1	Yes	IO1616-3	9
44	ONXJ2	Yes	IO1616-3	10

Inputs

ID	Input	Label	Invert	Toggle	Unit Type	Unit Pos.
1	sispwr		No	No	IO1616-1	8
2	sisflt		No	No	IO1616-1	9
3	UTC_I1	F1	No	No	IO1616-1	1
4	UTC_I2	F2	No	No	IO1616-1	2
5	UTC_I3	F3	No	No	IO1616-1	3
6	UTC_I4	F4	No	No	IO1616-1	4
7	UTC_I5	F5	No	No	IO1616-1	5
8	UTC_I6	F6	No	No	IO1616-1	6
9	UTC_I7	F7	No	No	IO1616-1	7
10	UTC_I8		No	No	-	8
11	UTC_I9		No	No	-	9
12	UTC_I10		No	No	IO1616-1	10
13	UTC_I11		No	No	IO1616-1	11
14	UTC_I12		No	No	IO1616-1	12
15	UTC_I13		No	No	IO1616-1	13
16	UTC_I14	TO1	No	No	IO1616-1	14
17	UTC_I15		No	No	IO1616-1	15

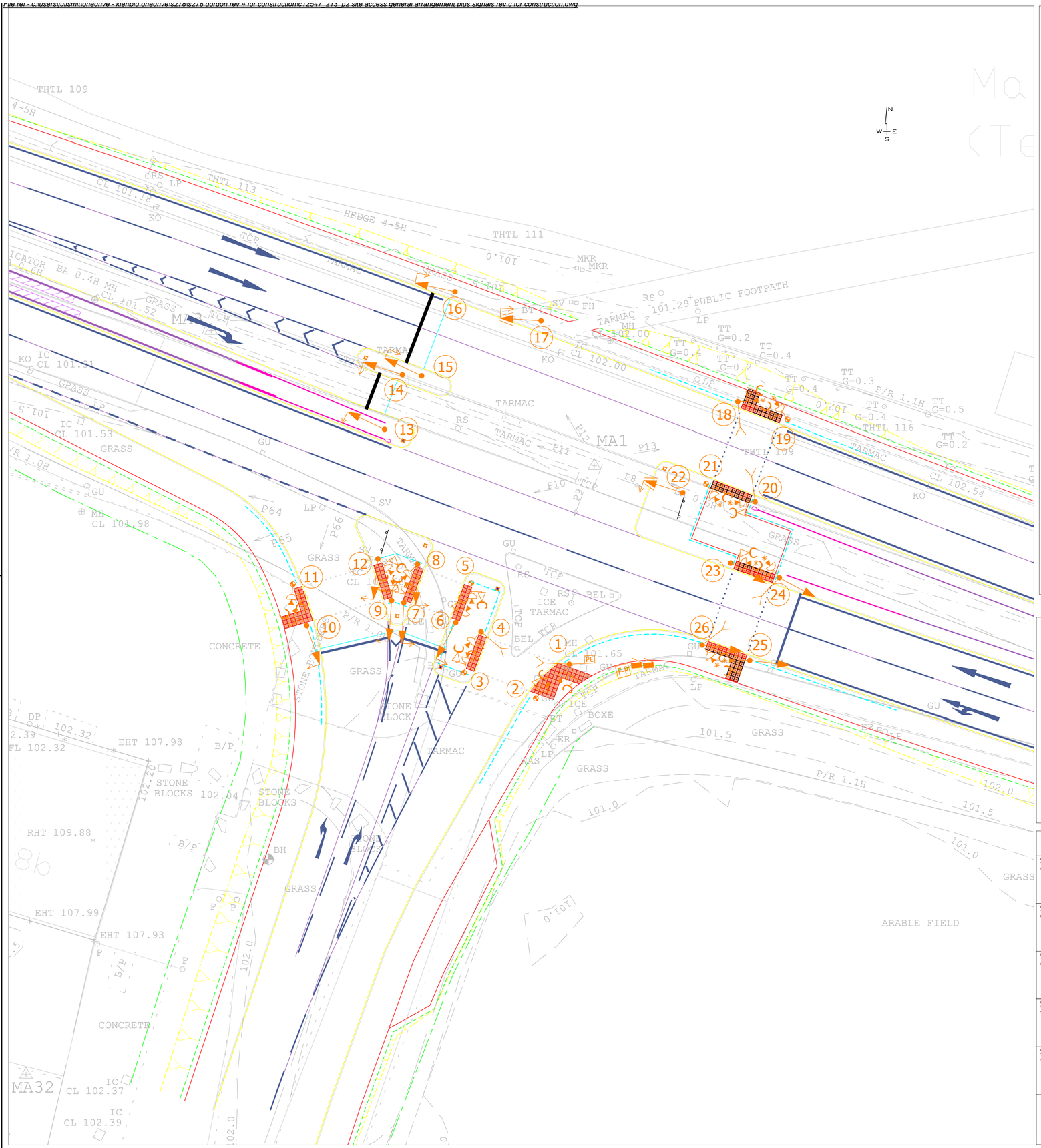
ID	Input	Label	Invert	Toggle	Unit Type	Unit Pos.
18	UTC_I16		No	No	IO1616-1	16
19	DIM_IN		No	No	DIMMING	1

Outputs

ID	Output	Label	Invert	Unit Type	Unit Pos.
1	MDET1		No	IO1616-2	1
2	MDET2		No	IO1616-2	2
3	MDET3		No	IO1616-2	3
4	MDET4		No	IO1616-2	4
5	MDET5		No	IO1616-2	5
6	MDET6		No	IO1616-2	6
7	MDET7		No	IO1616-2	7
8	MDET11		No	IO1616-2	8
9	MDET12		No	IO1616-2	9
10	MDET13		No	IO1616-2	10
11	MDET14		No	IO1616-2	11
12	MDET15		No	IO1616-2	12
13	MDET16		No	IO1616-2	13
14	MDET20		No	IO1616-2	14
15	MDET21		No	IO1616-2	15
16	MDET22		No	IO1616-2	16
17	MDET23		No	IO1616-3	1
18	MDET24		No	IO1616-3	2
19	MDET25		No	IO1616-3	3
20	MDET26		No	IO1616-3	4
21	MDET27		No	IO1616-3	5
22	SISPWR		No	IO1616-3	6
23	SISFLT		No	IO1616-3	7
24	UTC_O1	G1	No	IO1616-1	1
25	UTC_O2	G2	No	IO1616-1	2
26	UTC_O3	G3	No	IO1616-1	3
27	UTC_O4	G4	No	IO1616-1	4
28	UTC_O5	G5	No	IO1616-1	5
29	UTC_O6	G6	No	IO1616-1	6
30	UTC_O7	G7	No	IO1616-1	7
31	UTC_O8	LE	No	IO1616-1	8
32	UTC_O9		No	IO1616-1	9
33	UTC_O10		No	IO1616-1	10
34	UTC_O11		No	IO1616-1	11
35	UTC_O12		No	IO1616-1	12
36	UTC_O13		No	IO1616-1	13
37	UTC_O14		No	IO1616-1	14
38	UTC_O15	CRB1	No	IO1616-1	15
39	UTC_O16		No	IO1616-1	16
40	DIM_OUT		No	DIMMING	1

Report executed at 12/19/2016 2:57 PM

File ref - C:\users\jwilsmith\onedrive - kier\old onedrive\s278\s278 gordon rev 4 for construction\c12947_213_p2 site access general arrangement plus signals rev c for construction.dwg



New ELV traffic Signal Controller on NAL controller root

Termination Cabinet on NAL controller root

F-P Electricity feeder pillar

4m Passive safe aluminium signal pole

2m Passive safe aluminium signal pole

Primary ELV RAG LED signal head complete with hoods and backing board

Primary ELV RAGA ahead LED signal head complete with hoods and backing board

Primary ELV RAGA left arrow LED signal head complete with hoods and backing board

Primary ELV RAGA right arrow LED signal head complete with hoods and backing board

Secondary ELV RAGA ahead arrow LED signal head complete with hoods and backing board

Secondary ELV RAGA right arrow LED signal head complete with hoods and backing board

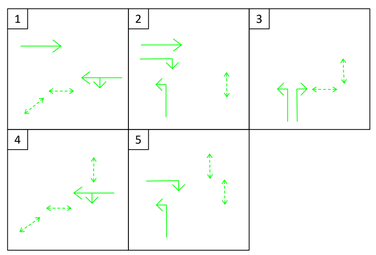
Nearside LED PUFFIN pedestrian demand and display unit with tactile cone

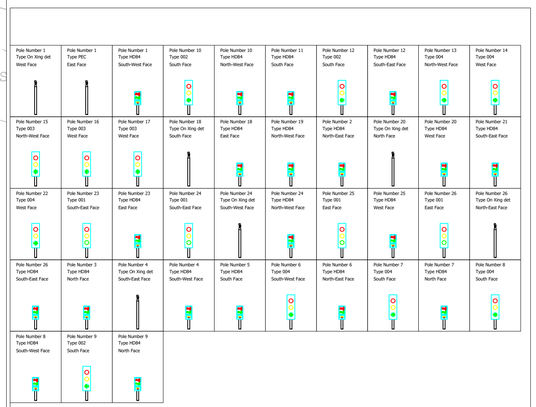
PUFFIN pedestrian demand unit with tactile cone

C Nearside TOUCAN demand and display unit with tactile cone.

Pedestrian on-crossing detector

PE PE photo Solar cell





RESIDUAL DESIGN HAZARDS

(The following information has been collected from Preconstruction Information and the EM CDM Hazard Management Process.)

1. Working adjacent to live traffic - Appropriate traffic management to be used to segregate work area from hazard.Please enter project specific hazards here.

NOTES

1. For ducting, chambers and detection see drawing 1200_010
2. The new ELV controller shall be type approved and equipped to operate in MOVA mode
3. A Siemens OMCU or OMCU/MOVA unit shall be installed to povide remote monitoring compatible with the existing Highways England RMS system.
4. All signal poles shall be passive safe aluminium poles with electrical isolation system in accordance with BS EN 12767
5. All poles shall be located in pole retention sockets. NAL duct foot or similar approved
6. All poles shall be fitted with access doors for cable termination from ground level and fitted with vented pole caps.
7. Pedestrian demand and display units shall be ELV LED units and installed and angled in agreement with the signal design engineer .
8. All poles shall be numbered as shown on the drawing and fitted with reflective banding.
9. Close associated secondary signal heads on poles 8, 12, 23 and 26 shall be fitted with primary hoods.
10. Tactile cones shall be installed in all pushbutton units.

Rev	Revision details	Chkd	Appd	Date
C	Issued for Construction	JRS	JRS	20/6/16
B	Crossings changed to Toucans	JRS	JRS	1/4/16
A	Revised Junction layout	JB	JB	12/2/16

Drawn:	JRS	Preliminary	
Design:	JRS	For comment	
Chkd:	JB	For tender	
Appd:	JB	For construction	✓
Date:	22/12/14	As constructed	
		Other	

em leaner, greener, safer

Client: highways england

Project Name: A5 Hall End Farm, Dordon

Drawing Title: Traffic Signals

Traffic Signals - Proposed Layout

Original Drawing Size : A1	Dimensions : -
Scale : 1:200	Copyright © EMHighways

Drawing No: M9/2210011 DR 1200 005

Rev: C