1 INTRODUCTION

1.1 Tetra Tech (TT) have been appointed by Hodgetts Estates to provide technical support for their outline planning application for a proposed development of up to 100,000sqm of employment floorspace and 150 space overnight lorry park (including an associated 400sqm amenity block) on land north-east of M42 Junction 10. The application is also supported by a Transport Assessment (TA) prepared by TT, dated February 2023.

1.2 This 2023 Baseline Validation Report follows on from the TT Consolidated Modelling Strategy Note, dated 7th June 2023. The Consolidated Methodology Note was approved by Warwickshire County Council (WCC) on 25th July. Staffordshire Count Council (SCC) provided some minor comments on 26th June and a v2 Consolidated Methodology Note is in preparation and will be completed upon receipt of National Highways (NH) comments.

1.3 As agreed with NH, WCC and SCC traffic surveys on the road network were undertaken on 4 July 2023 when the network flows were considered to be normal. The traffic flow data has been submitted to NH, WCC and SCC. SCC confirmed on 11th August that the data is acceptable.

1.4 This note set out the construction of the Transyt model and its validation with the 2023 traffic data.

2 AGREED SCOPE OF NETWORK

2.1 It has been agreed that in order to test the traffic impacts of the proposed development, the following seven junctions are required to be included in the TRANSYT model.

1. M42 Junction 10 Interchange (6-arm grade separated signalised roundabout)
2. A5 Watling Street/ Site Access junction (proposed 3-arm signalised junction)
3. A5 Watling Street/ Danny Morson Way (4-arm signalised junction, known locally as Birch Coppice)
4. A5 Watling Street/ Meridian Drive (3-arm signalised junction, known locally as Core 42)

5. B5080 Pennine Way North/ A5 Eastbound on/ off slip road (3-arm roundabout junction)

6. B5080 Pennine Way South/ A5 Westbound on/ off slip road/ Centurion Way/ Quarry Hill (4-arm roundabout junction)

7. A5 Watling Street/ Long Street/ Gypsy Lane (4-arm roundabout junction, known locally as – Dordon Roundabout)

2.2 The first stage is to set up a validated 2023 baseline model of the existing operational performance for junctions 1 to 7, excluding junction 3. This provides a reliable basis for assessing the performance of the network in future years both with and without the proposed development.

2.3 TT previously prepared a Pennine Way roundabout modelling note (junctions 5 and 6), dated 23 November 2022 and was issued to SCC. The junction parameters used in that modelling report were based on OS measurements and an intercept and slope coefficient was calculated for each approach. The intercept and slope coefficients have been extracted from the models and used in the initial TRANSYT model and were validated using the 2023 survey data in Transyt.

2.4 At the A5/ Dordon Roundabout the junction parameters have been measured from OS mapping and inserted into the TRANSYT model to derive the intercept and slope coefficients.

3 2023 SURVEY DATA

Traffic Flows

3.1 Full manual classified traffic counts of the six junctions took place on Tuesday 4th July 2023 between the hours 07:00 to 09:30 and 16:00 to 18:30. The survey data has been issued to NH, WCC and SCC under separate cover.

3.2 The numbers of surveyed vehicles were converted to passenger car units (pcu's) using TRL's Research Report 67 and recommended in the Transyt/ 16 User Guide. The peak hour periods were then determined.

3.3 In order to establish the traffic flows to be used in the model, the network peak hour was defined and then the respective flows at each of the junctions were established, this ensures the flow inconsistencies between the junctions are minimised.

3.4 The network AM peak hour was 07:30 to 08:30 and Figure 1 attached in Appendix A shows the turning flows. it was agreed with AECOM (NH's review consultant) for the assessment of the 2022 Transyt on behalf of NH, that minor flow inconsistencies in the order of around 20pcu were negligible and could be ignored. The flow differences between junctions are minimal and less than 20pcu on all links except southbound between the two Pennine Way roundabout junctions where the flow difference is 26pcu. Based on the AECOM advice no adjustment to the turning flows has been carried out.

3.5 The network PM peak hour was 16:45 to 17:45 and Figure 2 attached in Appendix A shows the turning flows. The flow differences between junctions in all but one link were less than 9pcu and could be ignored. For these links, no adjustment was considered necessary. There was a difference between the A5 eastbound exit flow at the Core 42 junction and the A5 eastbound entry flow at Dordon Roundabout of 109pcu. It is therefore considered appropriate to apply a 100pcu uplift onto the dominant ahead movement. Figure 3 attached in Appendix A shows the corrected 2023 PM peak surveyed flows to use in the model.

3.6 The surveys also captured the lane allocation of traffic on each of the approaches, for example where there is a choice of lanes to a particular destination, the vehicles were counted per lane. This lane-specific allocation of vehicles has been used in the model set up to ensure the correct proportion of traffic is assigned to the approach lanes. The excel data can be provided on request.

3.7 Although the overwhelming majority of drivers used the correct lane allocations, this was not the case on the A5 eastbound approach to Junction 10 and some late lane changes were observed. On the eastbound A5 approach the nearside lane (prior to the short flared lane) is indicated for Green Lane, M42 North and the A5 east, and the offside lane indicated for Trinity Road and the M42 South. In the AM peak hour 1275pcu (63%) are indicated for the nearside lane and 762pcu (37%) are indicated for the offside lane. The imbalance in traffic flows and the Pennine Way on-slip means that some drivers on the A5 choose to use the offside lane and undertake a lane change to the nearside lane between the Pennine Way on-slip and the stop line. The model has been set up to facilitate these observed lane change manoeuvres to

achieve the desired queues in each lane. A small proportion of drivers changed lanes after the stopline on the circulatory carriageway to get into the correct lane for exit. In both the AM and PM peaks 6% switched lanes post stop line. The model has been set up to replicate this proportion of traffic using the approach lane not as allocated on the ground and switching downstream.

3.8 At all of the other junctions where there is a choice of lane to use, the survey data had been analysed and the model has been coded to represent the observed lane usage. The 2023 AM (07:30 to 08:30) and PM (16:45 to 17:45) peak hour lane allocations are attached at Appendix B.

Queues

3.9 The maximum queue on each signalised lane was reported in 5-minute intervals. The average of the maximum queues was calculated for the AM and PM peaks to establish a typical maximum queue across both 1-hour periods. At the uncontrolled junctions the queue was reported at 1-minute intervals and the average queue over the hour was determined. Figure 4 attached in Appendix A shows the average queues on each lane during the AM peak hour and Figure 5 shows the PM peak hour equivalent. The excel data can be provided on request.

Signal Timings

3.10 The green signal timings at each stop line were recorded.

M42 Junction 10

3.11 The junction operates under MOVA control and so each pair of approach/ circulating stop lines has varying cycle times. Some of the approaches are coordinated, so that as one approach's cycle time alters for traffic demands then the downstream signals do so accordingly. For example, the A5 eastbound approach is coordinated with the downstream Green Lane circulatory stop line, where the A5 receives a green signal typically 2 secs before the Green Lane circulatory receives a green. Both nodes typically operated under a 74 secs cycle time in the AM peak and 80 secs in the PM peak.

3.12 Likewise the A5 westbound and the downstream Trinity Way circulatory stop line are coordinated so that the Trinity Way stop line receives a green before the A5 westbound

approach. Both nodes typically operated under a 68 secs cycle time in the AM peak and 74 secs in the PM peak.

3.13 The northbound and southbound slip roads, and their associated circulatory stop lines, are not coordinated with other nodes. In the AM peak hour the northbound slip operates on a typical 50 secs cycle and the southbound slip road on a 63 secs cycle time. In the PM peak hour the northbound slip operates on a typical 71 secs cycle and the southbound slip road on a 50 secs cycle time.

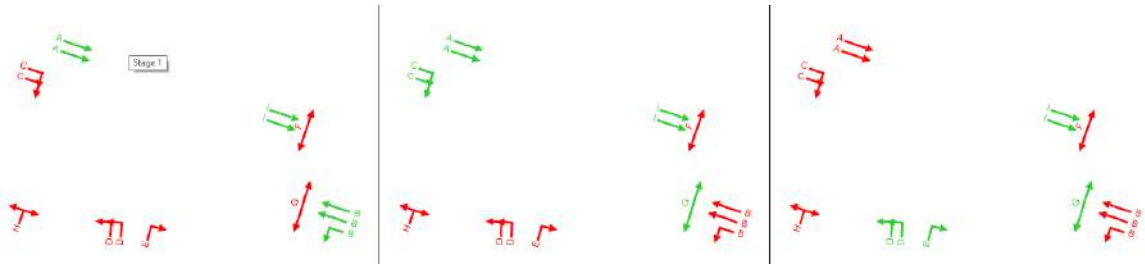
3.14 The model has been set up with the average cycle times and coordination where applicable. In addition, broadly the typical average green splits have been used for each stop line.

3.15 The simulation mode feature in TRANSYT 16 facilitates the use of different cycle times at each set of traffic signals as the model simulates a full hour run and reports the average queues and delays over the full hour.

A5/ Birch Coppice

3.16 During the AM and PM peak hours the A5/ Birch Coppice junction operated on 3 stages as shown below on Image 3.1. The junction is under MOVA control and so reacts to traffic demands resulting in varying cycle times and green splits for each phase. The access adjacent to Danny Morson Way (to the west) was never called during either peak hour, whilst the Birch Coppice (Danny Morson Way) access was called every cycle.

Image 3.1: A5/ Birch Coppice – Observed Staging Sequence

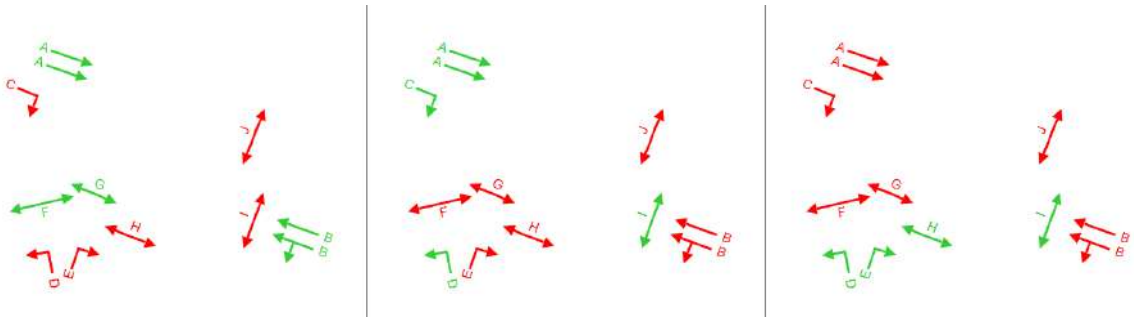


3.17 The typical cycle time in the AM peak hour was 108 secs and in the PM peak it was 95 secs.

A5/ Core 42

3.18 During the AM and PM peak hours the A5/ Core 42 junction operated on 3 stages as shown below on Image 3.2. The junction is under MOVA control and so reacts to traffic demands resulting in varying cycle times and green splits for each phase. Core 42 is 98.5% occupied (63,509sqm), with the remaining Core 7 (989sqm) element in for planning. The traffic flows turning right out of Core 42 are low (4pcu in the AM peak and 16pcu in the PM peak), the demand for stage 3 (Phase E right turn from Core 42) is infrequent across the peak hours. In the AM peak stage 3 was called once every 10 cycles on average and in the PM peak once every 4 cycles. As stage 3 is rarely called the A5 eastbound movement receives a green signal for long periods in excess of 10 minutes. The simulation mode in TRANSYT 16 facilitates intermittent occurrences of stages, therefore this feature has been used to reflect the observed operation.

Image 3.2: A5/ Core 42 – Observed Staging Sequence



3.19 In the AM peak phase B (A5 westbound) in stage 1 typically operated with a green time of 53 secs and 39 secs in the PM peak, whilst the left turn (phase D Core 42 to A5 westbound) in stage 2 typically received a green for 10 secs in the AM peak and 12 secs in the PM peak. Given the intermittent stage 3 it is difficult to determine an average cycle time, therefore a 90 sec cycle time for the AM and PM peaks has been used.

3.20 The intergreen and minimum phase green timings have been extracted from the signals controller specifications. The specifications are attached in Appendix C.

Saturation Flows

3.21 Cameras were located to give a view of vehicles passing over the stop lines and enable calculation of the saturation flows in accordance with TRL's Road Note 34. On each approach,

and where applicable, two lanes were measured to establish separate nearside and non-nearside lane saturation flows.

3.22 Upon review of the camera footage it was apparent that for some approaches it was not appropriate to calculate saturation flows for the following reasons;

- The lane in question was lightly trafficked and thus there was not sufficiently saturated for a meaningful sample to be collected in accordance with Road Note 34.
- On approaches with a short flare, drivers approaching in the single upstream lane then chose one of the flared lanes, as a result neither lane was fully saturated, for example the nearside lane at the A5 westbound approach to Junction 10.
- The green time was short, thus a sufficient sample could not be obtained.

3.23 Where saturation flows have been calculated for a lane, it was applied to the adjacent lane if the vehicles in it travelled in the same direction, for example at the Trinity Way circulatory stop lines the two nearside lanes travel to the M42 South have been allocated the same saturation flow while the 2 offside lanes turning right to go over the bridge have been allocated the same saturation flows.

3.24 Where a saturation flow has not been calculated, for example A5 left turn to Birch Coppice, TRL's Research Report 67, The Prediction Of Saturation Flows For Road Junctions Controlled By Traffic Signals, dated 1986, has been applied using on site geometries extracted from the as-built drawings.

3.25 At the Core 42 junction, the A5 right turn in saturation flow as well as the left and right turn out saturation flows have been taken from the equivalent traffic movements at the Birch Coppice junction. The reason for this was because the TRL RR67 saturation flows appeared to be on the high side (2,080pcu on the left turn out, 1,980pcu on the right turn out for example) and therefore it was considered robust to use the lower observed saturation flow at the similar Birch Coppice junction.

3.26 The saturation flow calculations are attached in Appendix D. The saturation flows used per lane are summarised on the 2023 TRANSYT modelling results at Table 4.1 for ease of reference.

4 2023 BASELINE TRANSYT MODELS

Model Network

4.1 The TRANSYT model has been developed using satellite imagery as a base, and the traffic streams (representing the lanes) have been created by copying the road network structure. The base map has been scaled so that all of the traffic streams have the correct lengths to represent the existing network. Image 4.1 below shows the TRANSYT model network and Figures 6 to 11 in Appendix A shows each junction in more detail.

Image 4.1: TRANSYT Model Network

4.1 TRANSYT reports the Mean Maximum Queue (MMQ) which is the “average” maximum back of queue position taken across each time segment throughout the hour. The delay is also reported which is the average delay experienced per vehicle each time segment. In simulation mode, the Degrees of Saturation (DoS) are not calculated, as there is no specific value that can be calculated for these, for example the capacity of a traffic stream depends not only on saturation flow but also on the lane configuration for turning movements. A low DoS could mean that the flow is low compared to the capacity (i.e. the usual interpretation), but could also

mean that the flow is low because it is restricted due to the lane configuration/ movements. As a result of this the performance of the junctions are judged on the MMQ and average delay per vehicle as per the 2022 model agreed with AECOM.

2023 AM Peak Hour Model Adjustments

4.2 The observed AM peak hour signal timings and lane allocations were initially used in the first model run. The unadjusted model produced a queue of 110pcu on the A5 westbound approach at the A5/ Dordon roundabout which is 107pcu longer than the observed average queue of 3pcu. The unadjusted nearside lane intercept was 932pcu/ hr and this was increased to 1332pcu/ hr to generate a modelled average queue of 5pcu. The other three approaches did not require any adjustments.

4.3 The queues on the A5/ Birch Coppice junction were slightly pessimistic with a right turn queue from the A5 at 13pcu in the offside lane, opposed to the observed average queue of 8pcu. The green split for phase C (right turn) was increased by 2 seconds. The modelling results were then similar to the observed with a queue of 9pcu.

4.4 At the M42 Junction 10 the modelled queues were broadly similar to the observed apart from the A5 eastbound approach. The unadjusted modelled queue was 20pcu in the nearside lane and the observed average queue was 47pcu. To generate a longer queue the A5 eastbound green time was reduced from 34 secs to 29 secs per cycle and the volume of traffic using the nearside lane to travel ahead to the A5 East was increased from 30% to 35%. This generated a modelled queue of 57pcu, 10pcu longer than the observed average queue. In the offside lane the modelled queue is 48pcu, longer than the observed queue of 32pcu.

4.5 There are queues on the A5 eastbound merge slip road from Pennine Way due to merge interaction and queues on the nearside lane of the A5. The observed average queue was 4pcu and the initial modelled queue was 14pcu. Different methods were trialed to reduce the queue on the slip road but it is very sensitive to change and was resulting in longer queues on the A5 eastbound mainline. As the modelled queue is on the pessimistic side, it is considered best to leave it the way it is.

4.6 The initial modelled queue at the Pennine Way approach at the northern Pennine Way roundabout was 1pcu, lower than the observed queue of 5pcu, therefore the intercept capacity was reduced from 1056pcu/ hr to 650pcu/ hr to achieve a modelled average queue of 5pcu.

4.7 At all other approaches to junctions within the model the queues validated reasonably well against those observed.

4.8 Table 4.1 attached in Appendix E summarises the 2023 AM peak hour results per lane (also refer to Figures 6 to 11 in Appendix A for lane reference) and a summary is provided further below.

2023 PM Peak Hour Model Adjustments

4.9 The intercept capacity alterations made in the AM peak model were carried through to the initial model run of the PM peak hour to try to maintain the same parameters where possible in both models. The observed PM peak signal timings and lane allocations were initially used in the first model run.

4.10 The initial model produced a queue of 34pcu on the A5 eastbound approach at the A5/ Dordon roundabout which is 32pcu longer than the observed average queue of 2pcu. The unadjusted nearside lane intercept was 1166pcu/ hr and this was increased to 1466pcu/ hr to generate a modelled average queue of 9pcu. The capacity adjustment has only been applied to the PM peak scenario.

4.11 The queues on the A5/ Core 42 and A5/ Birch Coppice junctions were all reasonably similar to the observed queues and no adjustments were needed.

4.12 The M42 nearside lane northbound off-slip queue in the model was 32pcu, some 17pcu longer than the observed average queue of 15pcu. The nearside queue on the M42 overbridge in the model was 24pcu, 8pcu longer than the average observed queue. The green time on the slip road was increased by 2 seconds and the queue decreased to 16pcu, similar to the observed average queue of 15pcu, whilst the queue on the overbridge only increased by 1pcu to 25pcu.

4.13 On the northern roundabout junction, the northbound overbridge approach modelled queue was 8pcu and the observed average queue was 1pcu. The unadjusted nearside lane intercept was 1,131pcu/ hr and this was increased to 1,431pcu/ hr to generate a queue of 2pcu. The capacity adjustment has only been applied to the PM peak scenario.

4.14 On the southern roundabout, the nearside lane of the Quarry Hill approach modelled queue was 1pcu and the observed average queue was 6pcu. The unadjusted nearside lane intercept

was 1,149pcu/ hr and this was reduced to 825pcu/ hr to generate a queue of 8pcu. The capacity adjustment has only been applied to the PM peak scenario.

4.15 Table 4.1 attached in Appendix E summarises the 2023 PM peak hour results per lane and a summary is provided below.

2023 AM Peak Summary Results

4.16 The Pennine Way roundabouts work well with the most queuing observed on the Pennine Way North arm with a queue of 5pcu and the modelled queue is also 5pcu. The modelled queues are very similar to those observed on all approaches at the two roundabouts.

4.17 The most notable queues and delays are experienced on the A5 eastbound approach to the M42 Junction 10 with the queue extending west beyond the Pennine Way overbridge for about half of the peak hour period. The majority of traffic is in the nearside lane in order to be in the correct lane at the stop line for circulating the roundabout. As discussed in Chapter 3 above, a proportion of A5 drivers use the offside lane to pass the nearside queue and then merge back to the nearside lane when nearer to the stop line, with a small proportion changing lanes after the stop line. The modelled queues in the nearside lane are slightly longer to those observed (57pcu vs 47pcu) whilst the offside lane modelled queue is also more than the observed queue (48pcu vs 32cpu). There are queues on the A5 eastbound merge slip road from Pennine Way due to merge interaction and queues on the nearside lane of the A5. The observed average queue was 4pcu and the modelled queue is 14pcu. The modelled queues are considered a fair representation of the existing conditions.

4.18 All other approaches and circulatory lanes on Junction 10 operate fairly well across the hour and the modelled queues are considered a reasonable match to the observed. There are instances in the model when the queuing does extend back momentarily from one stop line to the previous, slightly affecting the performance of the junction and this is considered an accurate representation of on street conditions based upon review of the survey videos. The simulation model runs can be demonstrated on a Teams call if necessary.

4.19 The A5/ Birch Coppice junction works well with most queueing on the westbound approaches. The modelled queues are considered a good match to the observed queues.

4.20 Likewise the A5/ Core 42 junction works very well and the modelled queues are considered a good match to the observed queues.

4.21 The A5/ Dordon roundabout works reasonably well with the A5 westbound approach operating with the longest queues. The modelled queues closely match the observed.

4.22 The 2023 AM peak model is considered a good base to use and amend for the future 2026/ 2033 Reference Case and 2033 Local Plan scenarios.

2023 PM Peak Summary Results

4.23 The Pennine Way roundabouts work well with the most queuing observed on the Quarry Hill approach with a queue of 6pcu and the modelled queue replicates this. The modelled queues are very similar to those observed on all approaches at the two roundabouts.

4.24 The PM peak operates in a similar manner to the AM peak with the most notable queues and delays experienced on the M42 Jn 10 northbound off slip, the two circulating lanes at the south overbridge. The M42 northbound off-slip experiences an average queue of 15pcu in the nearside lane and the model reflects this with a queue of 16pcu. The M42 northbound nearside circulating lane has a modelled queue of 25pcu, longer than observed queue of 16pcu, whilst the offside circulating lane has both a modelled and observed queue of 14pcu. Although the modelled queue is longer on the nearside lane it is considered reasonable to retain.

4.25 There was also some queueing on the A5 eastbound approach to the M42 Junction 10, although much less than in the AM peak hour. The modelled queues are similar to those observed and it is considered a fair representation of the existing conditions.

4.26 On all the other approaches and circulatory lanes at M42 Jn 10 the lanes operate reasonably well when averaged over the hour and the modelled queues are considered a good match with the observed. There are instances in the model when the queuing does extend back momentarily from one stop line to the previous, slightly affecting the performance of the junction and this is considered accurate upon observation of the survey videos. The simulation model runs can be demonstrated on a Teams call if necessary.

4.27 The A5/ Birch Coppice junction works well with most queueing on the westbound approaches. The modelled queues are considered a good match to the observed queues. As expected

there is slightly more queuing on the Birch Coppice exit approach as a result of the workforce finishing for the day.

4.28 Likewise the A5/ Core 42 junction works very well and the modelled queues are considered a good match to the observed queues.

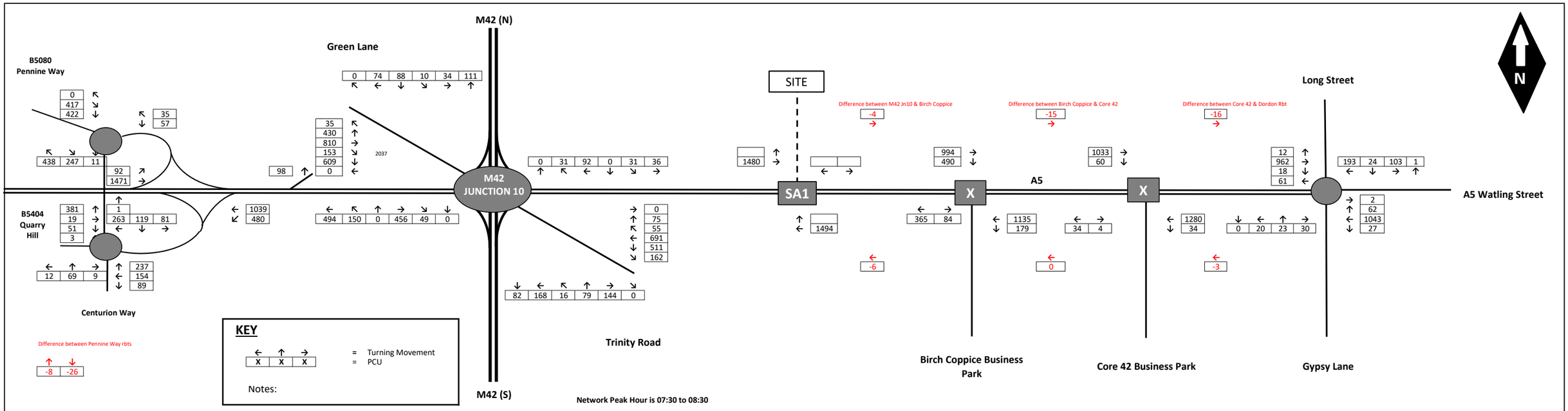
4.29 The 2023 PM peak model is considered a good base to use and amend for the future 2026/ 2031 Reference Case and 2031 Local Plan scenarios.

5 Conclusions

5.1 The 2023 Transyt modelled queues validate well and in some cases produces slightly longer queues than those observed on-street and is therefore considered to be a suitable base to assess the impacts of the proposed development at Land North East of M42 Jn10.

APPENDIX A

FIGURES



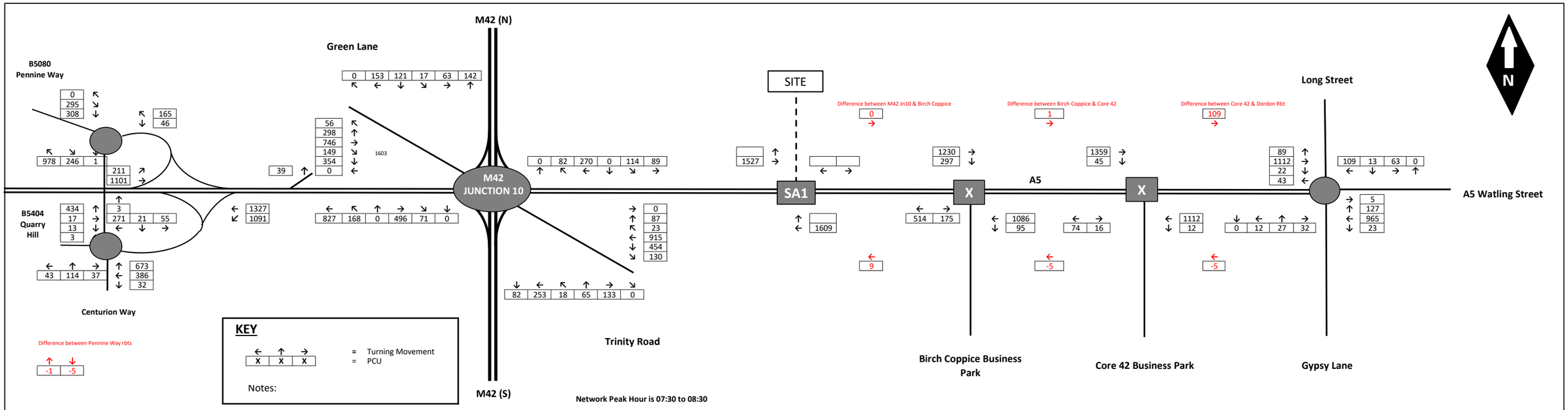
TETRA TECH

FIGURE 1

2023 AM PEAK (0730 TO 0830) - DEMAND FLOWS

Land North East of M42 Junction 10

JOB NUMBER: 784-B033920



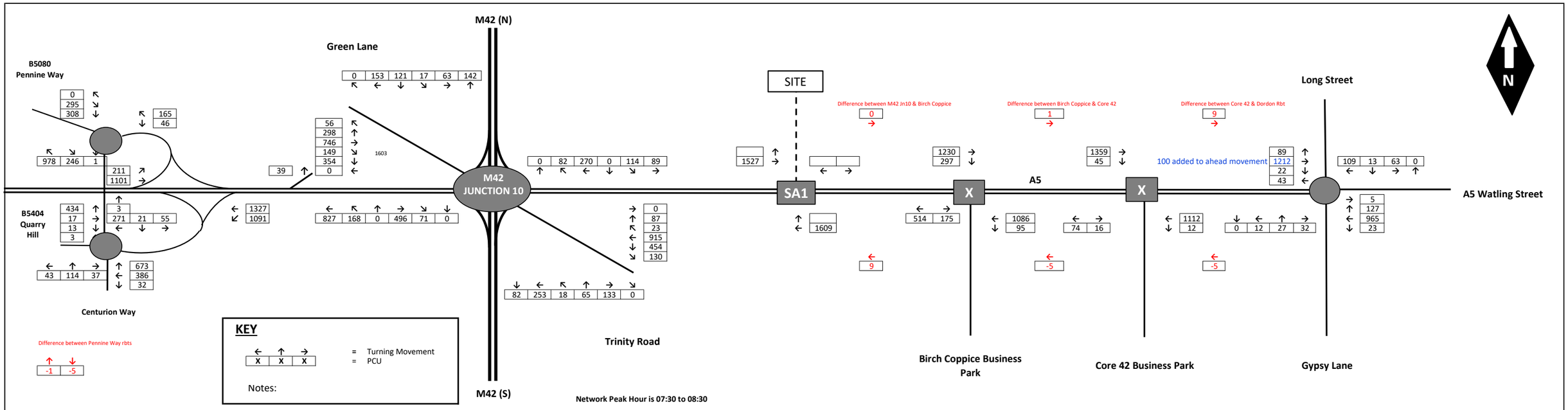
TETRA TECH

FIGURE 2

2023 PM PEAK (1645 TO 1745) - DEMAND FLOWS

Land North East of M42 Junction 10

JOB NUMBER: 784-B033920



TETRA TECH

FIGURE 3

2023 PM PEAK (1645 TO 1745) - DEMAND FLOWS CORRECTED

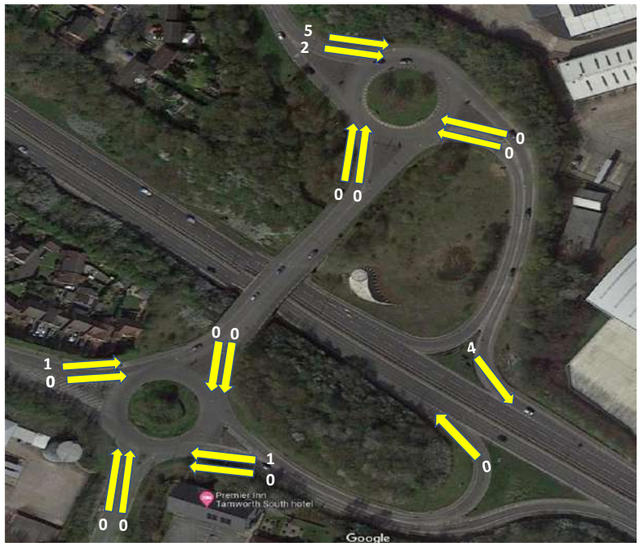
Land North East of M42 Junction 10

JOB NUMBER: 784-B033920

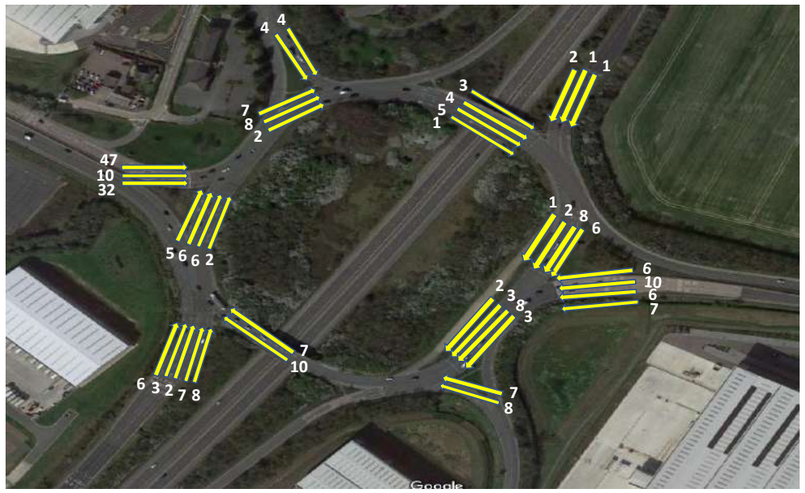
AM Peak Hour (07:30 to 08:30) Average Queue

(Average of the maximum Queue in 5 minute periods)

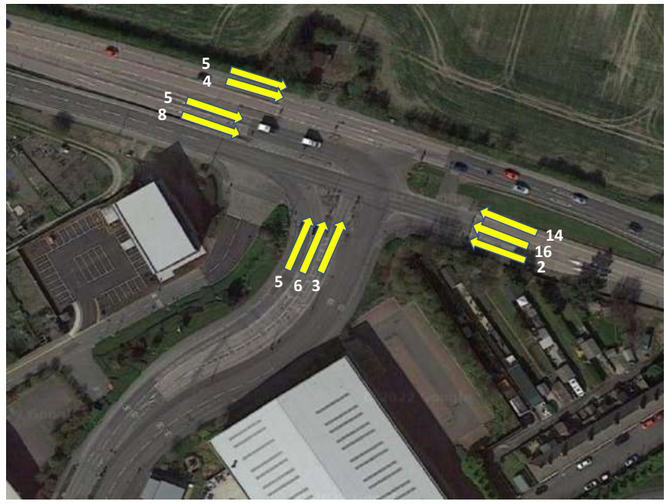
Pennine Way Roundabout Junctions & A5 Slip Roads



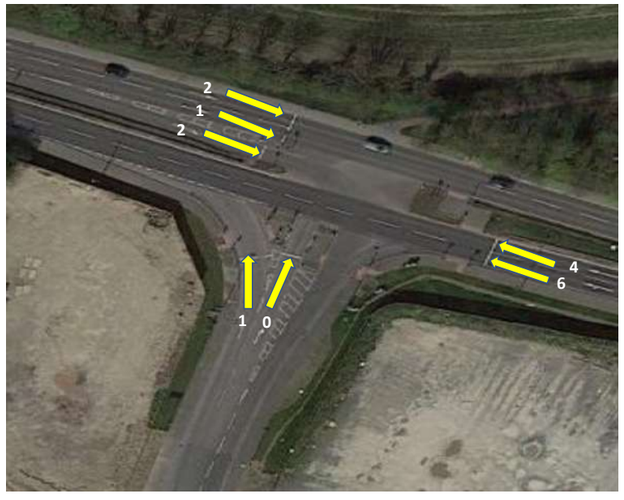
M42 Junction 10 Interchange



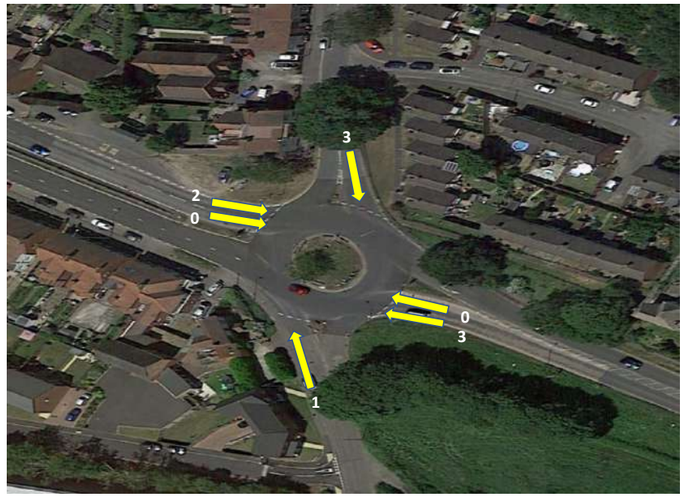
A5 Watling Street/ Danny Morson Way (Birch Coppice)



A5 Watling Street/ Meridian Drive (Core 42)



A5/ Dordon Roundabout

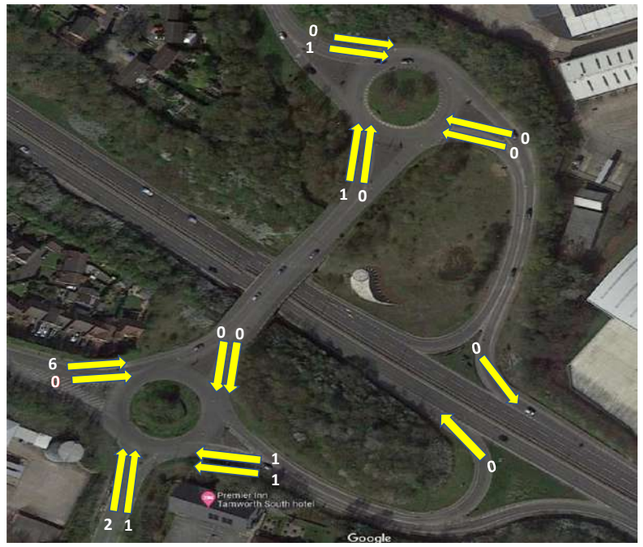


Land North East of M42 Junction 10	Figure 4
Average AM Peak Hour Queue Results (July 2023 Surveys)	TETRA TECH

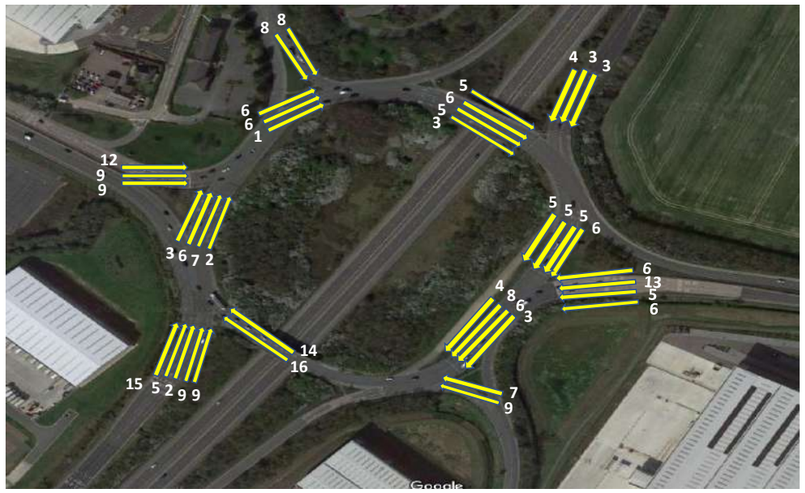
AM Peak Hour (07:30 to 08:30) Average Queue

(Average of the maximum Queue in 5 minute periods)

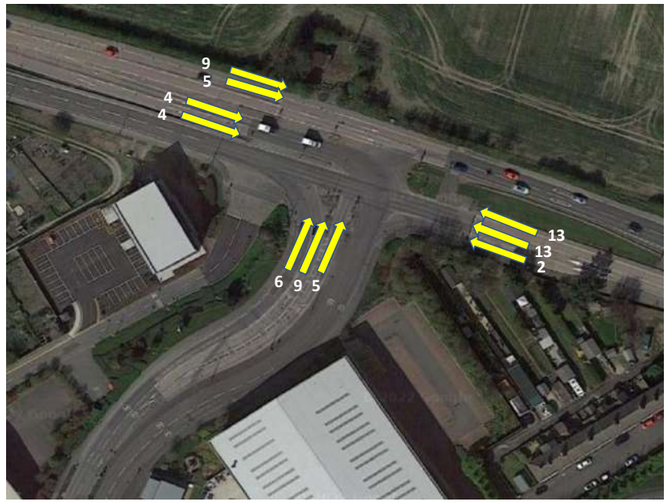
Pennine Way Roundabout Junctions & A5 Slip Roads



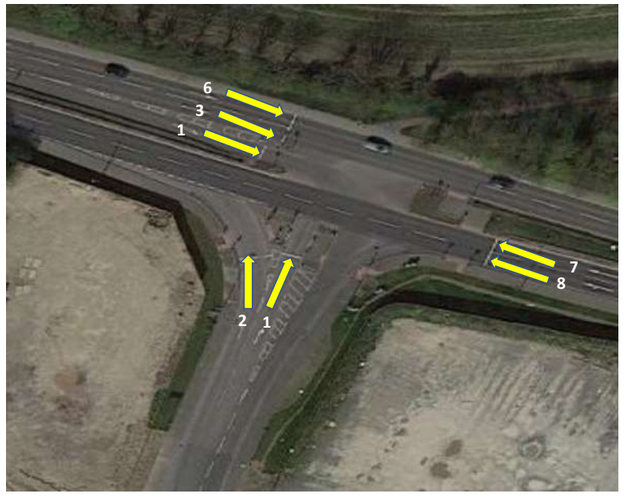
M42 Junction 10 Interchange



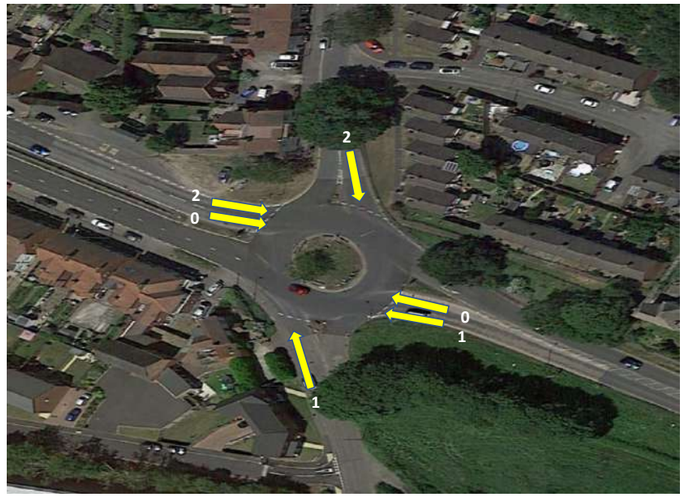
A5 Watling Street/ Danny Morson Way (Birch Coppice)



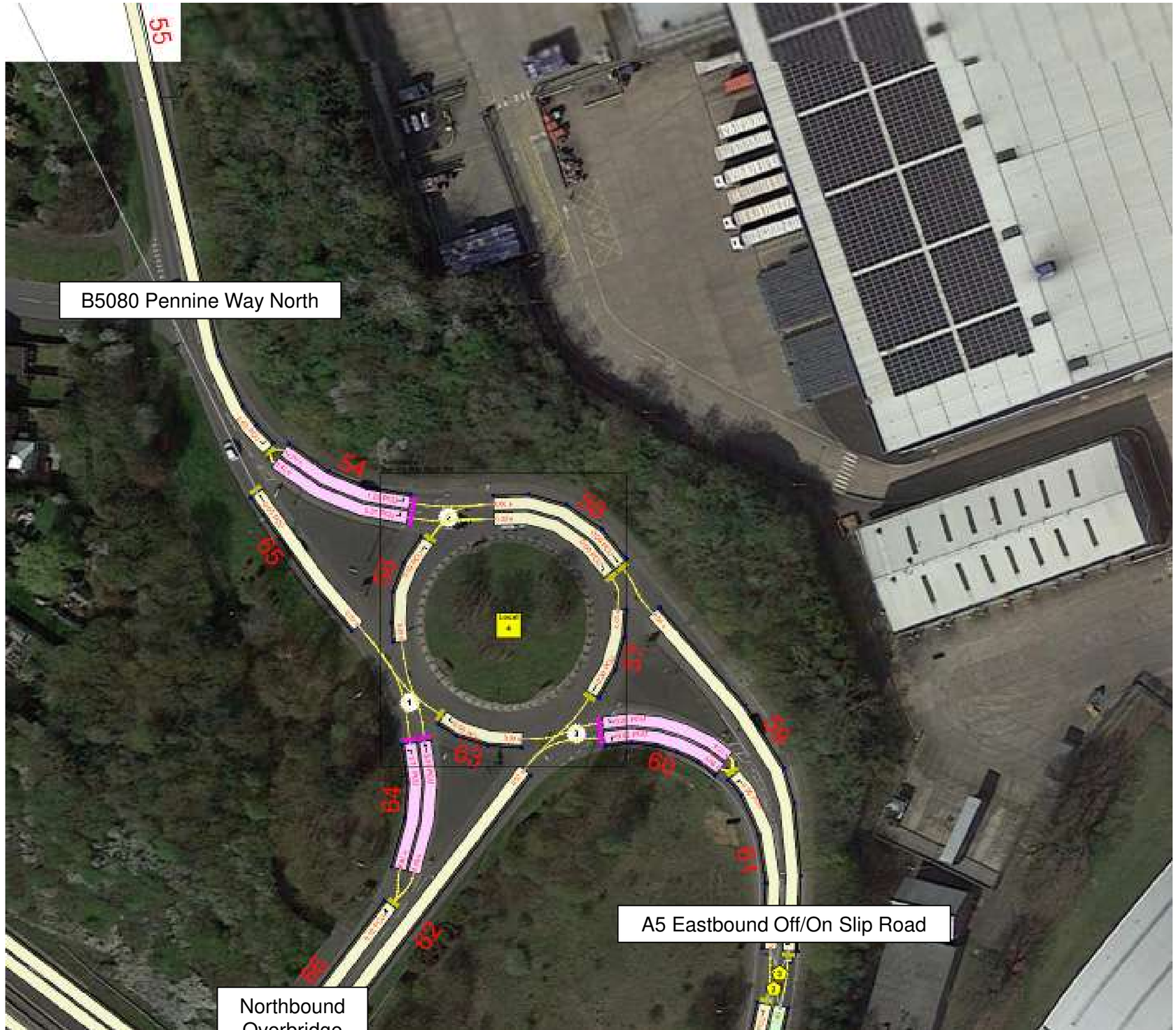
A5 Watling Street/ Meridian Drive (Core 42)



A5/ Dordon Roundabout



Land North East of M42 Junction 10	Figure 5
Average PM Peak Hour Queue Results (July 2023 Surveys)	TETRA TECH

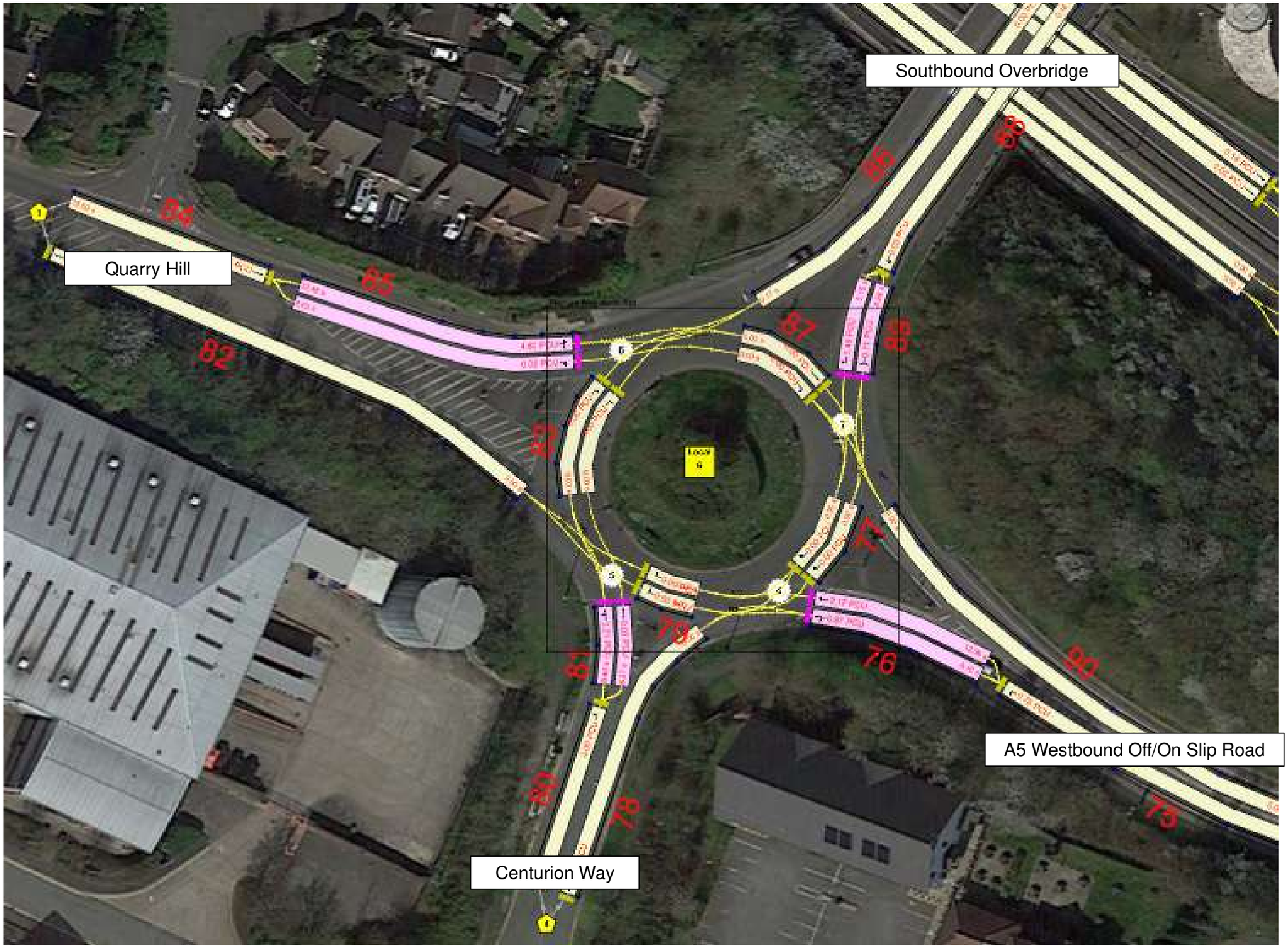


Land North East of M42 Junction 10

TRANSYT Network – B5080 Pennine Way North Roundabout

Figure 6

TETRA TECH



Land North East of M42 Junction 10

TRANSYT Network – B5080 Pennine Way South Roundabout

Figure 7

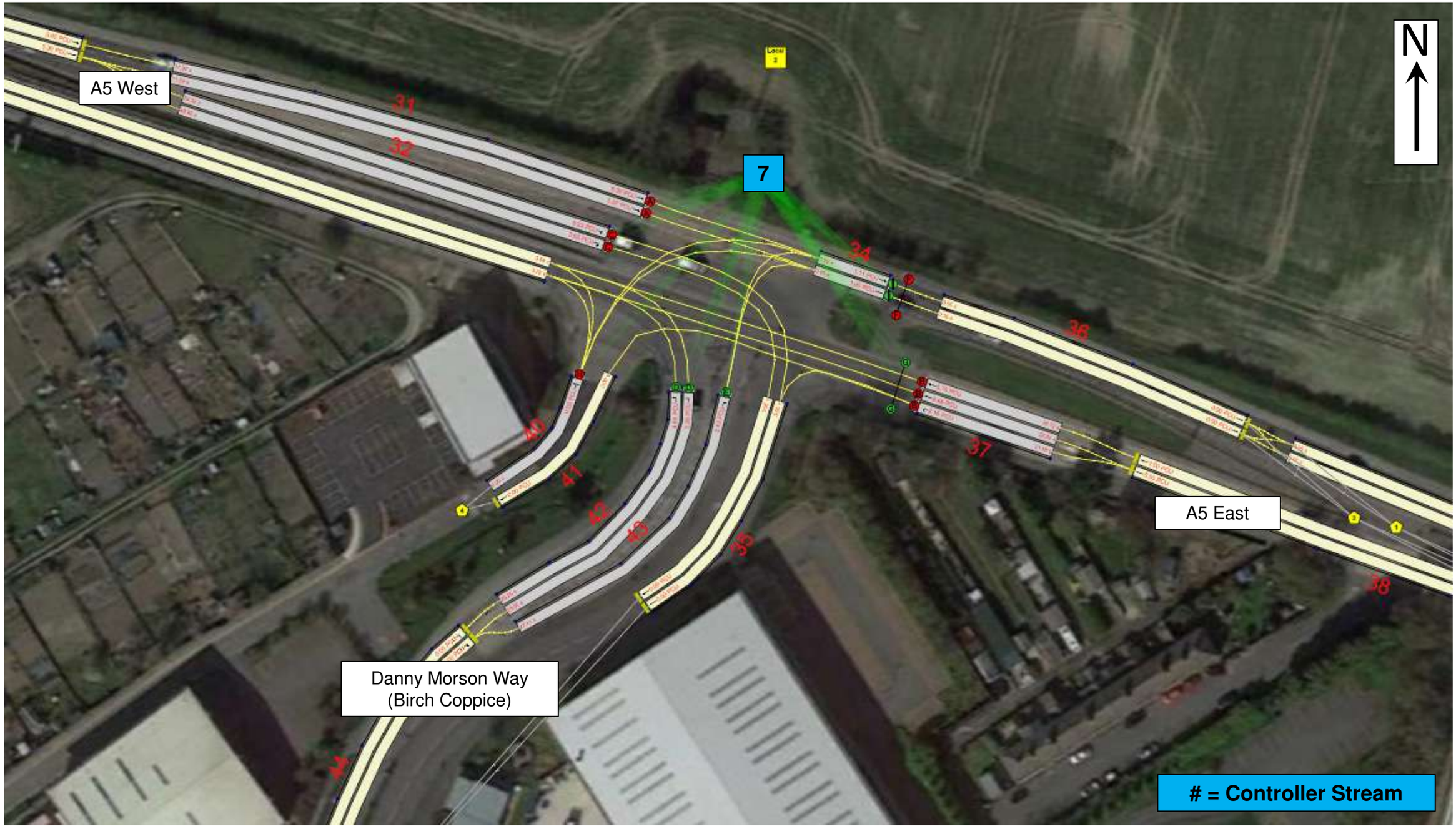
TETRA TECH

Land North East of M42 Junction 10

TRANSYT Network – M42 Junction 10

Figure 8

TETRA TECH

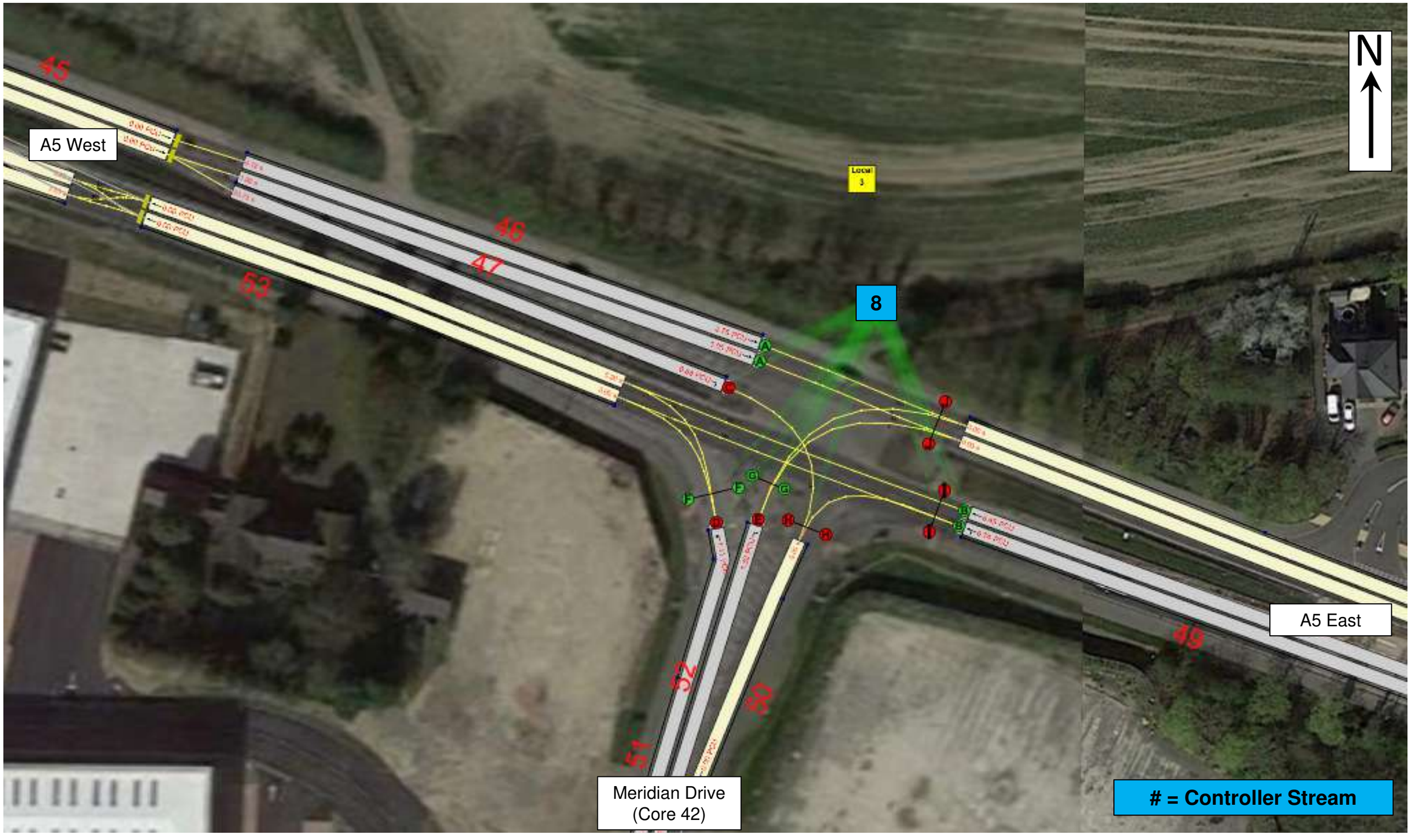


Land North East of M42 Junction 10

TRANSYT Network – A5/ Birch Coppice

Figure 9

TETRA TECH

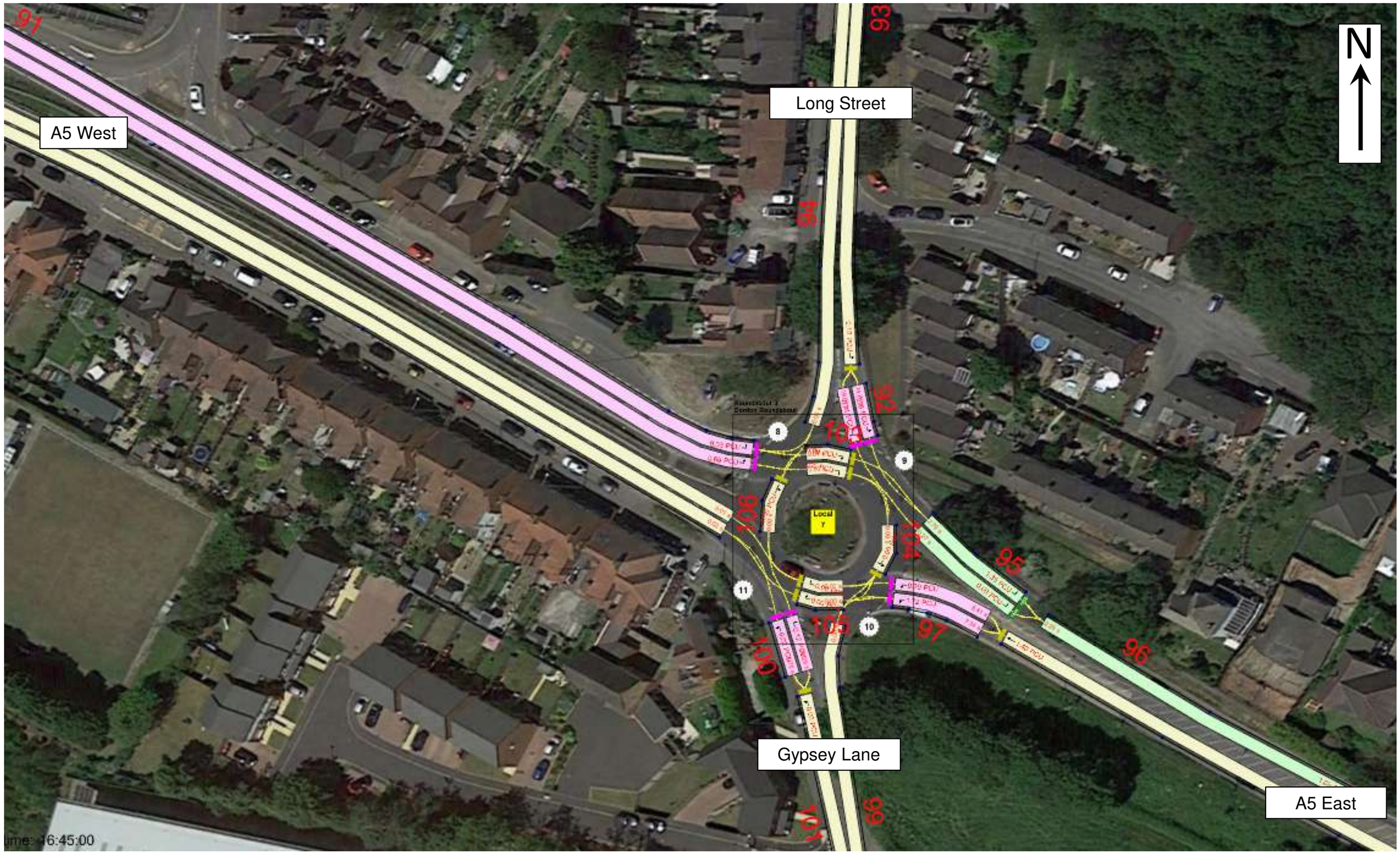


Land North East of M42 Junction 10

TRANSYT Network – A5/ Core 42

Figure 10

TETRA TECH



Land North East of M42 Junction 10

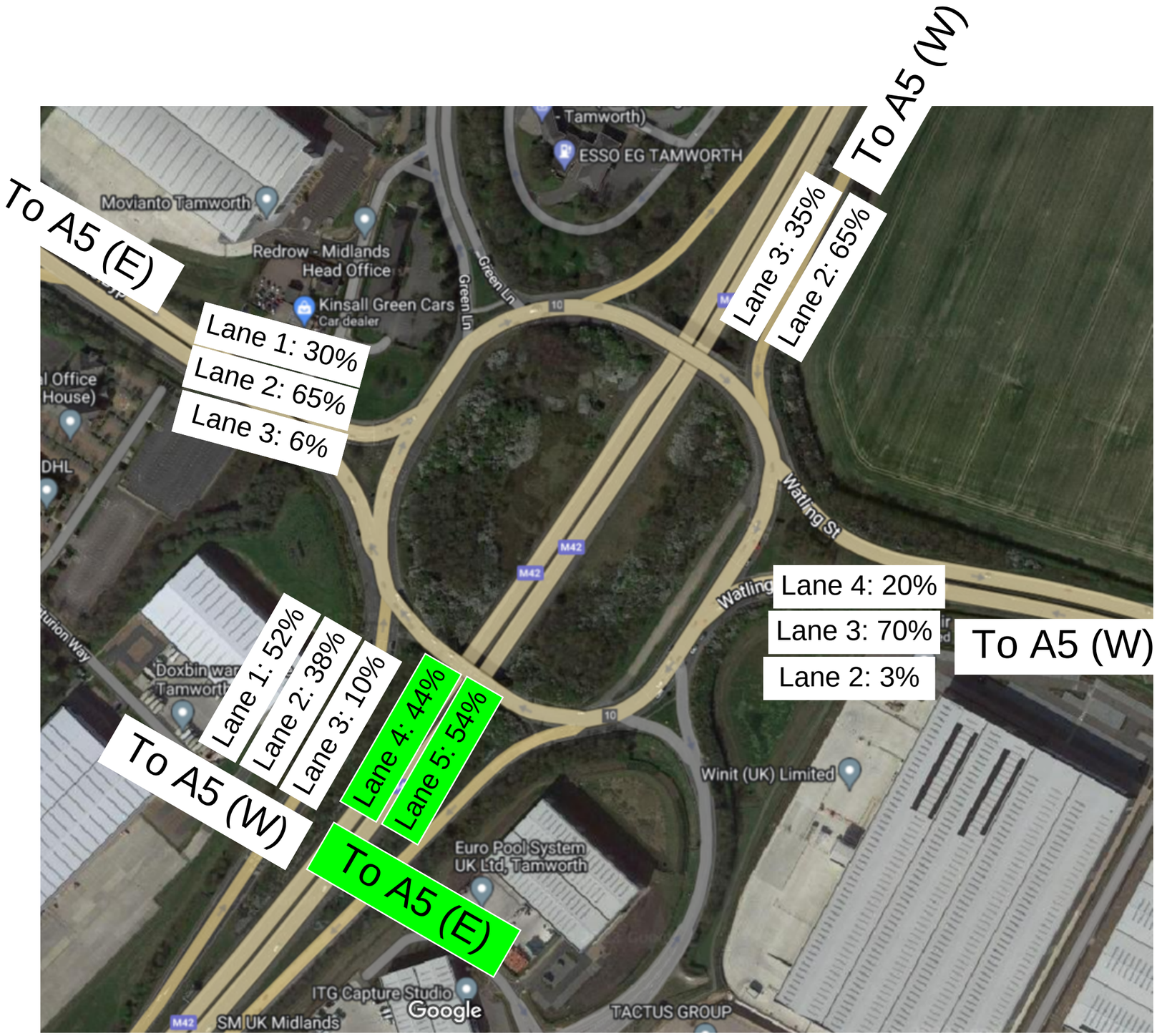
TRANSYT Network – A5 Dordon Roundabout

Figure 11

TETRA TECH

APPENDIX B

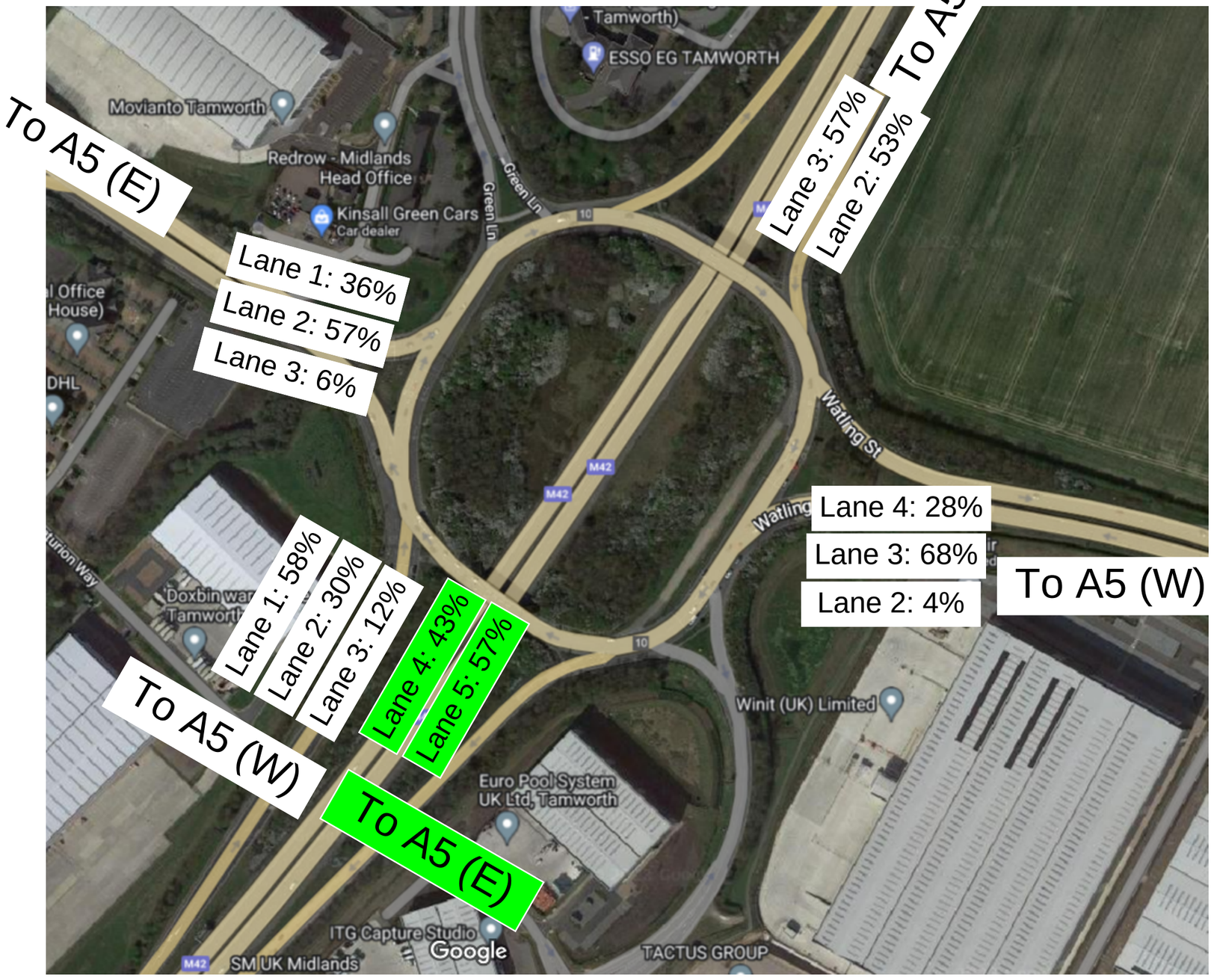
LANE ALLOCATIONS



2023 AM PEAK

M42 Junction 10

TETRA TECH



2023 PM PEAK

M42 Junction 10

TETRA TECH

2023 AM PEAK

A5/ Morson Way (Birch Coppice) Junction

TETRA TECH

2023 PM PEAK

A5/ Morson Way (Birch Coppice) Junction

TETRA TECH

2023 AM PEAK

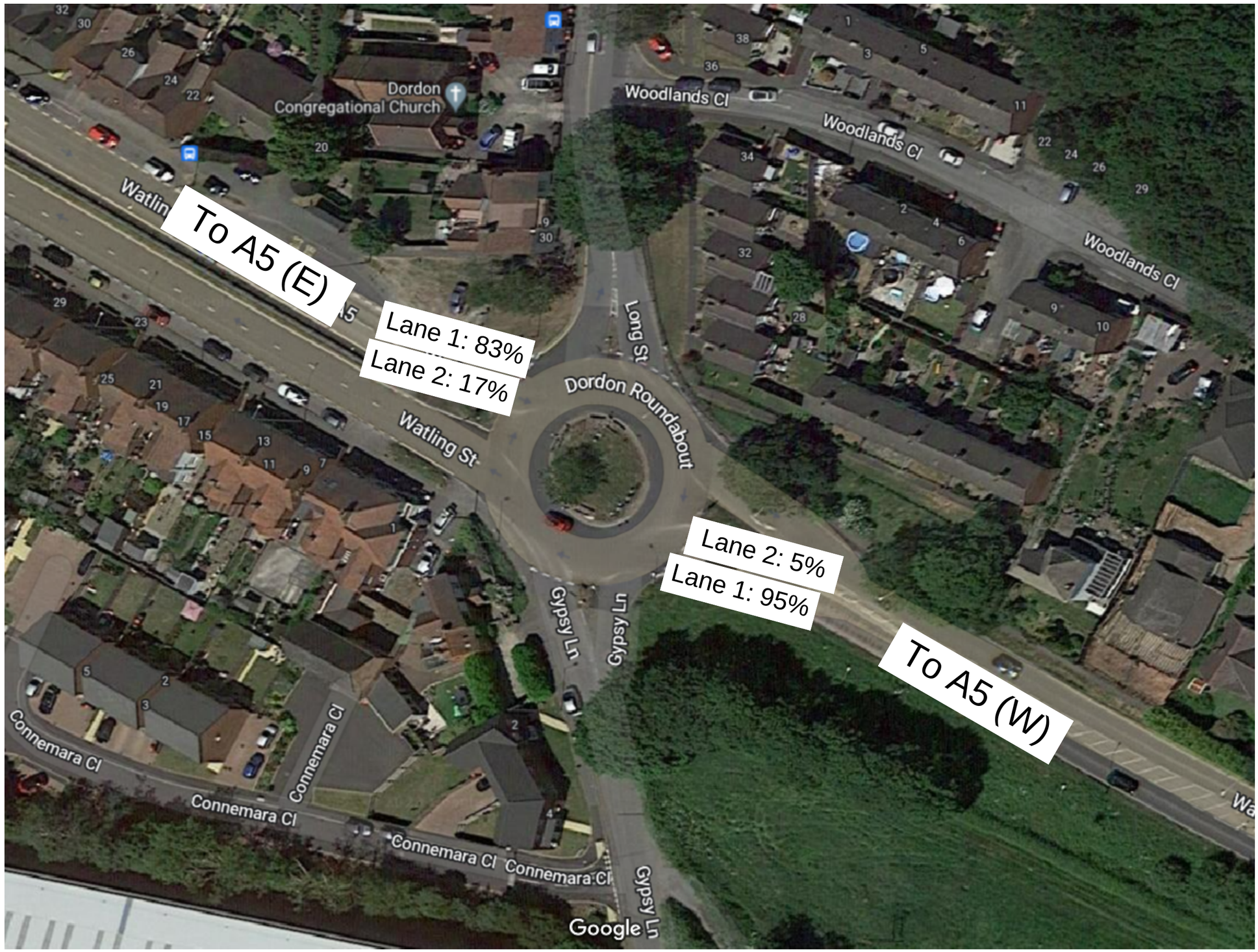
A5/ Meridian Drive (Core 42) Junction

TETRA TECH

2023 PM PEAK

A5/ Meridian Drive (Core 42) Junction

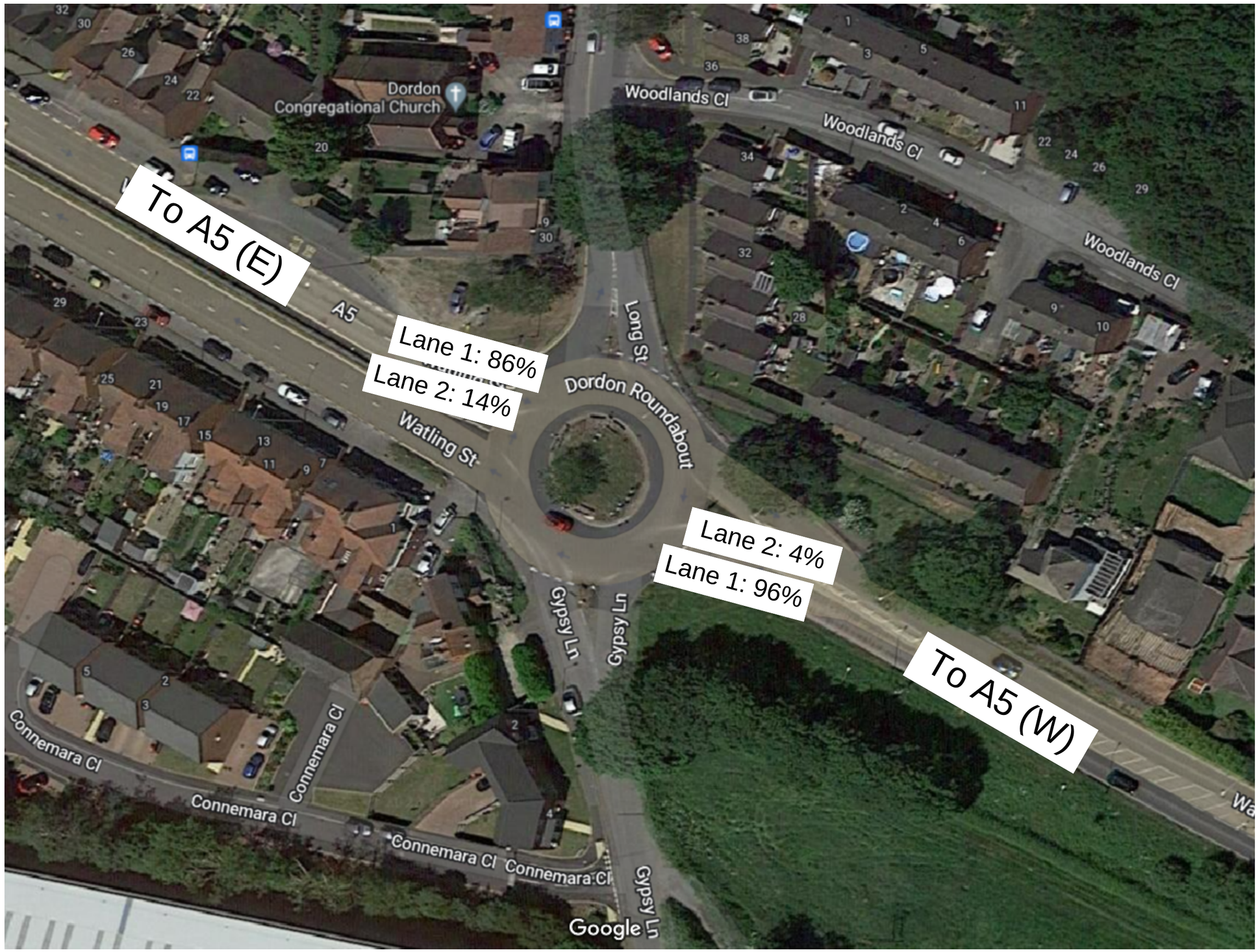
TETRA TECH



2023 AM PEAK

A5/ Dordon Roundabout

TETRA TECH



2023 PM PEAK

A5/ Dordon Roundabout

TETRA TECH

APPENDIX C

TRAFFIC SIGNAL SPECIFICATIONS

Telent traffic controller configuration forms

Customer: AMEY AREA 9 MAC

Intersection description: M42 JUNCTION 10 A5 DORDON ISLAND TAMWORTH WEST SIDE - SCN 210

Telent tender no.: **Telent works order no.:**

Customers order no.: 157078 **Dated:**

Customers engineer: JULIAN SMITH / PAULO MALARA / ROGER HACKER

Customers telephone no.: 07718511436 **Ext:**

Equipment installation by: TELENT

Slot cutting by:

Civil works by:

Configuration no.: CFGM0187 **Issue:** **Configuration engineer:** SIMON WINTER

General Data

Power supply data	
Mains voltage	48 Volts
Mains frequency	50 Hz
Peak current	0.0 Amps
Dimming voltage	160

Solar switch data				
Detector timing set data	Set 1	Set 2	Set 3	Set 4
Call delay period (Seconds)	10.0	10.0	10.0	10.0
Cancel delay period (Seconds)	10.0	10.0	10.0	10.0
DFM active times (Hours or minutes)	24H	24H	24H	24H
DFM inactive times (Hours or minutes)	24H	24H	24H	24H

British summertime change data			
BST start week	13	BST end week	43

Options	
Is manual disable via handset option required?	No
Inhibit pedestrian demand delay in FVP mode?	No
Inhibit pedestrian demand delay in PTM mode?	No
Limit handset warnings to UTC enabled warnings?	No

Configuration notes

ELV OPTIMA
==========

SEE SEPERATE SHEET FOR CONFIGURATION DETAILS

Configuration history

Issue	Date	Description
1.00	23/10/12	INITIAL CONFIGURATION
1.01	23/10/12	INTERMEDIATE EDIT
1.02	23/10/2012	Intermediate edit
1.03	25/10/2012	Intermediate edit
1.04	05/11/2012	Intermediate edit
1.05	10/11/2012	Intermediate edit
1.06	19/11/2012	Intermediate edit
2.00	03/09/2014	Changes as per updated spec 30-5-13 Additional Phases Added
2.01	19/09/2014	Intermediate edit
2.02	07/02/2015	Intermediate edit

Phase data 1

Phase Id	Road Name(s)	Phs. type	Appearance assoc'ted		Termination assoc'ted		Restart allowed	App. in man
			type	phase(s)	type	phase(s)		
A	M42 NORTHBOUND OFF SLIP	T	0		0		No	0
B	SOUTH BRIDGE WESTBOUND GYRATORY	T	0		0		No	0
C	A5 EASTBOUND	T	0		0		No	0
D	WESTSIDE A5 GYRATORY	T	0		0		No	0
E	GREEN LANE	T	0		0		No	0
F	WEST SIDE GREEN LANE GYRATORY	T	0		0		No	0
DA	ALL RED STREAM 1	G	0		0		No	0
DB	ALL RED STREAM 2	G	0		0		No	0

Phase data 2

Phase Id	Min green Time	Min green limit	Window time	Speed measurement facilities		Assoc to ped. phases	Cond demand type	Conditioning phases
				Exist	Ped. phases			
A	7.0	7.0	-	No		No	NONE	
B	7.0	7.0	-	No		No	NONE	
C	7.0	7.0	-	No		No	NONE	
D	7.0	7.0	-	No		No	NONE	
E	7	7		No		No	None	
F	7	7		No		No	None	
DA	3.0	3.0	-	No		No	NONE	
DB	3.0	3.0	-	No		No	NONE	

Phase data 2_1

Phase Id	Maximum greens (VA)								Maximum greens (PTM)								Maximum greens (FVP)							
	Set 1	Set 2	Set 3	Set 4	Set 5	Set 6	Set 7	Set 8	Set 1	Set 2	Set 3	Set 4	Set 5	Set 6	Set 7	Set 8	Set 1	Set 2	Set 3	Set 4	Set 5	Set 6	Set 7	Set 8
A	30	20	30	20	30	30	40	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	40	30	40	30	40	30	40	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	20	20	20	20	30	30	40	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D	40	30	40	30	40	30	40	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E	15	20	20	20	20	30	40	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F	45	30	45	30	40	30	40	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Phase data 2_2

Phs Id	Fixed seq.	Ped type	Demand extn.	Dithering		Pedestrian intergreen sequence times						PV info		PV associated to			PV delay	PV Window	Local override
				Quiescent	Normal	Gap	Frc	Min	Max	Clr	Xtr	UTC	Local	Phase	Str/Stg	Input			
A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Phase data 2_3

Phase compensation				
	Compensation sets			
Phase Id	Set 1	Set 2	Set 3	Set 4
A	0.0	0.0	0.0	0.0
B	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0
D	0.0	0.0	0.0	0.0
E	0	0	0	0
F	0	0	0	0
DA	0.0	0.0	0.0	0.0
DB	0.0	0.0	0.0	0.0

Phase data 2_4

Pedestrain supplementary signals									
Phase Id	Illuminate wait lamps on phase	Tactile	Confirmation input	State	Audible	Confirmation input	Active state	Drive phase	Duration
A		False	False	OC	False	False	OC	A	
B		False	False	OC	False	False	OC	B	
C		False	False	OC	False	False	OC	C	
D		False	False	OC	False	False	OC	D	
E		False	False	OC	False	False	OC	E	
F		False	False	OC	False	False	OC	F	
DA		False	False	OC	False	False	OC	DA	
DB		False	False	OC	False	False	OC	DB	

Phase data 4

Phase Id	Conflicting greens	Opposed by phase demands	Opposed by stage demands	Revertive phase demands
A	B	B,DA		A
B	A	A,DA		B
C	D	D,E,F,DB		C
D	C	C,E,F,DB		D
E	F	C,D,F,DB		E
F	E	C,D,E,DB		F
DA		A,B		
DB		C,D,E,F		

Lamp sequence data

Phs. type	Sequence description	Start-up starting			Start-up stoping			Normal starting			Normal stopping			Running		Stopped		Shutdown	
		State 1	State 2	Duration	State 1	State 2	Duration	State 1	State 2	Duration	State 1	State 2	Duration	State 1	State 2	State 1	State 2	State 1	State 2
FP	FAR/SIDE PEDESTRIAN	G	G	0	R	R	0	G	G	0	B	B	3	G	G	R	R	B	B
G	IND/FILTER	G	G	0	B	B	0	G	G	0	B	B	0	G	G	B	B	B	B
L	LRT	G	G	0	A	A	5	G	G	0	A	A	5	G	G	R	R	B	B
NP	NEAR/SIDE PEDESTRIAN	G	G	0	R	R	0	G	G	0	R	R	3	G	G	R	R	B	B
P	PEDESTRIAN	G	G	0	R	R	0	G	G	0	B	B	PBT	G	G	R	R	B	B
PP	PELICAN PEDESTRIAN	R	R	0	B	G	3	G	G	0	B	G	0.1	G	G	R	R	B	B
PT	PELICAN TRAFFIC	B	A	5	A	A	3	B	A	6	A	A	3	G	G	R	R	B	B
T	TRAFFIC	G	G	0	A	A	3	R,A	R,A	2	A	A	3	G	G	R	R	B	B
W	WIG-WAG	A	A	5	B	B	0	A	A	5	B	B	0	R	G	B	B	B	B

Stage data

Stream 1		Start-up stage no.	2
Stage	Active phases		
0	DA		
1	A		
2	B		
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Stream 2		Start-up stage no.	2
Stage	Active phases		
0	DB		
1	C,F		
2	D,F		
3	D,E		
4	C,E		
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Mode data

Stream 1		Starting intergreen duration	9.0
Mode	Priority no.	All red extension auto to max	
C.L.F.	6	No	
PSV emergency			
Hurry Call 1	4	No	
Hurry Call 2	5	No	
Hurry Call 3			
Hurry Call 4			
LRT			
Manual	1	No	
Manual FT	2	Yes	
MOVA			
Normal - VA	7	No	
PSV priority			
Part time			
UTC	3	No	
Phase demands to be inserteted on start-up and when leaving manual or fixed time modes			
A,B			

Stream 2		Starting intergreen duration	9.0
Mode	Priority no.	All red extension auto to max	
C.L.F.	6	No	
PSV emergency			
Hurry Call 1	4	No	
Hurry Call 2	5	No	
Hurry Call 3			
Hurry Call 4			
LRT			
Manual	1	No	
Manual FT	2	Yes	
MOVA			
Normal - VA	7	No	
PSV priority			
Part time			
UTC	3	No	
Phase demands to be inserteted on start-up and when leaving manual or fixed time modes			
C,D,E,F			

Part time and hurry call mode data

Stream 1

Part time mode data

Switch-off stage		Part-time hold duration	0H	Part-time prevent duration	0H	Part-time queue detector(s)	

Hurry call mode data

Hurry call no.	Call stage	Request detector(s)	Cancel detector(s)	Output name	Delay period	Hold period	Prevent period
1	1	AINHC		N/A	0.0	10.0	0.0
2	2	BINHC		N/A	0.0	10.0	0.0
3				N/A	0.0	0.0	0.0
4				N/A	0.0	0.0	0.0

Stream 2

Part time mode data

Switch-off stage		Part-time hold duration	0H	Part-time prevent duration	0H	Part-time queue detector(s)	

Hurry call mode data

Hurry call no.	Call stage	Request detector(s)	Cancel detector(s)	Output name	Delay period	Hold period	Prevent period
1	2	DINHC		N/A	0.0	10.0	0.0
2	2	FINHC		N/A	0.0	10.0	0.0
3				N/A	0.0	0.0	0.0
4				N/A	0.0	0.0	0.0

Manual mode data

Manual button no.	Stage number for each stream								Street name(s)
	1	2	3	4	5	6	7	8	
All red	0	0							ALL RED
1	2	2							GYRATORIES
2	1	2							M42 OFF / GYRATORIES
3	2	1							M42 GYRATORY / A5 EASTBOUND / GREEN LANE GYRATORY
4	2	3							M42 GYRATORY / A5 EASTBOUND / GREEN LANE
5	0	4							STREAM 1 ALL RED / A5 EASTBOUND / GREEN LANE
6	0	2							STREAM 1 ALL RED / STREAM 2 GYRATORY
7									
8									
9									
10									

Button no. for inital manual stage set	1	Streams that must be in manual mode together	

UTC general data, confirm bit data & SF/LO qualification periods

UTC General data

UTC option	1 (MCE 0105/0106)
TF Reset time	00:00:00
Use serial interface for UTC	False
UTC active state	Short circuit

Stream linking options

1	2	3	4	5	6	7	8
U	U	U	U	U	U	U	U

Sync confirm times	
RT reply bit	3
SR reply bit	3

Time sync data	
Day type	ANY
Reference time	12:00:00
Repeat rate	24H
Window time	24H

UTC confirm data

Stream	Confirm bit(s) to be used for manual mode running on stream	Confirm bit(s) to be used for fixed time running on stream
1		
2		
3		
4		
5		
6		
7		
8		

Controller state	Confirm bit(s) to be used for controller state
Manual mode selected	
Signals off failed	
Signals off manually	
Detectors fault	
Controller fault	
Controller warning	
Manual fixed time selected	

SF/LO qualification periods

L01	10.0	L02	10.0	L03	10.0	L04	10.0	L05	10.0	L06	10.0	L07	10.0	L08	10.0
SF01	7.0	SF02	7.0	SF03	7.0	SF04	7.0	SF05	7.0	SF06	7.0	SF07	7.0	SF08	7.0
SF09	7.0	SF10	7.0	SF11	7.0	SF12	7.0	SF13	7.0	SF14	7.0	SF15	7.0	SF16	7.0

UTC force bits

Force bit	Phase demands to be considered for demand depended stages	Required phase extensions	Stage to force in each stream							
			1	2	3	4	5	6	7	8
F01			1							
F02			2							
F03			2							
F04				1						
F05				2						
F06				3						
F07				4						
F08				2						

UTC (stream/stage) confirm data

Stage no.	Stream							
	1	2	3	4	5	6	7	8
00								
01	G1	G4						
02	G2	G5						
03		G6						
04		G7						
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								

UTC control/reply bit - stage stream associations

Control/ reply bit	Associated bit id per stream							
	1	2	3	4	5	6	7	8
FC								
FGR								
FM								
GO								
HC								
LL								
LO								
LRTI								
LRTR								
TOR								

UTC demand bits (DX Bits)

DX Bit	Latched stage demands	Unlatched stage demands	Latched phase demands	Unlatched phase demands	Phase extension demands
DX1					
DX2					
DX3					
DX4					
DX5					
DX6					
DX7					
DX8					

UTC demand bits (D Bits)

D Bit	Latched stage demands	Unlatched stage demands	Latched phase demands	Unlatched phase demands	Phase extensiob demands
D1					
D2					
D3					
D4					
D5					
D6					
D7					
D8					
D9					
D10					
D11					
D12					
D13					
D14					
D15					
D16					
D17					
D18					
D19					
D20					
D21					
D22					
D23					
D24					
D25					
D26					
D27					
D28					
D29					
D30					
D31					
D32					

UTC demand reply bits (SD Bits)

SD Bit name	Stage demands to reply	Phase demands to reply
SD1		
SD2		
SD3		
SD4		
SD5		
SD6		
SD7		
SD8		
SD9		
SD10		
SD11		
SD12		
SD13		
SD14		
SD15		
SD16		
SD17		
SD18		
SD19		
SD20		
SD21		
SD22		
SD23		
SD24		
SD25		
SD26		
SD27		
SD28		
SD29		
SD30		
SD31		
SD32		

UTC timeout data and local link inhibit data

UTC Timeout data										
	UTC bits									
	F	D	DX	SF	FM	LO	GO	LL	LRTI	PV
Timeout duration	300	0	0	0	0	0	0	0	0	500
No timeouts allowed	False	True	True	True	True	True	True	True	True	True

UTC local link inhibit data	
LL Bits	Phases
LL01	
LL02	
LL03	
LL04	
LL05	
LL06	
LL07	
LL08	

FT and VA mode

Stream 1																
FT mode data													Normal FT or VA to max			VA
From stage	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Stage time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
To stage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Demad dependant phases during VA to max				DA												
VA mode data																
Arterial reversion to stage/phase				2	VA stage selection option required					Near						

Stream 2																
FT mode data													Normal FT or VA to max			VA
From stage	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Stage time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
To stage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Demad dependant phases during VA to max				DB												
VA mode data																
Arterial reversion to stage/phase				2	VA stage selection option required					Near						

CLF mode data

Plan 1																								
																	Delay time		0	Cycle time		90		
	Stream 1			Stream 2			Stream 3			Stream 4			Stream 5			Stream 6			Stream 7			Stream 8		
Group	Offset time		0	Offset time		0	Offset time		0.0	Offset time		0.0	Offset time		0.0	Offset time		0.0	Offset time		0.0	Offset time		0.0
no.	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage
1	0	IM	1	0	PX	2	0.0			0.0			0.0			0.0			0.0			0.0		
2	20	PX	2	6	IM	2	0.0			0.0			0.0			0.0			0.0			0.0		
3	25	IM	2	22	IM	1	0.0			0.0			0.0			0.0			0.0			0.0		
4	80	PX	1	70	PX	3	0.0			0.0			0.0			0.0			0.0			0.0		
4				73	DM	3																		
0				76	HS																			
0				84	PX	2																		

Plan 2																								
																	Delay time		0	Cycle time		90		
	Stream 1			Stream 2			Stream 3			Stream 4			Stream 5			Stream 6			Stream 7			Stream 8		
Group	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0
no.	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage
1	0	IM	2	0	IM	1																		
2	34	PX	1	24	PX	3																		
3	44	IM	1	28	DM	3																		
4	65	PX	2	35	PX	2																		
5	73	IM	2	55	IM	2																		
5				72	PX	1																		
0				75	IM	1																		

Plan 3																								
																	Delay time		0	Cycle time		80		
	Stream 1			Stream 2			Stream 3			Stream 4			Stream 5			Stream 6			Stream 7			Stream 8		
Group	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0
no.	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage
1	0	PX	2	0	PX	1																		
2	4	IM	2	7	IM	1																		
3	45	PX	1	35	PX	3																		
4	57	DM	1	40	DM	3																		
5	68	HS		50	HS																			
6	70	PX	2	59	PX	2																		
6				63	IM	2																		

CLF mode data

Plan 4																								
																	Delay time		0	Cycle time		60		
	Stream 1			Stream 2			Stream 3			Stream 4			Stream 5			Stream 6			Stream 7			Stream 8		
Group	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0
no.	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage
1	0	PX	2	0	IM	2																		
2	4	IM	2	5	DM	1																		
3	40	PX	1	20	HS																			
4	47	DM	1	33	PX	3																		
5	50	HS		39	DM	3																		
5				40	PX	2																		
0				53	IM	2																		

Plan 5																								
																	Delay time		0	Cycle time		80		
	Stream 1			Stream 2			Stream 3			Stream 4			Stream 5			Stream 6			Stream 7			Stream 8		
Group	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0
no.	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage
1	0	IM	1	0	PX	2																		
2	18	PX	2	4	IM	2																		
3	22	IM	2	15	PX	1																		
4	75	PX	1	21	IM	1																		
4				70	DM	3																		
0				72	PX	2																		

Plan 6																								
																	Delay time		0	Cycle time		80		
	Stream 1			Stream 2			Stream 3			Stream 4			Stream 5			Stream 6			Stream 7			Stream 8		
Group	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0
no.	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage
1	0	IM	2	0	IM	1																		
2	30	PX	1	25	DM	3																		
3	37	IM	1	27	PX	2																		
4	52	PX	2	42	IM	2																		
5	63	IM	2	58	IM	1																		

Minimum intergreen durations

From phs.	To phase							
	A	B	C	D	E	F	DA	DB
A		7					3	
B	6						3	
C				7				3
D			6					3
E						7		3
F					6			3
DA	2	2						
DB			2	2	2	2		

Intergreen Minimum limit values

From phs.	To phase							
	A	B	C	D	E	F	DA	DB
A		5					3	
B	5						3	
C				5				3
D			5					3
E						5		3
F					5			3
DA	2	2						
DB			2	2	2	2		

Phase delay data

Delay No.	Losing stage	Gaining stage	Delay phase	Delay period
1	1	3	F	6

Detector data 1

Det. name	Det. type	Dummy	Vis. unit no.	Active state	Count det.	Self reset	Detector set			Latched phase demand(s)	Unlatched phase demand(s)	Green extension(s)		Varimax phases
							Gap period	Gap count	Self confirm			Phase	Taper %	
TO1	NM	No		SC	No	No	0.5	15	No				100	
TO2	NM	No		SC	No	No	0.5	15	No				100	
AIN1	NM	No		SC	No	No	0.5	15	No				100	
AIN2	NM	No		SC	No	No	0.5	15	No				100	
AIN3	NM	No		SC	No	No	0.5	15	No				100	
AIN4	NM	No		SC	No	No	0.5	15	No				100	
AX5	NM	No		SC	No	No	0.5	15	No	A		A(4.0)	100	
AX6	NM	No		SC	No	No	0.5	15	No	A		A(4.0)	100	
AX7	NM	No		SC	No	No	0.5	15	No	A		A(4.0)	100	
AX8	NM	No		SC	No	No	0.5	15	No	A		A(4.0)	100	
ASL10A	NM	No		SC	No	No	0.5	15	No	A		A(0.6)	100	
ASL10B	NM	No		SC	No	No	0.5	15	No	A		A(0.6)	100	
ASL10C	NM	No		SC	No	No	0.5	15	No	A		A(0.6)	100	
ASL10D	NM	No		SC	No	No	0.5	15	No	A		A(0.6)	100	
BIN11	NM	No		SC	No	No	0.5	15	No				100	
BIN12	NM	No		SC	No	No	0.5	15	No				100	
BX13	NM	No		SC	No	No	0.5	15	No	B		B(3.0)	100	
BX14	NM	No		SC	No	No	0.5	15	No	B		B(3.0)	100	
CIN15	NM	No		SC	No	No	0.5	15	No				100	
CIN16	NM	No		SC	No	No	0.5	15	No				100	
CX17	NM	No		SC	No	No	0.5	15	No	C		C(4.0)	100	
CX18	NM	No		SC	No	No	0.5	15	No	C		C(4.0)	100	
CX19	NM	No		SC	No	No	0.5	15	No	C		C(4.0)	100	
CSL20	NM	No		SC	No	No	0.5	15	No	C		C(0.6)	100	
CSL21	NM	No		SC	No	No	0.5	15	No	C		C(0.6)	100	
CSL22	NM	No		SC	No	No	0.5	15	No	C		C(0.6)	100	
DIN23	NM	No		SC	No	No	0.5	15	No				100	
DIN24	NM	No		SC	No	No	0.5	15	No				100	
DX27	NM	No		SC	No	No	0.5	15	No	D		D(3.0)	100	
DX28	NM	No		SC	No	No	0.5	15	No	D		D(3.0)	100	
DX29	NM	No		SC	No	No	0.5	15	No	D		D(3.0)	100	
SISPWR	NM	No		SC	No	No	0.5	15	No				100	
SISFLT	NM	No		SC	No	No	0.5	15	No				100	
E10MIN	NM	No		SC	No	No	0.5	15	No				100	
ERST	NM	No		SC	No	No	0.5	15	No				100	
MOVEST	NM	No		SC	No	No	0.5	15	No				100	
AX9	NM	No		SC	No	No	0.5	15	No	A		A(4.0)	100	

Detector data 1

Det. name	Det. type	Dummy	Vis. unit no.	Active state	Count det.	Self reset	Detector set			Latched phase demand(s)	Unlatched phase demand(s)	Green extension(s)		Varimax phases
							Gap period	Gap count	Self confirm			Phase	Taper %	
ASL10E	NM	No		SC	No	No	0.5	15	No	A		A(0.6)	100	
DIN25	NM	No		SC	No	No	0.5	15	No				100	
DIN26	NM	No		SC	No	No	0.5	15	No				100	
DX30	NM	No		SC	No	No	0.5	15	No	D		D(3.0)	100	
EIN31	NM	No		SC	No	No	0.5	15	No				100	
EIN32	NM	No		SC	No	No	0.5	15	No				100	
EX33	NM	No		SC	No	No	0.5	15	No	E		E(4.0)	100	
EX34	NM	No		SC	No	No	0.5	15	No	E		E(4.0)	100	
ESL35	NM	No		SC	No	No	0.5	15	No	E		E(1.0)	100	
ESL36	NM	No		SC	No	No	0.5	15	No	E		E(1.0)	100	
FIN37	NM	No		SC	No	No	0.5	15	No				100	
FIN38	NM	No		SC	No	No	0.5	15	No				100	
FIN39	NM	No		SC	No	No	0.5	15	No				100	
FX40	NM	No		SC	No	No	0.5	15	No	F		F(4.0)	100	
FX41	NM	No		SC	No	No	0.5	15	No	F		F(4.0)	100	
FX42	NM	No		SC	No	No	0.5	15	No	F		F(4.0)	100	
AINHC	NM	Yes		SC	No	No	0.5	15	No				100	
DINHC	NM	Yes		SC	No	No	0.5	15	No				100	
BINHC	NM	Yes		SC	No	No	0.5	15	No				100	
FINHC	NM	Yes		SC	No	No	0.5	15	No				100	
CINHC	NM	Yes		SC	No	No	0.5	15	No				100	
EINHC	NM	Yes		SC	No	No	0.5	15	No				100	

Detector data 2

	DFM Timings								DFM foce states		Call/cancel timings								Associated to ped.		
	DFA				DFI						DCL				DCN						
Det. name	Set 1	Set 2	Set 3	Set 4	Set 1	Set 2	Set 3	Set 4	Active	Inactive	Set 1	Set 2	Set 3	Set 4	Set 1	Set 2	Set 3	Set 4	Phase	Extn.	Push Buttons
TO1									N	N									-	-	-
TO2									N	N									-	-	-
AIN1	5M	5M	5M	5M					I	N	15.0	15.0	15.0	15.0					-	-	-
AIN2	5M	5M	5M	5M					I	N	15.0	15.0	15.0	15.0					-	-	-
AIN3	5M	5M	5M	5M					I	N	15.0	15.0	15.0	15.0					-	-	-
AIN4	5M	5M	5M	5M					I	N	15.0	15.0	15.0	15.0					-	-	-
AX5	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
AX6	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
AX7	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
AX8	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
ASL10A	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
ASL10B	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
ASL10C	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
ASL10D	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
BIN11	5M	5M	5M	5M					I	N	15.0	15.0	15.0	15.0					-	-	-
BIN12	5M	5M	5M	5M					I	N	15.0	15.0	15.0	15.0					-	-	-
BX13	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
BX14	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
CIN15	30M	30M	30M	30M	18H	18H	18H	18H	N	N	15.0	15.0	15.0	15.0					-	-	-
CIN16	30M	30M	30M	30M	18H	18H	18H	18H	N	N	15.0	15.0	15.0	15.0					-	-	-
CX17	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
CX18	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
CX19	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
CSL20	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
CSL21	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
CSL22	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
DIN23	5M	5M	5M	5M					I	N	30.0	30.0	30.0	30.0					-	-	-
DIN24	5M	5M	5M	5M					I	N	30.0	30.0	30.0	30.0					-	-	-
DX27	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
DX28	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
DX29	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
SISPWR									N	N	0	0	0	0	0	0	0	0	-	-	-
SISFLT									N	N	0	0	0	0	0	0	0	0	-	-	-
E10MIN									N	N									-	-	-
ERST									N	N									-	-	-
MOVEST									N	N									-	-	-
AX9	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-

Detector data 2

	DFM Timings								DFM foce states		Call/cancel timings								Associated to ped.		
	DFA				DFI						DCL				DCN						
Det. name	Set 1	Set 2	Set 3	Set 4	Set 1	Set 2	Set 3	Set 4	Active	Inactive	Set 1	Set 2	Set 3	Set 4	Set 1	Set 2	Set 3	Set 4	Phase	Extn.	Push Buttons
ASL10E	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
DIN25	5M	5M	5M	5M					I	I	15	15	15	15	0	0	0	0	-	-	-
DIN26	5M	5M	5M	5M					I	I	15	15	15	15	0	0	0	0	-	-	-
DX30	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
EIN31	30M	30M	30M	30M	18H	18H	18H	18H	A	A	15	15	15	15	0	0	0	0	-	-	-
EIN32	30M	30M	30M	30M	18H	18H	18H	18H	A	A	15	15	15	15	0	0	0	0	-	-	-
EX33	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
EX34	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
ESL35	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
ESL36	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
FIN37	5M	5M	5M	5M					I	I	15	15	15	15	0	0	0	0	-	-	-
FIN38	5M	5M	5M	5M					I	I	15	15	15	15	0	0	0	0	-	-	-
FIN39	5M	5M	5M	5M					I	I	15	15	15	15	0	0	0	0	-	-	-
FX40	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
FX41	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
FX42	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
AINHC									N	N									-	-	-
DINHC									N	N									-	-	-
BINHC									N	N									-	-	-
FINHC									N	N	0	0	0	0	0	0	0	0	-	-	-
CINHC									N	N	0	0	0	0	0	0	0	0	-	-	-
EINHC									N	N	0	0	0	0	0	0	0	0	-	-	-

Timetable entry data

No.	Day type	Time	Event list	Priorities
1	WKD	07:00:00	11	1
2	WKD	09:30:00	12	1
3	WKD	16:00:00	13	1
4	WKD	18:30:00	14	1
5	SAT	09:00:00	12	1
6	SAT	17:00:00	14	1
7	SUN	10:00:00	12	1
8	SUN	19:00:00	14	1
9	XSU	07:00:00	1	1
10	XSU	09:30:00	3	1
11	XSU	15:30:00	2	1
12	XSU	18:30:00	3	1

Timetable event list data

List no.	Event Action 1		Event Action 2		Event Action 3		Event Action 4		Event Action 5		Event Action 6		Event Action 7		Event Action 8	
	Type	Params	Type	Params	Type	Params	Type	Params	Type	Params	Type	Params	Type	Params	Type	Params
1	TCF	1														
2	TCF	2														
3	TCF	3														
4	TCF	4														
5	TCF	5														
6	TCF	6														
7	TCF	7														
8	TCF	8														
9	TCF	9														
10	TCF	OFF														
11	TTS	1														
12	TTS	2														
13	TTS	3														
14	TTS	4														
15	TTS	5														
16	TTS	6														
17	TTS	7														
18	TTS	8														

Timetable priorities data

Priority level 1. All year round					
Start			End		
Month	Day	Hour	Month	Day	Hour
Jan	1	0	Dec	31	24

Special conditioning timer data

Timer no.	Timer name	Duration	Fixed	Comment
1	CR1TOG	2.0	No	CRB1 TOGGLE TIME
2	CR1DLY	180.0	No	CRB1 TOGGLE DELAY TIME
3	CR1DUR	600.0	No	CRB1 TOGGLE DURATION TIME
4	CR2TOG	2.0	No	CRB2 TOGGLE TIME
5	CR2DLY	180.0	No	CRB2 TOGGLE DELAY TIME
6	CR2DUR	600.0	No	CRB2 TOGGLE DURATION TIME
7	WRST	2.0	No	WEST SIDE RESET PULSE
8	ADLYC	5.0	No	DELAY AFTER PHASE A HAS ROW BEFORE CALL PULSE TO STREAM 2
9	APULC	2.0	No	PULSE TIMER FOLLWOING ADLYC TIMER
10	ADLYH	7.0	No	DELAY AFTER PHASE A HAS ROW BEFORE HOLD TO STREAM 2
11	AHLDH	5.0	No	MINIMUM HOLD TIMER FOLLOWING ADLYH TIMER
12	ATRMH	8.0	No	DELAY FOLLOWING TERMINATION OF HOLD
13	AOVRH	60.0	No	HOLD OUTPUT OVERIDE
14	BDLYC	5.0	No	DELAY AFTER PHASE B HAS ROW BEFORE CALL PULSE TO STREAM 2
15	BPULC	2.0	No	PULSE TIMER FOLLOWING BDLYC TIMER
16	BDLYH	7.0	No	DELAY AFTER PHASE B HAS ROW BEFORE HOLD TO STREAM 2
17	BHLDH	5.0	No	MINIMUM HOLD TIMER FOLLOWING BDLYH TIMER
18	BTRMH	8.0	No	DELAY FOLLOWING TERMINATION OF HOLD
19	BOVRH	60.0	No	HOLD OUTPUT OVERIDE
20	CDLYC	5.0	No	DELAY AFTER PHASE C HAS ROW BEFORE CALL PULSE TO STREAM 1
21	CPULC	2.0	No	PULSE TIMER FOLLOWING CDLYC TIMER
22	CDLYH	7.0	No	DELAY AFTER PHASE C HAS ROW BEFORE HOLD TO STREAM 1
23	CHLDH	5.0	No	MINIMUM HOLD TIMER FOLLOWING CDLYH TIMER
24	CTRMH	8.0	No	DELAY FOLLOWING TERMINATION OF HOLD
25	COVRH	60.0	No	HOLD OUTPUT OVERIDE
26	DDLYC	5.0	No	DELAY AFTER PHASE D HAS ROW BEFORE CALL PULSE TO STREAM 1
27	DPULC	2.0	No	PULSE TIMER FOLLOWING DDLYC TIMER
28	DDLYH	7.0	No	DELAY AFTER PHASE D HAS ROW BEFORE HOLD TO STREAM 1
29	DHLDH	5.0	No	MINIMUM HOLD TIMER FOLLOWING DDLYH TIMER
30	DTRMH	8.0	No	DELAY FOLLOWING TERMINATION OF HOLD
31	DOVRH	60.0	No	HOLD OUTPUT OVERIDE
32	WFDLYC	5.0	No	DELAY AFTER PHASE F HAS ROW BEFORE CALL PULSE TO EAST CONTR.
33	WFPULC	2.0	No	PULSE TIMER FOLLOWING WCDLYC TIMER
34	WFDLYH	7.0	No	DELAY AFTER PHASE F HAS ROW BEFORE HOLD TO EAST CONTR.
35	WFHLDH	5.0	No	MINIMUM HOLD TIMER FOLLOWING WCDLYH TIMER
36	WFTRMH	12.0	No	DELAY FOLLOWING TERMINATION OF HOLD
37	WFOVRH	60.0	No	HOLD OUTPUT OVERIDE
38	WEDLYC	5.0	No	DELAY AFTER PHASE E HAS ROW BEFORE CALL PULSE TO EAST CONTR.
39	WEPULC	2.0	No	PULSE TIMER FOLLOWING WEDLYC TIMER

Special conditioning timer data

Timer no.	Timer name	Duration	Fixed	Comment
40	WEDLYH	7.0	No	DELAY AFTER PHASE E HAS ROW BEFORE HOLD TO EAST CONTR.
41	WEHLDH	5.0	No	MINIMUM HOLD TIMER FOLLOWING WDDLYH TIMER
42	WETRMH	8.0	No	DELAY FOLLOWING TERMINATION OF HOLD
43	WEOVRH	60.0	No	HOLD OUTPUT OVERIDE
44	SPARE	0.0	No	SPARE
45	WSTSHT	15.0	No	QIN HURRYCALL SHORT
46	WSTLNG	20.0	No	QIN HURRYCALL LONG
47	SW3PUL	1.0	No	AUX SWITCH 3 PULSE TIMER - USED BY CONDITIONING
48	F2OVR	180.0	No	UTC F2 OVERIDE TIMER
49	F5OVR	180.0	No	UTC F5 OVERIDE TIMER
50	F2PUL	0.5	No	UTC F2 INHIBIT PULSE TIMER
51	F5PUL	0.5	No	UTC F5 INHIBIT PULSE TIMER
52	AHCPUL	2.0	No	AIN MOVA HURRY CALL PULSE TIMER
53	BHCPUL	2.0	No	BIN MOVA HURRY CALL PULSE TIMER
54	CHCPUL	2.0	No	CIN MOVA HURRY CALL PULSE TIMER
55	DHCPUL	2.0	No	DIN MOVA HURRY CALL PULSE TIMER
56	EHCPUL	2.0	No	EIN MOVA HURRY CALL PULSE TIMER
57	FHCPUL	2.0	No	FIN MOVA HURRY CALL PULSE TIMER
58	AHCINHB	180.0	No	AIN HURRYCALL INHIBIT
59	BHCINHB	180.0	No	BIN HURRYCALL INHIBIT
60	CHCINHB	180.0	No	CIN HURRYCALL INHIBIT
61	DHCINHB	180.0	No	DIN HURRYCALL INHIBIT
62	EHCINHB	180.0	No	EIN HURRYCALL INHIBIT
63	FHCINHB	180.0	No	FIN HURRYCALL INHIBIT

Special conditioning statements

Statement 1	
Comments	MOVA PHASE CONFIRM C: PHASE C GREEN SETS OUTPUT GC

If PHASE-C
Then OUTPUTA-GC
Else OUTPUTN-GC

Statement 2	
Comments	MOVA PHASE CONFIRM D: PHASE D GREEN SETS OUTPUT GD

If PHASE-D
Then OUTPUTA-GD
Else OUTPUTN-GD

Statement 3	
Comments	MOVA PHASE CONFIRM E: PHASE E GREEN SETS OUTPUT GE

If PHASE-E
Then OUTPUTA-GE
Else OUTPUTN-GE

Statement 4	
Comments	MOVA PHASE CONFIRM F: PHASE F GREEN SETS OUTPUT GF

If PHASE-F
Then OUTPUTA-GF
Else OUTPUTN-GF

Statement 5	
Comments	UTC mode inactive starts CR1TOG and CR1DLY timers, else stops CRB1DLY timer.

If UTCMODE-1 **Not**
Then SCTSTART-CR1TOG SCTSTART-CR1DLY
Else SCTSTOP-CR1DLY

Statement 6	
Comments	STATEMENT 5 TRUE AND NOT IN FT, MANUAL MODES, CLF (SW5), VA(SW4) OR SW3PUL TIMER ACTIVE OR DET ERST ACTIVE START CR1DUR TIMER

If MFTMODE-1 **Or** MANMODE-1 **Or** MANIP-SW4 **Or** MANIP-SW5 **Not and** STMNT-5
And not SCTRUNNG-SW3PUL **And not** FDET-ERST
Then SCTSTART-CR1DUR
Else SCTSTOP-CR1DUR

Special conditioning statements

Statement 7	
Comments	CR1DLY timer expired and UTC mode still inactive starts CR1TOG and CR1DLY timers.

If	SCTEXPRD-CR1DLY	**And not**	UTCMODE-1
Then	SCTSTART-CR1TOG	SCTSTART-CR1DLY	

Statement 8	
Comments	MOVA INHIBIT/CLF INHIBIT SWITCH: VA BUTTON (SW4) SEE LATER STATEMENT FOR MOVA INHIBIT

If	MANIP-SW4	
Then	CLFINHIB-1	CLFINHIB-2
Else	CLFALLOW-1	CLFALLOW-2

Statement 9	
Comments	CRB1 OUTPUT

If	MSDMODE-1	**Or**	SHDMODE-1	**Or**	MFTMODE-1	**Or**	MANMODE-1	**Or**	STUMODE-1
Or	SCTRUNNG-CR1TOG	**Or**	MANIP-SW4	**Or**	MANIP-SW5	**Or**	SCFLAG-10	**Or**	FDET-E10MIN
Then	OUTPUTA-CRB1								
Else	OUTPUTN-CRB1								

Statement 10	
Comments	TIMER CR1DUR OR CR2DUR EXPIRED SETS FLAG 10 ACTIVE

If	SCTEXPRD-CR1DUR	**Or**	SCTEXPRD-CR2DUR
Then	SCFLGON-10		

Statement 11	
Comments	MANUAL PANEL PB7 ACTIVE OR DET ERST ACTIVE CLEARS FLAG

If	MANIP-SW3	**Or**	FDET-ERST
Then	SCFLGOFF-10		

Statement 12	
Comments	UTC ACTIVE STREAM 2 STARTS CR2TOG AND CR2DLY TIMERS

If	UTCMODE-2	**Not**
Then	SCTSTART-CR2TOG	SCTSTART-CR2DLY
Else	SCTSTOP-CR2DLY	

Special conditioning statements

Statement 13									
Comments	STATEMENT 5 TRUE AND NOT IN FT OR MANUAL MODES OR SW3PUL TIMER ACTIVE OR DET ERST ACTIVE START CR2DUR TIMER								
If	MANMODE-2	**Or**	MFTMODE-2	**Or**	MANIP-SW4	**Or**	MANIP-SW5	**Not and**	STMNT-12
And not	SCTRUNNG-SW3PUL	**And not**	FDET-ERST						
Then	SCTSTART-CR2DUR								
Else	SCTSTOP-CR2DUR								

Statement 14			
Comments	CR2DLY TIMER EXPIRED AND NOT IN UTCMODE STREAM 2 STARTS CR2TOG AND CR2DLY TIMERS		
If	SCTEXPRD-CR2DLY	**And not**	UTCMODE-2
Then	SCTSTART-CR2TOG	SCTSTART-CR2DLY	

Statement 15									
Comments	CRB2 OUTPUT								
If	MANMODE-2	**Or**	MFTMODE-2	**Or**	SHDMODE-2	**Or**	MSDMODE-2	**Or**	STUMODE-2
Or	SCTRUNNG-CR2TOG	**Or**	MANIP-SW4	**Or**	SCFLAG-10	**Or**	FDET-E10MIN	**Or**	MANIP-SW5
Then	OUTPUTA-CRB2								
Else	OUTPUTN-CRB2								

Statement 16			
Comments	FLAG 10 ACTIVE LIGHTS AUX 3 LED AND SETS W10MIN OUTPUT		
If	SCFLAG-10		
Then	MPLEDON-AUX3	OUTPUTA-W10MIN	

Statement 17			
Comments	DET E10MIN ACTIVE AND NOT FLAG 10 SET FLASES AUX3 LED.		
If	FDET-E10MIN	**And not**	SCFLAG-10
Then	MPLEDFLS-AUX3		

Statement 18				
Comments	STATEMENT 16 OR 17 NOT TRUE CLEARS AUX3 LED AND CLEARS W10MIN OUTPUT			
If	STMNT-16	**Or**	STMNT-17	**Not**
Then	MPLEDOFF-AUX3	OUTPUTN-W10MIN		

Statement 19			
Comments	UTC STREAM 1 AND DET MOVEST NOT ACTIVE FLASHES AUX 1 LED		
If	UTCMODE-1	**And not**	FDET-MOVEST
Then	MPLEDFLS-AUX1		

Special conditioning statements

Statement 20	
Comments	UTC STREAM 1 AND DET MOVEST ACTIVE LIGHTS AUX 1 LED

If UTCMODE-1 **And** FDET-MOVEST
Then MPLEDON-AUX1

Statement 21	
Comments	STATEMENT 19 OR 20 NOT TRUE CLEARS AUX 1 LED

If STMNT-19 **Or** STMNT-20 **Not**
Then MPLEDOFF-AUX1

Statement 22	
Comments	UTC MODE STREAMS 1 AND 2 SETS MOVWST OUTPUT ACTIVE

If UTCMODE-1 **And** UTCMODE-2
Then OUTPUTA-MOVWST
Else OUTPUTN-MOVWST

Statement 23	
Comments	PB7 ACTIVE STARTS WRST TIMER

If SCTRUNNG-SW3PUL
Then SCTSTART-WRST

Statement 24	
Comments	WRST TIMER ACTIVE SETS WRST OUTPUT ACTIVE

If SCTRUNNG-WRST
Then OUTPUTA-WRST
Else OUTPUTN-WRST

Statement 25	
Comments	TOD 11:59:58 SETS OUTPUT TSYNC

If CURTOD-11:59:58 **Or** SCBITS-254
Then OUTPUTA-TSYNC
Else OUTPUTN-TSYNC

Statement 26	
Comments	UTC MODE STREAM 1 SETS MOVA1 OUTPUT

If UTCMODE-1
Then OUTPUTA-MOVA1
Else OUTPUTN-MOVA1

Special conditioning statements

Statement 27	
Comments	UTC MODE STREAM 2 SETS MOVA2 OUTPUT

If UTCMODE-2
Then OUTPUTA-MOVA2
Else OUTPUTN-MOVA2

Statement 28	
Comments	TOD=12:00:00 SETS TSYNC OUTPUT

If CURTOD-12:00:00
Then OUTPUTA-TSYNC
Else OUTPUTN-TSYNC

Statement 29	
Comments	MOVA STREAM 1 TO BIT

If MANIP-SW4 **Or** MANIP-SW5 **Not and** FDET-TO1
Then UTCN-1
Else UTCI-1

Statement 30	
Comments	MOVA STREAM 2 TO BIT

If MANIP-SW4 **Or** MANIP-SW5 **Not and** FDET-TO2
Then UTCN-2
Else UTCI-2

Statement 31	
Comments	PHASE A ACTIVE STARTS TIMERS ADLYC AND ADLYH

If PHASE-A
Then SCTSTART-ADLYC SCTSTART-ADLYH

Statement 32	
Comments	TIMER ADLYC EXPIRED STARTS APULC TIMER

If SCTEXPRD-ADLYC
Then SCTSTART-APULC

Special conditioning statements

Statement 33	
Comments	APULC TIMER ACTIVE SETS OUTPUT ST2D43C

If SCTRUNNG-APULC
Then OUTPUTA-ST2D43C
Else OUTPUTN-ST2D43C

Statement 34	
Comments	TIMER ADLYH EXPIRED AND PHASE A ACTIVE SETS OUTPUT AND STARTS TIMERS AHLDH AND AOVRH

If SCTEXPRD-ADLYH **And** PHASE-A
Then OUTPUTA-ST2D44H SCTSTART-AHLDH SCTSTART-AOVRH

Statement 35	
Comments	AHLDH TIMER EXPIRED SETS FLAG 1

If SCTEXPRD-AHLDH
Then SCFLGON-1

Statement 36	
Comments	FLAG 1 SET AND NO EXTENSIONS ON PHASE A OR SCBIT 1 SET STARTS ATRMH TIMER

If SCFLAG-1 **And not** PHSEXT-A **And not** SCBITS-1
Then SCTSTART-ATRMH

Statement 37	
Comments	ATRMH TIMER NOT ACTIVE AND NOT PHASE A AND FLAG 1 ACTIVE STARTS ATRMH TIMER

If Not SCTRUNNG-ATRMH **And not** PHASE-A **And** SCFLAG-1
Then SCTSTART-ATRMH

Statement 38	
Comments	ATRMH TIMER ACTIVE OR AOVRH TIMER ACTIVE CLEARS OUTPUT AND CLEARS FLAG 1

If SCTEXPRD-ATRMH **Or** SCTEXPRD-AOVRH
Then OUTPUTN-ST2D44H SCFLGOFF-1

Statement 39	
Comments	PHASE A ACTIVE STARTS TIMERS BDLYC AND BDLYH

If PHASE-B
Then SCTSTART-BDLYC SCTSTART-BDLYH

Special conditioning statements

Statement 40	
Comments	TIMER BDLYC EXPIRED STARTS BPULC TIMER

If SCTEXPRD-BDLYC
Then SCTSTART-BPULC

Statement 41	
Comments	BPULC TIMER ACTIVE SETS OUTPUT

If SCTRUNNG-BPULC
Then OUTPUTA-ST2D45C
Else OUTPUTN-ST2D45C

Statement 42	
Comments	TIMER BDLYH EXPIRED AND PHASE B ACTIVE SETS OUTPUT AND STARTS TIMERS BHLDH AND BOVRH

If SCTEXPRD-BDLYH **And** PHASE-B
Then OUTPUTA-ST2D46H SCTSTART-BHLDH SCTSTART-BOVRH

Statement 43	
Comments	BHLDH TIMER EXPIRED SETS FLAG 1

If SCTEXPRD-BHLDH
Then SCFLGON-2

Statement 44	
Comments	FLAG 2 SET AND NO EXTENSIONS ON PHASE B OR SCBIT 1 SET STARTS BTRMH TIMER

If SCFLAG-2 **And not** PHSEXT-B **And not** SCBITS-2
Then SCTSTART-BTRMH

Statement 45	
Comments	BTRMH TIMER NOT ACTIVE AND NOT PHASE B AND FLAG 2 ACTIVE STARTS BTRMH TIMER

If Not SCTRUNNG-BTRMH **And not** PHASE-B **And** SCFLAG-2
Then SCTSTART-BTRMH

Statement 46	
Comments	BTRMH TIMER ACTIVE OR BOVRH TIMER ACTIVE CLEARS OUTPUT AND CLEARS FLAG 2

If SCTEXPRD-BTRMH **Or** SCTEXPRD-BOVRH
Then OUTPUTN-ST2D46H SCFLGOFF-2

Special conditioning statements

Statement 47	
Comments	PHASE C ACTIVE STARTS TIMERS CDLYC AND CDLYH

If PHASE-C
Then SCTSTART-CDLYC SCTSTART-CDLYH

Statement 48	
Comments	TIMER CDLYC EXPIRED STARTS CPULC TIMER

If SCTEXPRD-CDLYC
Then SCTSTART-CPULC

Statement 49	
Comments	CPULC TIMER ACTIVE SETS OUTPUT

If SCTRUNNG-CPULC
Then OUTPUTA-ST1A47C
Else OUTPUTN-ST1A47C

Statement 50	
Comments	TIMER CDLYH EXPIRED AND PHASE C ACTIVE SETS OUTPUT AND STARTS TIMERS CHLDH AND COVRH

If SCTEXPRD-CDLYH **And** PHASE-C
Then OUTPUTA-ST1A48H SCTSTART-CHLDH SCTSTART-COVRH

Statement 51	
Comments	CHLDH TIMER EXPIRED SETS FLAG 1

If SCTEXPRD-CHLDH
Then SCFLGON-3

Statement 52	
Comments	FLAG 3 SET AND NO EXTENSIONS ON PHASE C OR SCBIT 3 SET STARTS CTRMH TIMER

If SCFLAG-3 **And not** PHSEXT-C **And not** SCBITS-3
Then SCTSTART-CTRMH

Statement 53	
Comments	CTRMH TIMER NOT ACTIVE AND NOT PHASE C AND FLAG 3 ACTIVE STARTS CTRMH TIMER

If Not SCTRUNNG-CTRMH **And not** PHASE-C **And** SCFLAG-3
Then SCTSTART-CTRMH

Special conditioning statements

Statement 54	
Comments	CTRMH TIMER ACTIVE OR COVRH TIMER ACTIVE CLEARS OUTPUT AND CLEARS FLAG 3

If SCTEXPRD-CTRMH **Or** SCTEXPRD-COVRH
Then OUTPUTN-ST1A48H SCFLGOFF-3

Statement 55	
Comments	PHASE D ACTIVE STARTS TIMERS DDLYC AND DDLYH

If PHASE-D
Then SCTSTART-DDLYC SCTSTART-DDLYH

Statement 56	
Comments	TIMER DDLYC EXPIRED STARTS DPULC TIMER

If SCTEXPRD-DDLYC
Then SCTSTART-DPULC

Statement 57	
Comments	DPULC TIMER ACTIVE SETS OUTPUT

If SCTRUNNG-DPULC
Then OUTPUTA-ST1B49C
Else OUTPUTN-ST1B49C

Statement 58	
Comments	TIMER DDLYH EXPIRED AND PHASE D ACTIVE SETS OUTPUT AND STARTS TIMERS DHLDH AND DOVRH

If SCTEXPRD-DDLYH **And** PHASE-D
Then OUTPUTA-ST1B50H SCTSTART-DHLDH SCTSTART-DOVRH

Statement 59	
Comments	DHLDH TIMER EXPIRED SETS FLAG 1

If SCTEXPRD-DHLDH
Then SCFLGON-4

Statement 60	
Comments	FLAG 4 SET AND NO EXTENSIONS ON PHASE D OR SCBIT D SET STARTS DTRMH TIMER

If SCFLAG-4 **And not** PHSEXT-D **And not** SCBITS-4
Then SCTSTART-DTRMH

Special conditioning statements

Statement 61	
Comments	DTRMH TIMER NOT ACTIVE AND NOT PHASE D AND FLAG 4 ACTIVE STARTS DTRMH TIMER

If Not SCTRUNNG-DTRMH **And not** PHASE-D **And** SCFLAG-4
Then SCTSTART-DTRMH

Statement 62	
Comments	DTRMH TIMER ACTIVE OR DOVRH TIMER ACTIVE CLEARS OUTPUT AND CLEARS FLAG 4

If SCTEXPRD-DTRMH **Or** SCTEXPRD-DOVRH
Then OUTPUTN-ST1B50H SCFLGOFF-4

Statement 63	
Comments	PHASE F GREEN STARTS TIMERS WFDLYC AND WFDDLYH

If PHASE-F
Then SCTSTART-WFDLYC SCTSTART-WFDLYH

Statement 64	
Comments	TIMER WCDLYC EXPIRED STARTS WFPULC TIMER

If SCTEXPRD-WFDLYC
Then SCTSTART-WFPULC

Statement 65	
Comments	TIMER WFPULC RUNNING SETS OUTPUT WSBCALF

If SCTRUNNG-WFPULC
Then OUTPUTA-WSBCALF
Else OUTPUTN-WSBCALF

Statement 66	
Comments	TIMER WFDLYH EXPIRED AND PHASE F GREEN SETS OUTPUT WSBHLDF

If SCTEXPRD-WFDLYH **And** PHASE-F
Then OUTPUTA-WSBHLDF SCTSTART-WFHLDH SCTSTART-WFOVRH

Statement 67	
Comments	WFHLDH TIMER EXPIRED SETS FLAG 5

If SCTEXPRD-WFHLDH
Then SCFLGON-5

Special conditioning statements

Statement 68	
Comments	FLAG 5 SET, NO EXTENSIONS PHASE F AND SCBITS-5 NOT SET

If SCFLAG-5 **And not** PHSEXT-F **And not** SCBITS-5
Then SCTSTART-WFTRMH

Statement 69	
Comments	WFTRMH TIMER RUNNING AND NOT PHASE F GREEN AND FLAG 5 SET

If Not SCTRUNNG-WFTRMH **And not** PHASE-F **And** SCFLAG-5
Then SCTSTART-WFTRMH

Statement 70	
Comments	TIMER WFTRMH OR WFOVRH EXPIRED CLEAR WSBHLDF OUTPUT AND FLAG

If SCTEXPRD-WFTRMH **Or** SCTEXPRD-WFOVRH
Then OUTPUTN-WSBHLDF SCFLGOFF-5

Statement 71	
Comments	PHASE E GREEN STARTS WEDLYC TIMER AND WEDLYH TIMER

If PHASE-E
Then SCTSTART-WEDLYC SCTSTART-WEDLYH

Statement 72	
Comments	WEDLYC TIMER EXPIRED STARTS WEPULC TIMER

If SCTEXPRD-WEDLYC
Then SCTSTART-WEPULC

Statement 73	
Comments	WEPULC TIMER RUNNING SETS WSBCAEL OUTPUT

If SCTRUNNG-WEPULC
Then OUTPUTA-WSBCALE
Else OUTPUTN-WSBCALE

Statement 74	
Comments	WEDLYH TIMER EXPIRED AND PHASE E ACTIVE SETS WSEHLD OUTPUT, STARTS TIMER WEHLDH AND TIMER WEOVRH

If SCTEXPRD-WEDLYH **And** PHASE-E
Then OUTPUTA-WSBHLDE SCTSTART-WEHLDH SCTSTART-WEOVRH

Special conditioning statements

Statement 75									
Comments	WEHLDH TIMER EXPIRED SETS FLAG 6								
If	SCTEXPRD-WEHLDH								
Then	SCFLGON-6								

Statement 76									
Comments	FLAG 6 SET NO PHASE EXTENSIONS PHASE E AND SCBIT NOT SET STARTS WETRMH TIMER								
If	SCFLAG-6	**And not**	PHSEXT-E	**And not**	SCBITS-6				
Then	SCTSTART-WETRMH								

Statement 77									
Comments	WETRMH TIMER NOT RUNNING AND NOT PHASE E GREEN AND FLAG 6 ACTIVE STARTS TIMER WETRMH								
If Not	SCTRUNNG-WETRMH	**And not**	PHASE-E	**And**	SCFLAG-6				
Then	SCTSTART-WETRMH								

Statement 78									
Comments	WETRMH TIMER EXPIRED OR WEOVRH TIMER EXPIRED CLEARS WSBHLDE OUTPUT AND CLEARS FLAG 6								
If	SCTEXPRD-WETRMH	**Or**	SCTEXPRD-WEOVRH						
Then	OUTPUTN-WSBHLDE	SCFLGOFF-6							

Statement 79									
Comments	DETS BIN11 OR BIN12 ACTIVE, TIMER HCINHB NOT RUNNING AND SCBIT 7 NOT SET STARTS BHCPUL TIMER								
If	FDET-BIN11	**Or**	FDET-BIN12	**And not**	SCTRUNNG-BHCINHB	**And not**	SCBITS-7		
Then	SCTSTART-BHCPUL								

Statement 80									
Comments	DETS DIN23, DIN24, DIN25 OR DIN26 ACTIVE, TIMER HCINHB NOT RUNNING AND SCBIT 9 NOT SET STARTS DHCPUL TIMER								
If	FDET-DIN23	**Or**	FDET-DIN24	**Or**	FDET-DIN25	**Or**	FDET-DIN26	**And not**	SCTRUNNG-DHCINHB
And not	SCBITS-9								
Then	SCTSTART-DHCPUL								

Statement 81									
Comments	DETS AIN1, AIN2, AIN3 OR AIN4 ACTIVE, TIMER HCINHB NOT RUNNING AND SCBIT 6 NOT SET STARTS AHCPUL TIMER								
If	FDET-AIN1	**Or**	FDET-AIN2	**Or**	FDET-AIN3	**Or**	FDET-AIN4	**And not**	SCTRUNNG-AHCINHB
And not	SCBITS-6								
Then	SCTSTART-AHCPUL								

Special conditioning statements

Statement 82	
Comments	NOT USED

If

Statement 83							
Comments	TIMER BHCPUL RUNNING SETS OUTPUT BHCAL56 AND DETECTOR BINHC ACTIVE						
If	SCTRUNNG-BHCPUL						
Then	OUTPUTA-BHCAL56	DETA-BINHC	SCTSTART-BHCINHB				
Else	OUTPUTN-BHCAL56	DETN-BINHC					

Statement 84							
Comments	TIMER DHCPUL RUNNING SETS OUTPUT DHCAL57 AND DETECTOR DINHC ACTIVE						
If	SCTRUNNG-DHCPUL						
Then	OUTPUTA-DHCAL57	DETA-DINHC	SCTSTART-DHCINHB				
Else	OUTPUTN-DHCAL57	DETN-DINHC					

Statement 85							
Comments	TIMER AHCPUL RUNNING SETS OUTPUT AHCAL55 AND DETECTOR AINHC ACTIVE						
If	SCTRUNNG-AHCPUL						
Then	OUTPUTA-AHCAL55	DETA-AINHC	SCTSTART-AHCINHB				
Else	OUTPUTN-AHCAL55	DETN-AINHC					

Statement 86	
Comments	NOT USED

If

Statement 87							
Comments	DETS CIN15 OR CIN16, TIMER HCINHB NOT RUNNING AND SCBIT 8 NOT SET STARTS CHCPUL TIMER						
If	FDET-CIN15	**Or**	FDET-CIN16	**And not**	SCTRUNNG-CHCINHB	**And not**	SCBITS-8
Then	SCTSTART-CHCPUL						

Statement 88							
Comments	DETS EIN31 OR EIN32, TIMER HCINHB NOT RUNNING AND SCBIT 10 NOT SET STARTS EHCPUL TIMER						
If	FDET-EIN31	**Or**	FDET-EIN32	**And not**	SCTRUNNG-EHCINHB	**And not**	SCBITS-10
Then	SCTSTART-EHCPUL						

Special conditioning statements

Statement 89									
Comments	DETS FIN37, FIN38 OR FIN39, TIMER HCINHB NOT RUNNING AND SCBIT 11 NOT SET STARTS FHCPUL TIMER								
If	FDET-FIN37	**Or**	FDET-FIN38	**Or**	FDET-FIN39	**And not**	SCTRUNNG-FHCINHB	**And not**	SCBITS-11
Then	SCTSTART-FHCPUL								

Statement 90			
Comments	TIMER CHCPUL RUNNING SETS OUTPUT CHCAL59 AND DETECTOR CINHC ACTIVE		
If	SCTRUNNG-CHCPUL		
Then	OUTPUTA-CHCAL59	DETA-CINHC	SCTSTART-CHCINHB
Else	OUTPUTN-CHCAL59	DETN-CINHC	

Statement 91			
Comments	TIMER EHCPUL RUNNING SETS OUTPUT EHCAL60 AND DETECTOR EINHC ACTIVE		
If	SCTRUNNG-EHCPUL		
Then	OUTPUTA-EHCAL60	DETA-EINHC	SCTSTART-EHCINHB
Else	OUTPUTN-EHCAL60	DETN-EINHC	

Statement 92			
Comments	TIMER FHCPUL RUNNING SETS OUTPUT FHCAL58 AND DETECTOR FINHC ACTIVE		
If	SCTRUNNG-FHCPUL		
Then	OUTPUTA-FHCAL58	DETA-FINHC	SCTSTART-FHCINHB
Else	OUTPUTN-FHCAL58	DETN-FINHC	

Statement 93	
Comments	NOT USED
If	

Statement 94	
Comments	NOT USED
If	

Statement 95							
Comments	SHUTDOWN MODE SETS LE OUTPUT ACTIVE						
If	SHDMODE-1	**Or**	SHDMODE-2	**Or**	MSDMODE-1	**Or**	MSDMODE-2
Then	OUTPUTA-LE						
Else	OUTPUTN-LE						

Special conditioning statements

Statement 96	
Comments	AUX 3 SWITCH PULSE CONDITIONING: IF SW3 ACTIVE START TIMER SW3PUL

If MANIP-SW3
Then SCTSTART-SW3PUL

Statement 97	
Comments	AUX 3 SWITCH PULSE CONDITIONING: IF SW3 NOT ACTIVE START TIMER SW3PUL

If MANIP-SW3 **Not**
Then SCTSTART-SW3PUL

Statement 98	
Comments	PREVENT FORCE BITS OVERIDES: UTC-F2 ACTIVE START TIMER F2OVR.

If UTCBIT-F2
Then SCTSTART-F2OVR
Else SCTSTOP-F2OVR

Statement 99	
Comments	PREVENT FORCE BITS OVERIDES: UTC-F4 ACTIVE START TIMER F4OVR.

If UTCBIT-F5
Then SCTSTART-F5OVR
Else SCTSTOP-F5OVR

Statement 100	
Comments	PREVENT FORCE BITS OVERIDES: F2OVR TIMER EXPIRED START F2PUL

If SCTEXPRD-F2OVR **And** UTCBIT-F2
Then SCTSTART-F2PUL

Statement 101	
Comments	PREVENT FORCE BITS OVERIDES: F5OVR TIMER EXPIRED START F5PUL

If SCTEXPRD-F5OVR **And** UTCBIT-F5
Then SCTSTART-F5PUL

Statement 102	
Comments	PREVENT FORCE BITS OVERIDES:F2PUL TIMER ACTIVE SET UTC-F2 INACTIVE AND UTC-F3 ACTIVE

If SCTRUNNG-F2PUL
Then UTCBITA-F3 UTCBITI-F2
Else UTCBITN-F3 UTCBITN-F2

Special conditioning statements

Statement 103	
Comments	PREVENT FORCE BITS OVERIDES:F2PUL TIMER ACTIVE SET UTC-F5 INACTIVE AND UTC-F6 ACTIVE

If	SCTRUNNG-F5PUL		
Then	UTCBITA-F8	UTCBITI-F5	
Else	UTCBITN-F8	UTCBITN-F5	

Statement 104	
Comments	DETECTOR ASL10 A,B,C,D OR E ACTIVE SETS ASL10 OUTPUT

If	RDET-ASL10A	**Or**	RDET-ASL10B	**Or**	RDET-ASL10C	**Or**	RDET-ASL10D	**Or**	RDET-ASL10E
Then	OUTPUTA-ASL10								
Else	OUTPUTN-ASL10								

Statement 105	
Comments	SIS POWER

If	FDET-SISPWR		
Then	OUTPUTA-SISPWR		
Else	OUTPUTN-SISPWR		

Statement 106	
Comments	SIS FAULT

If	FDET-SISFLT		
Then	OUTPUTA-SISFLT		
Else	OUTPUTN-SISFLT		

Statement 107	
Comments	UTCMODE STREAM 2 AND NOT MOVEST ACTIVE FLASHES AUX2

If	UTCMODE-2	**And not**	FDET-MOVEST
Then	MPLEDFLS-AUX2		

Statement 108	
Comments	UTCMODE STREAM 2 AND MOVEST ACTIVE FLASHES AUX2

If	UTCMODE-2	**And**	FDET-MOVEST
Then	MPLEDON-AUX2		

Statement 109	
Comments	NOT STATEMENT 107 OR 108 SETS MANUAL PANEL AUX2 OFF

If	STMNT-107	**Or**	STMNT-108	**Not**
Then	MPLEDOFF-AUX2			

Red lamp monitoring data 1

Auto clear red lamp warnings	Yes	Red lamp monitor type	Other

Red lamp monitoring data 2

Stream based data					
Stream no.	Shutdown required	Red flt. extension	Single red lamp fault input name	Multiple red lamp fault input name	Inhibit stages
1	Yes	2.0			
2	Yes	2.0			

Red lamp monitoring data 3

Second red failure phase data	
Phase Id	Inhibited phases
A	
B	
C	
D	
E	
F	
DA	
DB	

ILM data

Fault indications		Mains unstable indications output(s)	
Auto clear red lamp warnings	Yes		
Flash DFM for lamp conflict	No		
Flash DFM for lamp failure	No		
Unstable toroid indication (as lamp failure)	No		

Phase	Lamp Types			Single fault	Multi faults	Failure indication output	Conflict indication output(s)
	Green	Amber	Red				
A	ELV LED (3R)	ELV LED (3R)	ELV LED (3R)	1	3	LF	
B	ELV LED (3R)	ELV LED (3R)	ELV LED (3R)	1	3	LF	
C	ELV LED (3R)	ELV LED (3R)	ELV LED (3R)	1	3	LF	
D	ELV LED (3R)	ELV LED (3R)	ELV LED (3R)	1	3	LF	
E	ELV LED (3R)	ELV LED (3R)	ELV LED (3R)	1	3	LF	
F	ELV LED (3R)	ELV LED (3R)	ELV LED (3R)	1	3	LF	

Input data

Input No.	Input name	Source	Comment
0	F03	Virtual	NOT USED
1	F08	Virtual	NOT USED
0	F01	Parallel	MOVA STREAM 1 STAGE 1 FORCE
1	F02	Parallel	MOVA STREAM 1 STAGE 2 FORCE
2	F04	Parallel	MOVA STREAM 2 STAGE 1 FORCE
3	F05	Parallel	MOVA STREAM 2 STAGE 2 FORCE
4	F06	Parallel	MOVA STREAM 2 STAGE 3 FORCE
5	F07	Parallel	MOVA STREAM 2 STAGE 4 FORCE
6	*TO1	Parallel	MOVA TO BIT STREAM 1
7	*TO2	Parallel	MOVA TO BIT STREAM 2
8	*AIN1	Parallel	
9	*AIN2	Parallel	
10	*AIN3	Parallel	
11	*AIN4	Parallel	
12	*AX5	Parallel	
13	*AX6	Parallel	
14	*AX7	Parallel	
15	*AX8	Parallel	
16	*ASL10A	Parallel	
17	*ASL10B	Parallel	
18	*ASL10C	Parallel	
19	*ASL10D	Parallel	
20	*BIN11	Parallel	
21	*BIN12	Parallel	
22	*BX13	Parallel	
23	*BX14	Parallel	
24	*CIN15	Parallel	
25	*CIN16	Parallel	
26	*CX17	Parallel	
27	*CX18	Parallel	
28	*CX19	Parallel	
29	*CSL20	Parallel	
30	*CSL21	Parallel	
31	*CSL22	Parallel	
32	*DIN23	Parallel	
33	*DIN24	Parallel	
34	*DX27	Parallel	
35	*DX28	Parallel	
36	*DX29	Parallel	

Input data

Input No.	Input name	Source	Comment
37	*SISPWR	Parallel	SIS POWER
38	*SISFLT	Parallel	SIS FAULT
39	*E10MIN	Parallel	LINKING FROM EAST CONTROLLER CRB TIMER EXPIRED
40	*ERST	Parallel	LINKING FROM EAST CONTROLLER CRB TIMER RESET
41	*MOVEST	Parallel	LINKKING FROM EAST CONTROLLER MOVA RUNNING
42	*AX9	Parallel	
43	*ASL10E	Parallel	NEW
44	*DIN25	Parallel	NEW
45	*DIN26	Parallel	NEW
46	*DX30	Parallel	NEW
47	IP47	Parallel	
48	*EIN31	Parallel	NEW
49	*EIN32	Parallel	NEW
50	*EX33	Parallel	NEW
51	*EX34	Parallel	NEW
52	*ESL35	Parallel	NEW
53	*ESL36	Parallel	NEW
54	*FIN37	Parallel	NEW
55	*FIN38	Parallel	NEW
56	*FIN39	Parallel	NEW
57	*FX40	Parallel	NEW
58	*FX41	Parallel	NEW
59	*FX42	Parallel	NEW

Output data

Output Number	Destination	Output name	Invert state	Comment
0	Parallel	G1	Yes	MOVA STREAM 1 STAGE 1 CONFIRM
1	Parallel	G2	Yes	MOVA STREAM 1 STAGE 2 CONFIRM
2	Parallel	G4	Yes	MOVA STREAM 2 STAGE 1 CONFIRM
3	Parallel	G5	Yes	MOVA STREAM 2 STAGE 2 CONFIRM
4	Parallel	G6	Yes	MOVA STREAM 2 STAGE 3 CONFIRM
5	Parallel	G7	Yes	MOVA STREAM 2 STAGE 4 CONFIRM
6	Parallel	GC	Yes	MOVA PHASE C CONFIRM
7	Parallel	GD	Yes	MOVA PHASE D CONFIRM
8	Parallel	GE	Yes	MOVA PHASE E CONFIRM
9	Parallel	GF	Yes	MOVA PHASE F CONFIRM
10	Parallel	CRB1	Yes	MOVA CRB BIT STREAM 1
11	Parallel	CRB2	Yes	MOVA CRB BIT STREAM 2
12	Parallel	MOVA1	No	MOVA MODE ACTIVE STREAM 1
13	Parallel	MOVA2	No	MOVA MODE ACTIVE STREAM 2
14	Parallel	OP14	No	
15	Parallel	OP15	No	
16	Parallel	ASL10	No	BUFFERED COMBINED ASL10 LOOPS - MOVA DET 10
17	Parallel	OP17	No	
18	Parallel	ST2D43C	No	STREAM 1 TO 2 LINKING - MOVA DET 43
19	Parallel	ST2D44H	No	STREAM 1 TO 2 LINKING - MOVA DET 44
20	Parallel	ST2D45C	No	STREAM 1 TO 2 LINKING - MOVA DET 45
21	Parallel	ST2D46H	No	STREAM 1 TO 2 LINKING - MOVA DET 46
22	Parallel	ST1A47C	No	STREAM 2 TO 1 LINKING - MOVA DET 47
23	Parallel	ST1A48H	No	STREAM 2 TO 1 LINKING - MOVA DET 48
24	Parallel	ST1B49C	No	STREAM 2 TO 1 LINKING - MOVA DET 49
25	Parallel	ST1B50H	No	STREAM 2 TO 1 LINKING - MOVA DET 50
26	Parallel	WSBHLDF	No	LINKING TO EAST CONTROLLER
27	Parallel	WSBCALF	No	LINKING TO EAST CONTROLLER
28	Parallel	WSBHLDE	No	LINKING TO EAST CONTROLLER
29	Parallel	WSBCALE	No	LINKING TO EAST CONTROLLER
30	Parallel	TSYNC	No	LINKING TO EAST CONTROLLER - TIME SYNC FOR EAST CONTROLLER
31	Parallel	W10MIN	No	LINKING TO EAST CONTROLLER - WEST CONTROLLER CRB TIMER EXPIRED
32	Parallel	WRST	No	LINKING TO EAST CONTROLLER - WEST CONTROLLER CRB RESET
33	Parallel	MOVWST	No	LINKING TO EAST CONTROLLER - MOVA CONTROL ACTIVE BOTH STREAMS WEST
34	Parallel	LE	Yes	LAMPS EXTINGUISHED TO OMU
35	Parallel	LF	Yes	LAMP FAULT TO OMU
36	Parallel	SISPWR	No	SIS POWER TO OMU
37	Parallel	SISFLT	No	SIS FAULT TO OMU
38	Parallel	AHCAL55	No	AIN MOVA HURRY CALL - MOVA DET 55

Output data

Output Number	Destination	Output name	Invert state	Comment
39	Parallel	BHCAL56	No	BIN MOVA HURRY CALL - MOVA DET 56
40	Parallel	DHCAL57	No	DIN MOVA HURRY CALL - MOVA DET 57
41	Parallel	FHCAL58	No	FIN MOVA HURRY CALL - MOVA DET 58
42	Parallel	CHCAL59	No	CIN MOVA HURRY CALL - MOVA DET 59
43	Parallel	EHCAL60	No	EIN MOVA HURRY CALL - MOVA DET 60

Hardware data

Safety cards	
Number	Fitted
1	Yes
2	No

Loop Detector Cards		
Number	Fitted	Detectors
2	Yes	16
3	No	-
4	No	-

Safety card 1

Phase Drive cards	
Number	Fitted
1	Yes
2	Yes
3	Yes
4	No
5	No
6	No
7	No
8	No
9	No
10	No
11	No
12	No
13	No
14	No
15	No
16	No

IO Cards	
Number	Card Type
1	Handset
2	IO 16/16
3	IO 16/16
4	IO 16/16
5	IO 16/16
6	Not Fitted
7	Not Fitted
8	Not Fitted

Loop Detector Cards		
Number	Fitted	Detectors
1	Yes	16

Virtual IO data

Bit No.	Bit name	Invert	Active	Comment
0	F03	False	False	
1	F08	False	False	

Telent traffic controller configuration forms

Customer: AMEY AREA9 MAC

Intersection description: M42 JUNCTION 10 A5 DORDON ISLAND TAMWORTH EAST SIDE - SCN 211

Telent tender no.: **Telent works order no.:**

Customers order no.: **Dated:**

Customers engineer: JULIAN SMITH / PAOLO MALARA / ROGER HACKER

Customers telephone no.: 01905 750255 **Ext:**

Equipment installation by: TELENT

Slot cutting by:

Civil works by:

Configuration no.: CFGM0188 **Issue:** **Configuration engineer:** SIMON WINTER

General Data

Power supply data	
Mains voltage	48 Volts
Mains frequency	50 Hz
Peak current	0.0 Amps
Dimming voltage	160

Solar switch data				
Detector timing set data	Set 1	Set 2	Set 3	Set 4
Call delay period (Seconds)	10.0	10.0	10.0	10.0
Cancel delay period (Seconds)	10.0	10.0	10.0	10.0
DFM active times (Hours or minutes)	24H	24H	24H	24H
DFM inactive times (Hours or minutes)	24H	24H	24H	24H

British summertime change data			
BST start week	13	BST end week	43

Options	
Is manual disable via handset option required?	No
Inhibit pedestrian demand delay in FVP mode?	No
Inhibit pedestrian demand delay in PTM mode?	No
Limit handset warnings to UTC enabled warnings?	No

Configuration notes

ELV OPTIMA

SEE CONFIGURATION NOTES

Configuration history

Issue	Date	Description
1.00	23/10/12	INITIAL CONFIGURATION
1.01	23/10/12	INTERMEDIATE EDIT
1.02	23/10/2012	Intermediate edit
1.03	23/10/2012	Intermediate edit
1.04	23/10/2012	Intermediate edit
1.05	10/11/2012	Intermediate edit
1.06	21/11/2012	Intermediate edit
1.07	04/12/2012	Intermediate edit
1.08	04/12/2012	Intermediate edit
2.00	11/09/2014	PHASES ADDED AND MOVA AMMENDED
2.01	19/09/2014	Intermediate edit
2.02	30/09/2014	Intermediate edit
2.03	07/02/2015	Intermediate edit
2.04	09/02/2015	Intermediate edit

Phase data 1

Phase Id	Road Name(s)	Phs. type	Appearance assoc'ted		Termination assoc'ted		Restart allowed	App. in man
			type	phase(s)	type	phase(s)		
A	M42 SOUTHBOUND OFF SLIP	T	0		0		No	0
B	NORTH BRIDGE EASTBOUND GYRATORY	T	0		0		No	0
C	A5 WESTBOUND	T	0		0		No	0
D	EASTSIDE A5 GYRATORY	T	0		0		No	0
E	TRINITY ROAD	T	0		0		No	0
F	EAST SIDE TRINITY GYRATORY	T	0		0		No	0
DA	ALL RED STREAM 1	G	0		0		No	0
DB	ALL RED STREAM 2	G	0		0		No	0

Phase data 2

Phase Id	Min green Time	Min green limit	Window time	Speed measurement facilities		Assoc to ped. phases	Cond demand type	Conditioning phases
				Exist	Ped. phases			
A	7.0	7.0	-	No		No	NONE	
B	7.0	7.0	-	No		No	NONE	
C	7.0	7.0	-	No		No	NONE	
D	7.0	7.0	-	No		No	NONE	
E	7	7		No		No	None	
F	7	7		No		No	None	
DA	3.0	3.0	-	No		No	NONE	
DB	3.0	3.0	-	No		No	NONE	

Phase data 2_1

Phase Id	Maximum greens (VA)								Maximum greens (PTM)								Maximum greens (FVP)							
	Set 1	Set 2	Set 3	Set 4	Set 5	Set 6	Set 7	Set 8	Set 1	Set 2	Set 3	Set 4	Set 5	Set 6	Set 7	Set 8	Set 1	Set 2	Set 3	Set 4	Set 5	Set 6	Set 7	Set 8
A	30.0	20.0	30.0	20.0	30.0	30.0	40.0	60.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	40.0	30.0	40.0	30.0	40.0	30.0	40.0	60.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	20.0	20.0	20.0	20.0	30.0	30.0	40.0	60.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D	40.0	30.0	40.0	30.0	40.0	30.0	40.0	60.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E	20	20	20	20	30	30	40	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F	40	30	40	30	40	30	40	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DB	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Phase data 2_2

Phs Id	Fixed seq.	Ped type	Demand extn.	Dithering		Pedestrian intergreen sequence times						PV info		PV associated to			PV delay	PV Window	Local override
				Quiescent	Normal	Gap	Frc	Min	Max	Clr	Xtr	UTC	Local	Phase	Str/Stg	Input			
A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Phase data 2_3

Phase compensation				
	Compensation sets			
Phase Id	Set 1	Set 2	Set 3	Set 4
A	0.0	0.0	0.0	0.0
B	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0
D	0.0	0.0	0.0	0.0
E	0	0	0	0
F	0	0	0	0
DA	0.0	0.0	0.0	0.0
DB	0.0	0.0	0.0	0.0

Phase data 2_4

Pedestrain supplementary signals									
Phase Id	Illuminate wait lamps on phase	Tactile	Confirmation input	State	Audible	Confirmation input	Active state	Drive phase	Duration
A		False	False	OC	False	False	OC	A	
B		False	False	OC	False	False	OC	B	
C		False	False	OC	False	False	OC	C	
D		False	False	OC	False	False	OC	D	
E		False	False	OC	False	False	OC	E	
F		False	False	OC	False	False	OC	F	
DA		False	False	OC	False	False	OC	DA	
DB		False	False	OC	False	False	OC	DB	

Phase data 4

Phase Id	Conflicting greens	Opposed by phase demands	Opposed by stage demands	Revertive phase demands
A	B	B,DA		A
B	A	A,DA		B
C	D	D,DB		C
D	C	C,DB		D
E	F	C,D,F		E
F	E	C,D,E		F
DA		A,B		
DB		C,D		

Lamp sequence data

Phs. type	Sequence description	Start-up starting			Start-up stoping			Normal starting			Normal stopping			Running		Stopped		Shutdown	
		State 1	State 2	Duration	State 1	State 2	Duration	State 1	State 2	Duration	State 1	State 2	Duration	State 1	State 2	State 1	State 2	State 1	State 2
FP	FAR/SIDE PEDESTRIAN	G	G	0	R	R	0	G	G	0	B	B	3	G	G	R	R	B	B
G	IND/FILTER	G	G	0	B	B	0	G	G	0	B	B	0	G	G	B	B	B	B
L	LRT	G	G	0	A	A	5	G	G	0	A	A	5	G	G	R	R	B	B
NP	NEAR/SIDE PEDESTRIAN	G	G	0	R	R	0	G	G	0	R	R	3	G	G	R	R	B	B
P	PEDESTRIAN	G	G	0	R	R	0	G	G	0	B	B	PBT	G	G	R	R	B	B
PP	PELICAN PEDESTRIAN	R	R	0	B	G	3	G	G	0	B	G	0.1	G	G	R	R	B	B
PT	PELICAN TRAFFIC	B	A	5	A	A	3	B	A	6	A	A	3	G	G	R	R	B	B
T	TRAFFIC	G	G	0	A	A	3	R,A	R,A	2	A	A	3	G	G	R	R	B	B
W	WIG-WAG	A	A	5	B	B	0	A	A	5	B	B	0	R	G	B	B	B	B

Stage data

Stream 1		Start-up stage no.	2
Stage	Active phases		
0	DA		
1	A		
2	B		
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Stream 2		Start-up stage no.	2
Stage	Active phases		
0	DB		
1	D,E		
2	D,F		
3	C,F		
4	C,E		
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Mode data

Stream 1		Starting intergreen duration	9.0
Mode	Priority no.	All red extension auto to max	
C.L.F.	6	No	
PSV emergency			
Hurry Call 1	4	No	
Hurry Call 2	5	No	
Hurry Call 3			
Hurry Call 4			
LRT			
Manual	1	No	
Manual FT	2	Yes	
MOVA			
Normal - VA	7	No	
PSV priority			
Part time			
UTC	3	No	
Phase demands to be inserteted on start-up and when leaving manual or fixed time modes			
A,B			

Stream 2		Starting intergreen duration	9.0
Mode	Priority no.	All red extension auto to max	
C.L.F.	6	No	
PSV emergency			
Hurry Call 1	4	No	
Hurry Call 2	5	No	
Hurry Call 3			
Hurry Call 4			
LRT			
Manual	1	No	
Manual FT	2	Yes	
MOVA			
Normal - VA	7	No	
PSV priority			
Part time			
UTC	3	No	
Phase demands to be inserteted on start-up and when leaving manual or fixed time modes			
C,D,E,F			

Part time and hurry call mode data

Stream 1

Part time mode data

Switch-off stage		Part-time hold duration	0H	Part-time prevent duration	0H	Part-time queue detector(s)	

Hurry call mode data

Hurry call no.	Call stage	Request detector(s)	Cancel detector(s)	Output name	Delay period	Hold period	Prevent period
1	1	AQHC		N/A	0.0	10.0	0.0
2	2	BINHC		N/A	0.0	10.0	0.0
3				N/A	0.0	0.0	0.0
4				N/A	0.0	0.0	0.0

Stream 2

Part time mode data

Switch-off stage		Part-time hold duration	0H	Part-time prevent duration	0H	Part-time queue detector(s)	

Hurry call mode data

Hurry call no.	Call stage	Request detector(s)	Cancel detector(s)	Output name	Delay period	Hold period	Prevent period
1	2	DINHC		N/A	0.0	10.0	0.0
2	2	FINHC		N/A	0.0	10.0	0.0
3				N/A	0.0	0.0	0.0
4				N/A	0.0	0.0	0.0

Manual mode data

Manual button no.	Stage number for each stream								Street name(s)
	1	2	3	4	5	6	7	8	
All red	0	0							ALL RED
1	2	2							GYRATORIES
2	1	2							M42 OFF / GYRATORY
3	2	3							M42 OFF GYRATORY / A5 WB / TRINITY RD GYRATORY
4	1	1							M42 OFF / A5 GYRATORY / TRINITY ROAD
5	0	4							STREAM 1 ALL RED / A5 WB / TRINITY ROAD
6	0	2							STREAM 1 ALL RED / STREAM 2 GYRATORIES
7									
8									
9									
10									

Button no. for inital manual stage set	1	Streams that must be in manual mode together	

UTC general data, confirm bit data & SF/LO qualification periods

UTC General data

UTC option	1 (MCE 0105/0106)
TF Reset time	00:00:00
Use serial interface for UTC	False
UTC active state	Short circuit

Stream linking options							
1	2	3	4	5	6	7	8
U	U	U	U	U	U	U	U

Sync confirm times	
RT reply bit	3
SR reply bit	3

Time sync data	
Day type	ANY
Reference time	12:00:00
Repeat rate	24H
Window time	24H

UTC confirm data

Stream	Confirm bit(s) to be used for manual mode running on stream	Confirm bit(s) to be used for fixed time running on stream
1		
2		
3		
4		
5		
6		
7		
8		

Controller state	Confirm bit(s) to be used for controller state
Manual mode selected	
Signals off failed	
Signals off manually	
Detectors fault	
Controller fault	
Controller warning	
Manual fixed time selected	

SF/LO qualification periods

L01	10.0	L02	10.0	L03	10.0	L04	10.0	L05	10.0	L06	10.0	L07	10.0	L08	10.0
SF01	7.0	SF02	7.0	SF03	7.0	SF04	7.0	SF05	7.0	SF06	7.0	SF07	7.0	SF08	7.0
SF09	7.0	SF10	7.0	SF11	7.0	SF12	7.0	SF13	7.0	SF14	7.0	SF15	7.0	SF16	7.0

UTC force bits

Force bit	Phase demands to be considered for demand depended stages	Required phase extensions	Stage to force in each stream							
			1	2	3	4	5	6	7	8
F01			1							
F02			2							
F03			2							
F04				1						
F05				2						
F06				3						
F07				4						
F08				2						

UTC (stream/stage) confirm data

Stage no.	Stream							
	1	2	3	4	5	6	7	8
00								
01	G1	G4						
02	G2	G5						
03		G6						
04		G7						
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								

UTC control/reply bit - stage stream associations

Control/ reply bit	Associated bit id per stream							
	1	2	3	4	5	6	7	8
FC								
FGR								
FM								
GO								
HC								
LL								
LO								
LRTI								
LRTR								
TOR								

UTC demand bits (DX Bits)

DX Bit	Latched stage demands	Unlatched stage demands	Latched phase demands	Unlatched phase demands	Phase extension demands
DX1					
DX2					
DX3					
DX4					
DX5					
DX6					
DX7					
DX8					

UTC demand bits (D Bits)

D Bit	Latched stage demands	Unlatched stage demands	Latched phase demands	Unlatched phase demands	Phase extensiob demands
D1					
D2					
D3					
D4					
D5					
D6					
D7					
D8					
D9					
D10					
D11					
D12					
D13					
D14					
D15					
D16					
D17					
D18					
D19					
D20					
D21					
D22					
D23					
D24					
D25					
D26					
D27					
D28					
D29					
D30					
D31					
D32					

UTC demand reply bits (SD Bits)

SD Bit name	Stage demands to reply	Phase demands to reply
SD1		
SD2		
SD3		
SD4		
SD5		
SD6		
SD7		
SD8		
SD9		
SD10		
SD11		
SD12		
SD13		
SD14		
SD15		
SD16		
SD17		
SD18		
SD19		
SD20		
SD21		
SD22		
SD23		
SD24		
SD25		
SD26		
SD27		
SD28		
SD29		
SD30		
SD31		
SD32		

UTC timeout data and local link inhibit data

UTC Timeout data										
	UTC bits									
	F	D	DX	SF	FM	LO	GO	LL	LRTI	PV
Timeout duration	300	0	0	0	0	0	0	0	0	500
No timeouts allowed	False	True	True	True	True	True	True	True	True	True

UTC local link inhibit data	
LL Bits	Phases
LL01	
LL02	
LL03	
LL04	
LL05	
LL06	
LL07	
LL08	

FT and VA mode

Stream 1																
FT mode data													Normal FT or VA to max			VA
From stage	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Stage time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
To stage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Demad dependant phases during VA to max				DA												
VA mode data																
Arterial reversion to stage/phase				2	VA stage selection option required					Near						

Stream 2																
FT mode data													Normal FT or VA to max			VA
From stage	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Stage time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
To stage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Demad dependant phases during VA to max				DB												
VA mode data																
Arterial reversion to stage/phase				2	VA stage selection option required					Near						

CLF mode data

Plan 1																								
																	Delay time		0	Cycle time		90		
	Stream 1			Stream 2			Stream 3			Stream 4			Stream 5			Stream 6			Stream 7			Stream 8		
Group	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0
no.	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage
1	0	IM	2	0	IM	3																		
2	6	PX	1	4	PX	2																		
3	12	IM	1	15	IM	2																		
4	30	PX	2	48	PX	1																		
5	35	IM	2	57	DM	1																		
5				58	HS																			
0				71	PX	3																		
0				76	IM	3																		

Plan 2																								
																	Delay time		0	Cycle time		90		
	Stream 1			Stream 2			Stream 3			Stream 4			Stream 5			Stream 6			Stream 7			Stream 8		
Group	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0
no.	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage
1	0	IM	2	0	IM	3																		
2	10	PX	1	26	PX	2																		
3	19	IM	1	36	IM	2																		
4	38	PX	2	63	PX	1																		
5	42	IM	2	67	DM	1																		
5				73	HS																			
0				77	PX	3																		
0				86	IM	3																		

Plan 3																								
																	Delay time		0	Cycle time		80		
	Stream 1			Stream 2			Stream 3			Stream 4			Stream 5			Stream 6			Stream 7			Stream 8		
Group	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0
no.	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage
1	0	PX	2	0	PX	3																		
2	2	IM	2	1	IM	3																		
3	45	PX	1	25	PX	2																		
4	49	IM	1	30	IM	2																		
5	70	PX	2	52	PX	1																		
5				66	DM	1																		
0				68	HS																			
0				72	PX	3																		

CLF mode data

Plan 4																								
																	Delay time		0	Cycle time		60		
Group no.	Stream 1			Stream 2			Stream 3			Stream 4			Stream 5			Stream 6			Stream 7			Stream 8		
	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0
	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage
1	0	IM	1	0	IM	3																		
2	2	PX	2	10	PX	2																		
3	6	IM	2	15	IM	2																		
4	45	PX	1	35	PX	1																		
5	50	IM	1	38	DM	1																		
5				39	HS																			
0				48	PX	3																		
0				52	IM	3																		

Plan 5																								
																	Delay time		0	Cycle time		80		
Group no.	Stream 1			Stream 2			Stream 3			Stream 4			Stream 5			Stream 6			Stream 7			Stream 8		
	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0
	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage
1	0	IM	1	0	IM	3																		
2	4	PX	2	20	PX	2																		
3	8	IM	2	29	IM	2																		
4	60	PX	1	52	PX	1																		
5	67	IM	1	56	DM	1																		
5				60	HS																			
0				65	PX	3																		
0				74	IM	3																		

Plan 6																								
																	Delay time		0	Cycle time		80		
Group no.	Stream 1			Stream 2			Stream 3			Stream 4			Stream 5			Stream 6			Stream 7			Stream 8		
	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0	Offset time		0
	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage	Start time	Inf	Stage
1	0	IM	2	0	IM	3																		
2	8	PX	1	18	PX	2																		
3	15	IM	1	27	IM	2																		
4	32	PX	2	50	PX	1																		
5	36	IM	2	54	DM	1																		
5				58	HS																			
0				63	PX	3																		
0				71	IM	3																		

Minimum intergreen durations

From phs.	To phase							
	A	B	C	D	E	F	DA	DB
A		7					3	
B	6						3	
C				7				3
D			6					3
E						7		3
F					6			3
DA	2	2						
DB			2	2	2	2		

Intergreen Minimum limit values

From phs.	To phase							
	A	B	C	D	E	F	DA	DB
A		5					3	
B	5						3	
C				5				3
D			5					3
E						5		3
F					5			3
DA	2	2						
DB			2	2	2	2		

Phase delay data

Delay No.	Losing stage	Gaining stage	Delay phase	Delay period
1	3	1	F	5

Detector data 1

Det. name	Det. type	Dummy	Vis. unit no.	Active state	Count det.	Self reset	Detector set			Latched phase demand(s)	Unlatched phase demand(s)	Green extension(s)		Varimax phases
							Gap period	Gap count	Self confirm			Phase	Taper %	
TO1	NM	No		SC	No	No	0.5	15	No				100	
TO2	NM	No		SC	No	No	0.5	15	No				100	
LSL1	NM	No		SC	No	No	0.5	15	No	DB		DB(1.6)	100	
AQ2	NM	No		SC	No	No	0.5	15	No				100	
AIN3	NM	No		SC	No	No	0.5	15	No				100	
AIN4	NM	No		SC	No	No	0.5	15	No				100	
AX5	NM	No		SC	No	No	0.5	15	No	A		A(4.0)	100	
AX6	NM	No		SC	No	No	0.5	15	No	A		A(4.0)	100	
AX7	NM	No		SC	No	No	0.5	15	No	A		A(4.0)	100	
ASL8A	NM	No		SC	No	No	0.5	15	No	A		A(0.6)	100	
ASL8B	NM	No		SC	No	No	0.5	15	No	A		A(0.6)	100	
ASL8C	NM	No		SC	No	No	0.5	15	No	A		A(0.6)	100	
BIN10	NM	No		SC	No	No	0.5	15	No				100	
BIN11	NM	No		SC	No	No	0.5	15	No				100	
BIN12	NM	No		SC	No	No	0.5	15	No				100	
BX13	NM	No		SC	No	No	0.5	15	No	B		B(4.0)	100	
BX14	NM	No		SC	No	No	0.5	15	No	B		B(4.0)	100	
BX15	NM	No		SC	No	No	0.5	15	No	B		B(4.0)	100	
BX16	NM	No		SC	No	No	0.5	15	No	B		B(4.0)	100	
CIN17	NM	No		SC	No	No	0.5	15	No				100	
CIN18	NM	No		SC	No	No	0.5	15	No				100	
CIN19	NM	No		SC	No	No	0.5	15	No				100	
CX20	NM	No		SC	No	No	0.5	15	No	C		C(3.5)	100	
CX21	NM	No		SC	No	No	0.5	15	No	C		C(3.5)	100	
CX22	NM	No		SC	No	No	0.5	15	No	C		C(3.5)	100	
CX23	NM	No		SC	No	No	0.5	15	No	C		C(3.5)	100	
CSL24A	NM	No		SC	No	No	0.5	15	No	C		C(0.6)	100	
CSL24B	NM	No		SC	No	No	0.5	15	No	C		C(0.6)	100	
CSL24C	NM	No		SC	No	No	0.5	15	No	C		C(0.6)	100	
CSL24D	NM	No		SC	No	No	0.5	15	No	C		C(0.6)	100	
DIN26	NM	No		SC	No	No	0.5	15	No				100	
DIN27	NM	No		SC	No	No	0.5	15	No				100	
DX28	NM	No		SC	No	No	0.5	15	No	D		D(3.5)	100	
DX29	NM	No		SC	No	No	0.5	15	No	D		D(3.5)	100	
DX30	NM	No		SC	No	No	0.5	15	No	D		D(3.5)	100	
DX31	NM	No		SC	No	No	0.5	15	No	D		D(3.5)	100	
SISPWR	NM	No		SC	No	No	0.5	15	No				100	

Detector data 1

Det. name	Det. type	Dummy	Vis. unit no.	Active state	Count det.	Self reset	Detector set			Latched phase demand(s)	Unlatched phase demand(s)	Green extension(s)		Varimax phases
							Gap period	Gap count	Self confirm			Phase	Taper %	
SISFLT	NM	No		SC	No	No	0.5	15	No				100	
W10MIN	NM	No		SC	No	No	0.5	15	No				100	
WRST	NM	No		SC	No	No	0.5	15	No				100	
MOVWST	NM	No		SC	No	No	0.5	15	No				100	
EIN32	NM	No		SC	No	No	0.5	15	No				100	
EX33	NM	No		SC	No	No	0.5	15	No	E		E(4.0)	100	
EX34	NM	No		SC	No	No	0.5	15	No	E		E(4.0)	100	
ESL35	NM	No		SC	No	No	0.5	15	No	E		E(0.6)	100	
ESL36	NM	No		SC	No	No	0.5	15	No	E		E(0.6)	100	
FIN37	NM	No		SC	No	No	0.5	15	No				100	
FIN38	NM	No		SC	No	No	0.5	15	No				100	
FIN39	NM	No		SC	No	No	0.5	15	No				100	
FX40	NM	No		SC	No	No	0.5	15	No	F		F(3.5)	100	
FX41	NM	No		SC	No	No	0.5	15	No	F		F(3.5)	100	
FX42	NM	No		SC	No	No	0.5	15	No	F		F(3.5)	100	
FX43	NM	No		SC	No	No	0.5	15	No	F		F(3.5)	100	
CINHC	NM	Yes		SC	No	No	0.5	15	No				100	
AQHC	NM	Yes		SC	No	No	0.5	15	No				100	
DINHC	NM	Yes		SC	No	No	0.5	15	No				100	
BINHC	NM	Yes		SC	No	No	0.5	15	No				100	
FINHC	NM	Yes		SC	No	No	0.5	15	No				100	

Detector data 2

	DFM Timings								DFM foce states		Call/cancel timings								Associated to ped.		
	DFA				DFI						DCL				DCN						
Det. name	Set 1	Set 2	Set 3	Set 4	Set 1	Set 2	Set 3	Set 4	Active	Inactive	Set 1	Set 2	Set 3	Set 4	Set 1	Set 2	Set 3	Set 4	Phase	Extn.	Push Buttons
TO1									N	N									-	-	-
TO2	5M	5M	5M	5M					N	N									-	-	-
LSL1	5M	5M	5M	5M					I	N									-	-	-
AQ2	5M	5M	5M	5M					I	N	15.0	15.0	15.0	15.0					-	-	-
AIN3	30M	30M	30M	30M	18H	18H	18H	18H	N	N									-	-	-
AIN4	30M	30M	30M	30M	18H	18H	18H	18H	N	N									-	-	-
AX5	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
AX6	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
AX7	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
ASL8A	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
ASL8B	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
ASL8C	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
BIN10	5M	5M	5M	5M					I	N	15.0	15.0	15.0	15.0					-	-	-
BIN11	5M	5M	5M	5M					I	N	15.0	15.0	15.0	15.0					-	-	-
BIN12	5M	5M	5M	5M					I	N	15.0	15.0	15.0	15.0					-	-	-
BX13	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
BX14	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
BX15	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
BX16	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
CIN17	30M	30M	30M	30M	18H	18H	18H	18H	N	N	15.0	15.0	15.0	15.0					-	-	-
CIN18	30M	30M	30M	30M	18H	18H	18H	18H	N	N	15.0	15.0	15.0	15.0					-	-	-
CIN19	30M	30M	30M	30M	18H	18H	18H	18H	N	N	15.0	15.0	15.0	15.0					-	-	-
CX20	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
CX21	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
CX22	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
CX23	30M	30M	30M	30M	18H	18H	18H	18H	N	N									-	-	-
CSL24A	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
CSL24B	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
CSL24C	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
CSL24D	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
DIN26	5M	5M	5M	5M					I	N	15.0	15.0	15.0	15.0					-	-	-
DIN27	5M	5M	5M	5M					I	N	15.0	15.0	15.0	15.0					-	-	-
DX28	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
DX29	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
DX30	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
DX31	30M	30M	30M	30M	18H	18H	18H	18H	A	A									-	-	-
SISPWR									N	N	0	0	0	0	0	0	0	0	-	-	-

Detector data 2

	DFM Timings								DFM foce states		Call/cancel timings								Associated to ped.		
	DFA				DFI						DCL				DCN						
Det. name	Set 1	Set 2	Set 3	Set 4	Set 1	Set 2	Set 3	Set 4	Active	Inactive	Set 1	Set 2	Set 3	Set 4	Set 1	Set 2	Set 3	Set 4	Phase	Extn.	Push Buttons
SISFLT									N	N	0	0	0	0	0	0	0	0	-	-	-
W10MIN									N	N									-	-	-
WRST									N	N									-	-	-
MOVWST									A	A									-	-	-
EIN32	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
EX33	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
EX34	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
ESL35	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
ESL36	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
FIN37	5M	5M	5M	5M					I	N	15	15	15	15	0	0	0	0	-	-	-
FIN38	5M	5M	5M	5M					I	N	15	15	15	15	0	0	0	0	-	-	-
FIN39	5M	5M	5M	5M					I	N	15	15	15	15	0	0	0	0	-	-	-
FX40	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
FX41	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
FX42	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
FX43	30M	30M	30M	30M	18H	18H	18H	18H	A	A	0	0	0	0	0	0	0	0	-	-	-
CINHC									N	N	0	0	0	0	0	0	0	0	-	-	-
AQHC									N	N									-	-	-
DINHC									N	N									-	-	-
BINHC									N	N									-	-	-
FINHC									N	N	0	0	0	0	0	0	0	0	-	-	-

Timetable entry data

No.	Day type	Time	Event list	Priorities
1	WKD	07:00:00	11	1
2	WKD	09:30:00	12	1
3	WKD	16:00:00	13	1
4	WKD	18:30:00	14	1
5	SAT	09:00:00	12	1
6	SAT	17:00:00	14	1
7	SUN	10:00:00	12	1
8	SUN	19:00:00	14	1
9	XSU	07:00:00	1	1
10	XSU	09:30:00	3	1
11	XSU	15:30:00	2	1
12	XSU	18:30:00	3	1

Timetable event list data

List no.	Event Action 1		Event Action 2		Event Action 3		Event Action 4		Event Action 5		Event Action 6		Event Action 7		Event Action 8	
	Type	Params	Type	Params	Type	Params	Type	Params	Type	Params	Type	Params	Type	Params	Type	Params
1	TCF	1														
2	TCF	2														
3	TCF	3														
4	TCF	4														
5	TCF	5														
6	TCF	6														
7	TCF	7														
8	TCF	8														
9	TCF	9														
10	TCF	OFF														
11	TTS	1														
12	TTS	2														
13	TTS	3														
14	TTS	4														
15	TTS	5														
16	TTS	6														
17	TTS	7														
18	TTS	8														

Timetable priorities data

Priority level 1. All year round					
Start			End		
Month	Day	Hour	Month	Day	Hour
Jan	1	0	Dec	31	24

Special conditioning timer data

Timer no.	Timer name	Duration	Fixed	Comment
1	CR1TOG	2.0	No	CRB1 TOGGLE TIME
2	CR1DLY	180.0	No	CRB1 TOGGLE DELAY TIME
3	CR1DUR	600.0	No	CRB1 TOGGLE DURATION TIME
4	CR2TOG	2.0	No	CRB2 TOGGLE TIME
5	CR2DLY	180.0	No	CRB2 TOGGLE DELAY TIME
6	CR2DUR	600.0	No	CRB2 TOGGLE DURATION TIME
7	ERST	2.0	No	EAST SIDE RESET PULSE
8	ADLYC	5.0	No	DELAY AFTER PHASE A HAS ROW BEFORE CALL PULSE TO STREAM 2
9	APULC	2.0	No	PULSE TIMER FOLLWOING ADLYC TIMER
10	ADLYH	7.0	No	DELAY AFTER PHASE A HAS ROW BEFORE HOLD TO STREAM 2
11	AHLDH	5.0	No	MINIMUM HOLD TIMER FOLLOWING ADLYH TIMER
12	ATRMH	8.0	No	DELAY FOLLOWING TERMINATION OF HOLD
13	AOVRH	60.0	No	HOLD OUTPUT OVERIDE
14	BDLYC	5.0	No	DELAY AFTER PHASE B HAS ROW BEFORE CALL PULSE TO STREAM 2
15	BPULC	2.0	No	PULSE TIMER FOLLOWING BDLYC TIMER
16	BDLYH	7.0	No	DELAY AFTER PHASE B HAS ROW BEFORE HOLD TO STREAM 2
17	BHLDH	5.0	No	MINIMUM HOLD TIMER FOLLOWING BDLYH TIMER
18	BTRMH	8.0	No	DELAY FOLLOWING TERMINATION OF HOLD
19	BOVRH	60.0	No	HOLD OUTPUT OVERIDE
20	CDLYC	5.0	No	DELAY AFTER PHASE C HAS ROW BEFORE CALL PULSE TO STREAM 1
21	CPULC	2.0	No	PULSE TIMER FOLLOWING CDLYC TIMER
22	CDLYH	7.0	No	DELAY AFTER PHASE C HAS ROW BEFORE HOLD TO STREAM 1
23	CHLDH	5.0	No	MINIMUM HOLD TIMER FOLLOWING CDLYH TIMER
24	CTRMH	8.0	No	DELAY FOLLOWING TERMINATION OF HOLD
25	COVRH	60.0	No	HOLD OUTPUT OVERIDE
26	DDLYC	5.0	No	DELAY AFTER PHASE D HAS ROW BEFORE CALL PULSE TO STREAM 1
27	DPULC	2.0	No	PULSE TIMER FOLLOWING DDLYC TIMER
28	DDLYH	7.0	No	DELAY AFTER PHASE D HAS ROW BEFORE HOLD TO STREAM 1
29	DHLDH	5.0	No	MINIMUM HOLD TIMER FOLLOWING DDLYH TIMER
30	DTRMH	8.0	No	DELAY FOLLOWING TERMINATION OF HOLD
31	DOVRH	60.0	No	HOLD OUTPUT OVERIDE
32	EFDLYC	5.0	No	DELAY AFTER PHASE F HAS ROW BEFORE CALL PULSE TO EAST CONTR.
33	EFPULC	2.0	No	PULSE TIMER FOLLOWING EFDLYC TIMER
34	EFDLYH	7.0	No	DELAY AFTER PHASE F HAS ROW BEFORE HOLD TO EAST CONTR.
35	EFHLDH	5.0	No	MINIMUM HOLD TIMER FOLLOWING EFDLYH TIMER
36	EFTRMH	12.0	No	DELAY FOLLOWING TERMINATION OF HOLD
37	EFOVRH	60.0	No	HOLD OUTPUT OVERIDE
38	EEDLYC	5.0	No	DELAY AFTER PHASE E HAS ROW BEFORE CALL PULSE TOWEST CONTR.
39	EEPULC	2.0	No	PULSE TIMER FOLLOWING EEDLYC TIMER

Special conditioning timer data

Timer no.	Timer name	Duration	Fixed	Comment
40	EEDLYH	7.0	No	DELAY AFTER PHASE E HAS ROW BEFORE HOLD TO WEST CONTR.
41	EEHLDH	5.0	No	MINIMUM HOLD TIMER FOLLOWING EDDLYH TIMER
42	EETRMH	8.0	No	DELAY FOLLOWING TERMINATION OF HOLD
43	EEOVRH	60.0	No	HOLD OUTPUT OVERIDE
44	SPARE	0.0	No	NOT USED
45	SW3PUL	1.0	No	AUX 3 SWITCH PULSE TIMER - USED BY CONDITIONING
46	F2OVR	280.0	No	UTC F2 OVERIDE TIMER
47	F5OVR	280.0	No	UTC F5 OVERIDE TIMER
48	F2PUL	0.5	No	UTC F2 INHIBIT PULSE TIMER
49	F5PUL	0.5	No	UTC F2 INHIBIT PULSE TIMER
50	AHCPUL	2.0	No	AIN MOVA HURRY CALL PULSE TIMER
51	BHCPUL	2.0	No	BIN MOVA HURRY CALL PULSE TIMER
52	CHCPUL	2.0	No	CIN MOVA HURRY CALL PULSE TIMER
53	DHCPUL	2.0	No	DIN MOVA HURRY CALL PULSE TIMER
54	FHCPUL	2.0	No	FIN MOVA HURRY CALL PULSE TIMER
55	AHCINHB	180	No	AIN HURRYCALL INHIBIT TIMER
56	BHCINHB	180	No	BIN HURRYCALL INHIBIT TIMER
57	CHCINHB	180	No	CIN HURRYCALL INHIBIT TIMER
58	DHCINHB	180	No	DIN HURRYCALL INHIBIT TIMER
59	FHCINHB	180	No	FIN HURRYCALL INHIBIT TIMER

Special conditioning statements

Statement 1	
Comments	PHASE C ACTIVE SETS OUTPUT GC

If PHASE-C
Then OUTPUTA-GC
Else OUTPUTN-GC

Statement 2	
Comments	PHASE D ACTIVE SETS OUTPUT GD

If PHASE-D
Then OUTPUTA-GD
Else OUTPUTN-GD

Statement 3	
Comments	PHASE E ACTIVE SETS OUTPUT GE

If PHASE-E
Then OUTPUTA-GE
Else OUTPUTN-GE

Statement 4	
Comments	PHASE F ACTIVE SETS OUTPUT GF

If PHASE-F
Then OUTPUTA-GF
Else OUTPUTN-GF

Statement 5	
Comments	UTC mode inactive starts CR1TOG and CR1DLY timers, else stops CRB1DLY timer.

If UTCMODE-1 **Not**
Then SCTSTART-CR1TOG SCTSTART-CR1DLY
Else SCTSTOP-CR1DLY

Statement 6	
Comments	STATEMENT 5 TRUE AND NOT IN FT, MANUAL MODES, CLF (SW5), VA(SW4) OR SW3PUL TIMER ACTIVE OR DET ERST ACTIVE START CR1DUR TIMER

If MFTMODE-1 **Or** MANMODE-1 **Or** MANIP-SW4 **Or** MANIP-SW5 **Not and** STMNT-5
And not SCTRUNNG-SW3PUL **And not** FDET-WRST
Then SCTSTART-CR1DUR
Else SCTSTOP-CR1DUR

Special conditioning statements

Statement 7	
Comments	CR1DLY timer expired and UTC mode still inactive starts CR1TOG and CR1DLY timers.

If	SCTEXPRD-CR1DLY	**And not**	UTCMODE-1
Then	SCTSTART-CR1TOG	SCTSTART-CR1DLY	

Statement 8	
Comments	MOVA INHIBIT/CLF INHIBIT SWITCH: VA BUTTON (SW4) SEE LATER STATEMENT FOR MOVA INHIBIT

If	MANIP-SW4	
Then	CLFINHIB-1	CLFINHIB-2
Else	CLFALLOW-1	CLFALLOW-2

Statement 9	
Comments	CRB1 OUTPUT

If	MSDMODE-1	**Or**	SHDMODE-1	**Or**	MFTMODE-1	**Or**	MANMODE-1	**Or**	STUMODE-1
Or	SCTRUNNG-CR1TOG	**Or**	MANIP-SW4	**Or**	SCFLAG-10	**Or**	FDET-W10MIN	**Or**	MANIP-SW5
Then	OUTPUTA-CRB1								
Else	OUTPUTN-CRB1								

Statement 10	
Comments	TIMER CR1DUR OR CR2DUR EXPIRED SETS FLAG 10 ACTIVE

If	SCTEXPRD-CR1DUR	**Or**	SCTEXPRD-CR2DUR
Then	SCFLGON-10		

Statement 11	
Comments	MANUAL PANEL SW3 ACTIVE OR DET WRST ACTIVE CLEARS FLAG

If	MANIP-SW3	**Or**	FDET-WRST
Then	SCFLGOFF-10		

Statement 12	
Comments	UTC ACTIVE STREAM 2 STARTS CR2TOG AND CR2DLY TIMERS

If	UTCMODE-2	**Not**	
Then	SCTSTART-CR2TOG	SCTSTART-CR2DLY	
Else	SCTSTOP-CR2DLY		

Special conditioning statements

Statement 13									
Comments	STATEMENT 5 TRUE AND NOT IN FT OR MANUAL MODES OR SW3PUL TIMER ACTIVE OR DET ERST ACTIVE START CR2DUR TIMER								
If	MANMODE-2	**Or**	MFTMODE-2	**Or**	MANIP-SW4	**Or**	MANIP-SW5	**Not and**	STMNT-12
And not	SCTRUNNG-SW3PUL	**And not**	FDET-WRST						
Then	SCTSTART-CR2DUR								
Else	SCTSTOP-CR2DUR								

Statement 14			
Comments	CR2DLY TIMER EXPIRED AND NOT IN UTCMODE STREAM 2 STARTS CR2TOG AND CR2DLY TIMERS		
If	SCTEXPRD-CR2DLY	**And not**	UTCMODE-2
Then	SCTSTART-CR2TOG	SCTSTART-CR2DLY	

Statement 15									
Comments	CRB2 OUTPUT								
If	MANMODE-2	**Or**	MFTMODE-2	**Or**	SHDMODE-2	**Or**	MSDMODE-2	**Or**	STUMODE-2
Or	SCTRUNNG-CR2TOG	**Or**	MANIP-SW4	**Or**	SCFLAG-10	**Or**	FDET-W10MIN	**Or**	MANIP-SW5
Then	OUTPUTA-CRB2								
Else	OUTPUTN-CRB2								

Statement 16			
Comments	FLAG 10 ACTIVE LIGHTS AUX3 LED		
If	SCFLAG-10		
Then	MPLEDON-AUX3	OUTPUTA-E10MIN	

Statement 17			
Comments	DET W10MIN ACTIVE AND NOT FLAG 10 SET FLASES AUX3 LED.		
If	FDET-W10MIN	**And not**	SCFLAG-10
Then	MPLEDFLS-AUX3		

Statement 18				
Comments	STATEMENT 16 OR 17 NOT TRUE CLEARS AUX3 LED			
If	STMNT-16	**Or**	STMNT-17	**Not**
Then	MPLEDOFF-AUX3	OUTPUTN-E10MIN		

Statement 19			
Comments	UTC STREAM 1 AND DET MOVEST NOT ACTIVE FLASHES AUX 1 LED		
If	UTCMODE-1	**And not**	FDET-MOVWST
Then	MPLEDFLS-AUX1		

Special conditioning statements

Statement 20	
Comments	UTC STREAM 1 AND DET MOVEST ACTIVE LIGHTS AUX 1 LED

If UTCMODE-1 **And** FDET-MOVWST
Then MPLEDON-AUX1

Statement 21	
Comments	STATEMENT 19 OR 20 NOT TRUE CLEARS AUX 1 LED

If STMNT-19 **Or** STMNT-20 **Not**
Then MPLEDOFF-AUX1

Statement 22	
Comments	UTC MODE STREAMS 1 AND 2 SETS MOVEST OUTPUT ACTIVE

If UTCMODE-1 **And** UTCMODE-2
Then OUTPUTA-MOVEST
Else OUTPUTN-MOVEST

Statement 23	
Comments	SW3PUL ACTIVE STARTS ERST TIMER

If SCTRUNNG-SW3PUL
Then SCTSTART-ERST

Statement 24	
Comments	ERST TIMER ACTIVE SETS WRST OUTPUT ACTIVE

If SCTRUNNG-ERST
Then OUTPUTA-ERST
Else OUTPUTN-ERST

Statement 25	
Comments	NOT USED

If

Statement 26	
Comments	UTC MODE STREAM 1 SETS MOVA1 OUTPUT

If UTCMODE-1
Then OUTPUTA-MOVA1
Else OUTPUTN-MOVA1

Special conditioning statements

Statement 27	
Comments	UTC MODE STREAM 2 SETS MOVA2 OUTPUT

If UTCMODE-2
Then OUTPUTA-MOVA2
Else OUTPUTN-MOVA2

Statement 28	
Comments	NOT USED

If

Statement 29	
Comments	MOVA STREAM 1 TO BIT

If MANIP-SW4 **Or** MANIP-SW5 **Not and** FDET-TO1
Then UTCN-1
Else UTCI-1

Statement 30	
Comments	MOVA STREAM 2 TO BIT

If MANIP-SW4 **Or** MANIP-SW5 **Not and** FDET-TO2
Then UTCN-2
Else UTCI-2

Statement 31	
Comments	PHASE A ACTIVE STARTS TIMERS ADLYC AND ADLYH

If PHASE-A
Then SCTSTART-ADLYC SCTSTART-ADLYH

Statement 32	
Comments	TIMER ADLYC EXPIRED STARTS APULC TIMER

If SCTEXPRD-ADLYC
Then SCTSTART-APULC

Statement 33	
Comments	APULC TIMER ACTIVE SETS OUTPUT

If SCTRUNNG-APULC
Then OUTPUTA-ST2D44C
Else OUTPUTN-ST2D44C

Special conditioning statements

Statement 34	
Comments	TIMER ADLYH EXPIRED AND PHASE A ACTIVE SETS OUTPUT AND STARTS TIMERS AHLDH AND AOVRH

If SCTEXPRD-ADLYH **And** PHASE-A
Then OUTPUTA-ST2D45H SCTSTART-AHLDH SCTSTART-AOVRH

Statement 35	
Comments	AHLDH TIMER EXPIRED SETS FLAG 1

If SCTEXPRD-AHLDH
Then SCFLGON-1

Statement 36	
Comments	FLAG 1 SET AND NO EXTENSIONS ON PHASE A OR SCBIT 1 SET STARTS ATRMH TIMER

If SCFLAG-1 **And not** PHSEXT-A **And not** SCBITS-1
Then SCTSTART-ATRMH

Statement 37	
Comments	ATRMH TIMER NOT ACTIVE AND NOT PHASE A AND FLAG 1 ACTIVE STARTS ATRMH TIMER

If Not SCTRUNNG-ATRMH **And not** PHASE-A **And** SCFLAG-1
Then SCTSTART-ATRMH

Statement 38	
Comments	ATRMH TIMER ACTIVE OR AOVRH TIMER ACTIVE CLEARS OUTPUT AND CLEARS FLAG 1

If SCTEXPRD-ATRMH **Or** SCTEXPRD-AOVRH
Then OUTPUTN-ST2D45H SCFLGOFF-1

Statement 39	
Comments	PHASE B ACTIVE STARTS TIMERS BDLYC AND BDLYH

If PHASE-B
Then SCTSTART-BDLYC SCTSTART-BDLYH

Statement 40	
Comments	TIMER BDLYC EXPIRED STARTS BPULC TIMER

If SCTEXPRD-BDLYC
Then SCTSTART-BPULC

Special conditioning statements

Statement 41	
Comments	BPULC TIMER ACTIVE SETS OUTPUT

If SCTRUNNG-BPULC
Then OUTPUTA-ST2D46C
Else OUTPUTN-ST2D46C

Statement 42	
Comments	TIMER BDLYH EXPIRED AND PHASE B ACTIVE SETS OUTPUT AND STARTS TIMERS BHLDH AND BOVRH

If SCTEXPRD-BDLYH **And** PHASE-B
Then OUTPUTA-ST2D47H SCTSTART-BHLDH SCTSTART-BOVRH

Statement 43	
Comments	BHLDH TIMER EXPIRED SETS FLAG 1

If SCTEXPRD-BHLDH
Then SCFLGON-2

Statement 44	
Comments	FLAG 2 SET AND NO EXTENSIONS ON PHASE B OR SCBIT 1 SET STARTS BTRMH TIMER

If SCFLAG-2 **And not** PHSEXT-B **And not** SCBITS-2
Then SCTSTART-BTRMH

Statement 45	
Comments	BTRMH TIMER NOT ACTIVE AND NOT PHASE B AND FLAG 2 ACTIVE STARTS BTRMH TIMER

If Not SCTRUNNG-BTRMH **And not** PHASE-B **And** SCFLAG-2
Then SCTSTART-BTRMH

Statement 46	
Comments	BTRMH TIMER ACTIVE OR BOVRH TIMER ACTIVE CLEARS OUTPUT AND CLEARS FLAG 2

If SCTEXPRD-BTRMH **Or** SCTEXPRD-BOVRH
Then OUTPUTN-ST2D47H SCFLGOFF-2

Statement 47	
Comments	PHASE C ACTIVE STARTS TIMERS CDLYC AND CDLYH

If PHASE-C
Then SCTSTART-CDLYC SCTSTART-CDLYH

Special conditioning statements

Statement 48	
Comments	TIMER CDLYC EXPIRED STARTS CPULC TIMER

If SCTEXPRD-CDLYC
Then SCTSTART-CPULC

Statement 49	
Comments	CPULC TIMER ACTIVE SETS OUTPUT

If SCTRUNNG-CPULC
Then OUTPUTA-ST1A48C
Else OUTPUTN-ST1A48C

Statement 50	
Comments	TIMER CDLYH EXPIRED AND PHASE C ACTIVE SETS OUTPUT AND STARTS TIMERS CHLDH AND COVRH

If SCTEXPRD-CDLYH **And** PHASE-C
Then OUTPUTA-ST1A49H SCTSTART-CHLDH SCTSTART-COVRH

Statement 51	
Comments	CHLDH TIMER EXPIRED SETS FLAG 1

If SCTEXPRD-CHLDH
Then SCFLGON-3

Statement 52	
Comments	FLAG 3 SET AND NO EXTENSIONS ON PHASE C OR SCBIT 3 SET STARTS CTRMH TIMER

If SCFLAG-3 **And not** PHSEXT-C **And not** SCBITS-3
Then SCTSTART-CTRMH

Statement 53	
Comments	CTRMH TIMER NOT ACTIVE AND NOT PHASE C AND FLAG 3 ACTIVE STARTS CTRMH TIMER

If Not SCTRUNNG-CTRMH **And not** PHASE-C **And** SCFLAG-3
Then SCTSTART-CTRMH

Statement 54	
Comments	CTRMH TIMER ACTIVE OR COVRH TIMER ACTIVE CLEARS OUTPUT AND CLEARS FLAG 3

If SCTEXPRD-CTRMH **Or** SCTEXPRD-COVRH
Then OUTPUTN-ST1A49H SCFLGOFF-3

Special conditioning statements

Statement 55	
Comments	PHASE D ACTIVE STARTS TIMERS DDLYC AND DDLYH

If PHASE-D
Then SCTSTART-DDLYC SCTSTART-DDLYH

Statement 56	
Comments	TIMER DDLYC EXPIRED STARTS DPULC TIMER

If SCTEXPRD-DDLYC
Then SCTSTART-DPULC

Statement 57	
Comments	DPULC TIMER ACTIVE SETS OUTPUT

If SCTRUNNG-DPULC
Then OUTPUTA-ST1B50C
Else OUTPUTN-ST1B50C

Statement 58	
Comments	TIMER DDLYH EXPIRED AND PHASE D ACTIVE SETS OUTPUT AND STARTS TIMERS DHLDH AND DOVRH

If SCTEXPRD-DDLYH **And** PHASE-D
Then OUTPUTA-ST1B51H SCTSTART-DHLDH SCTSTART-DOVRH

Statement 59	
Comments	DHLDH TIMER EXPIRED SETS FLAG 1

If SCTEXPRD-DHLDH
Then SCFLGON-4

Statement 60	
Comments	FLAG 4 SET AND NO EXTENSIONS ON PHASE D OR SCBIT D SET STARTS DTRMH TIMER

If SCFLAG-4 **And not** PHSEXT-D **And not** SCBITS-4
Then SCTSTART-DTRMH

Statement 61	
Comments	DTRMH TIMER NOT ACTIVE AND NOT PHASE D AND FLAG 4 ACTIVE STARTS DTRMH TIMER

If Not SCTRUNNG-DTRMH **And not** PHASE-D **And** SCFLAG-4
Then SCTSTART-DTRMH

Special conditioning statements

Statement 62	
Comments	DTRMH TIMER ACTIVE OR DOVRH TIMER ACTIVE CLEARS OUTPUT AND CLEARS FLAG 4

If SCTEXPRD-DTRMH **Or** SCTEXPRD-DOVRH
Then OUTPUTN-ST1B51H SCFLGOFF-4

Statement 63	
Comments	PHASE F GREEN STARTS TIMERS EFDLYC AND EFDLYH

If PHASE-F
Then SCTSTART-EFDLYC SCTSTART-EFDLYH

Statement 64	
Comments	TIMER EFDLYC EXPIRED STARTS EFPULC TIMER

If SCTEXPRD-EFDLYC
Then SCTSTART-EFPULC

Statement 65	
Comments	TIMER EFPULC RUNNING SETS OUTPUT ESBCALF

If SCTRUNNG-EFPULC
Then OUTPUTA-ESBCALF
Else OUTPUTN-ESBCALF

Statement 66	
Comments	TIMER EFDLYH EXPIRED AND PHASE C GREEN SETS OUTPUT ESCHLD

If SCTEXPRD-EFDLYH **And** PHASE-F
Then OUTPUTA-ESBHLDF SCTSTART-EFHLDH SCTSTART-EFOVRH

Statement 67	
Comments	EFHLDH TIMER EXPIRED SETS FLAG 5

If SCTEXPRD-EFHLDH
Then SCFLGON-5

Statement 68	
Comments	FLAG 5 SET, NO EXTENSIONS PHASE F AND SCBITS-5 NOT SET

If SCFLAG-5 **And not** PHSEXT-F **And not** SCBITS-5
Then SCTSTART-EFTRMH

Special conditioning statements

Statement 69	
Comments	EFTRMH TIMER RUNNING AND NOT PHASE F GREEN AND FLAG 5 SET

If Not SCTRUNNG-EFTRMH **And not** PHASE-F **And** SCFLAG-5
Then SCTSTART-EFTRMH

Statement 70	
Comments	TIMER EFTRMH OR EFOVRH EXPIRED CLEAR ESBHLDF OUTPUT AND FLAG 5

If SCTEXPRD-EFTRMH **Or** SCTEXPRD-EFOVRH
Then OUTPUTN-ESBHLDF SCFLGOFF-5

Statement 71	
Comments	PHASE E GREEN STARTS EEDLYC TIMER AND EEDLYH TIMER

If PHASE-E
Then SCTSTART-EEDLYC SCTSTART-EEDLYH

Statement 72	
Comments	EEDLYC TIMER EXPIRED STARTS EEPULC TIMER

If SCTEXPRD-EEDLYC
Then SCTSTART-EEPULC

Statement 73	
Comments	EEPULC TIMER RUNNING SETS ESBCALE OUTPUT

If SCTRUNNG-EEPULC
Then OUTPUTA-ESBCALE
Else OUTPUTN-ESBCALE

Statement 74	
Comments	EEDLYH TIMER EXPIRED AND PHASE E ACTIVE SETS ESDHLD OUTPUT, STARTS TIMER EEHLDH AND TIMER EEOVRH

If SCTEXPRD-EEDLYH **And** PHASE-E
Then OUTPUTA-ESBHLDE SCTSTART-EEHLDH SCTSTART-EEOVRH

Statement 75	
Comments	EEHLDH TIMER EXPIRED SETS FLAG 6

If SCTEXPRD-EEHLDH
Then SCFLGON-6

Special conditioning statements

Statement 76									
Comments	FLAG 6 SET NO PHASE EXTENSIONS PHASE E AND SCBIT 6 NOT SET STARTS EETRMH TIMER								
If	SCFLAG-6	**And not**	PHSEXT-E	**And not**	SCBITS-6				
Then	SCTSTART-EETRMH								

Statement 77									
Comments	EETRMH TIMER NOT RUNNING AND NOT PHASE E GREEN AND FLAG 6 ACTIVE STARTS TIMER EETRMH								
If Not	SCTRUNNG-EETRMH	**And not**	PHASE-E	**And**	SCFLAG-6				
Then	SCTSTART-EETRMH								

Statement 78									
Comments	EDTRMH TIMER EXPIRED OR EDOVRH TIMER EXPIRED CLEARS ESDHLD OUTPUT AND CLEARS FLAG 6								
If	SCTEXPRD-EETRMH	**Or**	SCTEXPRD-EEOVRH						
Then	OUTPUTN-ESBHLDE	SCFLGOFF-6							

Statement 79									
Comments	DETS BIN10, BIN11 OR BIN12 ACTIVE, TIMER HCINHB NOT RUNNING AND SCBIT 8 NOT SET STARTS BHCPUL TIMER								
If	FDET-BIN10	**Or**	FDET-BIN11	**Or**	FDET-BIN12	**And not**	SCTRUNNG-BHCINHB	**And not**	SCBITS-8
Then	SCTSTART-BHCPUL								

Statement 80									
Comments	DETS DIN23 OR DIN24 ACTIVE, TIMER HCINHB NOT RUNNING AND SCBITS-10 NOT SET STARTS DHCPUL TIMER								
If	FDET-DIN26	**Or**	FDET-DIN27	**And not**	SCTRUNNG-DHCINHB	**And not**	SCBITS-10		
Then	SCTSTART-DHCPUL								

Statement 81									
Comments	DETS AQ2, TIMER HCINHB NOT RUNNING AND SCBIT 7 NOT SET STARTS AHCPUL TIMER								
If	FDET-AQ2	**And not**	SCTRUNNG-AHCINHB	**And not**	SCBITS-7				
Then	SCTSTART-AHCPUL								

Statement 82									
Comments	NOT USED								
If									

Special conditioning statements

Statement 83	
Comments	TIMER BHCPUL RUNNING SETS OUTPUT BHCAL AND DETECTOR BINHC ACTIVE

If	SCTRUNNG-BHCPUL		
Then	OUTPUTA-BHCAL57	DETA-BINHC	SCTSTART-BHCINHB
Else	OUTPUTN-BHCAL57	DETN-BINHC	

Statement 84	
Comments	TIMER DHCPUL RUNNING SETS OUTPUT DHCAL AND SETS DETECTOR DINHC ACTIVE

If	SCTRUNNG-DHCPUL		
Then	OUTPUTA-DHCAL59	DETA-DINHC	SCTSTART-DHCINHB
Else	OUTPUTN-DHCAL59	DETN-DINHC	

Statement 85	
Comments	TIMER AHCPUL RUNNING SETS OUTPUT AHCAL AND DETECTOR AQHC ACTIVE

If	SCTRUNNG-AHCPUL		
Then	OUTPUTA-AHCAL56	DETA-AQHC	SCTSTART-AHCINHB
Else	OUTPUTN-AHCAL56	DETN-AQHC	

Statement 86	
Comments	NOT USED

If

Statement 87	
Comments	DETS CIN17, CIN18 OR BIN19 ACTIVE, TIMER HCINHB NOT RUNNING AND SCBIT 9 NOT SET STARTS CHCPUL TIMER

If	FDET-CIN17	**Or**	FDET-CIN18	**Or**	FDET-CIN19	**And not**	SCTRUNNG-CHCINHB	**And not**	SCBITS-9
Then	SCTSTART-CHCPUL								

Statement 88	
Comments	DETS FIN37, BIN38 OR BIN39 ACTIVE, TIMER HCINHB NOT RUNNING AND SCBIT 11 NOT SET STARTS FHCPUL TIMER

If	FDET-FIN37	**Or**	FDET-FIN38	**Or**	FDET-FIN39	**And not**	SCTRUNNG-FHCINHB	**And not**	SCBITS-11
Then	SCTSTART-FHCPUL								

Statement 89	
Comments	TIMER CHCPUL RUNNING SETS OUTPUT CHCAL AND DETECTOR CINHC ACTIVE

If	SCTRUNNG-CHCPUL		
Then	OUTPUTA-CHCAL58	DETA-CINHC	SCTSTART-CHCINHB
Else	OUTPUTN-CHCAL58	DETN-CINHC	

Special conditioning statements

Statement 90							
Comments	TIMER FHCPUL RUNNING SETS OUTPUT FHCAL AND DETECTOR FINHC ACTIVE						
If	SCTRUNNG-FHCPUL						
Then	OUTPUTA-FHCAL60	DETA-FINHC	SCTSTART-FHCINHB				
Else	OUTPUTN-FHCAL60	DETN-FINHC					

Statement 91	
Comments	NOT USED
If	

Statement 92	
Comments	NOT USED
If	

Statement 93	
Comments	NOT USED
If	

Statement 94	
Comments	NOT USED
If	

Statement 95							
Comments	SHUTDOWN MODE SETS LE OUTPUT						
If	SHDMODE-1	**Or**	SHDMODE-2	**Or**	MSDMODE-1	**Or**	MSDMODE-2
Then	OUTPUTA-LE						
Else	OUTPUTN-LE						

Statement 96	
Comments	AUX 3 SWITCH PULSE CONDITIONING: IF SW3 ACTIVE START TIMER SW3PUL
If	MANIP-SW3
Then	SCTSTART-SW3PUL

Statement 97		
Comments	AUX 3 SWITCH PULSE CONDITIONING: IF SW3 NOT ACTIVE START TIMER SW3PUL	
If	MANIP-SW3	**Not**
Then	SCTSTART-SW3PUL	

Special conditioning statements

Statement 98	
Comments	PREVENT FORCE BITS OVERIDES: UTC-F2 ACTIVE START TIMER F2OVR.

If UTCBIT-F2
Then SCTSTART-F2OVR
Else SCTSTOP-F2OVR

Statement 99	
Comments	PREVENT FORCE BITS OVERIDES: UTC-F5 ACTIVE START TIMER F5OVR.

If UTCBIT-F5
Then SCTSTART-F5OVR
Else SCTSTOP-F5OVR

Statement 100	
Comments	PREVENT FORCE BITS OVERIDES: F2OVR TIMER EXPIRED START F2PUL

If SCTEXPRD-F2OVR **And** UTCBIT-F2
Then SCTSTART-F2PUL

Statement 101	
Comments	PREVENT FORCE BITS OVERIDES: F5OVR TIMER EXPIRED START F5PUL

If SCTEXPRD-F5OVR **And** UTCBIT-F5
Then SCTSTART-F5PUL

Statement 102	
Comments	PREVENT FORCE BITS OVERIDES:F2PUL TIMER ACTIVE SET UTC-F2 INACTIVE AND UTC-F3 ACTIVE

If SCTRUNNG-F2PUL
Then UTCBITA-F3 UTCBITI-F2
Else UTCBITN-F3 UTCBITN-F2

Statement 103	
Comments	PREVENT FORCE BITS OVERIDES:F2PUL TIMER ACTIVE SET UTC-F5 INACTIVE AND UTC-F8 ACTIVE

If SCTRUNNG-F5PUL
Then UTCBITA-F8 UTCBITI-F5
Else UTCBITN-F8 UTCBITN-F5

Special conditioning statements

Statement 104							
Comments	DETECTOR ASL8 A,B OR C ACTIVE SETS ASL8 OUTPUT						
If	RDET-ASL8A	**Or**	RDET-ASL8B	**Or**	RDET-ASL8C		
Then	OUTPUTA-ASL8						
Else	OUTPUTN-ASL8						

Statement 105							
Comments	DETECTOR CSL24 A,B,C OR D ACTIVE SETS CSL24 OUTPUT						
If	RDET-CSL24A	**Or**	RDET-CSL24B	**Or**	RDET-CSL24C	**Or**	RDET-CSL24D
Then	OUTPUTA-CSL24						
Else	OUTPUTN-CSL24						

Statement 106	
Comments	SIS POWER
If	FDET-SISPWR
Then	OUTPUTA-SISPWR
Else	OUTPUTN-SISPWR

Statement 107	
Comments	SIS FAULT
If	FDET-SISFLT
Then	OUTPUTA-SISFLT
Else	OUTPUTN-SISFLT

Statement 108			
Comments	UTC STREAM 2 AND DET MOVEST NOT ACTIVE FLASHES AUX 2 LED		
If	UTCMODE-2	**And not**	FDET-MOVWST
Then	MPLEDFLS-AUX2		

Statement 109			
Comments	UTC STREAM 2 AND DET MOVEST ACTIVE FLASHES AUX 2 LED		
If	UTCMODE-2	**And**	FDET-MOVWST
Then	MPLEDON-AUX2		

Statement 110				
Comments	STATEMENT 108 OR 109 NOT TRUE CLEARS AUX 2 LED			
If	STMNT-108	**Or**	STMNT-109	**Not**
Then	MPLEDOFF-AUX2			

Red lamp monitoring data 1

Auto clear red lamp warnings	Yes	Red lamp monitor type	Other

Red lamp monitoring data 2

Stream based data					
Stream no.	Shutdown required	Red flt. extension	Single red lamp fault input name	Multiple red lamp fault input name	Inhibit stages
1	Yes	0			
2	Yes	0			

Red lamp monitoring data 3

Second red failure phase data	
Phase Id	Inhibited phases
A	
B	
C	
D	
E	
F	
DA	
DB	

ILM data

Fault indications		Mains unstable indications output(s)	
Auto clear red lamp warnings	Yes		
Flash DFM for lamp conflict	No		
Flash DFM for lamp failure	No		
Unstable toroid indication (as lamp failure)	No		

Phase	Lamp Types			Single fault	Multi faults	Failure indication output	Conflict indication output(s)
	Green	Amber	Red				
A	ELV LED (3R)	ELV LED (3R)	ELV LED (3R)	1	3	LF	
B	ELV LED (3R)	ELV LED (3R)	ELV LED (3R)	1	3	LF	
C	ELV LED (3R)	ELV LED (3R)	ELV LED (3R)	1	3	LF	
D	ELV LED (3R)	ELV LED (3R)	ELV LED (3R)	1	3	LF	
E	ELV LED (3R)	ELV LED (3R)	ELV LED (3R)	1	3	LF	
F	ELV LED (3R)	ELV LED (3R)	ELV LED (3R)	1	3	LF	

Input data

Input No.	Input name	Source	Comment
0	F03	Virtual	NOT USED
1	F08	Virtual	NOT USED
0	F01	Parallel	MOVA STREAM 1 STAGE 1 FORCE
1	F02	Parallel	MOVA STREAM 1 STAGE 2 FORCE
2	F04	Parallel	MOVA STREAM 2 STAGE 1 FORCE
3	F05	Parallel	MOVA STREAM 2 STAGE 2 FORCE
4	F06	Parallel	MOVA STREAM 2 STAGE 3 FORCE
5	F07	Parallel	MOVA STREAM 2 STAGE 4 FORCE
6	*TO1	Parallel	MOVA TO BIT STREAM 1
7	*TO2	Parallel	MOVA TO BIT STREAM 2
8	*LSL1	Parallel	
9	*AQ2	Parallel	
10	*AIN3	Parallel	
11	*AIN4	Parallel	
12	*AX5	Parallel	
13	*AX6	Parallel	
14	*AX7	Parallel	
15	*ASL8A	Parallel	
16	*ASL8B	Parallel	
17	*ASL8C	Parallel	
18	*BIN10	Parallel	
19	*BIN11	Parallel	
20	*BIN12	Parallel	
21	*BX13	Parallel	
22	*BX14	Parallel	
23	*BX15	Parallel	
24	*BX16	Parallel	
25	*CIN17	Parallel	
26	*CIN18	Parallel	
27	*CIN19	Parallel	
28	*CX20	Parallel	
29	*CX21	Parallel	
30	*CX22	Parallel	
31	*CX23	Parallel	
32	*CSL24A	Parallel	
33	*CSL24B	Parallel	
34	*CSL24C	Parallel	
35	*CSL24D	Parallel	
36	*DIN26	Parallel	

Input data

Input No.	Input name	Source	Comment
37	*DIN27	Parallel	
38	*DX28	Parallel	
39	*DX29	Parallel	
40	*DX30	Parallel	
41	*DX31	Parallel	
42	*SISPWR	Parallel	SIS POWER INPUT
43	*SISFLT	Parallel	SIS FAULT INPUT
44	*W10MIN	Parallel	LINKING FROM WEST CONTROLLER - WEST CONTROLLER CRB TIMED OUT
45	*WRST	Parallel	LINKING FROM WEST CONTROLLER - CRB RESET OPERATED AT WEST CONTROLLER
46	*MOVWST	Parallel	LINKING FROM WEST CONTROLLER - MOVA OPERATING ON BOTH STREAMS AT WEST CONTROLLER
47	TS	Parallel	TIME SYNCH INPUT FROM WEST SIDE CONTROLLER
48	*EIN32	Parallel	NEW
49	*EX33	Parallel	NEW
50	*EX34	Parallel	NEW
51	*ESL35	Parallel	NEW
52	*ESL36	Parallel	NEW
53	*FIN37	Parallel	NEW
54	*FIN38	Parallel	NEW
55	*FIN39	Parallel	NEW
56	*FX40	Parallel	NEW
57	*FX41	Parallel	NEW
58	*FX42	Parallel	NEW
59	*FX43	Parallel	NEW

Output data

Output Number	Destination	Output name	Invert state	Comment
0	Parallel	G1	Yes	MOVA STREAM 1 STAGE 1 CONFIRM
1	Parallel	G2	Yes	MOVA STREAM 1 STAGE 2 CONFIRM
2	Parallel	G4	Yes	MOVA STREAM 2 STAGE 1 CONFIRM
3	Parallel	G5	Yes	MOVA STREAM 2 STAGE 2 CONFIRM
4	Parallel	G6	Yes	MOVA STREAM 2 STAGE 3 CONFIRM
5	Parallel	G7	Yes	MOVA STREAM 2 STAGE 4 CONFIRM
6	Parallel	GC	Yes	
7	Parallel	GD	Yes	
8	Parallel	GE	Yes	
9	Parallel	GF	Yes	
10	Parallel	CRB1	Yes	MOVA CRB BIT STREAM 1
11	Parallel	CRB2	Yes	MOVA CRB BIT STREAM 2
12	Parallel	MOVA1	No	MOVA MODE ACTIVE STREAM 1
13	Parallel	MOVA2	No	MOVA MODE ACTIVE STREAM 2
16	Parallel	ASL8	No	BUFFERED COMBINED ASL8 LOOPS OUTPUT- CONNECT TO STREAM 1 MOVA DET 8
17	Parallel	CSL24	No	BUFFERED COMBINED CSL24 LOOPS OUTPUT - CONNECT TO STREAM 2 MOVA DET 24
18	Parallel	ST2D44C	No	STREAM 1 TO 2 LINKING
19	Parallel	ST2D45H	No	STREAM 1 TO 2 LINKING
20	Parallel	ST2D46C	No	STREAM 1 TO 2 LINKING
21	Parallel	ST2D47H	No	STREAM 1 TO 2 LINKING
22	Parallel	ST1A48C	No	STREAM 2 TO 1 LINKING
23	Parallel	ST1A49H	No	STREAM 2 TO 1 LINKING
24	Parallel	ST1B50C	No	STREAM 2 TO 1 LINKING
25	Parallel	ST1B51H	No	STREAM 2 TO 1 LINKING
26	Parallel	OP26	No	
27	Parallel	ESBHLDF	No	LINKING - TO WEST CONTROLLER
28	Parallel	ESBCALF	No	LINKING - TO WEST CONTROLLER
29	Parallel	ESBHLDE	No	LINKING - TO WEST CONTROLLER
30	Parallel	ESBCALE	No	LINKING - TO WEST CONTROLLER
31	Parallel	E10MIN	No	LINKING - TO WEST CONTROLLER CRB TIMER EXPIRED
32	Parallel	ERST	No	LINKING - TO WEST CONTROLLER CRB RESET
33	Parallel	MOVEST	No	LINKING - TO WEST CONTROLLER MOVA CONTROL ACTIVE BOTH STREAMS EAST
34	Parallel	LE	Yes	LAMPS EXTINGUISHED TO OMU
35	Parallel	LF	Yes	LAMP FAULT TO OMU
36	Parallel	SISPWR	No	SIS POWER TO OMU
37	Parallel	SISFLT	No	SIS FAULT TO OMU
38	Parallel	AHCAL56	No	AIN MOVA HURRYCALL MOVA DET 56
39	Parallel	BHCAL57	No	BIN MOVA HURRYCALL MOVA DET 57
40	Parallel	CHCAL58	No	CIN MOVA HURRYCALL MOVA DET 58

Output data

Output Number	Destination	Output name	Invert state	Comment
41	Parallel	DHCAL59	No	DIN MOVA HURRYCALL MOVA DET 59
42	Parallel	FHCAL60	No	FIN MOVA HURRYCALL MOVA DET 60

Hardware data

Safety cards	
Number	Fitted
1	Yes
2	No

Loop Detector Cards		
Number	Fitted	Detectors
2	No	-
3	No	-
4	No	-

Safety card 1

Phase Drive cards	
Number	Fitted
1	Yes
2	Yes
3	Yes
4	No
5	No
6	No
7	No
8	No
9	No
10	No
11	No
12	No
13	No
14	No
15	No
16	No

IO Cards	
Number	Card Type
1	Handset
2	IO 16/16
3	IO 16/16
4	IO 16/16
5	IO 16/16
6	Not Fitted
7	Not Fitted
8	Not Fitted

Loop Detector Cards		
Number	Fitted	Detectors
1	No	-

Virtual IO data

Bit No.	Bit name	Invert	Active	Comment
0	F03	False	False	
1	F08	False	False	

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Administration

General Specifications

Customer Name	URS CORPORATION (IM PROP)	Customer Order No.	
Intersection/ General Description	A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH	Controller/ Serial Number	
		S.T.S. /EM Number	E63476 Issue 6
Controller	(•) New ( ) Modification	Equipment Installation by	SIEMENS TRAFFIC CONTROLS
Area Specifications/ Customer Drawings	47439-003/5002/T/RO/0109	Slot Cutting by	
Specification Section		Civil Works by	
Contract/Tender Ref:		Customer's Engineer	Mark Stapley
Quotation No.		Telephone Number	01234 373641
Works Order No.	199069		

Signal Company Use Only

Signal Engineer: E DUFFY / S DEAKIN

(IF Prom Label as >) Prom Number: 16260 Prom Variant: 476

Configuration Check Value: 16 F3 A0 34

Controller Options

Hardware: T800 Firmware Type and Issue: PB800 ISS 19 Other Options: KTD LO

ST900/ST750 Series Cabinet Options

Cabinet/Rack Kit Type Options ( ) ( ) ( ) ( )

Cabinet/Rack Variant Cuckoo Options ☐

Mains Supply	240	Volts	50	Hz			
Peak Lamp Current	11	Amps	Dimming Voltage	160	Answer Issue	1	Date Created 25/09/02
Average Lamp Power	2048	Watts	Low Inrush Tra ☐		Edit Issue	12	
Total Average Power	2124	Watts					

Power feed fuse rating: requires 30 Amp minimum for controller, 15 Amp minimum for pelican/lightly loaded controller

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
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Streams, Stages, Phases Control

Select Object to Add/Delete/Insert

Streams

Current Number of Streams: 1

Phases

Current Total Number of Phases: 11

Number of Real Phases: 10

Number of Dummy Phases: 1

Stages

Current Number of stages (inc. ALL-RED stages): 8

Switched Signs

Number of Switched Signs: 0

Action

Add At | Delete At

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Facilities/Modes Enabled and Mode Priority Levels

Facilities

- [x] Manual Control
- [ ] Manual Step On Mode
- [x] CLF (Base Time)
- [ ] CLF (non-Base Time)
- [x] UTC Facility
- [x] Hurry Call Mode
- [ ] Priority
- [ ] Emergency Vehicles
- [ ] Part Time
- [x] Master Time Clock
- [x] RED Lamp Monitoring
- [x] Lamp Monitoring
- [ ] Linked Fixed Time
- [x] FT To Current MAX
- [ ] Speed Measurement
- [ ] Download To Level 3
- [ ] London IMU
- [ ] Extend All Red
- [ ] Fail To Hardware Flashing
- [ ] Ripple Change
- [ ] Non-UK
- [x] Pelican/Puffin/Toucan Facilities
- [ ] Standalone Manual
- [ ] Holiday Clock
- [ ] Fail to Part Time
- [x] Serial MOVA
- [x]
- [ ] Free-Standing OTU
- [ ] Integral OTU

15 Starting Intergreen

Mode Priority

PRIORITY	1	2	3	4	5	6	7	8	9	10	11
Part Time	○	○	○	○	○	○	○	○	○	○	○
Emergency Vehicle	○	○	○	○	○	○	○	○	○	○	○
Hurry Call	○	○	○	◉	○	○	○	○	○	○	○
Selected Man Cntrl	◉	○	○	○	○	○	○	○	○	○	○
UTC	○	○	◉	○	○	○	○	○	○	○	○
Manual Step On	○	○	○	○	○	○	○	○	○	○	○
Selected FT or VA or CLF	○	◉	○	○	○	○	○	○	○	○	○
Cableless Link (CLF)	○	○	○	○	◉	○	○	○	○	○	○
Priority Vehicle	○	○	○	○	○	○	○	○	○	○	○
Vehicle Actuated	○	○	○	○	○	◉	○	○	○	○	○
Fixed Time	○	○	○	○	○	○	◉	○	○	○	○

Configuration Complexity

○ Low ○ Medium ○ High ◉ Maximum

standard.8DF
Default PROM data file

Correspondence Monitoring to inc.

- [ ] Reds
- [ ] Ambers
- [ ] Switched Signs
- [ ] Ignore Reds and Ambers during Fail to Part Time

Flash Rate (ms)

400 Off 400 On

Works Order : 199069
EM Number : E63476
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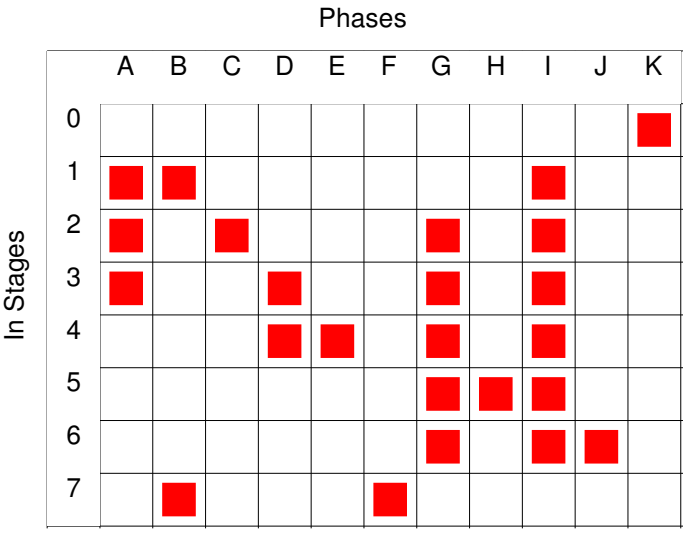
Phases in Stages



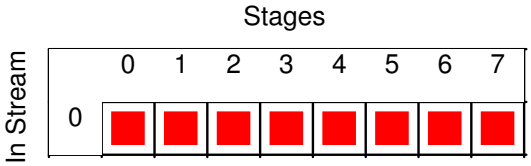
Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Stages in Streams

Stream Data

	0	1	2	3	4	5	6	7
Phase or Stage to revert to in absence of demands/extensions	1							
Startup Stage	1							
Part-Time switch off stage								
Standalone Pedestrian	☐	☐	☐	☐	☐	☐	☐	☐

NB : For a Stand-Alone Stream, the reversion must be to All Red stage or Traffic stage/phase to meet the relevant standard or specification.



Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Phase Type and Conditions

Phase Type and Conditions

(•) Phases A to P ( )

Phase	Title	Type	App. Type	Term. Type	Assoc. Phase
A	A5 NORTHWEST	0 - UK Traffic	0	0 - I	
B	A5 SOUTHEAST	0 - UK Traffic	0	0 - I	
C	A5 RIGHT TURN	0 - UK Traffic	0	0 - I	
D	BIRCH COPPICE LEFT TURN	0 - UK Traffic	0	0 - I	
E	BIRCH COPPICE RIGHTURN	0 - UK Traffic	0	0 - I	
F	TOUCAN CROSSING SOUTHEAST BOUND	3 - UK Near Side Pedestrian	0	0 - I	
G	TOUCAN CROSSING NORTHWEST BOUND	3 - UK Near Side Pedestrian	0	0 - I	
H	FARMERS ACCESS	0 - UK Traffic	0	0 - I	
I	A5 SOUTHEAST TOUCAN APPROACH	0 - UK Traffic	0	0 - I	
J	DEPOT ACCESS	0 - UK Traffic	0	0 - I	
K	DUMMY ALL RED	2 - UK GreenArrow	0	0 - I	

1) App Types: 0 = Always Appears, 1 = Appears if dem'd prior to interstage, 2 = If dem'd, 3 = If dem'd before end of window time
2) Term Types: 0 = Term's at end of stage, 1 = Term's when Assoc phase gains R.O.W, 2 = Term's when Assoc phase loses R.O.W.
3) The H/W Fail Flash fields are for information only on all but ST900ELV Controllers. For other controllers, physical switches or links (etc.) select which aspects flash and these need to be set up manually.

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Opposing and Conflicting Phases

Select Stream(s) To Configure

○ All ○ 0 ○ ○ ○ ○ ○ ○ ○ ○

Initialise

To Phase

From Phase

	A	B	C	D	E	F	G	H	I	J	K
A		o	o	o	Co	o	o	Co	o	Co	o
B	o		Co	Co	Co	o	Co	Co	o	Co	o
C	o	Co		o	Co	o	o	Co	o	Co	o
D	o	Co	o		o	o	o	Co	o	Co	o
E	Co	Co	Co	o		o	o	Co	o	Co	o
F	o	o	o	o	o		o	o	Co	o	o
G	o	Co	o	o	o	o		o	o	o	o
H	Co	Co	Co	Co	Co	o	o		o	Co	o
I	o	o	o	o	o	Co	o	o		o	o
J	Co	Co	Co	Co	Co	o	o	Co	o		o
K	o	o	o	o	o	o	o	o	o	o	

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Phase Minimums, Maximums, Extensions, Ped. Leaving periods

Phase Minimums, Maximums, Extensions, Ped. Leaving periods

(•) Phases A to P ( ) Phases Q to Z

Phase	Min Green	Min Ped Clr	Extensions	Maximums A	B	C	D	E	F	G	H	Pre-timed
A	7	0	4.6	40	30	30	30	40	30	40	60	☐
B	7	0	4.6	40	30	30	30	40	30	40	60	☐
C	7	0	4.6	20	20	15	10	20	20	30	40	☐
D	7	0	4.6	30	25	30	20	30	30	35	50	☐
E	7	0	4.6	20	20	25	30	20	25	30	45	☐
F	6	3	0.0	0	0	0	0	0	0	0	0	☐
G	6	3	0.0	0	0	0	0	0	0	0	0	☐
H	7	0	0.0	7	7	7	7	7	7	7	7	☐
I	7	0	0.0	30	20	20	20	30	30	40	60	☐
J	7	0	0.0	7	7	7	7	7	7	7	7	☐
K	3	0	0.0	0	0	0	0	0	0	0	0	☐
												☐
												☐
												☐
												☐
												☐

NB: For Standalone Streams see Help for use of Max. Sets.

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Phase Intergreen Times

Select Stream(s) To Configure

○ All ○ 0 ○ ○ ○ ○ ○ ○ ○ ○

NB: On a Stand Alone Pelican/Toucan/Puffin Stream the Intergreens between Pedestrian and Traffic Phases are controlled by the timings (PBT, PIT, CMX, CDY, CRD and PAR), therefore 0 should be entered for the appropriate intergreen times in grid below

To Phase

From Phase	A	B	C	D	E	F	G	H	I	J	K
A					7			7		8	3
B			7	11	9		7	13		11	3
C		8			7			7		7	3
D		6						8		6	3
E	6	6	6					6		6	3
F									0		3
G		0									3
H	7	5	6	5	7					9	3
I						5					3
J	5	5	6	5	5			7			3
K	2	2	2	2	2	2	2	2	2	2	

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Handset Intergreen Limits

HIGH 17

Copy Intergreen Values

To Phase

From Phase

	A	B	C	D	E	F	G	H	I	J	K
A					5			5		5	3
B			5	7	5		5	7		7	3
C		5			5			5		5	3
D		5						5		5	3
E	5	5	5					5		5	3
F											3
G											3
H	5	5	5	5	5					7	3
I						5					3
J	5	5	5	5	5			5			3
K	2	2	2	2	2	2	2	2	2	2	

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Phase Timing Handset Ranges

Phase Timing Handset Ranges

Initialise Min Green Limits

Phase	Min. Green Min.	Min. Green Max.	Phase	Min. Green Min.	Min. Green Max.
A	7	255	Q		
B	7	255	R		
C	7	255	S		
D	7	255	T		
E	7	255	U		
F	4	255	V		
G	4	255	W		
H	7	255	X		
I	7	255	Y		
J	7	255	Z		
K	0	255	A2		
L			B2		
M			C2		
N			D2		
O			E2		
P			F2		

Max. Green
Min. 0 Max. 255

Vehicle Extension
Min. 0.0 Max. 10.0

Phase Delay
Min. 0 Max. 30

Starting I/G
Min. 8 Max. 20

Min Ped Clr (PBT)
Min. 3 Max. 3

Traffic Phase Leaving
Min. 3.0 Max. 3.0

Traffic Phase Red/Amber
Min. 2 Max. 2

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Phase - VA Demand and Extend Definitions

VA Demand and Extend Definitions

(●) Phases A to P ( )

Demands

For Unlatched demands preceed the name with a #.
Conditioning MUST be used to specify unlatched demands.

Phase				
A	AX2	AX4		
B	BX6	BX8	BX9	
C	CX11	CSL12	CX13	CSL14
D	DX16	DX18	DSL19	
E	EX20	ESL21		
F	PBUF			
G	PBUG			
H	HSL24			
I				
J	JSL25			
K				

Extensions

AX2	AX4		
BX6	BX8	BX9	
CX11	CX13		
DX16	DX18		
EX20			

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Phase Internal/Revertive Demands

Phase Internal/Revertive Demands

Start-up Vehicle Responsive Demands

A	B	C	D	E	F	G	H	I	J	K						
☑	☑	☑	☑	☑	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Demands Inserted When Leaving Manual and Fixed Time Modes

A	B	C	D	E	F	G	H	I	J	K						
☑	☑	☑	☑	☑	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Unlatched Demands that Start Max Timers

A	B	C	D	E	F	G	H	I	J	K						
☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Revertive Phase Demands

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
A	B	C	D	E											

Q	R	S	T	U	V	W	X	Y	Z	A2	B2	C2	D2	E2	F2

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Phase - OnCrossing and Kerbside Detector Definitions

On Crossing and Kerbside Input Definitions

(●) Phases A to P ( )

Phase	On Crossing				Kerbside			
A								
B								
C								
D								
E								
F	ONC3F	ONC16F						
G	ONC6G	ONC7G						
H								
I								
J								
K								

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Stream - Pelican/Puffin/Toucan Times

Stream - Pelican/Puffin/Toucan Times

Pedestrian Enable VA Mode (PEV)

Streams

0 1 2 3 4 5 6 7

Pedestrian All Red Times (Vehicle to Pedestrian)

Streams	0	1	2	3	4	5	6	7
(PARn 0) VA Gap Change								
(PAR n 1) VA Max Change								
(PAR n 2) FVP Change								
(PAR n 3) UTC Change								
(PAR n 4) Local Link Change								

Handset Range Limits

	Min	Max
(PAR n 2) FVP Change	0	0

Pelican Intergreen times

	Min	Max
(PIT n 0) Veh Red/Ped Flash Green	0	0
(PIT n 1) Veh Flash Amber/Ped Flash Green	0	0
(PIT n 2) Veh Flash Amber/Ped red	0	0
(PIT n 3) Veh Flash Amber/Ped Red Quiescent	0	0

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Phase - Pelican Puffin and Toucan Times

Phase - Pelican Puffin and Toucan Times

Phase	PDD Ped Dem Del	PDX Demand Hold	CMX Ped Clearance Maximum	CDY 0 Clearance Delay Gap Chng	CDY 1 Clearance Delay Max Chng	CRD Clearance Minimum Red	
A	0	0.0	0	0	0	0	
B	0	0.0	0	0	0	0	☐
C	0	0.0	0	0	0	0	
D	0	0.0	0	0	0	0	☐
E	0	0.0	0	0	0	0	
F	1	0.0	16	3	3	0	
G	1	0.0	20	3	3	0	
H	0	0.0	0	0	0	0	
I	0	0.0	0	0	0	0	
J	0	0.0	0	0	0	0	
K	0	0.0	0	0	0	0	

◉ Phases A to P ○

Handset Range Limits

	MIN	MAX
Pedestrian Demand delay PDD	0	3
Pedestrian Demand Hold PDX	0.0	5.0
Pedestrian Clearance CMX	0	24
Pedestrian Clearance Delays CDY 0 and CDY1	0	5
Pedestrian Clearance Delay (Red) CRD	0	8

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

IO and Link - Pelican/Puffin/Toucan Times

I/O and Link - Pelican/Puffin/Toucan Times

Streams 0 1 2 3 4 5 6 7

Computer Control

PV

Window Time
UIE

Local Link

PV1

Link Delay Time
LKD

Link Window Time
LKW

Link Override Time
LKO

Kerbside Mat Test Output

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Stage Internal Demands / Ped. Window Times

Stage Internal Demands / Ped. Window Times

Start-up Vehicle Responsive Demands

0	1	2	3	4	5	6	7									
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Demands Inserted When Leaving Manual and Fixed Time Modes

0	1	2	3	4	5	6	7									
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Unlatched Demands that Start Maximum Timers

0	1	2	3	4	5	6	7									
☑	☑	☑	☑	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Window Times

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	0	0	0	0	0	0	0								

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Phase delays

Phase delays

(●) Phase Delays 0-29 ( ) Phase Delays 30-59 ( ) Phase Delays 60-89 ( ) Phase Delays 90-119

No.	Delay Phase	On Change from Stage	To Stage	By (X) Seconds	No.	Delay Phase	On Change from Stage	To Stage	By (X) Seconds
0	I	1	7	6	15				0
1				0	16				0
2				0	17				0
3				0	18				0
4				0	19				0
5				0	20				0
6				0	21				0
7				0	22				0
8				0	23				0
9				0	24				0
10				0	25				0
11				0	26				0
12				0	27				0
13				0	28				0
14				0	29				0

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Fixed Time

Fixed Time

Stage Moves & Times (Not Fixed Time to Current Max)

Current Stage	0	1	2	3	4	5	6	7
Next Stage								
Time								
Current Stage	8	9	10	11	12	13	14	15
Next Stage								
Time								
Current Stage	16	17	18	19	20	21	22	23
Next Stage								
Time								
Current Stage	24	25	26	27	28	29	30	31
Next Stage								
Time								

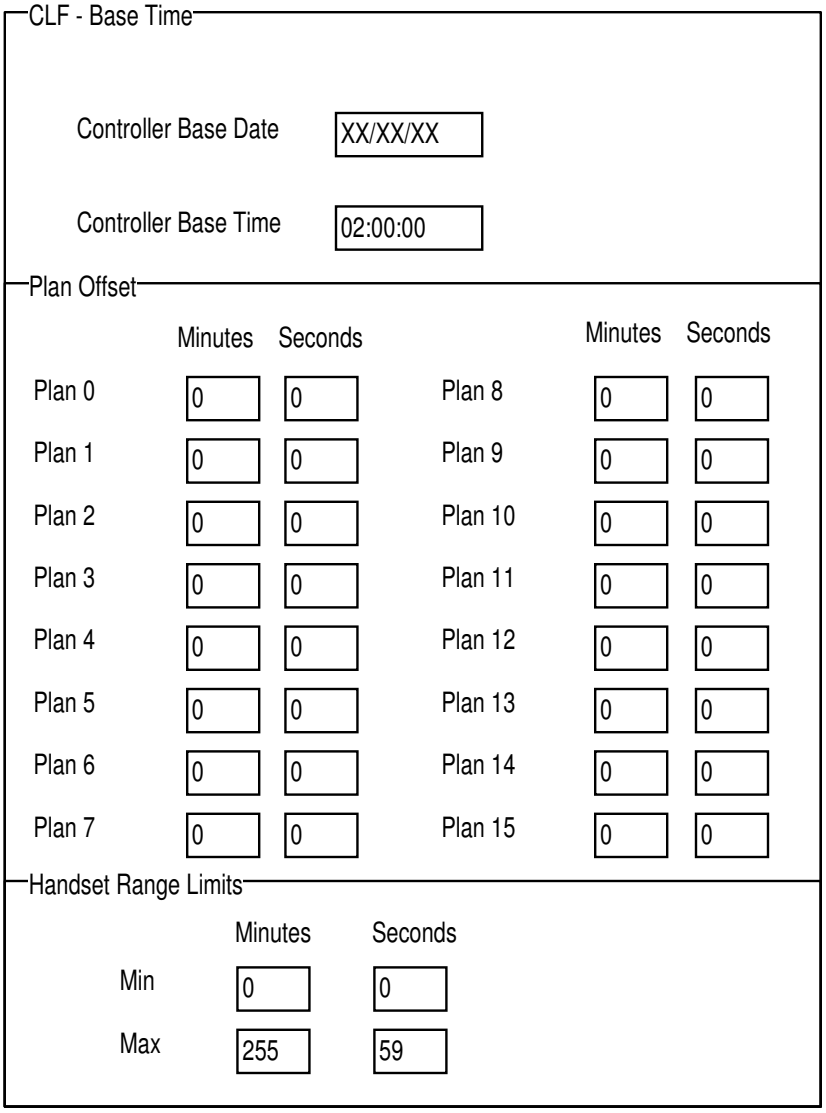
Phases Demanded and Extended under Fixed Time to Current Max.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Demand	☑	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Extend	☑	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

	Q	R	S	T	U	V	W	X	Y	Z	A2	B2	C2	D2	E2	F2
Demand	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Extend	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

CLF - Base Time



Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

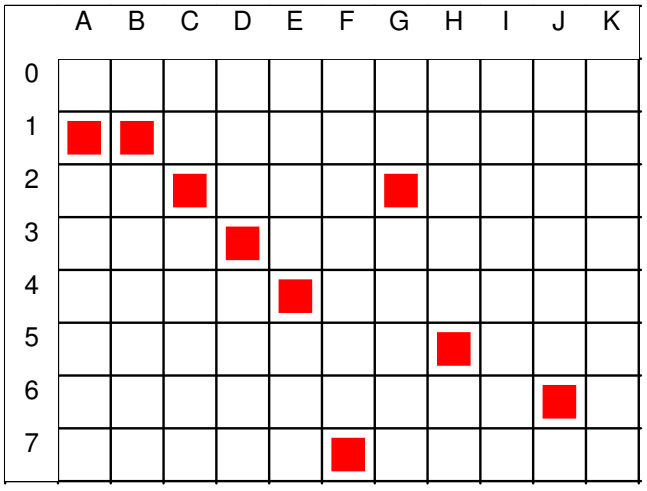
CLF - Demand Dependent Moves

Clear Grid Data

Notes:
If no data is entered for a stage then a demand for any phases in that stage will be considered.
The data specified on this screen will also change the screen
CLF - Demands to Consider with Demand Dependent Stage Moves.

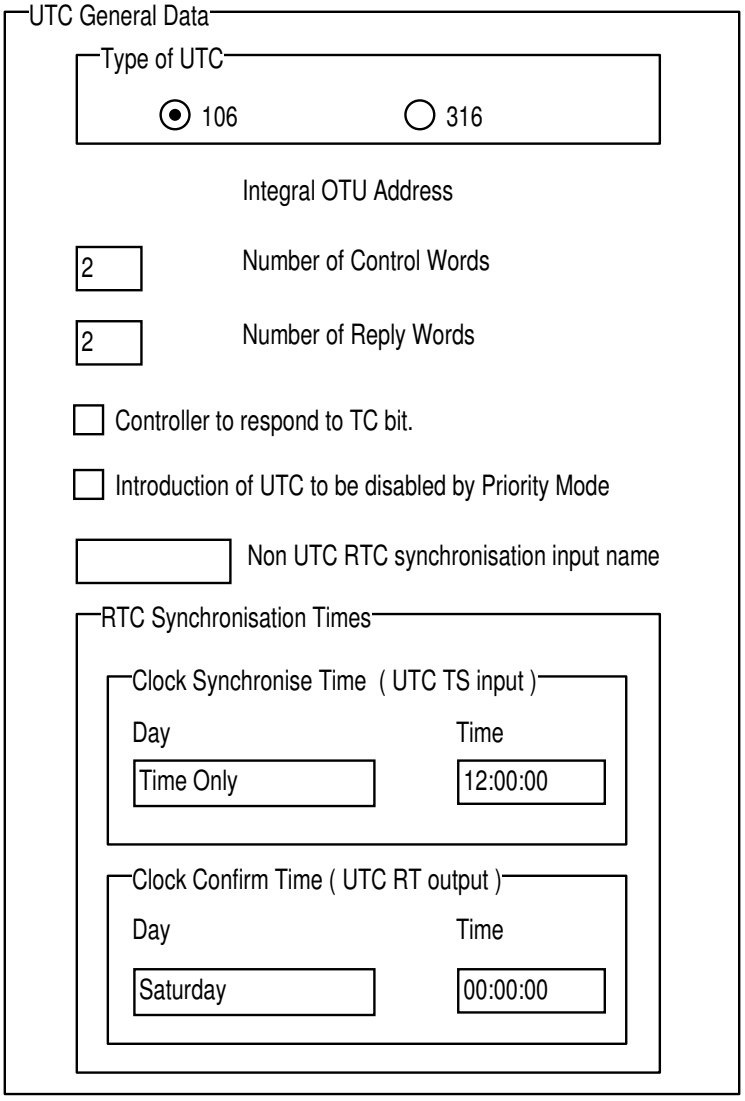
Phases

Stages



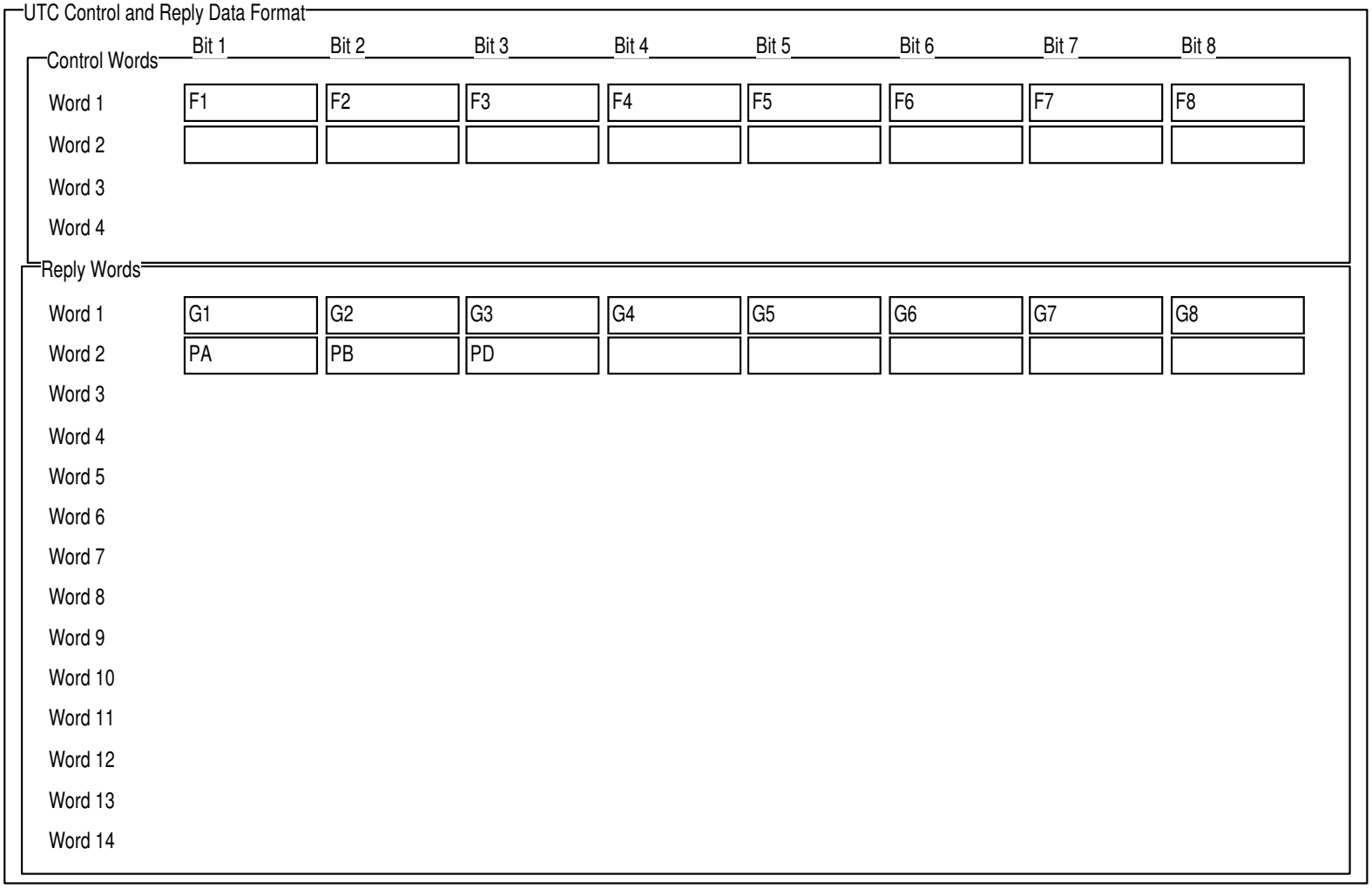
Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

UTC General Data



Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

UTC Control and Reply Data Format



Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

UTC Stage and Modes Data Definitions

UTC Stage and Modes Data Definitions

Stage	Force Bit	Green Confirm Bit	Demand Confirm Bit	Stage	Force Bit	Green Confirm Bit	Demand Confirm Bit
0	F8	G8		16			
1	F1	G1		17			
2	F2	G2		18			
3	F3	G3		19			
4	F4	G4		20			
5	F5	G5		21			
6	F6	G6		22			
7	F7	G7		23			
8				24			
9				25			
10				26			
11				27			
12				28			
13				29			
14				30			
15				31			

Mode Data Definitions

Manual Mode Operative:
☐ G1/G2 ☐ RR ☐

Manual Mode Selected:
☐ G1/G2 ☐ RR ☐

No Lamp Power, or Lamps Off due to RLM (
☐ G1/G2 ☐ ☐

Detector Fault:
☐ ☐ ☐ DF

Normal NOT selected on the Manual Panel:
☐ G1/G2 ☐ RR ☐

RR Button Selected:
☐ G1/G2 ☐ RR ☐

If UTC Reply Confirms are required for a Controller Fault (CF) OR for separate MC and RR replies, Conditioning must be used.

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

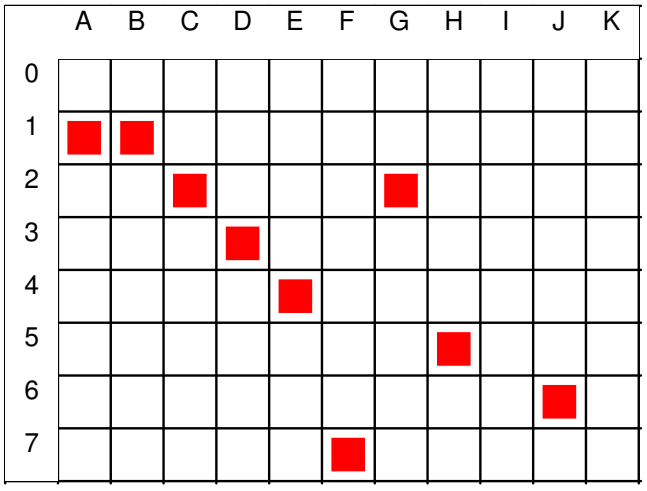
UTC Demand Dependent Forces

Clear Grid Data

Notes:
If no data is entered for a stage then a demand for any phases in that stage will be considered.
The data specified on this screen will also change the screen
CLF - Demands to Consider with Demand Dependent Stage Moves.

Phases

Stages



Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Serial MOVA

Serial MOVA

1	AIN1	2	AX2	3	AIN3	4	AX4	5	BIN5	6	BX6	7	BIN7	8	BX8
9	BX9	10	CIN10	11	CX11	12	CSL12	13	CX13	14	CSL14	15	DIN15	16	DX16
17	DIN17	18	DX18	19	DSL19	20	EX20	21	ESL21	22		23		24	HSL24
25	JSL25	26		27		28		29		30		31		32	AMB32
33		34		35		36		37		38		39		40	
41		42		43		44		45		46		47		48	
49		50		51		52		53		54		55		56	
57		58		59		60		61		62		63		64	

Note - only 32 detectors available on MOVA 4.0

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

MTC - Time Switch Parameters

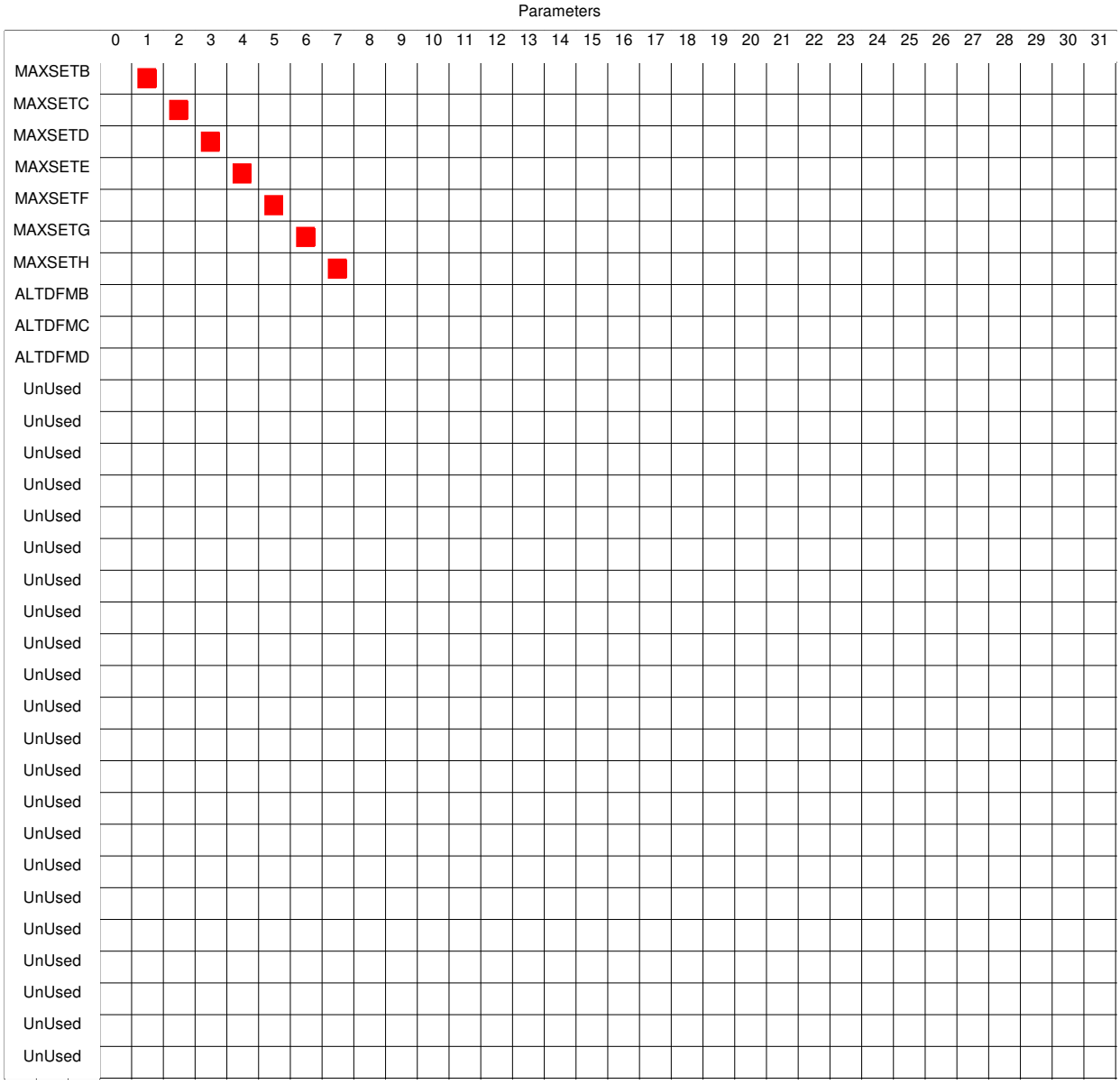
MTC - Time Switch Parameters

	Type	Event
0	Alternate Max	MAXSETB
1	Alternate Max	MAXSETC
2	Alternate Max	MAXSETD
3	Alternate Max	MAXSETE
4	Alternate Max	MAXSETF
5	Alternate Max	MAXSETG
6	Alternate Max	MAXSETH
7	Alternate DFM	ALTDFMB
8	Alternate DFM	ALTDFMC
9	Alternate DFM	ALTDFMD
10	No Action	
11	No Action	
12	No Action	
13	No Action	
14	No Action	
15	No Action	

	Type	Event
16	No Action	
17	No Action	
18	No Action	
19	No Action	
20	No Action	
21	No Action	
22	No Action	
23	No Action	
24	No Action	
25	No Action	
26	No Action	
27	No Action	
28	No Action	
29	No Action	
30	No Action	
31	No Action	

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

MTC - Time Switch Parameters Array



Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Master Time Clock - Day Type

Master Time Clock - Day Type

No.	Mon	Tue	Wed	Thu	Fri	Sat	Sun
0	☐	☐	☐	☐	☐	☑	☐
1	☐	☐	☐	☐	☐	☐	☑
2	☑	☐	☐	☐	☐	☐	☐
3	☐	☑	☐	☐	☐	☐	☐
4	☐	☐	☑	☐	☐	☐	☐
5	☐	☐	☐	☑	☐	☐	☐
6	☐	☐	☐	☐	☑	☐	☐
7	☑	☑	☑	☑	☑	☑	☑
8	☑	☑	☑	☑	☑	☑	☐
9	☑	☑	☑	☑	☑	☐	☐
10	☐	☐	☐	☐	☐	☑	☑
11	☐	☐	☐	☐	☐	☐	☐
12	☐	☐	☐	☐	☐	☐	☐
13	☐	☐	☐	☐	☐	☐	☐
14	☐	☐	☐	☐	☐	☐	☐
15	☐	☐	☐	☐	☐	☐	☐

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Master Time Clock - Time Table

Master Time Clock - Time Table

View Time Table settings

(•) 0-15 ( ) 16-31 ( ) 32-47 ( ) 48-63

Number	Day Type	Time	Introduce Function Required	Function Number	Plan/ Parameter
0	9	07:00:00	INTRODUCE MAX SET A	2	0
1	9	09:30:00	INTRODUCE MAX SET B	2	1
2	9	12:00:00	INTRODUCE MAX SET C	2	2
3	9	14:00:00	INTRODUCE MAX SET D	2	3
4	9	16:00:00	INTRODUCE MAX SET E	2	4
5	9	19:00:00	INTRODUCE MAX SET F	2	5
6	1	10:00:00	INTRODUCE MAX SET G	2	6
7	1	18:00:00	INTRODUCE MAX SET H	2	7
8	0			0	0
9	0			0	0
10	0			0	0
11	0			0	0
12	0			0	0
13	0			0	0
14	0			0	0
15	0			0	0

Function Numbers:

0 = Isolate From CLF

1 = Introduce a CLF Plan

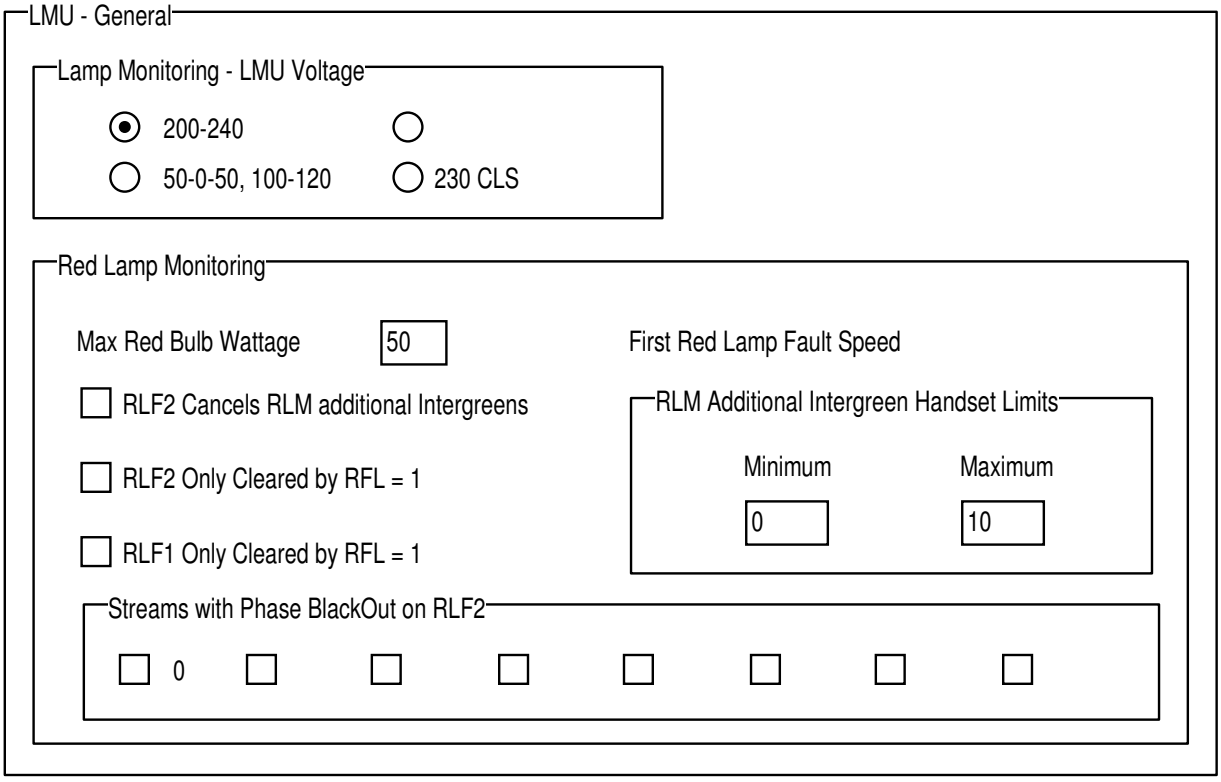
2 = Introduce a Parameter (Combination of event switches

3 = Selects an Individual event switch to be set

4 = Selects an Individual event switch to be cleared.

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

LMU - General



Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

LMU - Sensors

LMU - Sensors

On-Board Sensors

Sensor\ Phase	Sensor Type	Bulb Watts	NLM CLS
1 \ A	As Seq.	40	☐
2 \ B	As Seq.	40	☐
3 \ C	As Seq.	40	☐
4 \ D	As Seq.	40	☐
5 \ E	As Seq.	40	☐
6 \ F	None	40	☐
7 \ G	None	40	☐
8 \ H	As Seq.	40	☐
9 \ I	As Seq.	40	☐
10 \ J	As Seq.	40	☐
11 \ K	As Seq.	40	☐
12 \ L	As Seq.	40	☐
13 \ M	As Seq.	40	☐
14 \ N	As Seq.	40	☐
15 \ O	As Seq.	40	☐
16 \ P	As Seq.	40	☐

On-Board Sensors

Sensor\ Phase	Sensor Type	Bulb Watts	NLM CLS
17 \ Q			☐
18 \ R			☐
19 \ S			☐
20 \ T			☐
21 \ U			☐
22 \ V			☐
23 \ W			☐
24 \ X			☐
25 \ Y			☐
26 \ Z			☐
27 \ A2			☐
28 \ B2			☐
29 \ C2			☐
30 \ D2			☐
31 \ E2			☐
32 \ F2			☐

External Sensors

Sensor\ Pin	Drive	Sensor Type	Bulb Watts
33 \ b14		Reg. Sign	7
34 \ z16		Reg. Sign	7
35 \ z14		Reg. Sign	7
36 \ z12		Reg. Sign	7
37 \ b14		Reg. Sign	7
38 \ z16		Reg. Sign	7
39 \ z14		Reg. Sign	7
40 \ z12		Reg. Sign	7
41 \ b14			
42 \ z16			
43 \ z14			
44 \ z12			
45 \ b14			
46 \ z16			
47 \ z14			
48 \ z12			

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

RLM Additional Intergreens

Phases Delayed

Phases with RLF1

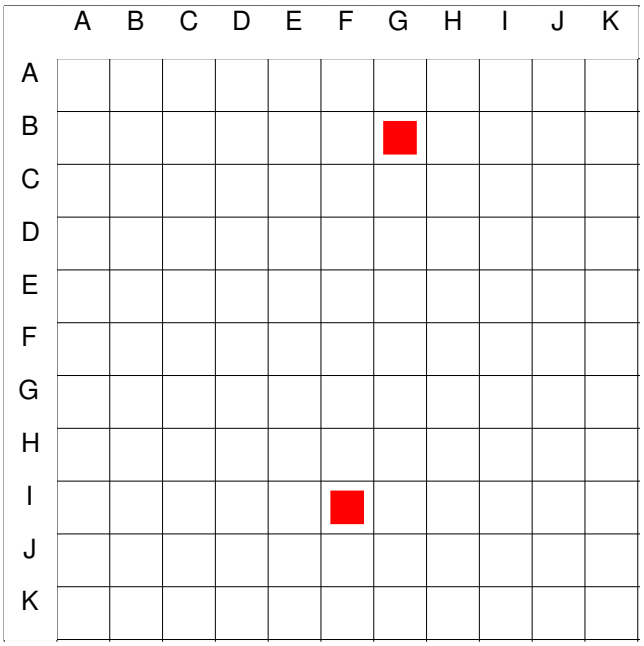
	A	B	C	D	E	F	G	H	I	J	K
A											
B							2				
C											
D											
E											
F											
G											
H											
I						2					
J											
K											

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

RLM Phase Inhibits

Phases Inhibited/Blacked-out

Phases with RLF2



Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Hurry Call

Hurry Call

Hurry Call	Stage Called	Call Input Name	Cancel Input Name	Confirm Output Name	Delay Time	Hold Time	Prevent Time
0	1	*SCRT1			6	30	120
1					0	0	0
2					0	0	0
3					0	0	0
4					0	0	0
5					0	0	0
6					0	0	0
7					0	0	0

Hurry Call Limit Values

	Min.	Max.
Call Delay	0	255
Call Hold	0	255
Call Prevent	0	255

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Manual Panel

Manual Panel

Stage Buttons and LEDs

Button No.	Title	Called Stage for Stream 0	1	2	3	4	5	6	7
0	ALL RED	0							
1	A5 MAIN ROAD	1							
2	A5 NORTHWEST _RIGHT TURN	2							
3	BIRCH COPPICE LEFT TURN	3							
4	BIRCH COPPICE LEFT TURN _RIGHT TURN	4							
5	FARMERS ACCESS	5							
6	DEPOT ACCESS	6							
7	PEDESTRIAN PHASE F	7							

General LEDs

	AUX 1	AUX 2	AUX 3	AUX 4 (Hurry Call)	AUX 5 (Higher Priority)
Conditioned	☑	☐	☐	☑	☑

General Buttons

	None	SW1	SW2	SW3
Momentary		☑	☐	☐
Dim Override	◉	○	○	○
RR	◉	○	○	○

Manual Signals On

- ○ Immediate Signals On
- ◉ As Start-Up

Manual Mode Enable

- ◉ Always
- ○ When Handset Plugged in (Note 1)
- ○ When 'MND' Command Entered

Note 1:
For this to operate Special Conditioning is required.

Mode Select Switches Disabled

☐ VA ☐ Fixed Time ☐ CLF

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Special Conditioning

```
; MANUAL PANEL
;==============
;
(MODE0 EQL<6>)=MIL17           ; WHEN MOVA IS ACTIVE LIGHT HIGHER PRIORITY LED.
(MODE0 EQL<5>)=MIL07           ; HURRY CALL ACTIVE LIGHT HURRY CALL LED.
AMB32+MAUXSW1=MIL22            ; ILLUMINATE AUX 1 WHEN AMBULANCE P/B IS ACTIVE.
MAUXSW1=+MOVADET32            ; SET MOVA DET 32 WHEN AUX SWITCH 1 IS PRESSED.

;
;
; MOVA
;======
;
NOT(PHASEA)=PA                                  ; PHASE A ACTIVE REPLY PA
NOT(PHASEB)=PB                                  ; PHASE B ACTIVE REPLY PB
NOT(PHASED)=PD                                  ; PHASE D ACTIVE REPLY PD
PRSLMPAF=+MOVADET22                             ; WAIT LAMP CONFIRMS FOR PHASE F
PRSLMPAG=+MOVADET23                             ; WAIT LAMP CONFIRMS FOR PHASE G
;
; VA HURRY CALL
;===============
;
(MODE0 EQL<2>).(AMB32+MAUXSW1)=SCRT1            ; DEMAND HURRY CALL ONLY IN VA FROM P/B OR MANUAL PANNEL
;
;
; MOVA CRB
;==========
;
IFT NOT(MODE0 EQL<6>).NOT(CNDTMA0).SSNRM THN            ; NOT IN MOVA MODE AND IN NORMAL RUN TIMER
    RUN<0>
END
IFT CNDTER0+((PRVMOD0 EQL<6>).NOT(MODE0 EQL<6>)) THN    ; START TIMER WHEN MOVA DROPS OFF OR TIMER TERMINATES
    LOD<10> 1SCRTCH0
    TRUE=2SCRT1
END                                             ; START A 2 SEC INTERNAL TIMER FOR CRB TOGGLE
NOT(1SCRTST0 EQL<0>)=.2SCRT1                    ; RESET SCRT BIT WHEN COUNT REACHES ZERO
IFT (1SCRTST0 GRT<0>) THN                       ; DECREMENT COUNT EVERY 200MS UNTIL ZERO
    DEC 1SCRTCH0
END
SSNRM.(NOT(2SCRT1)+(MODE0 EQL<6>))=MOVACRB              ; WHEN TIMER TERMINATES TOGGLE CRB
;
;
;
; VA STAGE MOVEMENTS
;====================
;
(MODE0 EQL<2>).NOT(LCPHD+UCPHD+LCST3+UCST3)=PRVST3
(MODE0 EQL<2>).NOT(LCPHE+UCPHE+LCST4+UCST4)=PRVST4
(MODE0 EQL<2>).NOT(LCPHH+UCPHH+LCST5+UCST5)=PRVST5
(MODE0 EQL<2>).NOT(LCPHJ+UCPHJ+LCST6+UCST6)=PRVST6
(MODE0 EQL<2>).NOT(LCPHF+UCPHF+PEDBUTF+LCST7+UCST7)=PRVST7
```

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Special Conditioning Timers

Special Conditioning Timers

Timers: (•) 0-31 ( ) 32-63 ( ) 64-95

No	Value	Min	Max	200ms	Description	No	Value	Min	Max	200ms	Description
0	120	0	255	☐	CRB TOGGLE	16		0	255	☐	
1		0	255	☐		17		0	255	☐	
2		0	255	☐		18		0	255	☐	
3		0	255	☐		19		0	255	☐	
4		0	255	☐		20		0	255	☐	
5		0	255	☐		21		0	255	☐	
6		0	255	☐		22		0	255	☐	
7		0	255	☐		23		0	255	☐	
8		0	255	☐		24		0	255	☐	
9		0	255	☐		25		0	255	☐	
10		0	255	☐		26		0	255	☐	
11		0	255	☐		27		0	255	☐	
12		0	255	☐		28		0	255	☐	
13		0	255	☐		29		0	255	☐	
14		0	255	☐		30		0	255	☐	
15		0	255	☐		31		0	255	☐	

Works Order : 199069
EM Number : E63476
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Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Special Instructions

E63476

Board	Position	Skt	Port	Type I or O	Line	Cable	Block
CPU	A	X3I	0	I	00 - 07	101	1TBG
CPU	A	X3I	1	I	08 - 15		1TBH
CPU	A	X3O	11	O	88 - 91	105	1TBX
IO1	B	B	2	I	16 - 23	103	1TBJ
IO1	B	E	4	O	32 - 39		1TBK
IO1	B	C	3	I	24 - 31	103	1TBL
IO1	B	D	5	O	40 - 47		1TBM
IO2	C	B	6	I	48 - 55	103	1TBN
IO2	C	E	8	O	64 - 71		1TBP
IO2	C	C	7	I	56 - 63	103	1TBR
IO2	C	D	9	O	72 - 79		1TBS

The socket X3 on the CPU pcb is the double stacked one
X3I = Inner (nearest the board)
X3O = Outer

Works Order : 199069
EM Number : E63476
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Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Special Instructions

ST800 CONTROLLER ITEMS LIST SHEET 1 (*I*L*)

ITEM	DRAWING NUMBER	DESCRIPTION	QTY	TOT	REMARKS
1					
2	667/1/27000/001	Cabinet 8 Phase wired 16 Phase	1		
3	667/1/27000/002	Cabinet 24 Phase wired 32 Phase			
4	667/1/27001/001	Rack 8 Phase wired 16 Phase			
5	667/1/27001/002	Rack 24 Phase wired 32 Phase			
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24	667/1/27002/000	Lamp Switch Kit 8 Phase	1		
25	667/1/27003/000	I/O Kit	2		
26	667/1/27005/000	SDE Facility Kit			
27	667/1/27004/000	Integral OTU Kit			
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39	667/1/16260/476	Configuration Eprom (Issue 6. 0)	1		
40					

Note 1:
Please refer to special instruction pages for additional information on items marked with an '*'.

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Special Instructions

ST800 CONTROLLER ITEMS LIST SHEET 2 (*I*L*)

ITEM	DRAWING NUMBER	DESCRIPTION	QTY	TOT	REMARKS
41					
42	667/1/27056/001	Manual Panel Assy (Intersection Cont)			
43	667/1/27056/010	Manual Panel Assy (Sigs on/off)			
44	667/1/27056/000	Manual Panel Blanking Kit			
45					
46					Note 2:
47					Ancillary Processor PLD
48					Variants
49					101 OTU & LMU
50					102 OTU Only
51					103 LMU Only
52	667/7/25171/000	Current Transformer			104 OTU & LMU + Up/Download
53					105 OUT Only + Up/DownLoad
54					NB Controller Has built in LMU
55					So LMU on Ancillary Processor
56					Not required included for info
57					only.
58					
59					
60					Note 3:
61	667/1/27000/101	Cabinet Export 8 Phase wired 16 Phase			Fit Current Transformer
62	667/1/27000/102	Cabinet Export 24 Phase wired 32 Phase			starting from position
63	667/1/27001/101	Rack Export 8 Phase wired 16 Phase			TLB/z/16 on the first phase
64	667/1/27001/102	Rack Export 24 Phase wired 32 Phase			driver PCB. if more than 3
65	667/1/27002/100	Export Lamp Switch Kit			sensors are called up fit the
66	667/1/27084/001	Dimming Assembly (1.5KVA)(Fit Std UK)			4th sensor to the second
67	667/1/27084/002	Dimming Assembly (2.0KVA)			Phases driver PCB, and so on
68	667/1/27084/003	Dimming Assembly (3.0KVA)			until all sensors have been
69	667/1/27130/000	30A Controller Kit			used up.
70					TLB/b/14 - 1st sensor terminal
71	667/1/27001/310	ST800 SE Export Rack up to 8 Phase			TLB/z/16 - 2nd sensor terminal
72	667/1/27223/003	ST800 SE 8 Phase Driver No LMU			TLB/z/14 - 3rd sensor terminal
73	667/1/27223/403	ST800 SE 4 Phase Driver No LMU			TLB/z/12 - 4th sensor terminal
74					TLB/z/12 - 4th sensor terminal
75					
76					
77	667/1/27000/301	ST800 P In a Cabinet 4Ph 1 Stream PED			TLB/z/12 - 4th sensor terminal
78	667/1/27012/000	PED 2nd Stream Kit for ST800 P			
79	667/1/27001/300	ST800 P Rack Only 4Ph 1 Stream PED			

Works Order : 199069
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Special Instructions

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Special Instructions

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Special Instructions

DETECTOR EQUIPMENT SHEET (*I*L*)

Item	Drawing Number	DESCRIPTION	QTY	TOT	REMARKS
1	667/1/20690/000	Detector 11 inch detector rack kit			
2	667/1/20690/001	Detector 19 inch detector rack kit	1		
3	667/1/17705/011	Detector Beehive kit (excl Pedestal)			
4	667/2/01999/000	Pedestal (Metric) D Detr. Housing			
5	667/1/17212/000	Detector L bracket kit			
6	667/1/22447/000	Detector Mounting Kit E.F.U. (T500)			
7	667/1/22470/000	Detector Frame Assy (T500)			
8	667/1/15990/002	Detector double backplane kit			
9	667/1/15990/003	Detector single backplane kit	7		
10	667/1/15990/004	Detector logic backplane kit			
11					
12	667/1/27663/000	Siemens STR4 (4 Channel) loop detector	7		
13	667/1/21029/001	48V WAIT SUPPLY KIT	6		
14	667/1/20292/008	24V AGD SUPPLY KIT	3		
15	667/1/03887/000	Detector Cableform (1 per 2 B/Planes)			
16	667/1/15854/000	Detector Cable termination kit	5		
17					
18	667/1/15991/000	Mod Kit Regulator PSU 1.5A 21-38V			
19	667/1/15991/001	Mod Kit Regulator PSU 0.5A 21-48V			
20					
21					
22	667/7/20360/002	Microsense Detr. Board 2 Channel			Eng. to supply
23	667/7/20360/004	Microsense Detr. Board 4 Channel			Eng. to supply
24	667/7/20368/000	Microsense Rack 3Ux19"			Eng. to supply
25	667/7/20365/000	Microsense 20-Way Backplane (Std)			Eng. to supply
26	667/7/20366/000	Microsense 20-Way Logic Backplane			
27	667/7/20369/000	Microsense Card Frame Guides (Pr.)			Eng. to supply
28					
29	667/7/20361/002	Microsense 2 Channel U/D Logic			
30	667/7/20361/004	Microsense 4 Channel U/D Logic			
31	667/7/20362/000	Microsense Count Logic N,N+1,U/D & DFM			
32	667/7/20363/000	Microsense Queue Logic with DFM			Eng. to supply
33	667/7/20364/000	Microsense Bus Detector 2-Channel			Eng. to supply
34					
35					
36	667/7/20377/000	Microsense MIX 3-1-R-24 I/R detector			Nearside mounting
37	667/7/20377/001	Microsense MIX 3-2-R-24 I/R detector			Offside mounting
38	667/7/20378/000	Short fixing bracket			
39	667/7/20379/000	Sighting Hood for MIX detectors			Eng. to supply
40	667/7/20380/000	Handbook for MIX detectors			Eng. to supply

[Template - Detector items.txt issue 1.0]

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Special Instructions

SIEMENS SINGLE INTERNAL DETECTOR BACKPLANE INSTRUCTIONS SHEET (BACKPLANE 1)

CONNECTIONS MADE USING CABLEFORM 667/1/03887/002
UNUSED WIRE ENDS MUST BE TIED BACK AND INSULATED

DETECTOR RACK POWER CONNECTIONS

SIGNAL	WIRE COLOUR	SUPPLY TERMINALS FROM ST800	BACKPLANE No.1 TERMINALS
24 VOLTS	RED	1TBE 1 to 6	19
0 VOLTS	BLACK	1TBE 7 to 12	20
SCREEN	PINK	1TBE 7 to 12	22
COMMON	WHITE	1TBE 7 to 12	18

LOOP No.	LOOP DESIGNATION	INTERMEDIATE TERMINALS	WIRE COLOUR	BACKPLANE TERMINALS
1	AIN1	2TBR 1 & 2TBR 2	GREEN	1 & 2
2	AX2	2TBR 3 & 2TBR 4	BLUE	3 & 4
3	AIN3	2TBR 5 & 2TBR 6	ORANGE	5 & 6
4	AX4	2TBR 7 & 2TBR 8	BROWN	7 & 8

DETECTOR OUTPUTS

DETECTOR No.	BACKPLANE TERMINALS	COLOUR	CONTR TERMINALS
1	10	BLUE	1TBG 1
2	12	GREEN	1TBG 2
3	14	ORANGE	1TBG 3
4	16	YELLOW	1TBG 4

Note 1 If more than one backplane power Linking between B/Planes to be made using the Red, Black Pink and White from 667/1/03887/002

Note 2 Use the detector termination kit (667/1/15854/000) to do the intermediate wiring.

Note 3 Ensure that the correct colour wires are used for the inter-mediate wiring.

[Template - Internal intermediate Detectors.txt iss 1.0]

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Special Instructions

SIEMENS SINGLE INTERNAL DETECTOR BACKPLANE INSTRUCTIONS SHEET (BACKPLANE 2)

CONNECTIONS MADE USING CABLEFORM 667/1/03887/002
UNUSED WIRE ENDS MUST BE TIED BACK AND INSULATED

DETECTOR RACK POWER CONNECTIONS

SIGNAL	WIRE COLOUR	BACKPLANE NO.1 TERMINALS	BACKPLANE No.2 TERMINALS
24 VOLTS	RED	19	19
0 VOLTS	BLACK	20	20
SCREEN	PINK	22	22
COMMON	WHITE	18	18

LOOP No.	LOOP DESIGNATION	INTERMEDIATE TERMINALS	WIRE COLOUR	BACKPLANE TERMINALS
1	CSL12	2TBR 9 & 2TBR 10	SLATE	1 & 2
2	CSL14	2TBR 11& 2TBR 12	BLUE/WHITE	3 & 4
3	CX11	2TBS 1 & 2TBS 2	GREEN	5 & 6
4	CX13	2TBS 3 & 2TBS 4	BLUE	7 & 8

DETECTOR OUTPUTS

DETECTOR No.	BACKPLANE TERMINALS	COLOUR	CONTR TERMINALS
1	10	BLUE	1TBG 5
2	12	GREEN	1TBG 6
3	14	ORANGE	1TBG 7
4	16	YELLOW	1TBG 8

Note 1 If more than one backplane power Linking between B/Planes to be made using the Red, Black Pink and White from 667/1/03887/002

Note 2 Use the detector termination kit (667/1/15854/000) to do the intermediate wiring.

Note 3 Ensure that the correct colour wires are used for the inter-mediate wiring.

[Template - Internal intermediate Detectors.txt iss 1.0]

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Special Instructions

SIEMENS SINGLE INTERNAL DETECTOR BACKPLANE INSTRUCTIONS SHEET (BACKPLANE 3)

CONNECTIONS MADE USING CABLEFORM 667/1/03887/002
UNUSED WIRE ENDS MUST BE TIED BACK AND INSULATED

DETECTOR RACK POWER CONNECTIONS

SIGNAL	WIRE COLOUR	BACKPLANE NO.2 TERMINALS	BACKPLANE No.3 TERMINALS
24 VOLTS	RED	19	19
0 VOLTS	BLACK	20	20
SCREEN	PINK	22	22
COMMON	WHITE	18	18

LOOP No.	LOOP DESIGNATION	INTERMEDIATE TERMINALS	WIRE COLOUR	BACKPLANE TERMINALS
1	CIN10	2TBS 5 & 2TBS 6	ORANGE	1 & 2
2		2TBS 7 & 2TBS 8	BROWN	3 & 4
3		2TBS 9 & 2TBS 10	SLATE	5 & 6
4	DSL19	2TBS 11& 2TBS 12	BLUE/WHITE	7 & 8

DETECTOR OUTPUTS

DETECTOR No.	BACKPLANE TERMINALS	COLOUR	CONTR TERMINALS
1	10	BLUE	1TBH 1
2	12	GREEN	1TBH 2
3	14	ORANGE	1TBH 3
4	16	YELLOW	1TBH 4

Note 1 If more than one backplane power Linking between B/Planes to be made using the Red, Black Pink and White from 667/1/03887/002

Note 2 Use the detector termination kit (667/1/15854/000) to do the intermediate wiring.

Note 3 Ensure that the correct colour wires are used for the inter-mediate wiring.

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Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Special Instructions

SIEMENS SINGLE INTERNAL DETECTOR BACKPLANE INSTRUCTIONS SHEET (BACKPLANE 4)

CONNECTIONS MADE USING CABLEFORM 667/1/03887/002
UNUSED WIRE ENDS MUST BE TIED BACK AND INSULATED

DETECTOR RACK POWER CONNECTIONS

SIGNAL	WIRE COLOUR	BACKPLANE No.3 TERMINALS	BACKPLANE No.4 TERMINALS
24 VOLTS	RED	19	19
0 VOLTS	BLACK	20	20
SCREEN	PINK	22	22
COMMON	WHITE	18	18

LOOP No.	LOOP DESIGNATION	INTERMEDIATE TERMINALS	WIRE COLOUR	BACKPLANE TERMINALS
1	DX16	2TBY 1 & 2TBY 2	GREEN	1 & 2
2	DX18	2TBY 3 & 2TBY 4	BLUE	3 & 4
3	DIN15	2TBY 5 & 2TBY 6	ORANGE	5 & 6
4	DIN17	2TBY 7 & 2TBY 8	BROWN	7 & 8

DETECTOR OUTPUTS

DETECTOR No.	BACKPLANE TERMINALS	COLOUR	CONTR TERMINALS
1	10	BLUE	1TBH 5
2	12	GREEN	1TBH 6
3	14	ORANGE	1TBH 7
4	16	YELLOW	1TBH 8

Note 1 If more than one backplane power Linking between B/Planes to be made using the Red, Black Pink and White from 667/1/03887/002

Note 2 Use the detector termination kit (667/1/15854/000) to do the intermediate wiring.

Note 3 Ensure that the correct colour wires are used for the inter-mediate wiring.

[Template - Internal intermediate Detectors.txt iss 1.0]

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Special Instructions

SIEMENS SINGLE INTERNAL DETECTOR BACKPLANE INSTRUCTIONS SHEET (BACKPLANE 5)

CONNECTIONS MADE USING CABLEFORM 667/1/03887/002
UNUSED WIRE ENDS MUST BE TIED BACK AND INSULATED

DETECTOR RACK POWER CONNECTIONS

SIGNAL	WIRE COLOUR	BACKPLANE NO.4 TERMINALS	BACKPLANE No.5 TERMINALS
24 VOLTS	RED	19	19
0 VOLTS	BLACK	20	20
SCREEN	PINK	22	22
COMMON	WHITE	18	18

LOOP No.	LOOP DESIGNATION	INTERMEDIATE TERMINALS	WIRE COLOUR	BACKPLANE TERMINALS
1	ESL21	2TBY 9 & 2TBY 10	SLATE	1 & 2
2	EX20	2TBY 11& 2TBY 12	BLUE/WHITE	3 & 4
3	BX6	2TBN 1 & 2TBN 2	GREEN	5 & 6
4	BX8	2TBN 3 & 2TBN 4	BLUE	7 & 8

DETECTOR OUTPUTS

DETECTOR No.	BACKPLANE TERMINALS	COLOUR	CONTR TERMINALS
1	10	BLUE	1TBJ 1
2	12	GREEN	1TBJ 2
3	14	ORANGE	1TBJ 3
4	16	YELLOW	1TBJ 4

Note 1 If more than one backplane power Linking between B/Planes to be made using the Red, Black Pink and White from 667/1/03887/002

Note 2 Use the detector termination kit (667/1/15854/000) to do the intermediate wiring.

Note 3 Ensure that the correct colour wires are used for the inter-mediate wiring.

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Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Special Instructions

SIEMENS SINGLE INTERNAL DETECTOR BACKPLANE INSTRUCTIONS SHEET (BACKPLANE 6)

CONNECTIONS MADE USING CABLEFORM 667/1/03887/002
UNUSED WIRE ENDS MUST BE TIED BACK AND INSULATED

DETECTOR RACK POWER CONNECTIONS

SIGNAL	WIRE COLOUR	BACKPLANE NO.5 TERMINALS	BACKPLANE No.6 TERMINALS
24 VOLTS	RED	19	19
0 VOLTS	BLACK	20	20
SCREEN	PINK	22	22
COMMON	WHITE	18	18

LOOP No.	LOOP DESIGNATION	INTERMEDIATE TERMINALS	WIRE COLOUR	BACKPLANE TERMINALS
1	BX9	2TBN 5 & 2TBN 6	ORANGE	1 & 2
2	BIN5	2TBN 7 & 2TBN 8	BROWN	3 & 4
3	BIN7	2TBN 9 & 2TBN 10	SLATE	5 & 6
4		2TBN 11& 2TBN 12	BLUE/WHITE	7 & 8

DETECTOR OUTPUTS

DETECTOR No.	BACKPLANE TERMINALS	COLOUR	CONTR TERMINALS
1	10	BLUE	1TBJ 5
2	12	GREEN	1TBJ 6
3	14	ORANGE	1TBJ 7
4	16	YELLOW	1TBJ 8

Note 1 If more than one backplane power Linking between B/Planes to be made using the Red, Black Pink and White from 667/1/03887/002

Note 2 Use the detector termination kit (667/1/15854/000) to do the intermediate wiring.

Note 3 Ensure that the correct colour wires are used for the inter-mediate wiring.

[Template - Internal intermediate Detectors.txt iss 1.0]

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Special Instructions

SIEMENS SINGLE INTERNAL DETECTOR BACKPLANE INSTRUCTIONS SHEET (BACKPLANE 7)

CONNECTIONS MADE USING CABLEFORM 667/1/03887/002
UNUSED WIRE ENDS MUST BE TIED BACK AND INSULATED

DETECTOR RACK POWER CONNECTIONS

SIGNAL	WIRE COLOUR	BACKPLANE No.6 TERMINALS	BACKPLANE No.7 TERMINALS
24 VOLTS	RED	19	19
0 VOLTS	BLACK	20	20
SCREEN	PINK	22	22
COMMON	WHITE	18	18

LOOP No.	LOOP DESIGNATION	INTERMEDIATE TERMINALS	WIRE COLOUR	BACKPLANE TERMINALS
1	HSL24	2TBP 1 & 2TBP 2	GREEN	1 & 2
2	HSL24a	2TBP 3 & 2TBP 4	BLUE	3 & 4
3	JSL25	2TBP 5 & 2TBP 6	ORANGE	5 & 6
4	JSL25a	2TBP 7 & 2TBP 8	BROWN	7 & 8

DETECTOR OUTPUTS

DETECTOR No.	BACKPLANE TERMINALS	COLOUR	CONTR TERMINALS
1	10	BLUE	1TBL 1
2	12	GREEN	1TBL 2
3	14	ORANGE	1TBL 3
4	16	YELLOW	1TBL 4

Note 1 If more than one backplane power Linking between B/Planes to be made using the Red, Black Pink and White from 667/1/03887/002

Note 2 Use the detector termination kit (667/1/15854/000) to do the intermediate wiring.

Note 3 Ensure that the correct colour wires are used for the inter-mediate wiring.

[Template - Internal intermediate Detectors.txt iss 1.0]

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Special Instructions

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Input/Output

Input/Output

☐ Enable Signal Required Check boxes

Port Number & Type

Port: 0

○ ○ ◉ Inputs & Outputs

	DET No	Bit No	Type I or O	Name	Req'd	BP	Inv	U/D	Misc	DFM	DFM Group	Ext time	Used By Phs	UTC	SDE	Pri	HC	CC	AR	UD	Term Block	Term No
○	0	0	I	AIN1	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBG	1
○	1	1	I	AX2	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBG	2
○	2	2	I	AIN3	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBG	3
○	3	3	I	AX4	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBG	4
○	4	4	I	CSL12	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBG	5
○	5	5	I	CSL14	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBG	6
○	6	6	I	CX11	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBG	7
○	7	7	I	CX13	☑	☐	☐		☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBG	8

Add | Delete | Move | Clear Used By

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Input/Output

Input/Output

☐ Enable Signal Required Check boxes

Port Number & Type

Port: 1

○ ○ ◉ Inputs & Outputs

	DET No	Bit No	Type I or O	Name	Req'd	BP	Inv	U/D	Misc	DFM	DFM Group	Ext time	Used By Phs	UTC	SDE	Pri	HC	CC	AR	UD	Term Block	Term No
○	8	0	I	CIN10	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBH	1
○	9	1	I	SPARE1	☑	☐	☐	☐	☐	N		0.0	☐	☐	☐	☐	☐	☐	☐	☐	1TBH	2
○	10	2	I	SPARE2	☑	☐	☐	☐	☐	N		0.0	☐	☐	☐	☐	☐	☐	☐	☐	1TBH	3
○	11	3	I	DSL19	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBH	4
○	12	4	I	DX16	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBH	5
○	13	5	I	DX18	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBH	6
○	14	6	I	DIN15	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBH	7
○	15	7	I	DIN17	☑	☐	☐		☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBH	8

Add | Delete | Move | Clear Used By

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Input/Output

Input/Output

☐ Enable Signal Required Check boxes

Port Number & Type

Port: 2

○ ○ ◉ Inputs & Outputs

	DET No	Bit No	Type I or O	Name	Req'd	BP	Inv	U/D	Misc	DFM	DFM Group	Ext time	Used By Phs	UTC	SDE	Pri	HC	CC	AR	UD	Term Block	Term No
○	16	0	I	ESL21	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBJ	1
○	17	1	I	EX20	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBJ	2
○	18	2	I	BX6	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBJ	3
○	19	3	I	BX8	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBJ	4
○	20	4	I	BX9	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBJ	5
○	21	5	I	BIN5	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBJ	6
○	22	6	I	BIN7	☑	☐	☐	☐	☐	A	0	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBJ	7
○	23	7	I	SPARE3	☑	☐	☐		☐	N		0.0	☐	☐	☐	☐	☐	☐	☐	☐	1TBJ	8

Add | Delete | Move | Clear Used By

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Input/Output

Input/Output

☐ Enable Signal Required Check boxes

Port Number & Type

Port: 3

○ ○ ◉ Inputs & Outputs

	DET No	Bit No	Type I or O	Name	Req'd	BP	Inv	U/D	Misc	DFM	DFM Group	Ext time	Used By: Phs	UTC	SDE	Pri	HC	CC	AR	UD	Term Block	Term No
○	24	0	I	HSL24	☑	☐	☐	☑	☐	A	2	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBL	1
○	25	1	I	HSL24u	☑	☐	☐	☐	☐	A	2	0.0	☐	☐	☐	☐	☐	☐	☐	☑	1TBL	2
○	26	2	I	JSL25	☑	☐	☐	☐	☐	A	2	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBL	3
○	27	3	I	SPARE4	☑	☐	☐	☐	☐	N		0.0	☐	☐	☐	☐	☐	☐	☐	☐	1TBL	4
○	28	4	I	PBUF	☑	☐	☐	☐	☐	A	2	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBL	5
○	29	5	I	ONC3F	☑	☐	☐	☐	☐	A	0	1.6	☑	☐	☐	☐	☐	☐	☐	☐	1TBL	6
○	30	6	I	ONC16F	☑	☐	☐	☐	☐	A	0	1.6	☑	☐	☐	☐	☐	☐	☐	☐	1TBL	7
○	31	7	I		☐	☐	☐		☐				☐	☐	☐	☐	☐	☐	☐	☐	1TBL	8

Add | Delete | Move | Clear Used By

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Input/Output

Input/Output

☐ Enable Signal Required Check boxes

Port Number & Type

Port: 6

○ ○ ◉ Inputs & Outputs

	DET No	Bit No	Type I or O	Name	Req'd	BP	Inv	U/D	Misc	DFM	DFM Group	Ext time	Used By Phs	UTC	SDE	Pri	HC	CC	AR	UD	Term Block	Term No
○	48	0	I	PBUG	☑	☐	☐	☐	☐	A	2	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBN	1
○	49	1	I	ONC6G	☑	☐	☐	☐	☐	A	0	1.6	☑	☐	☐	☐	☐	☐	☐	☐	1TBN	2
○	50	2	I	ONC7G	☑	☐	☐	☐	☐	A	0	1.6	☑	☐	☐	☐	☐	☐	☐	☐	1TBN	3
○	51	3	I	AMB32	☑	☐	☐	☐	☐	I	3	0.0	☑	☐	☐	☐	☐	☐	☐	☐	1TBN	4
○	52	4	I		☐	☐	☐	☐	☐				☐	☐	☐	☐	☐	☐	☐	☐	1TBN	5
○	53	5	I		☐	☐	☐	☐	☐				☐	☐	☐	☐	☐	☐	☐	☐	1TBN	6
○	54	6	I		☐	☐	☐	☐	☐				☐	☐	☐	☐	☐	☐	☐	☐	1TBN	7
○	55	7	I		☐	☐	☐		☐				☐	☐	☐	☐	☐	☐	☐	☐	1TBN	8

Add | Delete | Move | Clear Used By

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

Aspect Drives

Aspect Drives

(●) A-L ( ) M-X ( ) Y-F2

Phase Driver Card 1

	Used For	Term Block	Term No
A - Red	Phase	1TBA	1
A - Amber	Phase	1TBA	2
A - Green	Phase	1TBA	3
B - Red	Phase	1TBA	4
B - Amber	Phase	1TBA	5
B - Green	Phase	1TBA	6
C - Red	Phase	1TBA	7
C - Amber	Phase	1TBA	8
C - Green	Phase	1TBA	9
D - Red	Phase	1TBA	10
D - Amber	Phase	1TBA	11
D - Green	Phase	1TBA	12

Phase Driver Card 1

	Used For	Term Block	Term No
E - Red	Phase	1TBB	1
E - Amber	Phase	1TBB	2
E - Green	Phase	1TBB	3
F - Red	Phase	1TBB	4
F - Amber	Phase	1TBB	5
F - Green	Phase	1TBB	6
G - Red	Phase	1TBB	7
G - Amber	Phase	1TBB	8
G - Green	Phase	1TBB	9
H - Red	Phase	1TBB	10
H - Amber	Phase	1TBB	11
H - Green	Phase	1TBB	12

Phase Driver Card 2

	Used For	Term Block	Term No
I - Red	Phase	1TBC	1
I - Amber	Phase	1TBC	2
I - Green	Phase	1TBC	3
J - Red	Phase	1TBC	4
J - Amber	Phase	1TBC	5
J - Green	Phase	1TBC	6
K - Red			
K - Amber			
K - Green			
L - Red			
L - Amber			
L - Green			

Works Order : 199069
EM Number : E63476
Engineer : E DUFFY / S DEAKIN
Intersection : A5 / BIRCH COPPICE DEVELOPMENT TAMWORTH

I/O - Group DFM Timings

I/O - Group DFM Timings

Input Group	State	SET A	SET B	SET C	SET D
Group 0	Active (Mins)	120	120	120	120
	InActive (Hrs)	18	18	18	18
Group 1	Active (Mins)	30	30	30	30
	InActive (Hrs)	72	72	72	72
Group 2	Active (Mins)	15	15	15	15
	InActive (Hrs)				
Group 3	Active (Mins)	5	5	5	5
	InActive (Hrs)				
Group 4	Active (Mins)	30	30	30	30
	InActive (Hrs)	18	18	18	18
Group 5	Active (Mins)	30	30	30	30
	InActive (Hrs)	18	18	18	18
Group 6	Active (Mins)	30	30	30	30
	InActive (Hrs)	18	18	18	18
Group 7	Active (Mins)	30	30	30	30
	InActive (Hrs)	18	18	18	18

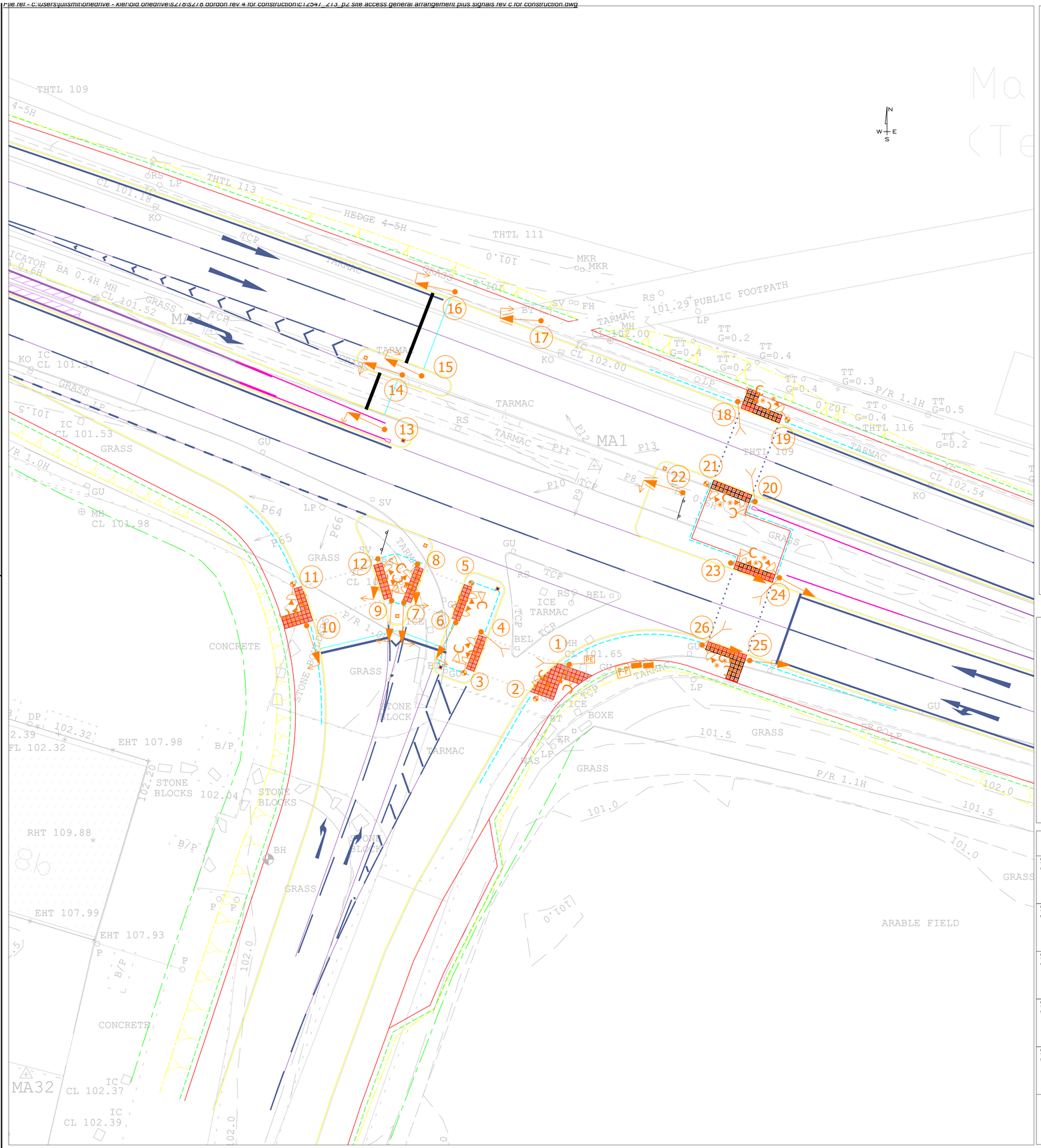
Note - 255 or blank disables DFM monitoring of that state (active or inactive) during that timeset (A

Handset Limiting Values

State	Min	Max
Active (Mins)	0	254
InActive (Hrs)	0	254

Index

File ref - c:\users\jillsmith\onedrive - kier\old onedrive\s278\s278 dordon 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

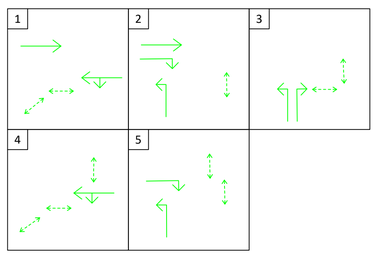
Nearside LED PUFFIN pedestrian demand and display unit with tactile cone

PUFFIN pedestrian demand unit with tactile cone

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	

Client

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

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

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

OUT

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-IN

Unit	Addr	*

KOPMV-OUT

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

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APPENDIX D

SATURATION FLOW MEASUREMENTS

Saturation Flows **23-Mar-22** **South Bound Slip Road (Site 1 Location 13) at Junction 10**

Jack H **AM** **Lane 1 (Nearside)**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line												TOTAL	TIME PERIODS	TIME
		6	12	18	24	30	36	42	48	54	1m	1m 6				
	1	2.3	2.3	2.0										2	1	6
	2	2.0	3.3	4.0	1.0									7	2	12
	3	3.0	4.0	1.0										4	1	6
	4	1.5	3.0	2.0	1.0									5	2	12
	5	3.0	2.5	3.0	3.0									9	3	18
	6	3.0	3.0	3.0										6	2	12
	7	3.0	5.0											5	1	6
	8	2.0	3.0	3.0	1.0									6	2	12
	9	3.3	3.0	2.0	2.0									7	3	18
	10													0	0	0
	Total	23	29	20	8	0	0	0	0	0	0	0				
														51		**102**

TOTAL FLOW **51**
TOTAL TIME **102**
SAT FLOW **1804**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **South Bound Slip Road (Site 1 Location 13) at Junction 10**

Jack H **AM** **Lane 3**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line												TOTAL	TIME PERIODS	TIME
		6	12	18	24	30	36	42	48	54	1m	1m 6				
	1	1.0	4.6	2.0										5	1	6
	2	2.0	2.0											2	1	6
	3	2.3	3.0	3.0	2.0									6	2	12
	4	2.0	3.0	1.0										3	1	6
	5	2.3	2.0	1.0										2	1	6
	6	2.0	3.3											3	1	6
	7	2.5	3.0	2.0										3	1	6
	8	2.0	3.3	1.0										3	1	6
	9													0	0	0
	10													0	0	0
	Total	16	24	10	2	0	0	0	0	0	0	0				
														27		**54**

TOTAL FLOW **27**
TOTAL TIME **54**
SAT FLOW **1813**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **West Bound A5 (Site 1 Location 14) at Junction 10**

Jack H **AM** **Lane 1 (Nearside)**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	2.0	4.0	3.0										7	2	12
	2	2.0	3.3	3.0	4.0									10	3	18
	3	1.5	2.5	3.0										6	2	12
	4	2.0	4.0	4.3	1.0									8	2	12
	5	2.0	3.0	3.0	2.0									6	2	12
	6	3.0	3.0	3.5										7	2	12
	7	2.0	3.0	4.3	1.0									7	2	12
	8	3.0	2.0	3.0	3.0	3.0	1.0							11	4	24
	9	1.5	3.3	3.0	3.0									9	3	18
	10	2.0	3.0	3.0										6	2	12
	Total	21	31	33	14	3	1	0	0	0	0	0				
														77		**144**

TOTAL FLOW **77**

TOTAL TIME **144**

SAT FLOW **1930**

"=" traffic flow not included in saturation flow calculation

Additional Green time

Saturation Flows **23-Mar-22** **West Bound A5 (Site 1 Location 14) at Junction 10**

Jack H **AM** **Lane 3**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	2.3	3.0	3.0	2.0	3.0	1.0							11	4	24
	2	3.0	3.0	3.0	3.0	4.0	3.0							16	5	30
	3	3.0	2.0	2.3	2.0	4.0	3.0	4.0						17	6	36
	4	2.0	4.0	3.0	4.0	2.5	2.0							14	4	24
	5	2.0	3.0	3.0	3.0									9	3	18
	6	2.0	4.0	3.0	4.0	3.0								14	4	24
	7	3.0	3.0	3.0	3.0									9	3	18
	8	3.0	2.0	4.0	2.0	3.0								11	4	24
	9	2.5	3.0	3.0	1.0									6	2	12
	10	3.0	2.0	4.6	3.0	3.0	4.0	1.0						17	5	30
	Total	26	29	32	27	23	13	5	0	0	0	0				
														123		**240**

TOTAL FLOW **123**
TOTAL TIME **240**
SAT FLOW **1851**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **Northbound Slip Road (Site 1 Location 17) at Junction 10**

Jack H **AM** **Lane 1 (nearside)**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	2.0	3.0	1.0										3	1	6
	2	3.3	2.0	3.0										5	2	12
	3	2.3	3.0	3.0										6	2	12
	4	3.0	3.0											3	1	6
	5	2.5	2.0	3.0	1.0									5	2	12
	6	2.0	3.0	2.5										6	2	12
	7	2.5	3.0	4.0										7	2	12
	8	2.0	3.0											3	1	6
	9	2.5	3.3	3.0	2.0									6	2	12
	10	2.0	4.0	1.5										6	2	12
	Total	24	29	21	3	0	0	0	0	0	0	0				
														49		**102**

TOTAL FLOW **49**
TOTAL TIME **102**
SAT FLOW **1740**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **Northbound Slip Road (Site 1 Location 17) at Junction 10**

Jack H **AM** **Lane 2**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	1.5	2.3	4.6										7	2	12
	2	2.3	3.0	3.0										6	2	12
	3	3.3	1.0	4.3										4	1	6
	4	2.0	3.3	2.5	1.0									6	2	12
	5	2.0	2.5	2.3										5	2	12
	6	2.3	2.3											2	1	6
	7	2.3	3.3											3	1	6
	8	2.3	2.3	2.3										2	1	6
	9	2.5	2.0	2.5										5	2	12
	10	2.3	3.3	2.0										3	1	6
	Total	23	25	24	1	0	0	0	0	0	0	0				
														44		**90**

TOTAL FLOW **44**
TOTAL TIME **90**
SAT FLOW **1740**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **Northbound Slip Road (Site 1 Location 17) at Junction 10**

Jack H **AM** **Lane 5 offside**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line												TOTAL	TIME PERIODS	TIME
		6	12	18	24	30	36	42	48	54	1m	1m 6				
	1	2.0	3.0	3.0	2.0									6	2	12
	2	3.0	3.0	3.0	2.0									6	2	12
	3	2.3	3.0	2.0										3	1	6
	4	2.0	3.0	3.3										6	2	12
	5	2.3	3.0	2.3										3	1	6
	6	3.0	3.0	2.0	1.0									5	2	12
	7	2.0	3.0	4.6										8	2	12
	8	3.5	3.5	1.0										4	1	6
	9	3.0	3.0	3.0										6	2	12
	10	2.0	3.0	3.0	1.0									6	2	12
	Total	25	31	27	6	0	0	0	0	0	0	0				
														52		**102**

TOTAL FLOW **52**
TOTAL TIME **102**
SAT FLOW **1849**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **East Bound A5 (Site 1 Location 18) at Junction 10**

Jack H **AM** **Lane 1 (nearside)**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	2.3	2.0	3.0	4.0	3.0	4.0	2.0						16	5	30
	2	3.0	3.0	2.5	3.5	2.0	1.0							11	4	24
	3	2.0	4.0	2.3	2.0	2.3	2.0							11	4	24
	4	2.0	2.5	4.3	3.3	2.0								10	3	18
	5	3.0	4.3	2.0	2.0	3.0								11	4	24
	6	1.0	2.0	3.0	3.0	2.0								8	3	18
	7	2.0	3.0	3.0	3.0	3.0	3.0	2.0						15	5	30
	8	2.0	3.0	3.0	3.5									10	3	18
	9	2.0	3.0	3.0	4.0	2.3	4.0	2.0						16	5	30
	10	2.0	4.0	4.0	3.0	2.0								11	3	18
	Total	21	31	30	31	22	14	6	0	0	0	0				
														119		**234**

TOTAL FLOW **119**
TOTAL TIME **234**
SAT FLOW **1828**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **East Bound A5 (Site 1 Location 18) at Junction 10**

Jack H **AM** **Lane 2**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line												TOTAL	TIME PERIODS	TIME
		6	12	18	24	30	36	42	48	54	1m	1m 6				
	1	2.3	2.5	2.0	3.0									8	3	18
	2	2.0	3.0	4.0	2.0									7	2	12
	3	3.0	3.0	3.0	2.0	1.0								6	2	12
	4	2.0	4.0	3.0	2.0									7	2	12
	5	3.0	3.0	2.0	4.0									9	3	18
	6	2.0	4.0	3.0										7	2	12
	7	2.5	3.0	4.0	2.0									7	2	12
	8	3.0	3.0	2.0										3	1	6
	9	2.0	3.0	2.0										3	1	6
	10	3.0	3.0	4.0	3.0	1.0								10	3	18
	Total	25	32	29	18	2	0	0	0	0	0	0				
														67		**126**

TOTAL FLOW **67**
TOTAL TIME **126**
SAT FLOW **1900**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **Trinity Road (Site 1 Location 25) at Junction 10**

Jack H **AM** **Lane 1 nearside**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line												TOTAL	TIME PERIODS	TIME
		6	12	18	24	30	36	42	48	54	1m	1m 6				
	1	2.3	3.0	3.3	1.0									7	3	18
	2	2.3	3.3	1.5										3	1	6
	3	2.3	2.3	2.0	3.0									7	3	18
	4	3.0	3.0	1.0										3	1	6
	5	2.3	3.3	2.3										3	1	6
	6	3.0	3.0											3	1	6
	7	2.3	2.3	4.6										7	2	12
	8	2.3	2.3	3.0										5	2	12
	9	3.3	2.3	3.3	1.0									6	2	12
	10	3.3	2.3											2	1	6
	Total	26	27	21	5	0	0	0	0	0	0	0				
														47		**102**

TOTAL FLOW **47**
TOTAL TIME **102**
SAT FLOW **1669**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **Green Lane (Site 1 Location 22) at Junction 10**

Jack H **AM** **Lane 1 nearside**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line												TOTAL	TIME PERIODS	TIME
		6	12	18	24	30	36	42	48	54	1m	1m 6				
	1	1.0	3.0	2.0										3	1	6
	2	2.3	2.0											2	1	6
	3	3.3	3.3											3	1	6
	4	2.3	3.0											3	1	6
	5	1.0	3.0	2.0										3	1	6
	6	2.0	2.3	1.5										2	1	6
	7	2.3	2.3	1.0										2	1	6
	8	2.0	3.0											3	1	6
	9	2.3	2.5											3	1	6
	10	2.3	2.3	1.0										2	1	6
	Total	21	27	8	0	0	0	0	0	0	0	0				
														27		**60**

TOTAL FLOW **27**
TOTAL TIME **60**
SAT FLOW **1602**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **Eastbound Overbridge (Site 1 Location 7) - Southbound circulatory on Junction 10**

Jack H **AM** **Lane 1 (Nearside)**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	1.0	4.6	3.0	2.5									8	2	12
	2	2.3	2.5	3.3	3.3	2.0								9	3	18
	3	2.0	3.0	2.5	4.0									10	3	18
	4	3.0	2.5	3.0	3.0									9	3	18
	5	4.6	3.0	3.0	3.0									9	3	18
	6	2.5	3.3	3.0	2.3									6	2	12
	7	2.5	4.6	3.3	3.3									11	3	18
	8	3.3	4.3	2.5	2.0									7	2	12
	9	2.3	4.0	3.0	1.0									7	2	12
	10	2.3	2.5	4.0	2.0									7	2	12
	Total	26	34	31	26	2	0	0	0	0	0	0				
														82		**150**

TOTAL FLOW **82**
TOTAL TIME **150**
SAT FLOW **1956**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **Eastbound Overbridge (Site 1 Location 7) - Southbound circulatory on Junction 10**

Jack H **AM** **Lane 3 (Offside Middle)**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	3.0	4.0	3.5	2.0									8	2	12
	2	3.0	3.5	2.0	2.0	3.3	3.3							14	5	30
	3	3.0	3.0	2.5	4.3	1.0								10	3	18
	4	2.3	2.5	3.0										6	2	12
	5	2.5	2.0	3.0	3.0	3.0	1.0							11	4	24
	6	3.3	2.0	4.0	2.0									6	2	12
	7	2.0	3.3	2.0	2.0									5	2	12
	8	2.0	2.5	1.0	3.3	3.0	3.0	3.0						15	5	30
	9	3.0	4.0	2.0	4.0	3.0								13	4	24
	10	2.0	3.0	3.0	3.0	3.0								12	4	24
	Total	26	30	26	26	16	7	3	0	0	0	0				
														99		**198**

TOTAL FLOW **99**
TOTAL TIME **198**
SAT FLOW **1800**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **Green Lane Circulatory (Site 1 Location 12) on Junction 10**

Jack H **AM** **Lane 1 nearside**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line												TOTAL	TIME PERIODS	TIME
		6	12	18	24	30	36	42	48	54	1m	1m 6				
	1	2.3	3.3	2.0										5	2	12
	2	3.0	2.5	3.3	3.0	4.0	4.5	3.0						20	6	36
	3	2.3	2.0	3.5										6	2	12
	4	2.3	3.0	3.3	4.3	3.0								14	4	24
	5	3.3	2.0	3.5										6	2	12
	6	2.0	2.3	3.0	3.5	4.0	4.0	3.8	1.0					21	6	36
	7	2.0	3.3	3.8	2.0	3.0	3.3	2.0						15	5	30
	8	1.5	3.0	2.0	4.0	3.3	4.3	2.0						17	5	30
	9	2.3	2.0	4.3	3.3	3.0	4.0	3.0	3.3	4.3	2.3			27	8	48
	10	2.3	1.5											0	0	0
	Total	23	25	29	20	20	20	14	4	4	2	0				
														130		**240**

TOTAL FLOW **130**
TOTAL TIME **240**
SAT FLOW **1950**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **Green Lane Circulatory (Site 1 Location 12) on Junction 10**

Jack H **AM** **Lane 2 Middle**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	2.0	3.3	3.0	4.3	2.0								11	3	18
	2	3.5	2.0	1.0										0	0	0
	3	2.0	2.0	4.0	4.0	3.0								10	3	18
	4	1.5	2.0	2.0	2.0	4.0	4.5	3.0						18	6	36
	5	2.0	2.0											0	0	0
	6	2.0	3.0											3	1	6
	7	2.0	2.0	2.0	3.3	2.0	2.0	3.0						14	6	36
	8	3.0	3.0	3.0										6	2	12
	9	3.0	3.0	2.0										5	2	12
	10	1.5	2.3	4.0										6	2	12
	Total	23	25	21	14	11	7	6	0	0	0	0				
														73		**150**

TOTAL FLOW **73**

TOTAL TIME **150**

SAT FLOW **1745**

"=" traffic flow not included in saturation flow calculation

Additional Green time

Saturation Flows **23-Mar-22** **M42 Northbound Slip Road Circulating (Site 1 Location 10) on Junction 10**

Jack H **AM** **Lane 1 nearside**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	2.0	4.0	4.0	1.0									8	2	12
	2	2.0	3.0	4.0	2.3	4.3	3.0	3.8						20	6	36
	3	2.0	3.8	3.0	3.3	2.5	3.0	3.0	4.0	2.0				23	7	42
	4	3.3	3.0	3.5	3.5	4.0	3.0	4.0	3.0	2.5				24	7	42
	5	3.0	2.0	3.0	2.5									5	2	12
	6	2.0	3.5	3.3	4.3	4.0	3.5	1.0						19	5	30
	7	2.0	2.3	4.0	4.3	1.0								11	3	18
	8	2.3	3.0	3.0	3.0	4.0	4.0	4.0	2.0					21	6	36
	9	2.0	4.0	3.0	2.0	4.3	3.0	4.0	3.0					20	6	36
	10	1.5	2.0	4.0	4.0	2.0	4.0							16	5	30
	Total	22	31	35	30	26	24	20	12	5	0	0				
														167		**294**

TOTAL FLOW **167**
TOTAL TIME **294**
SAT FLOW **2039**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **M42 Northbound Slip Road Circulating (Site 1 Location 10) on Junction 10**

Jack H **AM** **Lane 2 offside**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	3.0	3.0	3.5	3.0	2.0								10	3	18
	2	3.3	3.0	3.0	1.0									6	2	12
	3	2.0	2.5	3.0	3.0	1.0								9	3	18
	4	2.3	4.0	1.5	3.0									9	3	18
	5	2.0	3.0	3.0	2.3									6	2	12
	6	2.0	4.0	3.0	2.5	1.0								10	3	18
	7	2.0	4.5	1.0										5	1	6
	8	3.0	4.0	1.0										4	1	6
	9	2.3	3.3	2.3	2.5	2.0								8	3	18
	10	2.0	3.0	3.0	3.0	2.5								9	3	18
	Total	24	34	24	20	9	0	0	0	0	0	0				
														74		**144**

TOTAL FLOW **74**
TOTAL TIME **144**
SAT FLOW **1840**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **Trinity Road Circulating (Site 1 Location 9) on Junction 10**

Jack H **AM** **Lane 2 nearside middle**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	2.0	3.0	3.0	4.0	1.0								10	3	18
	2	2.5	3.0	2.0										3	1	6
	3	3.0	3.0	1.0										3	1	6
	4	2.0	4.0	3.0	1.0									7	2	12
	5	1.0	4.3	2.0										4	1	6
	6	3.3	2.0	2.0	1.0									4	2	12
	7	2.0	3.0	2.0	1.0									5	2	12
	8	3.5	3.0	4.0										7	2	12
	9	3.5	2.0											2	1	6
	10	3.0	3.0	4.0	1.0									7	2	12
	Total	26	30	23	8	1	0	0	0	0	0	0				
														52		**102**

TOTAL FLOW **52**
TOTAL TIME **102**
SAT FLOW **1846**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **Trinity Road Circulating (Site 1 Location 9) on Junction 10**

Jack H **AM** **Lane 3 offside middle**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	2.0	3.0	3.0	4.5	2.5	2.0							13	4	24
	2	2.0	3.0											3	1	6
	3	1.0	2.5	2.3	3.0	2.0	3.5	2.5	4.0	2.0				20	7	42
	4	2.0	4.0	4.0	2.0	1.0								10	3	18
	5	2.0	2.0	3.3	4.6	3.0								13	4	24
	6	3.0	3.0	3.0										6	2	12
	7	1.0	3.0	2.0										3	1	6
	8	2.0	2.0											2	1	6
	9	2.0	4.0	3.0	2.0									7	2	12
	10	2.0	3.0	4.8	1.0									8	2	12
	Total	19	30	25	17	9	6	3	4	2	0	0				
														85		**162**

TOTAL FLOW **85**
TOTAL TIME **162**
SAT FLOW **1878**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **A5 Westbound Circulating (Site 1 Location 8) on Junction 10**

Jack H **AM** **Lane 1 nearside**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	3.3	2.0											2	1	6
	2	2.0	3.0	3.3										6	2	12
	3	2.3	2.0	4.0										6	2	12
	4	1.0	3.3	3.0										6	2	12
	5	1.0	3.3	3.3	1.0									7	2	12
	6	2.0	2.5	3.0	4.3	2.0								10	3	18
	7	2.0	3.0	2.0										3	1	6
	8	2.0	2.0	3.3	2.3									5	2	12
	9	2.0	1.0	4.3										5	2	12
	10	3.0	3.3	2.0										3	1	6
	Total	21	25	28	8	2	0	0	0	0	0	0				
														54		**108**

TOTAL FLOW **54**
TOTAL TIME **108**
SAT FLOW **1797**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **A5 Westbound Circulating (Site 1 Location 8) on Junction 10**

Jack H **AM** **Lane 3 offside middle**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line												TOTAL	TIME PERIODS	TIME
		6	12	18	24	30	36	42	48	54	1m	1m 6				
	1	2.0	4.0	2.0										4	1	6
	2	2.3	4.3	2.0										4	1	6
	3	2.0	3.0	3.0	2.0									6	2	12
	4	2.0	3.0	1.0										3	1	6
	5	1.5	3.3	1.0										3	1	6
	6	3.3	2.0	2.0										4	2	12
	7	2.0	4.0	2.0										4	1	6
	8	2.3	4.3	1.0										4	1	6
	9	2.3	3.0											3	1	6
	10	1.5	3.0	2.3	1.0									5	2	12
	Total	21	34	16	3	0	0	0	0	0	0	0				
														41		**78**

TOTAL FLOW **41**
TOTAL TIME **78**
SAT FLOW **1902**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **A5 Westbound ahead at Birch Coppice (Site 2 Location 4)**

Jack H **AM** **Lane 3 Offside**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	2.0	3.0	4.0	2.0									7	2	12
	2	2.0	4.0	3.0	3.0	3.0	2.0	2.0						15	5	30
	3	2.0	3.0	4.0	3.0	4.0	3.0	3.0						17	5	30
	4	2.0	3.0	4.0	4.0	2.0								11	3	18
	5	3.0	4.0	3.0	4.0	3.0	1.0							14	4	24
	6	2.0	4.0	3.0	3.0	3.0	4.0	3.0						20	6	36
	7	3.0	4.0	4.0	4.0	3.0	4.0	2.0						19	5	30
	8	3.0	3.0	3.0	4.0	1.0								10	3	18
	9	3.0	2.0	3.0	3.0	3.0	2.0							11	4	24
	10	3.0	4.0	3.0	3.0									7	2	12
	Total	25	34	34	33	22	16	10	0	0	0	0				
														131		**234**

TOTAL FLOW **131**

TOTAL TIME **234**

SAT FLOW **2015**

"=" traffic flow not included in saturation flow calculation

Additional Green time

Saturation Flows **23-Mar-22** **Birch Coppice Left Turn Exit on to A5 (Site 2 Location 5)**

Jack H **AM** **Lane 1 nearside**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	2.3	2.3	2.0	1.5									4	2	12
	2	2.3	2.3	2.5										5	2	12
	3	2.0	2.3	4.6	2.3									7	2	12
	4	2.0	2.3	3.3	2.3	2.3								8	3	18
	5	2.3	1.0	2.3	3.8	1.0								7	3	18
	6	2.3	3.3	1.0										3	1	6
	7	2.0	2.3	4.3										7	2	12
	8	2.0	3.0	1.0										3	1	6
	9	2.0	4.0	3.0	2.0									7	2	12
	10	2.3	3.3	2.3										6	2	12
	Total	22	26	26	12	3	0	0	0	0	0	0				
														57		**120**

TOTAL FLOW **57**
TOTAL TIME **120**
SAT FLOW **1695**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **Birch Coppice Left Turn Exit on to A5 (Site 2 Location 5)**

Jack H **AM** **Lane 2 middle**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	2.0	4.0											4	1	6
	2	3.0	3.0	4.0	4.0	3.0								11	3	18
	3	2.0	3.0	2.0	2.0									5	2	12
	4	1.0	3.3	4.0	1.0									7	2	12
	5	2.0	3.0	3.0										6	2	12
	6	2.0	3.0	2.0	4.5									10	3	18
	7	2.5	3.0	2.5	4.5									10	3	18
	8	3.0	4.0	2.5										4	1	6
	9	2.0	3.0											3	1	6
	10	2.0	3.0	1.0										3	1	6
	Total	22	32	21	16	3	0	0	0	0	0	0				
														63		**114**

TOTAL FLOW **63**
TOTAL TIME **114**
SAT FLOW **1983**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **Birch Coppice Right Turn Exit on to A5 (Site 2 Location 5)**

Jack H **AM** **Lane 3 (Right Turn)**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	2.5	2.0											2	1	6
	2	2.5	1.5	2.3										4	2	12
	3	2.0	3.5	1.0										4	1	6
	4	2.0	2.0											2	1	6
	5	2.0	3.0											3	1	6
	6	3.0	4.0	2.0	3.5	2.0								10	3	18
	7	3.0	3.0	3.0										6	2	12
	8	2.0	4.0	1.0										4	1	6
	9													0	0	0
	10													0	0	0
	Total	19	23	9	4	2	0	0	0	0	0	0				
														34		**72**

TOTAL FLOW **34**

TOTAL TIME **72**

SAT FLOW **1690**

"=" traffic flow not included in saturation flow calculation

Additional Green time

Saturation Flows **23-Mar-22** **A5 Eastbound ahead at Birch Coppice (Site 2 Location 6)**

Jack H **AM** **Lane 1 nearside**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	2.0	2.0	2.5	2.3	3.0	2.0							10	4	24
	2	2.0	3.0	3.8	1.0									7	2	12
	3	3.8	2.0	1.0										0	0	0
	4	2.0	2.5	3.5	2.0	3.8	2.0							12	4	24
	5	2.0	3.5	3.0	3.0	3.5								13	4	24
	6	3.0	3.0	2.5	3.0	3.0								12	4	24
	7	2.0	4.0	3.0	1.0									7	2	12
	8	2.3	3.0	2.5	4.0	2.0	2.0							10	3	18
	9	2.0	3.0	3.0	4.0									10	3	18
	10	3.0	1.0	4.3	3.0									8	3	18
	Total	24	27	29	23	15	6	0	0	0	0	0				
														88		**174**

TOTAL FLOW **88**
TOTAL TIME **174**
SAT FLOW **1814**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **A5 Eastbound ahead at Birch Coppice (Site 2 Location 6)**

Jack H **AM** **Lane 2**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line												TOTAL	TIME PERIODS	TIME
		6	12	18	24	30	36	42	48	54	1m	1m 6				
	1	3.0	4.0	4.0	4.0	2.0								12	3	18
	2	3.0	3.0	3.0	1.0									6	2	12
	3	3.0	3.0	2.0										3	1	6
	4	3.0	3.0											3	1	6
	5	3.0	3.0	1.0										3	1	6
	6	3.3	2.0	2.0										2	1	6
	7	3.0	4.0											4	1	6
	8	2.3	3.0	2.0										3	1	6
	9	3.0	4.0	5.0										9	2	12
	10	3.0	3.0	4.0	3.0	4.0	1.0							14	4	24
	Total	30	32	23	8	6	1	0	0	0	0	0				
														59		**102**

TOTAL FLOW **59**
TOTAL TIME **102**
SAT FLOW **2082**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **A5 Eastbound right turn to Birch Coppice (Site 2 Location 6)**

Jack H **AM** **Lane 3 nearside**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	3.3	2.5	2.0										3	1	6
	2	3.3	2.3	3.3										6	2	12
	3	1.0	4.6	2.3										7	2	12
	4	2.0	3.3	3.3	2.3									7	2	12
	5	3.3	4.6	3.3	1.0	3.3								12	4	24
	6	2.3	2.3	4.6										7	2	12
	7	2.3	3.8	3.8										8	2	12
	8	2.3	4.6											5	1	6
	9	2.3	2.3	3.3	3.8	1.5								9	3	18
	10	2.5	2.5	3.8	2.3									6	2	12
	Total	25	33	30	9	5	0	0	0	0	0	0				
														69		**126**

TOTAL FLOW **69**
TOTAL TIME **126**
SAT FLOW **1960**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **A5 Eastbound right turn to Birch Coppice (Site 2 Location 6)**

Jack H **AM** **Lane 4 offside**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line												TOTAL	TIME PERIODS	TIME
		6	12	18	24	30	36	42	48	54	1m	1m 6				
	1	2.0	4.0	3.0	1.0									7	2	12
	2	2.0	2.0											2	1	6
	3	2.0	3.0											3	1	6
	4	2.0	3.0	1.0										3	1	6
	5	3.0	3.0											3	1	6
	6	3.0	2.0	3.0										5	2	12
	7	2.0	2.0											2	1	6
	8													0	0	0
	9													0	0	0
	10													0	0	0
	Total	16	19	7	1	0	0	0	0	0	0	0				
														25		**54**

TOTAL FLOW **25**
TOTAL TIME **54**
SAT FLOW **1667**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **A5 Westbound ahead and left turn at Core 42 (Site 3 Location 4)**

Jack H **AM** **Lane 1 nearside**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line														
		6	12	18	24	30	36	42	48	54	1m	1m 6		TOTAL	TIME PERIODS	TIME
	1	2.0	4.0	2.0										4	1	6
	2	2.0	3.0	1.0										3	1	6
	3	3.0	3.0	3.0										6	2	12
	4	2.0	2.0	4.0	3.0	2.0								9	3	18
	5	2.0	2.0	3.0	1.0									5	2	12
	6	2.5	4.0	3.0	1.0									7	2	12
	7	3.3	3.0	3.0	2.0									6	2	12
	8	2.0	4.0	3.0	3.0									7	2	12
	9	3.0	4.0	4.0	4.0	4.0	1.0							16	4	24
	10	3.0	4.0	2.0	3.0	3.0	2.0	2.0						12	4	24
	Total	25	33	28	17	9	3	2	0	0	0	0				
														75		**138**

TOTAL FLOW **75**
TOTAL TIME **138**
SAT FLOW **1957**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **A5 Westbound ahead at Core 42 (Site 3 Location 4)**

Jack H **AM** **Lane 2 offside**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line												TOTAL	TIME PERIODS	TIME
		6	12	18	24	30	36	42	48	54	1m	1m 6				
	1	2.3	2.0	3.3	2.5									8	3	18
	2	2.0	4.0	4.0	1.0									8	2	12
	3	2.0	4.3	3.0	1.0									7	2	12
	4	2.0	3.0	3.0	2.0									6	2	12
	5	2.0	3.0	1.0										3	1	6
	6	3.3	1.0	2.0										0	0	0
	7	2.3	4.3	2.0										4	1	6
	8	2.0	3.0	2.0										3	1	6
	9	2.3	3.0	2.5	3.0	3.0	1.0							12	4	24
	10													0	0	0
	Total	20	28	23	10	3	1	0	0	0	0	0				
														51		**96**

TOTAL FLOW **51**
TOTAL TIME **96**
SAT FLOW **1909**

"=" traffic flow not included in saturation flow calculation
Additional Green time

Saturation Flows **23-Mar-22** **A5 Eastbound ahead at Core 42 (Site 3 Location 6)**

Jack H **AM** **Lane 1 nearside**

Stop Line	Cycle	Seconds of Saturated Flow - Stop Line												TOTAL	TIME PERIODS	TIME
		6	12	18	24	30	36	42	48	54	1m	1m 6				
	1	3.3	2.0	1.0										2	1	6
	2	2.3	3.0	2.0										3	1	6
	3	2.0	4.0	2.5	2.5	1.0								9	3	18
	4	2.0	3.0	3.0	3.0	3.0	2.0							12	4	24
	5	2.0	2.5	3.0	1.0									6	2	12
	6	2.5	2.0	3.5	4.0	3.0	4.0	4.0	3.0	1.0				24	7	42
	7													0	0	0
	8													0	0	0
	9													0	0	0
	10													0	0	0
	Total	14	17	15	11	7	6	4	3	1	0	0				
														55		**108**

TOTAL FLOW **55**
TOTAL TIME **108**
SAT FLOW **1833**

"=" traffic flow not included in saturation flow calculation
Additional Green time

APPENDIX E

2023 AM & PM PEAK HOUR MODELLING RESULTS

Table 4.1: M42/ Junction 10 + A5/ Birch Coppice + A5/ Core 42, 2023 Surveyed Year

				AM Peak		PM Peak	
Traffic Stream(s)	Lane	Saturation Flow pcu/hr	Model Output	Observed Queue	Results	Observed Queue	Results
B5080 Pennine Way North/ A5 Eastbound On/ Off Slip Road							
54/1 + 55/1	Pennine Way North Lane 1	N/A	Queue Aver Delay	5	5 44 secs	0	1 13 secs
54/2	Pennine Way South Lane 2	N/A	Queue Aver Delay	2	1 7 secs	1	0 5 secs
60/1	A5 Eastbound Off Slip Lane 1	N/A	Queue Aver Delay	0	0 4 secs	0	0 4 secs
60/2	A5 Eastbound Off Slip Lane 2	N/A	Queue Aver Delay	0	0 4 secs	0	0 4 secs
64/1 + 66/1	Northbound Overbridge Lane 1	N/A	Queue Aver Delay	0	0 5 secs	1	2 8 secs
64/2	Northbound Overbridge Lane 2	N/A	Queue Aver Delay	0	0 4 secs	0	0 4 secs
68/1 + 59/1	A5 Eastbound On-Slip Merge	N/A	Queue Aver Delay	4	14 1m 28s	0	0 2 secs
B5080 Pennine Way South/ A5 Westbound On/ Off Slip Road/ Quarry Hill							
89/1	Southbound Overbridge Lane 1	N/A	Queue Aver Delay	0	0 5 secs	0	0 4 secs
89/2	Southbound Overbridge Lane 2	N/A	Queue Aver Delay	0	0 5 secs	0	0 5 secs
76/1	A5 Westbound Off Slip Lane 1	N/A	Queue Aver Delay	0	0 6 secs	1	1 8 secs
76/2	A5 Westbound Off Slip Lane 2	N/A	Queue Aver Delay	1	0 6 secs	1	3 15 secs
81/1	Centurion Way Lane 1	N/A	Queue Aver Delay	0	0 4 secs	2	0 6 secs
81/2	Centurion Way Lane 2	N/A	Queue Aver Delay	0	0 4 secs	1	0 5 secs
86/1	Quarry Hill Lane 1	N/A	Queue Aver Delay	1	1 6 secs	6	8 49 secs
86/2	Quarry Hill Lane 2	N/A	Queue Aver Delay	0	0 4 secs	0	0 4 secs
M42 Junction 10							
1/1	M42 Northbound Offslip Lane 1	1740	Queue Aver Delay	6	3 16 secs	15	16 1m 29s
1/2	M42 Northbound Offslip Lane 2	1740	Queue Aver Delay	3	2 15 secs	5	5 32 secs
1/3	M42 Northbound Offslip Lane 3	1740	Queue Aver Delay	2	1 13 secs	2	2 21 secs
3/1	M42 Northbound Offslip Lane 4	1849	Queue Aver Delay	7	4 17 secs	9	6 28 secs
3/2	M42 Northbound Offslip Lane 5	1849	Queue Aver Delay	8	4 17 secs	9	6 27 secs
7/1	M42 Northbound Circulating Lane 1	2039	Queue Aver Delay	10	6 17 secs	16	25 21 secs
7/2	M42 Northbound Circulating Lane 2	1840	Queue Aver Delay	7	2 15 secs	14	14 17 secs
8/1 + 9/1 + 11/1	A5 Eastbound Lane 1	1828	Queue Aver Delay	47	57 3m 49s	12	13 52 secs
8/2	A5 Eastbound Lane 2	1900	Queue Aver Delay	10	4 20 secs	9	5 20 secs
8/3 + 9/2 + 11/2	A5 Eastbound Lane 3	1900	Queue Aver Delay	32	48 2m 51s	9	10 33 secs
12/1	A5 Eastbound Circulating Lane 1	1846	Queue Aver Delay	5	2 14 secs	3	4 19 secs
12/2	A5 Eastbound Circulating Lane 2	1878	Queue Aver Delay	6	3 15 secs	6	6 19 secs
12/3	A5 Eastbound Circulating Lane 3	1878	Queue Aver Delay	6	3 14 secs	7	6 18 secs
12/4	A5 Eastbound Circulating Lane 4	1878	Queue Aver Delay	2	1 12 secs	2	2 15 secs
14/1	Green Lane Lane 1	1602	Queue Aver Delay	4	3 39 secs	8	5 37 secs
14/2	Green Lane Lane 2	1602	Queue Aver Delay	4	5 1 min	8	11 1m 33s
15/1	Green Lane Circulating Lane 1	1950	Queue Aver Delay	7	8 4 secs	6	13 9 secs
15/2	Green Lane Circulating Lane 2	1745	Queue Aver Delay	8	5 5 secs	6	10 11 secs
15/3	Green Lane Circulating Lane 3	1745	Queue Aver Delay	2	1 3 secs	1	1 3 secs

18/1	M42 Southbound Offslip Lane 1	1804	Queue Aver Delay	1	1 25 secs	3	2 18 secs
18/2	M42 Southbound Offslip Lane 2	1813	Queue Aver Delay	1	1 27 secs	3	4 32 secs
18/3	M42 Southbound Offslip Lane 3	1813	Queue Aver Delay	2	1 27 secs	4	3 25 secs
17/1	M42 Southbound Circulating Lane 1	1956	Queue Aver Delay	3	5 5 secs	5	4 7 secs
17/2	M42 Southbound Circulating Lane 2	1956	Queue Aver Delay	4	10 6 secs	6	4 10 secs
17/3	M42 Southbound Circulating Lane 3	1800	Queue Aver Delay	5	11 7 secs	5	4 9 secs
17/4	M42 Southbound Circulating Lane 4	1800	Queue Aver Delay	1	1 4 secs	3	3 6 secs
23/1	A5 Westbound Lane 1	1930	Queue Aver Delay	7	9 21 secs	6	4 18 secs
23/2	A5 Westbound Lane 2	1851	Queue Aver Delay	6	5 18 secs	5	2 17 secs
23/3 + 24/1 + 25/1	A5 Westbound Lane 3	1851	Queue Aver Delay	10	11 35 secs	13	13 49 secs
23/4 + 24/1	A5 Westbound Lane 4	1851	Queue Aver Delay	6	6 18 secs	6	4 20 secs
22/1	A5 Westbound Circulating Lane 1	1797	Queue Aver Delay	6	3 14 secs	6	10 19 secs
22/2	A5 Westbound Circulating Lane 2	1797	Queue Aver Delay	8	2 11 secs	5	3 14 secs
22/3	A5 Westbound Circulating Lane 3	1902	Queue Aver Delay	2	2 11 secs	5	2 13 secs
22/4	A5 Westbound Circulating Lane 4	1902	Queue Aver Delay	1	2 11 secs	5	3 13 secs
28/1 + 29/1	Trinity Road Lane 1	1669	Queue Aver Delay	8	4 34 secs	9	9 58 secs
28/2	Trinity Road Lane 2	1669	Queue Aver Delay	7	5 34 secs	7	3 31 secs
27/1	Trinity Road Circulating Lane 1	1846	Queue Aver Delay	3	4 9 secs	3	4 8 secs
27/2	Trinity Road Circulating Lane 2	1846	Queue Aver Delay	8	3 9 secs	6	4 10 secs
27/3	Trinity Road Circulating Lane 3	1878	Queue Aver Delay	3	9 10 secs	8	7 7 secs
27/4	Trinity Road Circulating Lane 4	1878	Queue Aver Delay	2	3 8 secs	4	6 8 secs
A5/ Birch Coppice							
31/1	A5 Eastbound Ahead Lane 1	1814	Queue Aver Delay	5	4 12 secs	9	8 18 secs
31/2	A5 Eastbound Ahead Lane 2	2082	Queue Aver Delay	4	5 9 secs	5	1 11 secs
32/1	A5 Eastbound Right Turn Lane 3	1960	Queue Aver Delay	5	7 48 secs	4	5 54 secs
32/2	A5 Eastbound Right Turn Lane 4	1667	Queue Aver Delay	8	9 1m 10s	4	4 49 secs
37/1	A5 Westbound Ahead Lane 1	1751	Queue Aver Delay	2	2 21 secs	2	2 21 secs
37/2 + 38/1	A5 Westbound Ahead Lane 2	2015	Queue Aver Delay	16	16 32 secs	13	9 29 secs
37/3 + 38/2	A5 Westbound Ahead Lane 3	2015	Queue Aver Delay	14	13 34 secs	13	10 33 secs
42/1	Birch Coppice Left Turn Lane 1	1695	Queue Aver Delay	5	5 32 secs	6	5 26 secs
42/2	Birch Coppice Left Turn Lane 2	1983	Queue Aver Delay	6	3 31 secs	9	5 26 secs
43/1	Birch Coppice Right Turn Lane 3	1690	Queue Aver Delay	3	2 32 secs	5	3 27 secs
A5/ Core 42							
46/1	A5 Eastbound Ahead Lane 1	1833	Queue Aver Delay	2	2 2 secs	6	3 6 secs
46/2	A5 Eastbound Ahead Lane 2	2082	Queue Aver Delay	1	1 1 sec	3	1 2 secs
47/1	A5 Eastbound Right Turn Lane 3	1667	Queue Aver Delay	2	1 33 secs	1	1 24 secs
49/1	A5 Westbound Ahead & Left Turn Lane 1	1957	Queue Aver Delay	6	8 7 secs	8	7 14 secs
49/2	A5 Westbound Ahead Lane 2	1909	Queue Aver Delay	4	4 6 secs	7	6 13 secs
51/1	Core 42 Left Turn Lane 1	1695	Queue Aver Delay	1	1 33 secs	2	1 22 secs

52/1	Core 42 Right Turn Lane 2	1690	Queue Aver Delay	0	1 6m 24s	1	1 2m 13s
A5/ Dordon Roundabout							
91/1	A5 Eastbound Lane 1	N/A	Queue Aver Delay	2	3 14 secs	2	9 18 secs
91/2	A5 Eastbound Lane 2	N/A	Queue Aver Delay	0	0 4 secs	0	1 4 secs
92/1 + 92/2 + 93/1	Long Street	N/A	Queue Aver Delay	3	2 30 secs	2	1 36 secs
97/1 + 98/1	A5 Westbound Lane 1	N/A	Queue Aver Delay	3	5 16 secs	1	3 11 secs
97/2	A5 Westbound Lane 2	N/A	Queue Aver Delay	0	0 5 secs	0	0 5 secs
100/1 + 100/2	Gypsey Lane	N/A	Queue Aver Delay	1	0 21 secs	1	0 19 secs
			Network PI	5608.93		4954.19	