



## **Technical Note 20046**

**Downend Bridge Audit**


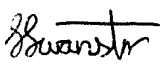
**26<sup>th</sup> November 2020**

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Technical Note 20046  
 Issue: 1.0

|            |  |   |
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**Previous Issues**

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## 0.0 About this technical note

This technical note is intended for use by personnel experienced in traffic engineering and familiar with the area being analysed/ designed. It is designed to help these technical personnel in the decision-making process and its contents may be subsumed into a more comprehensive report without permission. This technical note should always be read in conjunction with models, drawing and or supplementary text and documents as outlined throughout the note. This is not intended to be a comprehensive report for the consumption of a wider and potentially none technical audience. A technical note rather than a more descriptive report has been produced at the client’s request. JCT are happy to provide supplementary information to others and provide information on the tasks undertaken in alternative format on instruction.

## 1.0 Brief

- 1.0.1 JCT were commissioned by i-Transport to review LinSig models representing a proposed shuttle scheme at Downend Bridge in Fareham.
- 1.0.2 There are currently no traffic signals at the location and the bridge is a narrow two-way road. The proposed schemes shown in **Figures 1 and 2** aim to provide pedestrian facilities in the way of a wide public path and remove one lane for traffic and operate as a signalised shuttle junction.

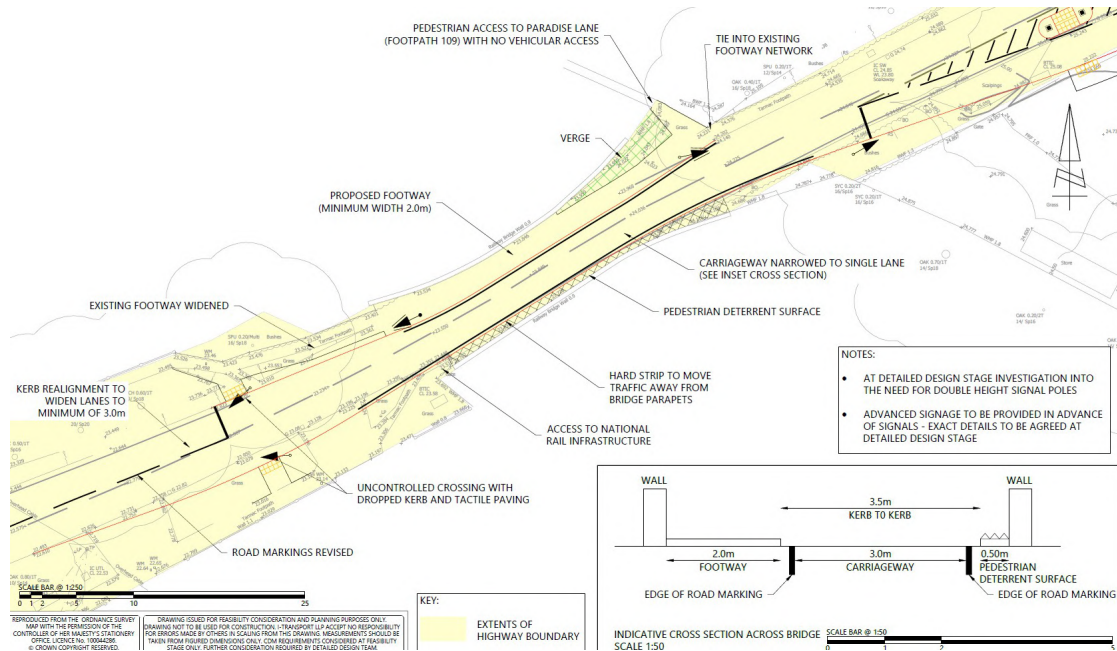
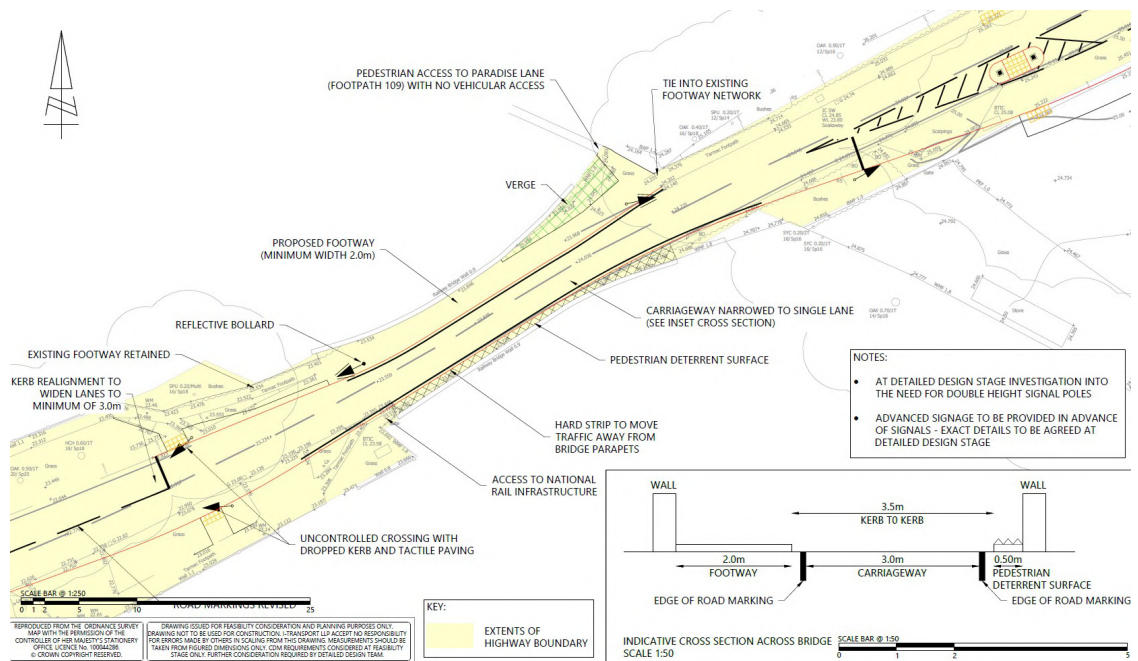


Figure 1 – Planning Submission Proposed Layout



**Figure 2 – Revised Submission Proposed Layout**

1.0.3 i-Transport provided LinSig models, junction layouts and traffic flows with the files named below:

- LinSig model for planning submission – Downend Bridge GA51 24hr.lsg3x
- LinSig model for revised submission - Downend Bridge GA51D 24hr.lsg3x
- Planning submission scaled drawing - ITB12212-GA-051C.pdf
- Revised submission scaled drawing - ITB12212-GA-051D.pdf
- Traffic flows - DE Road Traffic Flow Profiles - 24 Hr (Finalised).xlsx

## 2.0 Model Audit

2.0.1 The provided models were “Downend Bridge GA51 24hr.lsg3x”, which represented the planning submission option (**Figure 1**) and “Downend Bridge GA51D 24hr.lsg3x” which represented a revised planning submission (**Figure 2**). The difference between the layouts is at the northern side of the bridge where the stopline is moved 4m away from the bridge in the revised planning submission.

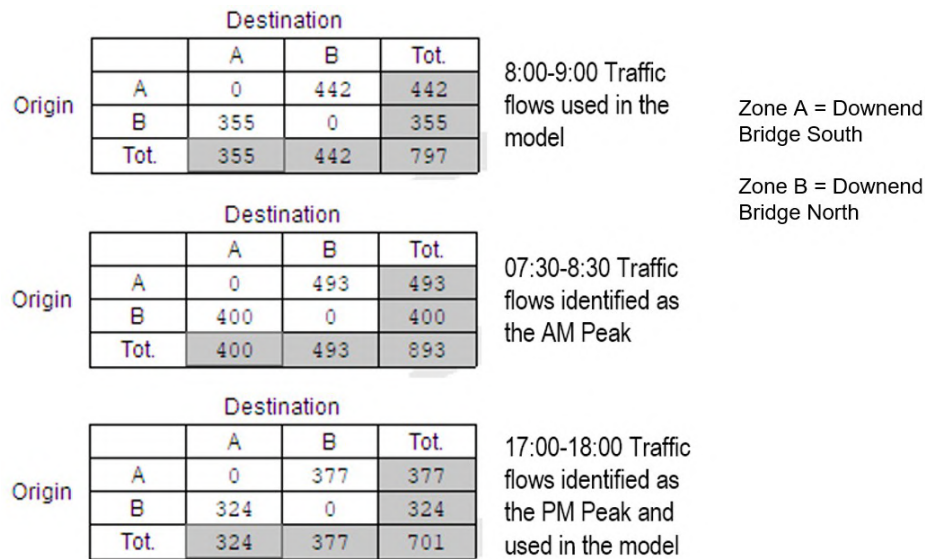
2.0.2 LinSig Model Audit View was initially used to highlight any differences between the two models and showed that different custom lane length values were used in the models. Custom lane lengths have a modelling impact in network modelling where cruise speeds are used as they determine cruise times. They also have an impact when modelling flares. However, they will have no impact on the models representing the shuttle.

2.0.3 Both models were identical, bar the comment in paragraph 2.0.2 so the audit comments from hereon in will relate to both models.

2.0.4 JCT updated models with any changes highlighted in **blue** text and the results compared following the audit comments.

2.0.5 The layout of the models accurately represented that of the layouts in the provided drawings with one northbound and one southbound lane only.

- 2.0.6 Provided traffic flows included the 5-day average 2016 flows for a 24-hour period.
- 2.0.7 These values were increased to account for natural growth in the population using factors derived from TEMPRO (2016-2026). The growth factors applied to the flows for the 2026 scenarios were:
  - AM Peak – 1.0574
  - PM Peak – 1.0372
- 2.0.8 Development traffic was estimated using TRICS and 70% of this development traffic was assigned to use the proposed Downend Bridge junction.
- 2.0.9 Traffic flows were modelled for every hour within a 24hr period and had been converted from actual counts into pcu (Passenger Car Units) which is the unit LinSig uses to consider vehicle composition. PCU factors of 1.5 were used for medium goods vehicles and 2.3 for heavy goods vehicles.
- 2.0.10 Based on the traffic flows provided by i-Transport, JCT identified that the AM peak ran between the hours of 07:30 – 08:30 and the PM peak was identified as 17:00 – 18:00. **Figure 3** shows the highest hourly AM and PM Peak traffic flows used in the provided models and the AM Peak traffic flows identified by JCT, which JCT identified AM Peak having 97 more pcus passing through the junction. [JCT update: Include the highest AM peak flows from 07:30-08:30.](#)



**Figure 3 – Highest AM and PM peak traffic flows and JCT identified AM Peak**

- 2.0.11 The modelling required two traffic phases that were set to run 7” minimum green times. These phases were correctly assigned with phase A controlling northbound movement and phase B controlling the southbound.
- 2.0.12 Two stages were present in the model with Phase A running in Stage 1 and Phase B running in Stage 2.
- 2.0.13 Cycle times of 50” and 45” were used in the AM and PM peak period respectively. These would be considered reasonable as an average cycle time, although there would be flexibility for higher/lower values from cycle to cycle using adaptive control.

2.0.14 Saturation flow is defined as the number of pcus which could cross the stopline in an hour if the signals were green and the queue of traffic was infinite. As the junction is a proposed option the saturation flows must be predicted. The industry standard method is to use Research Report 67 (RR67) which was a study on predicting saturation flows for road junctions controlled by traffic signals and was conducted by the Transport and Road Research Laboratory. One of the factors that determine saturation flows are the road widths with wider roads increasing driver confidence to drive at higher speeds thus creating higher saturation flows. The correct widths were used in the model.

2.0.15 Chapter 6 of the ‘Traffic Signs Manual’ by the Department for Transport states:

*“The intergreen is the period between the end of the green signal giving right of way for one phase, and the beginning of the green signal giving right of way for the next conflicting phase. It can be thought of as the ‘safety margin’ to allow traffic to clear the junction safely. It can be extended by external factors, but never shortened”*

With a shuttle arrangement the furthest point of conflict before the next traffic phase begins should be assumed to have cleared the opposing stopline. Once this distance is measured the intergreen table from Chapter 6 should be consulted to assign an appropriate intergreen. **Table 1** shows intergreens used vs intergreens based on Chapter 6 for both models. [JCT update: Intergreens updated based on Chapter 6 guidance.](#)

**Table 1 – Model Vs JCT calculated intergreens**

| Intergreen Values   | Stopline to Stopline distance | Intergreen Used in models | Chapter 6 Intergreen |
|---------------------|-------------------------------|---------------------------|----------------------|
| Planning Submission | 63m                           | 10"                       | 11"                  |
| Revised Submission  | 67m                           | 10"                       | 12"                  |

2.0.16 The model contained twenty-four scenarios, representing the 5-day average for each hour with development for the year 2026.

2.0.17 All scenarios had assigned the flow using delay-based assignment and optimised signal timings for the best possible Practical Reserve Capacity (PRC).

### 3.0 Modelling Results

- 3.0.1 **Table 2** is a results summary comparing i-Transport models with JCT updated models which include the changes suggested by JCT in paragraphs 2.0.10 (using AM Peak Traffic flows) and 2.0.15 (intergreen changes based on Chapter 6 measurements).
- 3.0.2 The worst-case AM and PM peak periods, in the original modelling were selected for comparison, which were 08:00-09:00 and 17:00-18:00.
- 3.0.3 A full copy of the JCT modelling input/output for the planning submission model and the revised submission model are found in **Appendix A** and **B**, whilst a summary of the modelling results and queue comparison is shown in **Tables 2**. These show the following:

**Degree of Saturation (DoS):** The highest value for any lane on the arm is shown. This represents the ratio of Flow / Capacity. An arm is considered to be over practical capacity when the DoS exceeds 90%.

**Mean Maximum Queue (MMQ):** The highest value for any lane on the arm is shown. This represents the maximum back of queue from the stopline each cycle, averaged over all cycles in the modelled period. This is longer than the end of red queue, as traffic can still join the back of a queue whilst traffic leaves the front of the queue at the start of the green period. For a lane in which the DoS exceeds 100% (i.e. demand flow higher than capacity), then the queue would be expected to grow from one cycle to the next. Therefore, the MMQ would represent the back of the queue midway through the modelled period. However, this also assumes suppressed demand (congestion) did not exist before the modelled period.

**Practical Reserve Capacity (PRC):** This is calculated using the highest DoS on any lane for the junction. If the highest degree of saturation was 90%, the PRC would be 0% as any additional traffic flow would result in the DoS exceeding 90%. A positive PRC indicates that all DoS values are below 90%. A negative PRC value indicates at least one DoS exceeds 90%.

**Average Delay per pcu:** The sum of all delays to traffic using the junction, divided by the total flow using the junction in the modelled period.

**Table 2: Results Summary Comparison**

| AM Peak            | Planning Submission            |            | JCT Planning Submission     |            | Revised Submission              |            | JCT Revised Submission      |            |
|--------------------|--------------------------------|------------|-----------------------------|------------|---------------------------------|------------|-----------------------------|------------|
|                    | 2026+D                         |            | 2026+D                      |            | 2026+D                          |            | 2026+D                      |            |
|                    | Dos                            | MMQ (pcus) | Dos                         | MMQ (pcus) | Dos                             | MMQ (pcus) | Dos                         | MMQ (pcus) |
| Downend Rd (S)     | 68.2%                          | 6.1        | 85.0%                       | 9.0        | 68.2%                           | 6.1        | 90.4%                       | 10.5       |
| Downend Rd (N)     | 71.3%                          | 5.7        | 80.3%                       | 7.1        | 71.3%                           | 5.7        | 87.0%                       | 8.4        |
| PRC                | 26.2%                          |            | 5.8%                        |            | 26.2%                           |            | -0.4%                       |            |
| Avg. Delay (s/pcu) | 25.0                           |            | 34.9                        |            | 25.0                            |            | 45.8                        |            |
| Cycle Time (s)     | 50                             |            | 50                          |            | 50                              |            | 50                          |            |
| File name          | Downend Bridge GA51 24hr.Isg3x |            | Downend Bridge PS JCT.Isg3x |            | Downend Bridge GA51D 24hr.Isg3x |            | Downend Bridge RS JCT.Isg3x |            |

| PM Peak            | Planning Submission            |            | JCT Planning Submission     |            | Revised Submission              |            | JCT Revised Submission      |            |
|--------------------|--------------------------------|------------|-----------------------------|------------|---------------------------------|------------|-----------------------------|------------|
|                    | 2026+D                         |            | 2026+D                      |            | 2026+D                          |            | 2026+D                      |            |
|                    | Dos                            | MMQ (pcus) | Dos                         | MMQ (pcus) | Dos                             | MMQ (pcus) | Dos                         | MMQ (pcus) |
| Downend Rd (S)     | 66.3%                          | 5.0        | 71.1%                       | 5.3        | 66.3%                           | 5.0        | 76.5%                       | 5.9        |
| Downend Rd (N)     | 63.4%                          | 4.4        | 69.2%                       | 4.7        | 63.4%                           | 4.4        | 76.1%                       | 5.3        |
| PRC                | 35.7%                          |            | 26.6%                       |            | 35.7%                           |            | 17.6%                       |            |
| Avg. Delay (s/pcu) | 23.1                           |            | 26.4                        |            | 23.1                            |            | 31.5                        |            |
| Cycle Time (s)     | 45                             |            | 45                          |            | 45                              |            | 45                          |            |
| File name          | Downend Bridge GA51 24hr.Isg3x |            | Downend Bridge PS JCT.Isg3x |            | Downend Bridge GA51D 24hr.Isg3x |            | Downend Bridge RS JCT.Isg3x |            |

- 3.0.4 When modelling the AM Peak traffic flows and increasing the intergreens from 10” to 11”, The results show the junction operates within capacity in the JCT planning submission model where there is a decrease in PRC from 26.2% to 5.8% in the AM Peak and 35.7% to 26.6% in the PM Peak compared to the i-Transport planning submission model.
- 3.0.5 When increasing the AM traffic flows and increasing the intergreens from 10” to 12”, the results show the junction operates over capacity during the AM Peak in the JCT revised submission model with a decrease in PRC from 26.2% to -0.4% compared to the i-Transport revised submission model. The PM peak remains within capacity with a decrease from 35.7% to 17.6% in the PM Peak compared to the i-Transport revised submission model.
- 3.0.6 However, although the PRC dropped to -0.4% during the AM peak when 12” intergreens were used, this was primarily due to the low cycle time used. **Table 3** shows the JCT modelling results using a 60” cycle time for the AM Peak period.

**Table 3: JCT modelling results with 60” cycle time**

| AM Peak            | Planning Submission            |            | JCT Planning Submission    |            | Revised Submission              |            | JCT Revised Submission     |            |
|--------------------|--------------------------------|------------|----------------------------|------------|---------------------------------|------------|----------------------------|------------|
|                    | 2026+D                         |            | 2026+D                     |            | 2026+D                          |            | 2026+D                     |            |
|                    | Dos                            | MMQ (pcus) | Dos                        | MMQ (pcus) | Dos                             | MMQ (pcus) | Dos                        | MMQ (pcus) |
| Downend Rd (S)     | 68.2%                          | 6.1        | 75.4%                      | 8.6        | 68.2%                           | 6.1        | 78.9%                      | 9.1        |
| Downend Rd (N)     | 71.3%                          | 5.7        | 73.7%                      | 7.4        | 71.3%                           | 5.7        | 78.3%                      | 7.9        |
| PRC                | 26.2%                          |            | 19.3%                      |            | 26.2%                           |            | 14.1%                      |            |
| Avg. Delay (s/pcu) | 25.0                           |            | 29.2                       |            | 25.0                            |            | 32.9                       |            |
| Cycle Time (s)     | 50                             |            | 60                         |            | 50                              |            | 60                         |            |
| File name          | Downend Bridge GA51 24hr.Isg3x |            | Downend Bridge PSJCT.Isg3x |            | Downend Bridge GA51D 24hr.Isg3x |            | Downend Bridge RSJCT.Isg3x |            |



3.0.7 The results of using a 60" cycle time at the junction indicate that in the AM peak the junction will operate within capacity with a PRC of 19.3% in the JCT planning submission and 14.1% in the JCT revised submission model.

## **4.0 Conclusions**

4.0.1 The review of the models identified issues that required attention. These were:

1. The busiest AM Peak used in model was 08:00-09:00. However, there was a higher hourly flow between 07:30-08:30.
2. The intergreens used in the model could be considered too low.

4.0.2 Once the model was adjusted by JCT, the capacity at the junction reduces in the JCT planning submission model but still operates within capacity in both peak periods. The junction operates over capacity in the AM peak only in the JCT Revised Submission model but within capacity in the PM peak.

4.0.4 Increasing the cycle time to 60" in the AM peak will result in the junction operating within capacity



## **Appendix A**

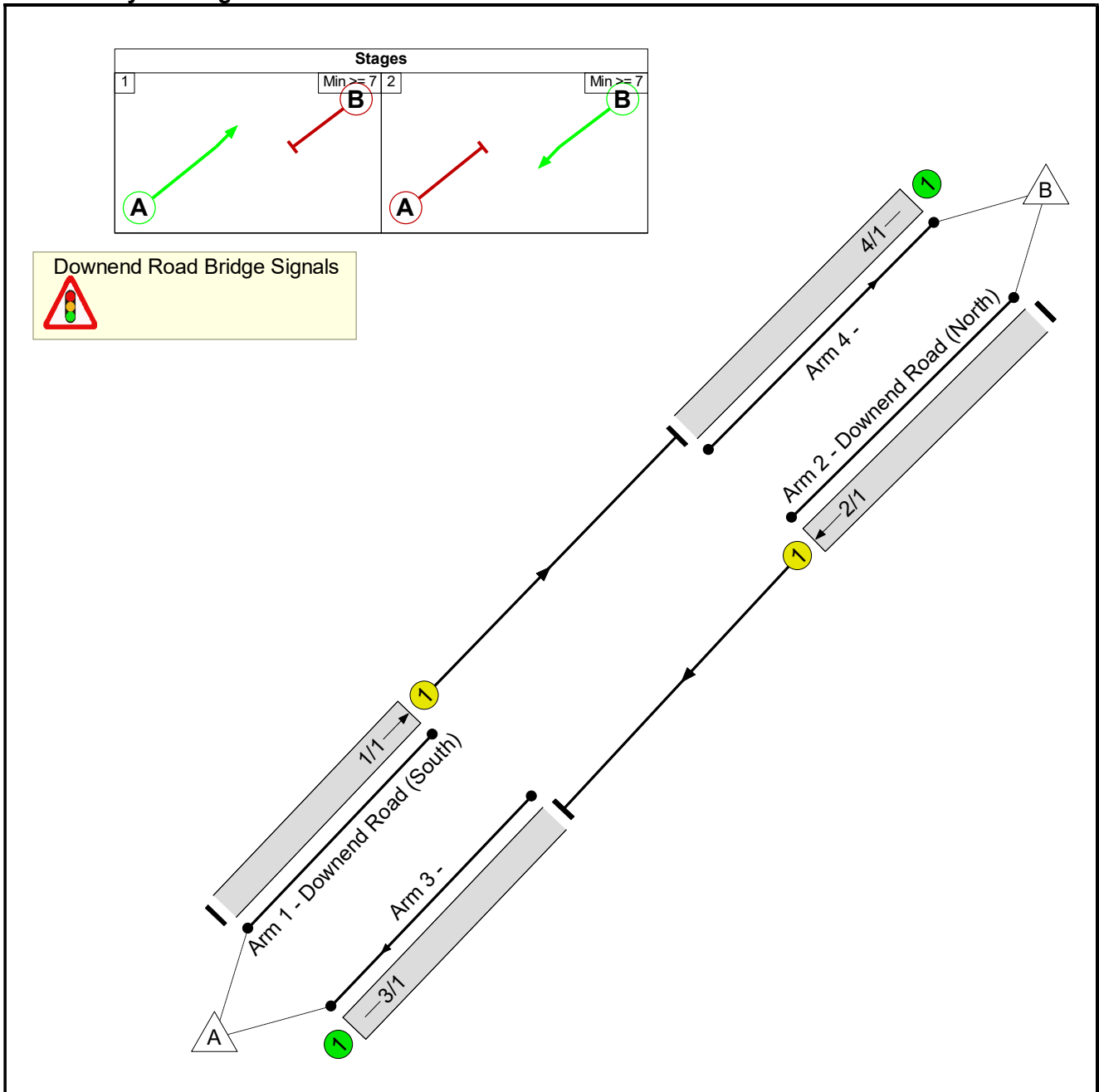
### JCT Planning Submission LinSig Data

JCT Planning Submission Full Input Data And Results  
**JCT Planning Submission Full Input Data And Results**

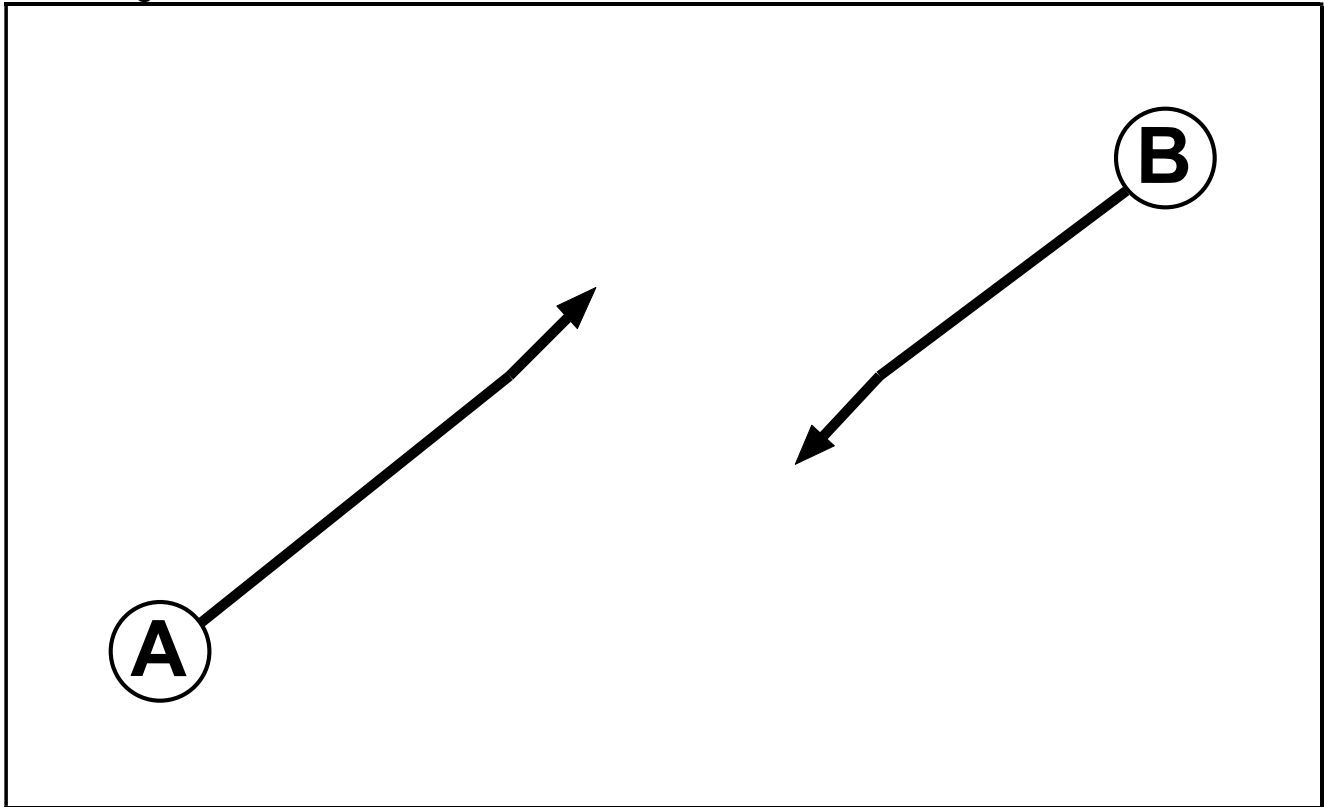
**User and Project Details**

|                           |  |
|---------------------------|--|
| <b>Project:</b>           | <b>20046 Downend Bridge Audit</b>  |
| <b>Title:</b>             | <b>Planning Submission</b>   |
| <b>Location:</b>          | Fareham  |
| <b>Client:</b>            | i-Transport  |
| <b>Design Layout Ref:</b> | ITB12212-GA-051 Rev C  |
| <b>Date Started:</b>      | 24/11/20   |
| <b>Date Completed:</b>    | 25/11/20   |
| <b>Model Assumptions:</b> | 07:30-08:30 AM Peak flows added as they were higher than the 7am-8am or the 8am-9am flows.<br>Increased the intergreens from 10" ro 11" to account for stopline to stopline distances in this layout |
| <b>Checked By:</b>        | Simon Swanston   |
| <b>Checked By Date:</b>   | 25/11/20   |
| <b>Additional detail:</b> |  |
| <b>File name:</b>         | Downend Bridge PS JCT.lsg3x  |
| <b>Author:</b>            | Stuart Hanson  |
| <b>Company:</b>           | JCT Consultancy  |
| <b>Address:</b>           | LinSig House, Nettleham, LN22LL  |

Network Layout Diagram



**Phase Diagram**



**Phase Input Data**

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|------------|----------|
| A          | Traffic    |              | 7          | 7        |
| B          | Traffic    |              | 7          | 7        |

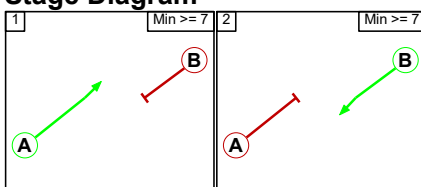
**Phase Intergreens Matrix**

|                   |   | Starting Phase |    |
|-------------------|---|----------------|----|
|                   |   |                |    |
| Terminating Phase | A | 11             |    |
|                   | B |                | 11 |

**Phases in Stage**

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | A               |
| 2         | B               |

**Stage Diagram**



**Phase Delays**

| Term. Stage                       | Start Stage | Phase | Type | Value | Cont value |
|-----------------------------------|-------------|-------|------|-------|------------|
| There are no Phase Delays defined |             |       |      |       |            |

**Prohibited Stage Change**

|            |   | To Stage |    |
|------------|---|----------|----|
|            |   | 1        | 2  |
| From Stage | 1 | ■        | 11 |
|            | 2 | 11       | ■  |

JCT Planning Submission Full Input Data And Results

**Give-Way Lane Input Data**

**Junction: Downend Road Bridge Signals**

There are no Opposed Lanes in this Junction



**Lane Input Data**

| Junction: Downend Road Bridge Signals |           |        |             |           |                       |               |                                   |                |          |               |             |                    |
|---------------------------------------|-----------|--------|-------------|-----------|-----------------------|---------------|-----------------------------------|----------------|----------|---------------|-------------|--------------------|
| Lane                                  | Lane Type | Phases | Start Disp. | End Disp. | Physical Length (PCU) | Sat Flow Type | Def User Saturation Flow (PCU/Hr) | Lane Width (m) | Gradient | Nearside Lane | Turns       | Turning Radius (m) |
| 1/1<br>(Downend Road (South))         | U         | A      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.00           | 5.00     | Y             | Arm 4 Ahead | Inf                |
| 2/1<br>(Downend Road (North))         | U         | B      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 3 Ahead | Inf                |
| 3/1                                   | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |
| 4/1                                   | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |

**Traffic Flow Groups**

| Flow Group                         | Start Time | End Time | Duration | Formula |
|------------------------------------|------------|----------|----------|---------|
| 1: '2026 with Dev AM 00-01'        | 00:00      | 01:00    | 01:00    |         |
| 2: '2026 with Dev AM 01-02'        | 01:00      | 02:00    | 01:00    |         |
| 3: '2026 with Dev AM 02-03'        | 02:00      | 03:00    | 01:00    |         |
| 4: '2026 with Dev AM 03-04'        | 03:00      | 04:00    | 01:00    |         |
| 5: '2026 with Dev AM 04-05'        | 04:00      | 05:00    | 01:00    |         |
| 6: '2026 with Dev AM 05-06'        | 05:00      | 06:00    | 01:00    |         |
| 7: '2026 with Dev AM 06-07'        | 06:00      | 07:00    | 01:00    |         |
| 8: '2026 with Dev AM 07-08'        | 07:00      | 08:00    | 01:00    |         |
| 9: '2026 with Dev AM 08-09'        | 08:00      | 09:00    | 01:00    |         |
| 10: '2026 with Dev AM 09-10'       | 09:00      | 10:00    | 01:00    |         |
| 11: '2026 with Dev AM 10-11'       | 10:00      | 11:00    | 01:00    |         |
| 12: '2026 with Dev AM 11-12'       | 11:00      | 12:00    | 01:00    |         |
| 13: '2026 with Dev PM 12-13'       | 12:00      | 13:00    | 01:00    |         |
| 14: '2026 with Dev PM 13-14'       | 13:00      | 14:00    | 01:00    |         |
| 15: '2026 with Dev PM 14-15'       | 14:00      | 15:00    | 01:00    |         |
| 16: '2026 with Dev PM 15-16'       | 15:00      | 16:00    | 01:00    |         |
| 17: '2026 with Dev PM 16-17'       | 16:00      | 17:00    | 01:00    |         |
| 18: '2026 with Dev PM 17-18'       | 17:00      | 18:00    | 01:00    |         |
| 19: '2026 with Dev PM 18-19'       | 18:00      | 19:00    | 01:00    |         |
| 20: '2026 with Dev PM 19-20'       | 19:00      | 20:00    | 01:00    |         |
| 21: '2026 with Dev PM 20-21'       | 20:00      | 21:00    | 01:00    |         |
| 22: '2026 with Dev PM 21-22'       | 21:00      | 22:00    | 01:00    |         |
| 23: '2026 with Dev PM 22-23'       | 22:00      | 23:00    | 01:00    |         |
| 24: '2026 with Dev PM 23-00'       | 23:00      | 00:00    | 01:00    |         |
| 25: '2026 with Dev AM 07:30-08:30' | 07:30      | 08:30    | 01:00    |         |

**Scenario 1: '1'** (FG1: '2026 with Dev AM 00-01', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |   |      |
|--------|------|-------------|---|------|
|        |      | A           | B | Tot. |
| Origin | A    | 0           | 6 | 6    |
|        | B    | 17          | 0 | 17   |
|        | Tot. | 17          | 6 | 23   |

**Traffic Lane Flows**

| Lane   | Scenario 1:<br>1 |
|--|------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                  |
| 1/1  | 6                |
| 2/1  | 17               |
| 3/1  | 17               |
| 4/1  | 6                |

**Lane Saturation Flows**

| <b>Junction: Downend Road Bridge Signals</b> |                          |          |               |               |                    |               |                   |                          |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))                | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))                | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 2: '2'** (FG2: '2026 with Dev AM 01-02', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |   |      |
|--------|------|-------------|---|------|
|        |      | A           | B | Tot. |
| Origin | A    | 0           | 4 | 4    |
|        | B    | 9           | 0 | 9    |
|        | Tot. | 9           | 4 | 13   |

**Traffic Lane Flows**

| Lane   | Scenario 2:<br>2 |
|--|------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                  |
| 1/1  | 4                |
| 2/1  | 9                |
| 3/1  | 9                |
| 4/1  | 4                |

**Lane Saturation Flows**

| <b>Junction: Downend Road Bridge Signals</b> |                          |          |               |               |                    |               |                   |                          |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))                | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))                | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 3: '3'** (FG3: '2026 with Dev AM 02-03', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |   |      |
|--------|------|-------------|---|------|
|        |      | A           | B | Tot. |
| Origin | A    | 0           | 5 | 5    |
|        | B    | 3           | 0 | 3    |
|        | Tot. | 3           | 5 | 8    |

**Traffic Lane Flows**

| Lane   | Scenario 3:<br>3 |
|--|------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                  |
| 1/1  | 5                |
| 2/1  | 3                |
| 3/1  | 3                |
| 4/1  | 5                |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 4: '4'** (FG4: '2026 with Dev AM 03-04', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

| Origin | Destination |   |      |  |
|--------|-------------|---|------|--|
|        | A           | B | Tot. |  |
| A      | 0           | 7 | 7    |  |
| B      | 6           | 0 | 6    |  |
| Tot.   | 6           | 7 | 13   |  |

**Traffic Lane Flows**

| Lane                                  | Scenario 4:<br>4 |
|---------------------------------------|------------------|
| Junction: Downend Road Bridge Signals |                  |
| 1/1                                   | 7                |
| 2/1                                   | 6                |
| 3/1                                   | 6                |
| 4/1                                   | 7                |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 5: '5'** (FG5: '2026 with Dev AM 04-05', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |    |      |
|--------|------|-------------|----|------|
|        |      | A           | B  | Tot. |
| Origin |      | 0           | 11 | 11   |
|        | A    | 0           | 11 | 11   |
|        | B    | 9           | 0  | 9    |
|        | Tot. | 9           | 11 | 20   |

**Traffic Lane Flows**

| Lane   | Scenario 5:<br>5 |
|--|------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                  |
| 1/1  | 11               |
| 2/1  | 9                |
| 3/1  | 9                |
| 4/1  | 11               |

**Lane Saturation Flows**

| <b>Junction: Downend Road Bridge Signals</b> |                          |          |               |               |                    |               |                   |                          |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))                | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))                | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 6: '6'** (FG6: '2026 with Dev AM 05-06', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |    |      |
|--------|------|-------------|----|------|
|        |      | A           | B  | Tot. |
| Origin |      | 0           | 36 | 36   |
|        | A    | 0           | 36 | 36   |
|        | B    | 30          | 0  | 30   |
|        | Tot. | 30          | 36 | 66   |

**Traffic Lane Flows**

| Lane   | Scenario 6:<br>6 |
|--|------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                  |
| 1/1  | 36               |
| 2/1  | 30               |
| 3/1  | 30               |
| 4/1  | 36               |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 7: '7'** (FG7: '2026 with Dev AM 06-07', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

| Origin | Destination |     |      |  |
|--------|-------------|-----|------|--|
|        | A           | B   | Tot. |  |
| A      | 0           | 197 | 197  |  |
| B      | 92          | 0   | 92   |  |
| Tot.   | 92          | 197 | 289  |  |

**Traffic Lane Flows**

| Lane                                  | Scenario 7:<br>7 |
|---------------------------------------|------------------|
| Junction: Downend Road Bridge Signals |                  |
| 1/1                                   | 197              |
| 2/1                                   | 92               |
| 3/1                                   | 92               |
| 4/1                                   | 197              |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 8: '8'** (FG8: '2026 with Dev AM 07-08', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin |      | 0           | 443 | 443  |
|        | A    | 0           | 443 | 443  |
|        | B    | 354         | 0   | 354  |
|        | Tot. | 354         | 443 | 797  |

**Traffic Lane Flows**

| Lane   | Scenario 8:<br>8 |
|--|------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                  |
| 1/1  | 443              |
| 2/1  | 354              |
| 3/1  | 354              |
| 4/1  | 443              |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 9: '9'** (FG9: '2026 with Dev AM 08-09', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin |      | 0           | 442 | 442  |
|        | A    | 0           | 442 | 442  |
|        | B    | 355         | 0   | 355  |
|        | Tot. | 355         | 442 | 797  |

**Traffic Lane Flows**

| Lane   | Scenario 9:<br>9 |
|--|------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                  |
| 1/1  | 442              |
| 2/1  | 355              |
| 3/1  | 355              |
| 4/1  | 442              |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 10: '10'** (FG10: '2026 with Dev AM 09-10', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

| Origin | Destination |     |      |  |
|--------|-------------|-----|------|--|
|        | A           | B   | Tot. |  |
| A      | 0           | 272 | 272  |  |
| B      | 243         | 0   | 243  |  |
| Tot.   | 243         | 272 | 515  |  |

**Traffic Lane Flows**

| Lane                                  | Scenario 10: 10 |
|---------------------------------------|-----------------|
| Junction: Downend Road Bridge Signals |                 |
| 1/1                                   | 272             |
| 2/1                                   | 243             |
| 3/1                                   | 243             |
| 4/1                                   | 272             |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |



**Scenario 11: '11'** (FG11: '2026 with Dev AM 10-11', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 225 | 225  |
|        | B    | 253         | 0   | 253  |
|        | Tot. | 253         | 225 | 478  |

**Traffic Lane Flows**

| Lane   | Scenario 11:<br>11 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 225                |
| 2/1  | 253                |
| 3/1  | 253                |
| 4/1  | 225                |

**Lane Saturation Flows**

| <b>Junction: Downend Road Bridge Signals</b> |                          |          |               |               |                    |               |                   |                          |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))                | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))                | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 12: '12'** (FG12: '2026 with Dev AM 11-12', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 217 | 217  |
|        | B    | 260         | 0   | 260  |
|        | Tot. | 260         | 217 | 477  |

**Traffic Lane Flows**

| Lane   | Scenario 12:<br>12 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 217                |
| 2/1  | 260                |
| 3/1  | 260                |
| 4/1  | 217                |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 13: '13'** (FG13: '2026 with Dev PM 12-13', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 226 | 226  |
|        | B    | 287         | 0   | 287  |
|        | Tot. | 287         | 226 | 513  |

**Traffic Lane Flows**

| Lane                                  | Scenario 13: 13 |
|---------------------------------------|-----------------|
| Junction: Downend Road Bridge Signals |                 |
| 1/1                                   | 226             |
| 2/1                                   | 287             |
| 3/1                                   | 287             |
| 4/1                                   | 226             |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 14: '14'** (FG14: '2026 with Dev PM 13-14', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 241 | 241  |
|        | B    | 260         | 0   | 260  |
|        | Tot. | 260         | 241 | 501  |

**Traffic Lane Flows**

| Lane   | Scenario 14:<br>14 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 241                |
| 2/1  | 260                |
| 3/1  | 260                |
| 4/1  | 241                |

**Lane Saturation Flows**

| <b>Junction: Downend Road Bridge Signals</b> |                          |          |               |               |                    |               |                   |                          |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))                | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))                | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 15: '15'** (FG15: '2026 with Dev PM 14-15', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 232 | 232  |
|        | B    | 308         | 0   | 308  |
|        | Tot. | 308         | 232 | 540  |

**Traffic Lane Flows**

| Lane   | Scenario 15:<br>15 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 232                |
| 2/1  | 308                |
| 3/1  | 308                |
| 4/1  | 232                |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 16: '16'** (FG16: '2026 with Dev PM 15-16', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 271 | 271  |
|        | B    | 359         | 0   | 359  |
|        | Tot. | 359         | 271 | 630  |

**Traffic Lane Flows**

| Lane                                  | Scenario 16: 16 |
|---------------------------------------|-----------------|
| Junction: Downend Road Bridge Signals |                 |
| 1/1                                   | 271             |
| 2/1                                   | 359             |
| 3/1                                   | 359             |
| 4/1                                   | 271             |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 17: '17'** (FG17: '2026 with Dev PM 16-17', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 338 | 338  |
|        | B    | 358         | 0   | 358  |
|        | Tot. | 358         | 338 | 696  |

**Traffic Lane Flows**

| Lane   | Scenario 17:<br>17 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 338                |
| 2/1  | 358                |
| 3/1  | 358                |
| 4/1  | 338                |

**Lane Saturation Flows**

| <b>Junction: Downend Road Bridge Signals</b> |                          |          |               |               |                    |               |                   |                          |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))                | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))                | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 18: '18'** (FG18: '2026 with Dev PM 17-18', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 377 | 377  |
|        | B    | 324         | 0   | 324  |
|        | Tot. | 324         | 377 | 701  |

**Traffic Lane Flows**

| Lane   | Scenario 18:<br>18 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 377                |
| 2/1  | 324                |
| 3/1  | 324                |
| 4/1  | 377                |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 19: '19'** (FG19: '2026 with Dev PM 18-19', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 256 | 256  |
|        | B    | 269         | 0   | 269  |
|        | Tot. | 269         | 256 | 525  |

**Traffic Lane Flows**

| Lane                                  | Scenario 19: 19 |
|---------------------------------------|-----------------|
| Junction: Downend Road Bridge Signals |                 |
| 1/1                                   | 256             |
| 2/1                                   | 269             |
| 3/1                                   | 269             |
| 4/1                                   | 256             |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 20: '20'** (FG20: '2026 with Dev PM 19-20', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin |      | 0           | 133 | 133  |
|        | A    | 0           | 133 | 133  |
|        | B    | 197         | 0   | 197  |
|        | Tot. | 197         | 133 | 330  |

**Traffic Lane Flows**

| Lane   | Scenario 20:<br>20 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 133                |
| 2/1  | 197                |
| 3/1  | 197                |
| 4/1  | 133                |

**Lane Saturation Flows**

| <b>Junction: Downend Road Bridge Signals</b> |                          |          |               |               |                    |               |                   |                          |  |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|--|
| Lane   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |  |
| 1/1<br>(Downend Road (South))                | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |  |
| 2/1<br>(Downend Road (North))                | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |  |
| 3/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |  |
| 4/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |  |

**Scenario 21: '21'** (FG21: '2026 with Dev PM 20-21', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |    |      |
|--------|------|-------------|----|------|
|        |      | A           | B  | Tot. |
| Origin |      | 0           | 76 | 76   |
|        | A    | 0           | 76 | 76   |
|        | B    | 145         | 0  | 145  |
|        | Tot. | 145         | 76 | 221  |

**Traffic Lane Flows**

| Lane   | Scenario 21:<br>21 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 76                 |
| 2/1  | 145                |
| 3/1  | 145                |
| 4/1  | 76                 |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 22: '22'** (FG22: '2026 with Dev PM 21-22', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |    |      |
|--------|------|-------------|----|------|
|        |      | A           | B  | Tot. |
| Origin | A    | 0           | 47 | 47   |
|        | B    | 102         | 0  | 102  |
|        | Tot. | 102         | 47 | 149  |

**Traffic Lane Flows**

| Lane                                  | Scenario 22: 22 |
|---------------------------------------|-----------------|
| Junction: Downend Road Bridge Signals |                 |
| 1/1                                   | 47              |
| 2/1                                   | 102             |
| 3/1                                   | 102             |
| 4/1                                   | 47              |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |



**Scenario 23: '23'** (FG23: '2026 with Dev PM 22-23', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |    |      |
|--------|------|-------------|----|------|
|        |      | A           | B  | Tot. |
| Origin | A    | 0           | 38 | 38   |
|        | B    | 63          | 0  | 63   |
|        | Tot. | 63          | 38 | 101  |

**Traffic Lane Flows**

| Lane   | Scenario 23:<br>23 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 38                 |
| 2/1  | 63                 |
| 3/1  | 63                 |
| 4/1  | 38                 |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 24: '24'** (FG24: '2026 with Dev PM 23-00', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |    |      |
|--------|------|-------------|----|------|
|        |      | A           | B  | Tot. |
| Origin | A    | 0           | 22 | 22   |
|        | B    | 58          | 0  | 58   |
|        | Tot. | 58          | 22 | 80   |

**Traffic Lane Flows**

| Lane   | Scenario 24:<br>24 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 22                 |
| 2/1  | 58                 |
| 3/1  | 58                 |
| 4/1  | 22                 |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 25: 'AM Peak'** (FG25: '2026 with Dev AM 07:30-08:30', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 493 | 493  |
|        | B    | 400         | 0   | 400  |
|        | Tot. | 400         | 493 | 893  |

**Traffic Lane Flows**

| Lane                                  | Scenario 25:<br>AM Peak |
|---------------------------------------|-------------------------|
| Junction: Downend Road Bridge Signals |                         |
| 1/1                                   | 493                     |
| 2/1                                   | 400                     |
| 3/1                                   | 400                     |
| 4/1                                   | 493                     |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 26: 'AM Peak 60CT'** (FG25: '2026 with Dev AM 07:30-08:30', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

Desired Flow :

|        | Destination |     |     |      |
|--------|-------------|-----|-----|------|
|        |             | A   | B   | Tot. |
| Origin | A           | 0   | 493 | 493  |
|        | B           | 400 | 0   | 400  |
|        | Tot.        | 400 | 493 | 893  |

**Traffic Lane Flows**

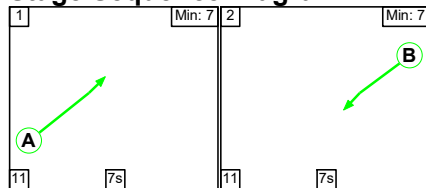
| Lane   | Scenario 26:<br>AM Peak 60CT |
|--|------------------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                              |
| 1/1  | 493                          |
| 2/1  | 400                          |
| 3/1  | 400                          |
| 4/1  | 493                          |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 1: '1'** (FG1: '2026 with Dev AM 00-01', Plan 1: 'Network Control Plan 1')

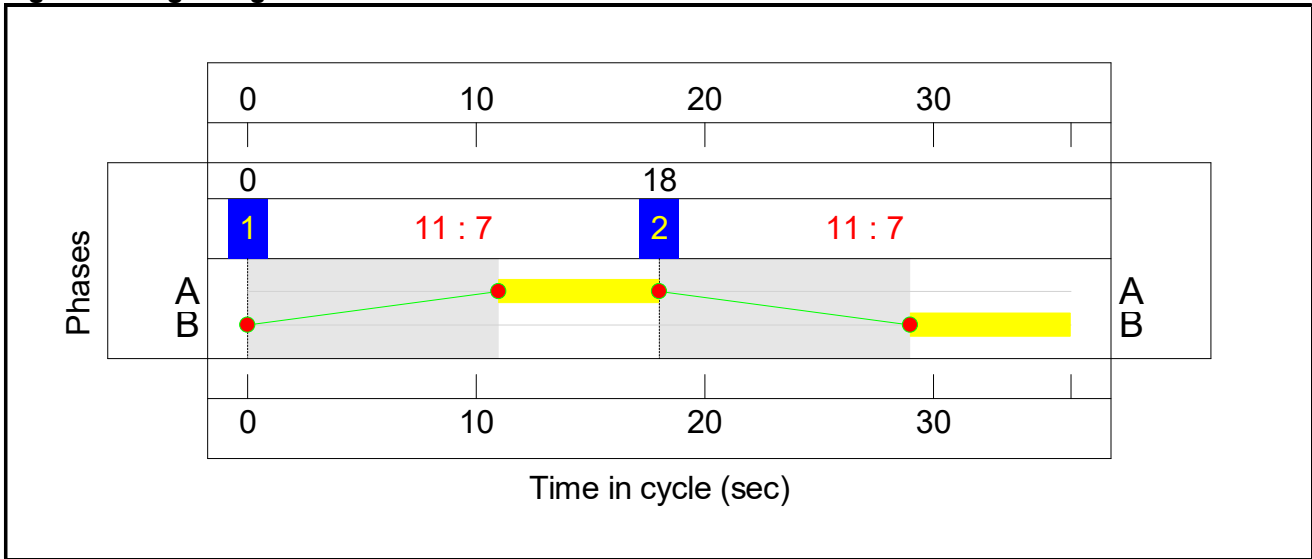
**Stage Sequence Diagram**



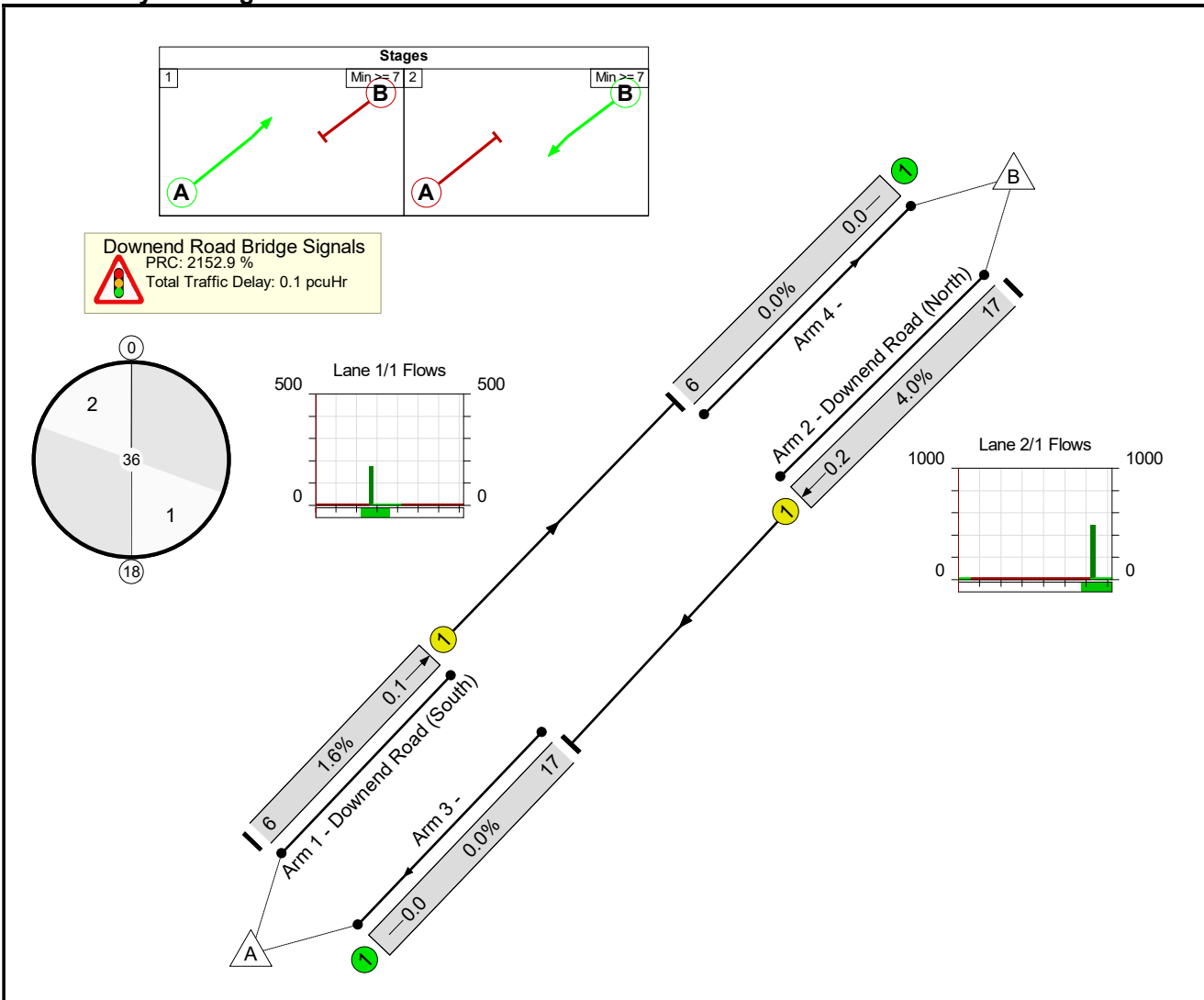
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 18 |

### Signal Timings Diagram



### Network Layout Diagram

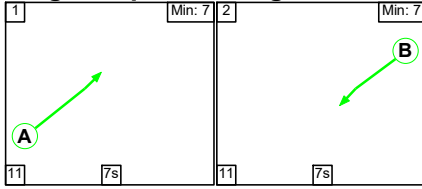


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item   | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|--|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 4.0%                 |
| <b>Downend Road Bridge Signals</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 4.0%                 |
| 1/1  | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 6                         | 1705                             | 379                        | 1.6%                 |
| 2/1  | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 17                        | 1915                             | 426                        | 4.0%                 |
| 3/1  |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 17                        | Inf                              | Inf                        | 0.0%                 |
| 4/1  |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 6                         | Inf                              | Inf                        | 0.0%                 |
| Item   | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.1                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>   | -                          | -             | 0                     | 0                            | 0                           | 0.1                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| 1/1  | 6                          | 6             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 16.1                      | 0.0                              | 0.0                        | 0.1                  |
| 2/1  | 17                         | 17            | -                     | -                            | -                           | 0.1                   | 0.0                          | -                                  | 0.1                 | 15.7                      | 0.1                              | 0.0                        | 0.2                  |
| 3/1  | 17                         | 17            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1  | 6                          | 6             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| <p>C1      PRC for Signalled Lanes (%): 2152.9      Total Delay for Signalled Lanes (pcuHr): 0.10      Cycle Time (s): 36<br/>                     PRC Over All Lanes (%): 2152.9      Total Delay Over All Lanes(pcuHr): 0.10</p> |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

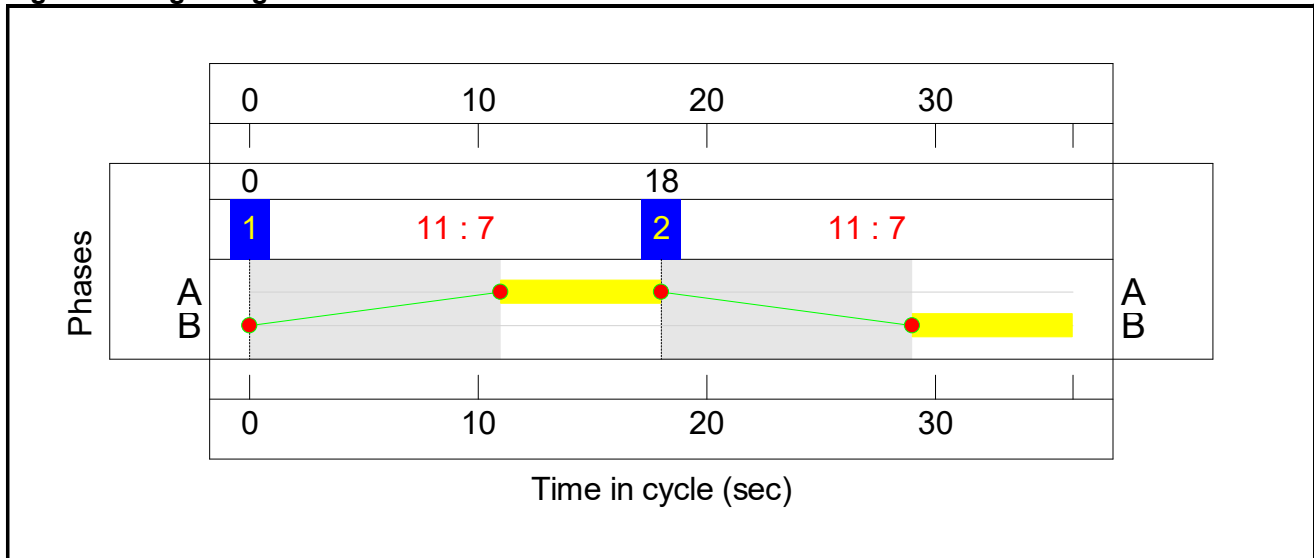
**Stage Sequence Diagram**



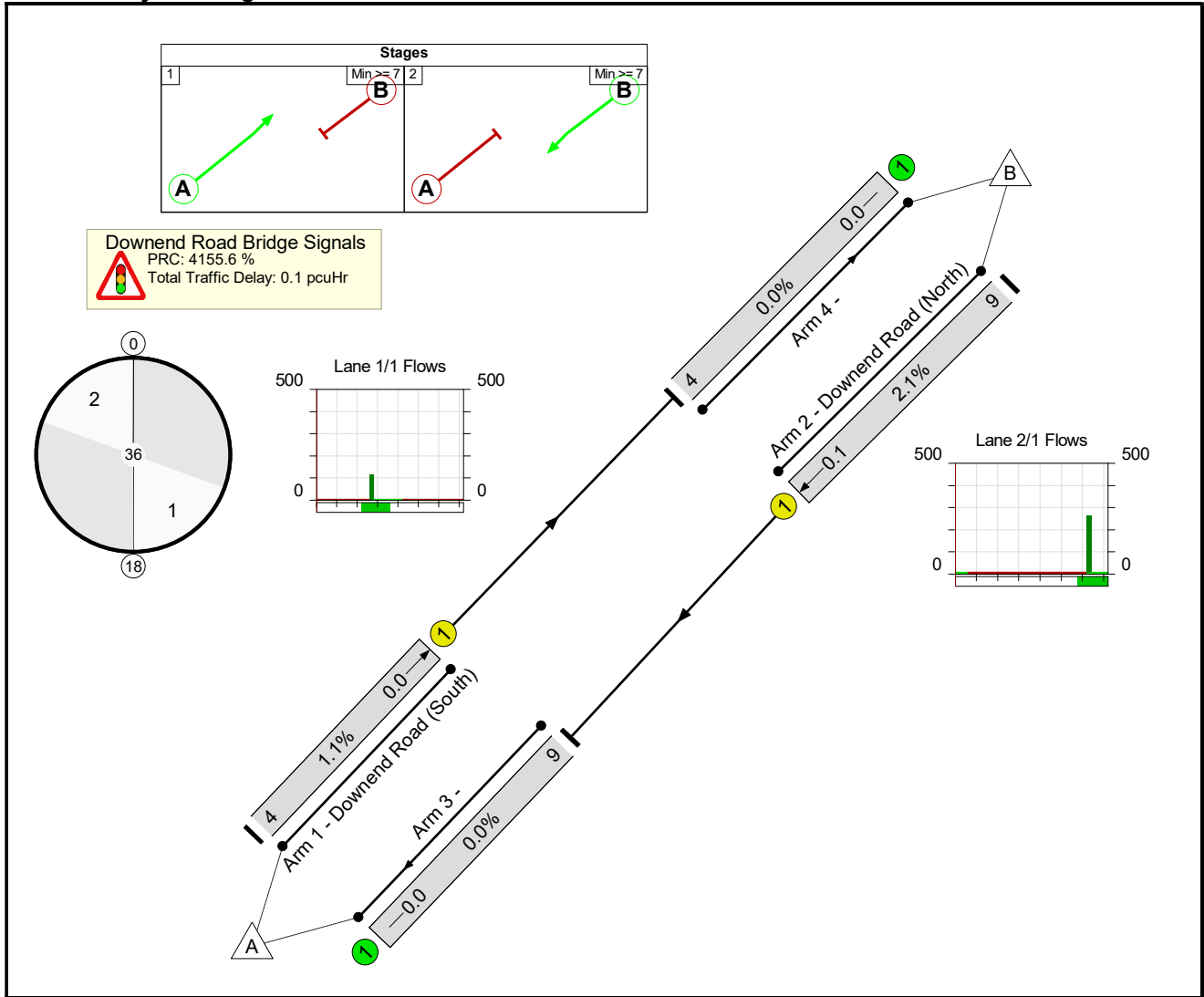
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 18 |

**Signal Timings Diagram**



### Network Layout Diagram



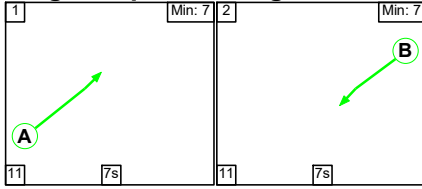
JCT Planning Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 2.1%                 |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 2.1%                 |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 4                         | 1705                             | 379                        | 1.1%                 |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 9                         | 1915                             | 426                        | 2.1%                 |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 9                         | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 4                         | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b>   | -                          | -             | 0                     | 0                            | 0                           | 0.0                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.0                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| 1/1   | 4                          | 4             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 16.1                      | 0.0                              | 0.0                        | 0.0                  |
| 2/1   | 9                          | 9             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 15.6                      | 0.1                              | 0.0                        | 0.1                  |
| 3/1   | 9                          | 9             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 4                          | 4             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 4155.6      Total Delay for Signalled Lanes (pcuHr): 0.06      Cycle Time (s): 36<br>PRC Over All Lanes (%): 4155.6      Total Delay Over All Lanes(pcuHr): 0.06 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |



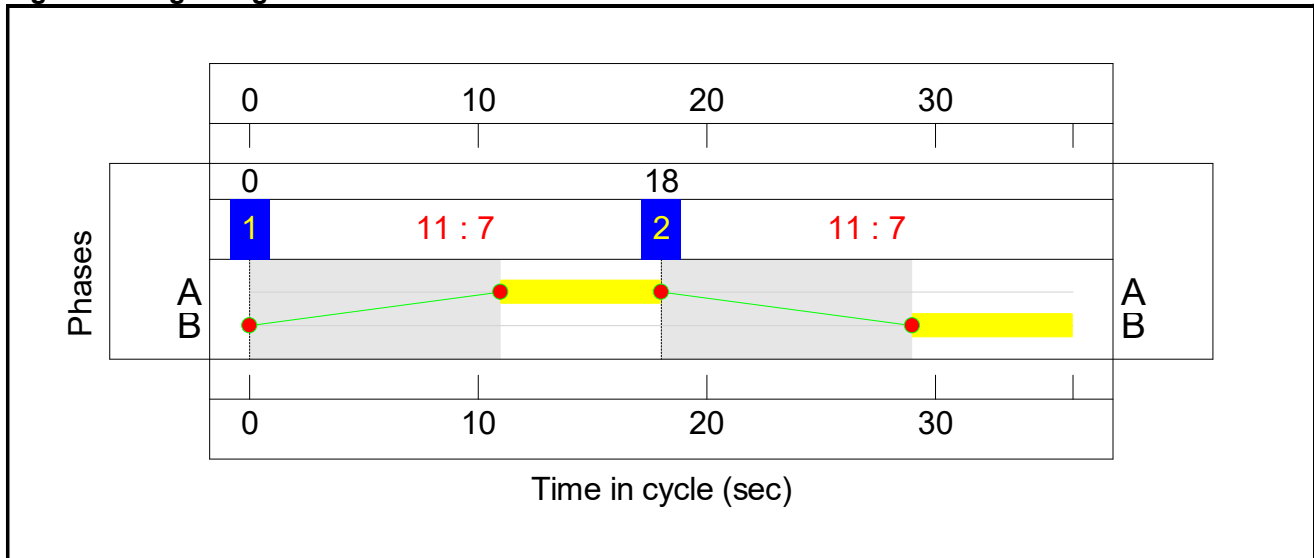
**Stage Sequence Diagram**



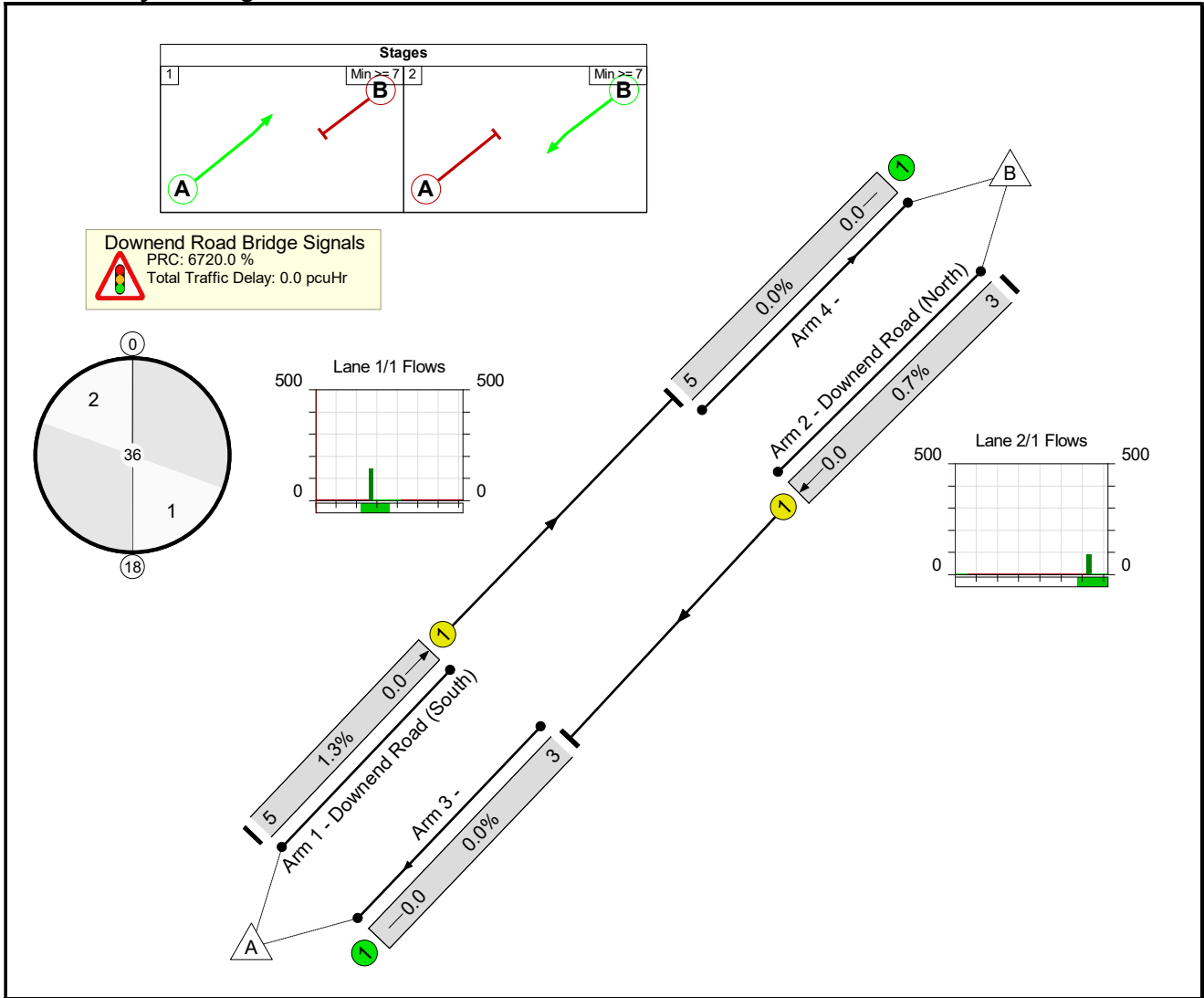
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 18 |

**Signal Timings Diagram**



### Network Layout Diagram

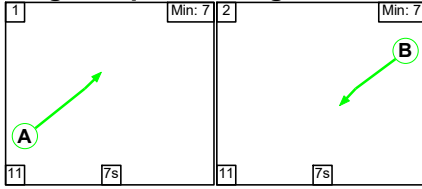


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 1.3%                 |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 1.3%                 |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 5                         | 1705                             | 379                        | 1.3%                 |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 3                         | 1915                             | 426                        | 0.7%                 |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 3                         | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 5                         | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b>   | -                          | -             | 0                     | 0                            | 0                           | 0.0                   | 0.0                          | 0.0                                | 0.0                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.0                   | 0.0                          | 0.0                                | 0.0                 | -                         | -                                | -                          | -                    |
| 1/1   | 5                          | 5             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 16.1                      | 0.0                              | 0.0                        | 0.0                  |
| 2/1   | 3                          | 3             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 15.5                      | 0.0                              | 0.0                        | 0.0                  |
| 3/1   | 3                          | 3             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 5                          | 5             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 6720.0      Total Delay for Signalled Lanes (pcuHr): 0.04      Cycle Time (s): 36<br>PRC Over All Lanes (%): 6720.0      Total Delay Over All Lanes(pcuHr): 0.04 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

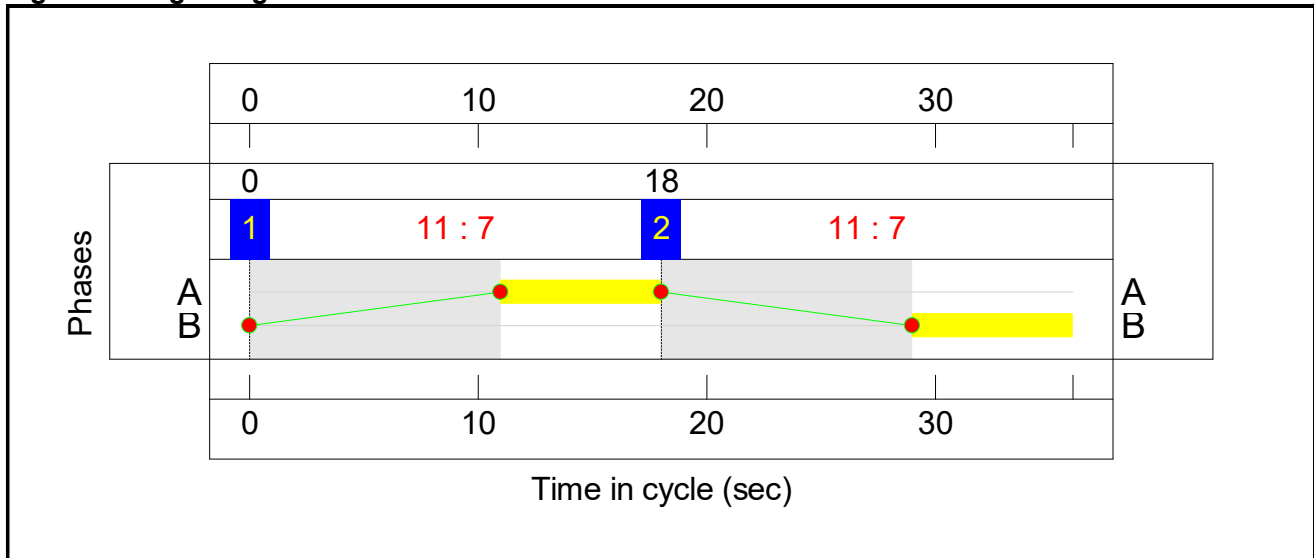
**Stage Sequence Diagram**



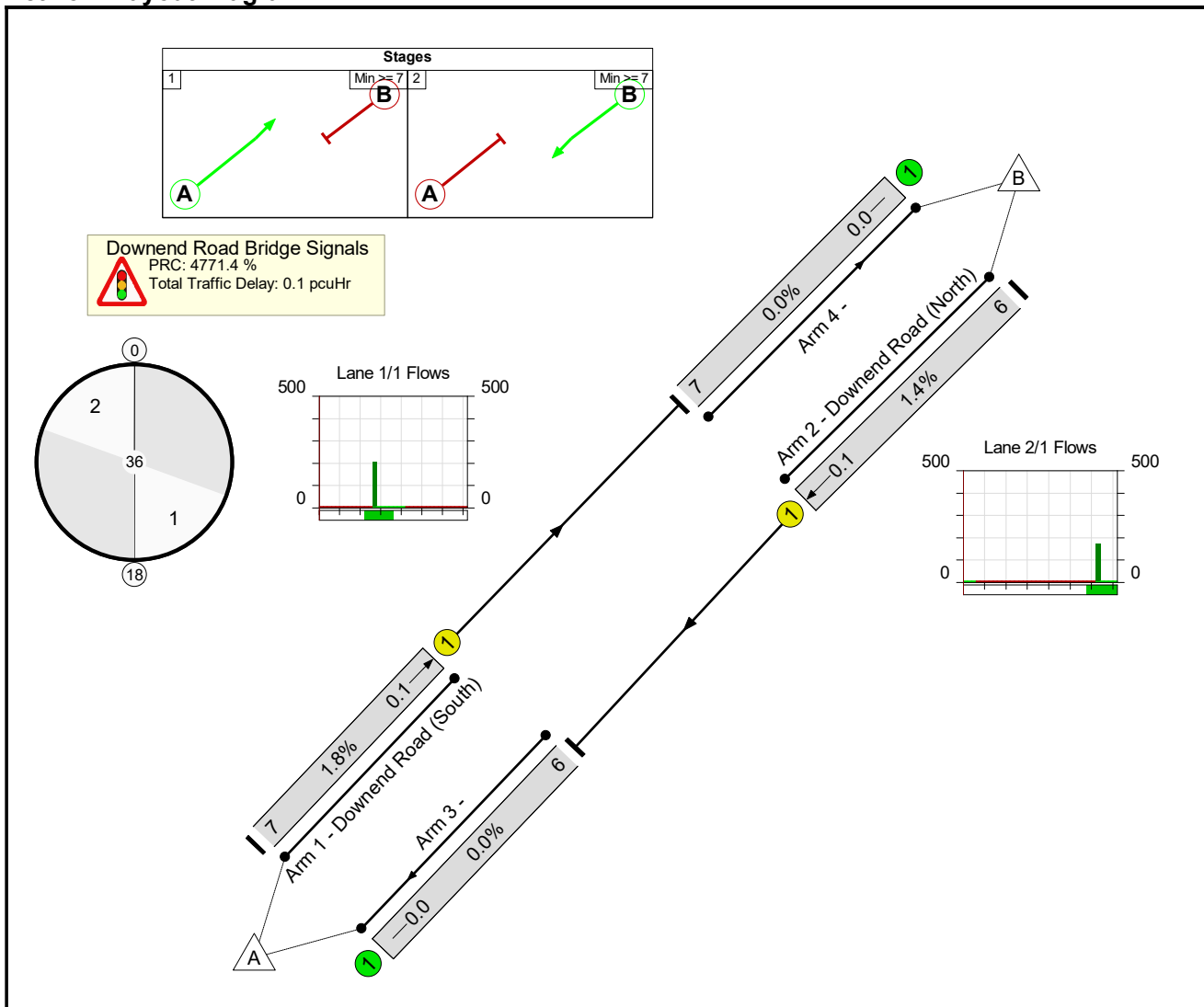
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 18 |

**Signal Timings Diagram**



### Network Layout Diagram

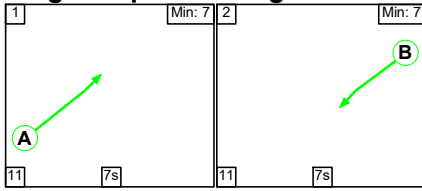


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 1.8%                 |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 1.8%                 |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 7                         | 1705                             | 379                        | 1.8%                 |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 6                         | 1915                             | 426                        | 1.4%                 |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 6                         | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 7                         | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b>   | -                          | -             | 0                     | 0                            | 0                           | 0.0                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.0                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| 1/1   | 7                          | 7             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 16.1                      | 0.1                              | 0.0                        | 0.1                  |
| 2/1   | 6                          | 6             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 15.6                      | 0.0                              | 0.0                        | 0.1                  |
| 3/1   | 6                          | 6             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 7                          | 7             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 4771.4      Total Delay for Signalled Lanes (pcuHr): 0.06      Cycle Time (s): 36<br>PRC Over All Lanes (%): 4771.4      Total Delay Over All Lanes(pcuHr): 0.06 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

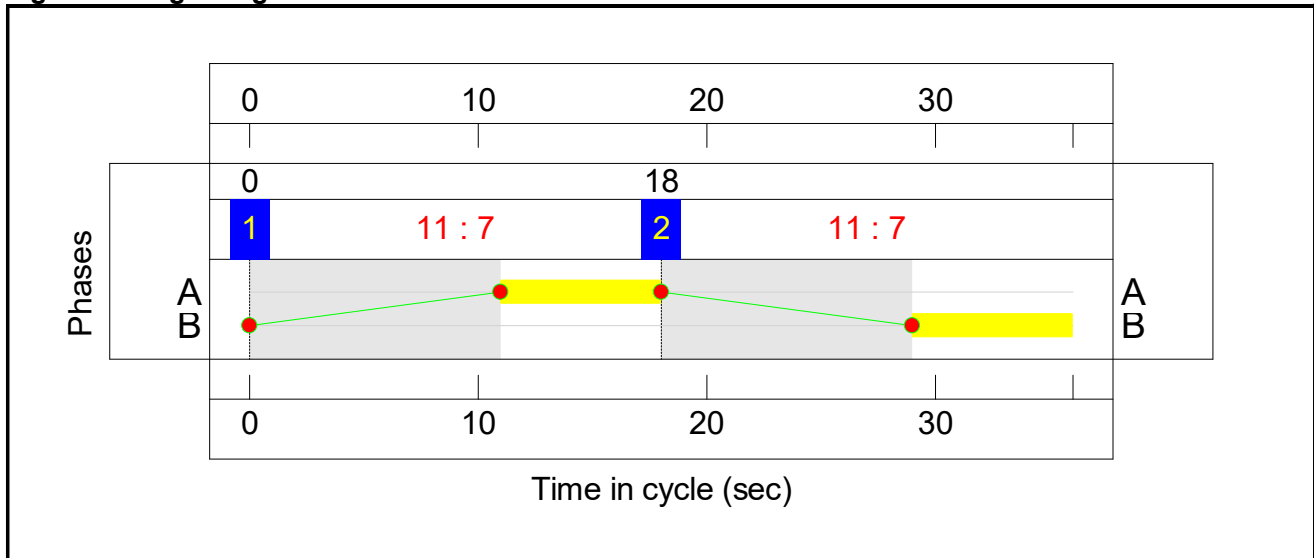
**Stage Sequence Diagram**



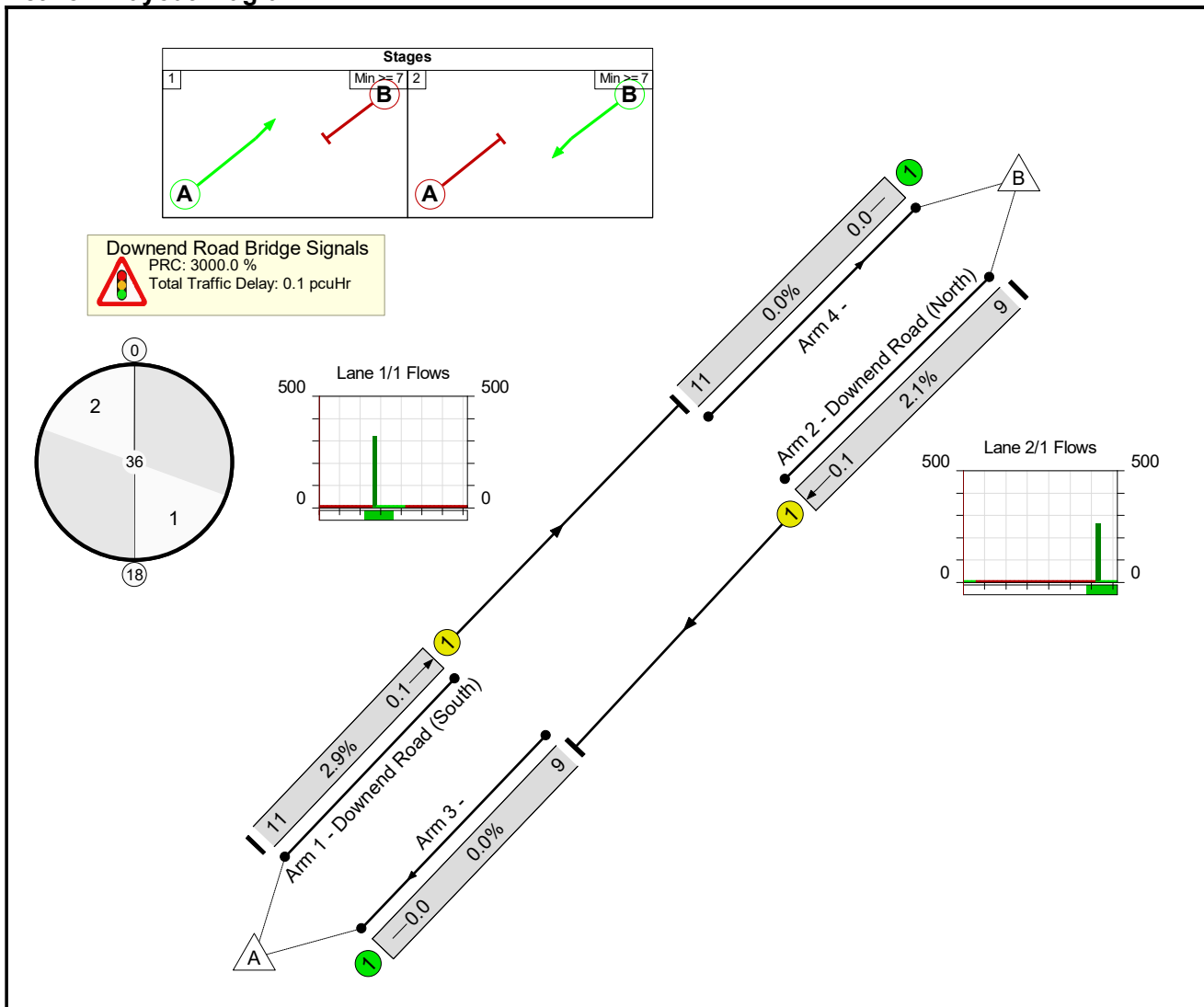
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 18 |

**Signal Timings Diagram**



### Network Layout Diagram



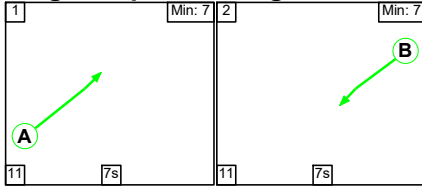


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 2.9%                 |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 2.9%                 |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 11                        | 1705                             | 379                        | 2.9%                 |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 9                         | 1915                             | 426                        | 2.1%                 |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 9                         | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 11                        | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b>   | -                          | -             | 0                     | 0                            | 0                           | 0.1                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.1                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| 1/1   | 11                         | 11            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 16.2                      | 0.1                              | 0.0                        | 0.1                  |
| 2/1   | 9                          | 9             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 15.6                      | 0.1                              | 0.0                        | 0.1                  |
| 3/1   | 9                          | 9             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 11                         | 11            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 3000.0      Total Delay for Signalled Lanes (pcuHr): 0.09      Cycle Time (s): 36<br>PRC Over All Lanes (%): 3000.0      Total Delay Over All Lanes(pcuHr): 0.09 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

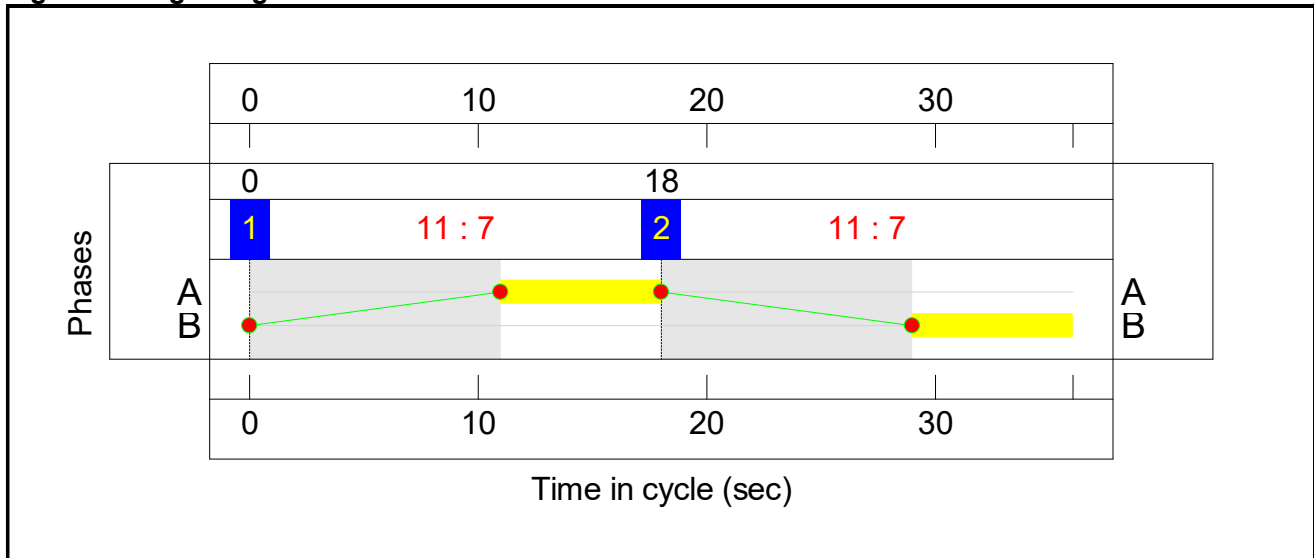
**Stage Sequence Diagram**



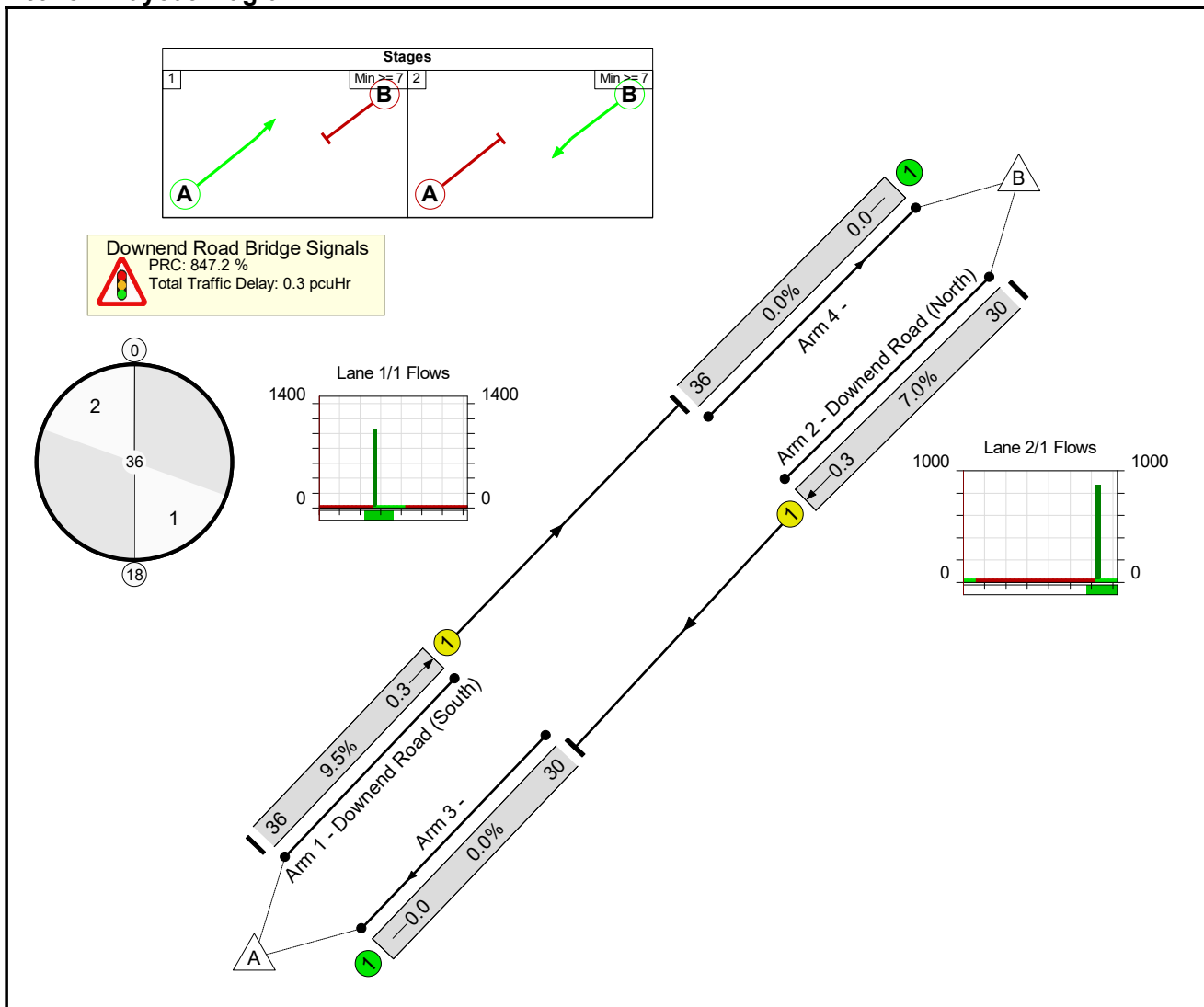
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 18 |

**Signal Timings Diagram**



### Network Layout Diagram

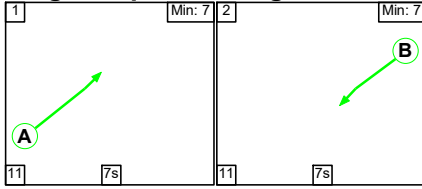


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 9.5%                 |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 9.5%                 |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 36                        | 1705                             | 379                        | 9.5%                 |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 30                        | 1915                             | 426                        | 7.0%                 |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 30                        | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 36                        | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b>   | -                          | -             | 0                     | 0                            | 0                           | 0.2                   | 0.1                          | 0.0                                | 0.3                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.2                   | 0.1                          | 0.0                                | 0.3                 | -                         | -                                | -                          | -                    |
| 1/1   | 36                         | 36            | -                     | -                            | -                           | 0.1                   | 0.1                          | -                                  | 0.2                 | 16.5                      | 0.3                              | 0.1                        | 0.3                  |
| 2/1   | 30                         | 30            | -                     | -                            | -                           | 0.1                   | 0.0                          | -                                  | 0.1                 | 15.8                      | 0.2                              | 0.0                        | 0.3                  |
| 3/1   | 30                         | 30            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 36                         | 36            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 847.2      Total Delay for Signalled Lanes (pcuHr): 0.30      Cycle Time (s): 36<br>PRC Over All Lanes (%): 847.2      Total Delay Over All Lanes(pcuHr): 0.30 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

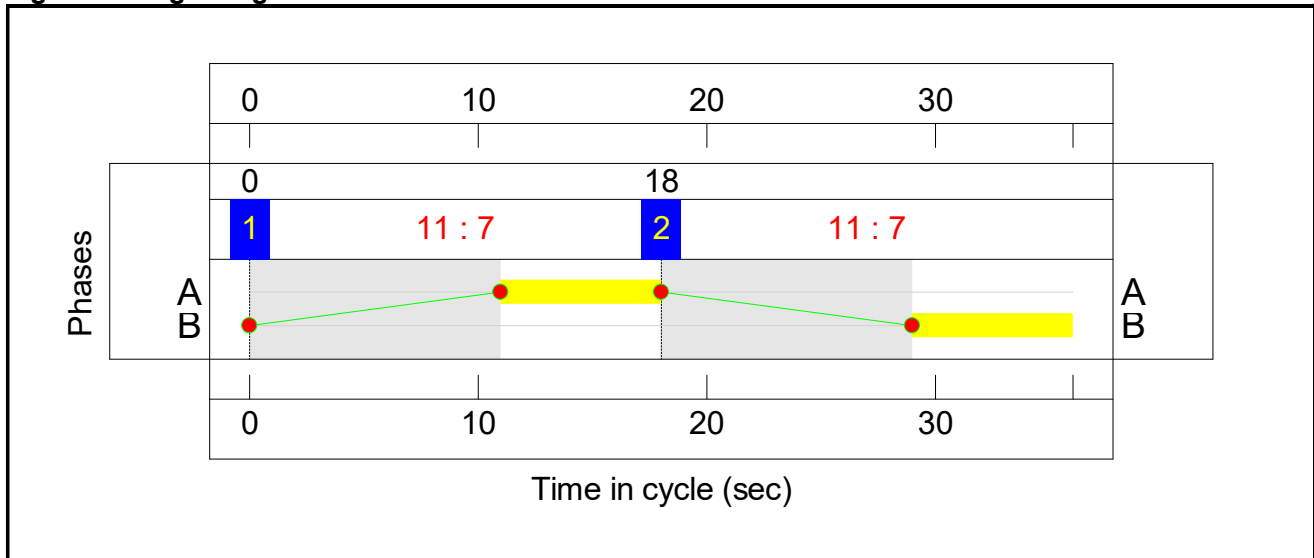
**Stage Sequence Diagram**



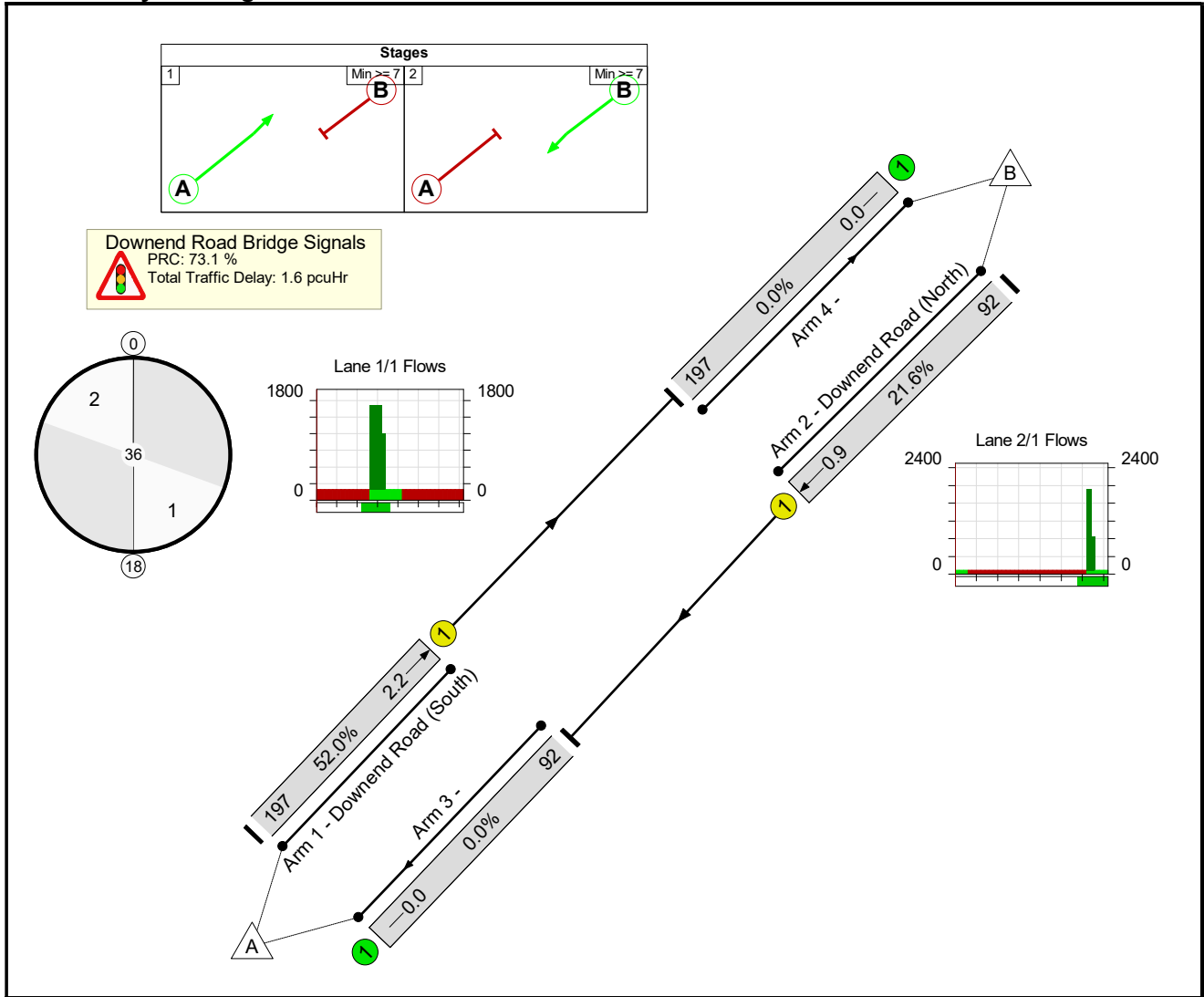
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 18 |

**Signal Timings Diagram**



**Network Layout Diagram**

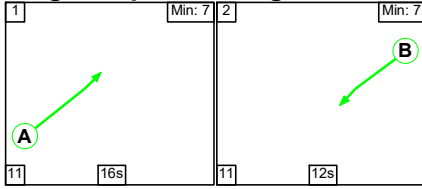


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item   | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|--|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 52.0%                |
| <b>Downend Road Bridge Signals</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 52.0%                |
| 1/1  | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 197                       | 1705                             | 379                        | 52.0%                |
| 2/1  | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 92                        | 1915                             | 426                        | 21.6%                |
| 3/1  |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 92                        | Inf                              | Inf                        | 0.0%                 |
| 4/1  |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 197                       | Inf                              | Inf                        | 0.0%                 |
| Item   | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 1.0                   | 0.7                          | 0.0                                | 1.6                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>   | -                          | -             | 0                     | 0                            | 0                           | 1.0                   | 0.7                          | 0.0                                | 1.6                 | -                         | -                                | -                          | -                    |
| 1/1  | 197                        | 197           | -                     | -                            | -                           | 0.7                   | 0.5                          | -                                  | 1.2                 | 22.2                      | 1.7                              | 0.5                        | 2.2                  |
| 2/1  | 92                         | 92            | -                     | -                            | -                           | 0.3                   | 0.1                          | -                                  | 0.4                 | 16.9                      | 0.7                              | 0.1                        | 0.9                  |
| 3/1  | 92                         | 92            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1  | 197                        | 197           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| <p>C1      PRC for Signalled Lanes (%): 73.1      Total Delay for Signalled Lanes (pcuHr): 1.65      Cycle Time (s): 36<br/>                     PRC Over All Lanes (%): 73.1      Total Delay Over All Lanes(pcuHr): 1.65</p> |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

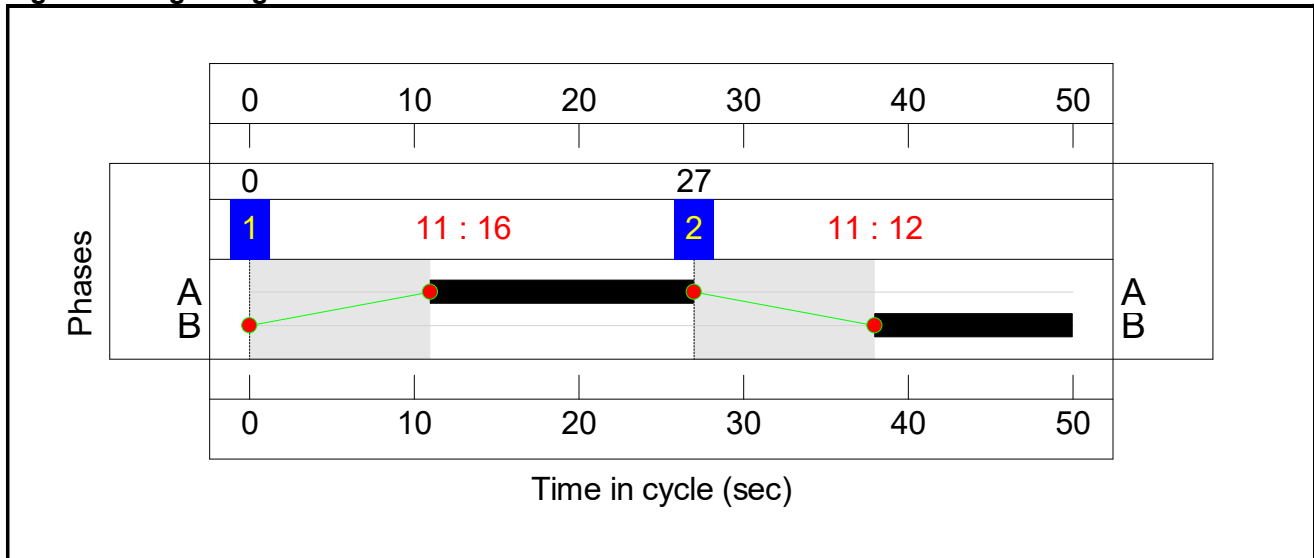
**Stage Sequence Diagram**



**Stage Timings**

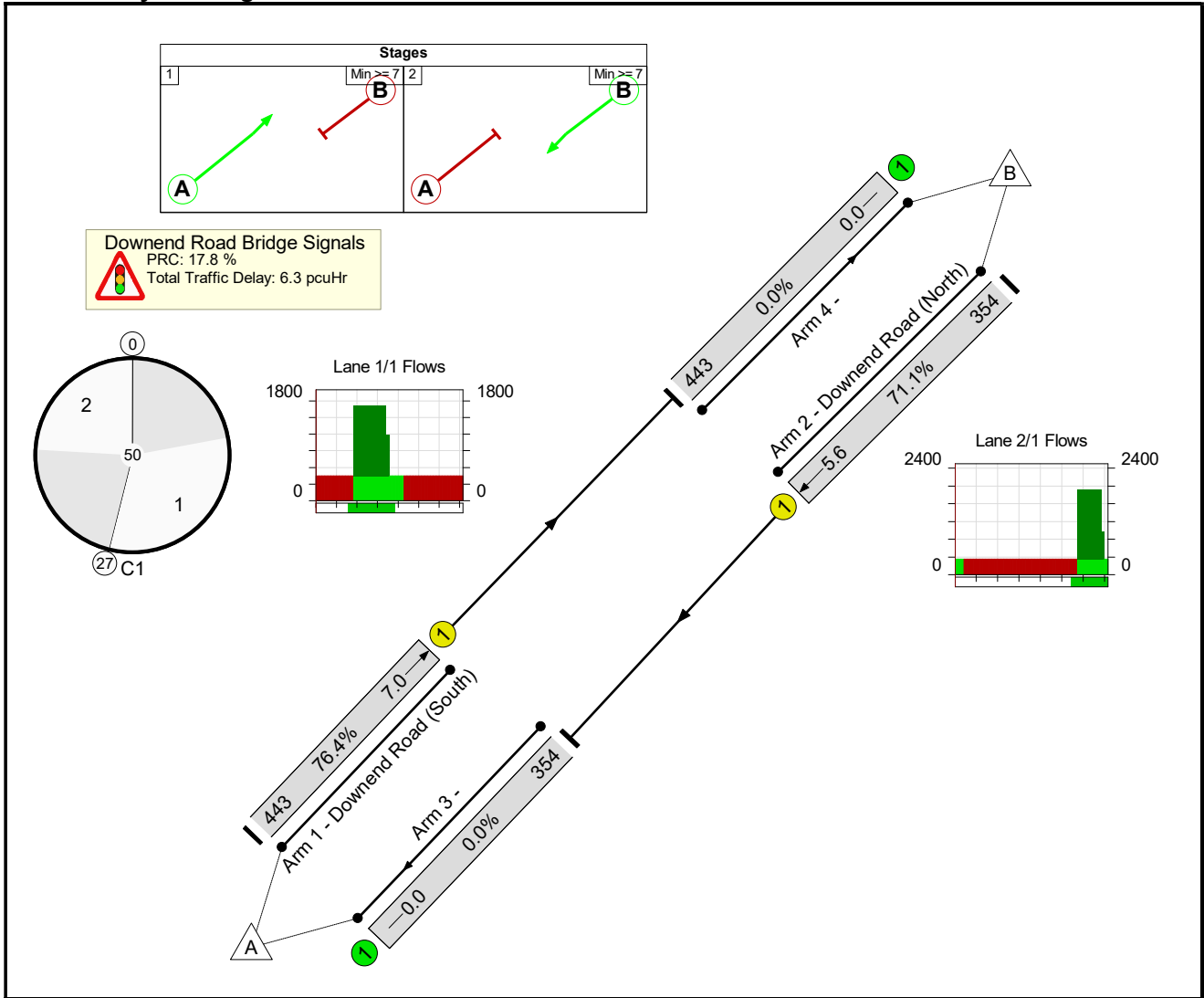
| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 16 | 12 |
| Change Point | 0  | 27 |

**Signal Timings Diagram**





**Network Layout Diagram**

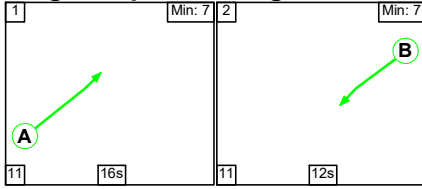


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item                                | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                                    | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|-------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|---|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b> | -                          | -             | N/A                               | -                            | -   |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 76.4%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                               | -                            | -   |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 76.4%                |
| 1/1                                 | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A   |                       | 1                            | 16                                 | -                   | 443                       | 1705                             | 580                        | 76.4%                |
| 2/1                                 | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B   |                       | 1                            | 12                                 | -                   | 354                       | 1915                             | 498                        | 71.1%                |
| 3/1                                 |                            | U             | N/A                               | N/A                          | -   |                       | -                            | -                                  | -                   | 354                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                 |                            | U             | N/A                               | N/A                          | -   |                       | -                            | -                                  | -                   | 443                       | Inf                              | Inf                        | 0.0%                 |
| Item                                | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)                   | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b> | -                          | -             | 0                                 | 0                            | 0   | 3.5                   | 2.8                          | 0.0                                | 6.3                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                                 | 0                            | 0   | 3.5                   | 2.8                          | 0.0                                | 6.3                 | -                         | -                                | -                          | -                    |
| 1/1                                 | 443                        | 443           | -                                 | -                            | -   | 1.8                   | 1.6                          | -                                  | 3.4                 | 27.6                      | 5.4                              | 1.6                        | 7.0                  |
| 2/1                                 | 354                        | 354           | -                                 | -                            | -   | 1.7                   | 1.2                          | -                                  | 2.9                 | 29.1                      | 4.4                              | 1.2                        | 5.6                  |
| 3/1                                 | 354                        | 354           | -                                 | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                 | 443                        | 443           | -                                 | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                  |                            |               | PRC for Signalled Lanes (%): 17.8 |                              | Total Delay for Signalled Lanes (pcuHr): 6.26 |                       | Cycle Time (s): 50           |                                    |                     |                           |                                  |                            |                      |
|                                     |                            |               | PRC Over All Lanes (%): 17.8      |                              | Total Delay Over All Lanes(pcuHr): 6.26       |                       |                              |                                    |                     |                           |                                  |                            |                      |

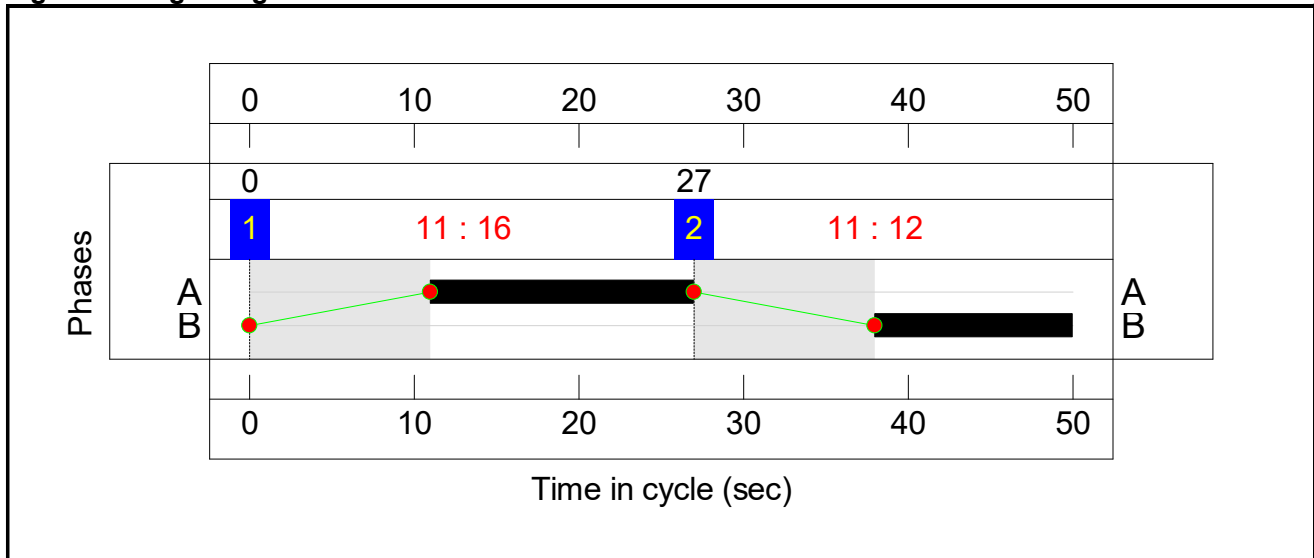
**Stage Sequence Diagram**



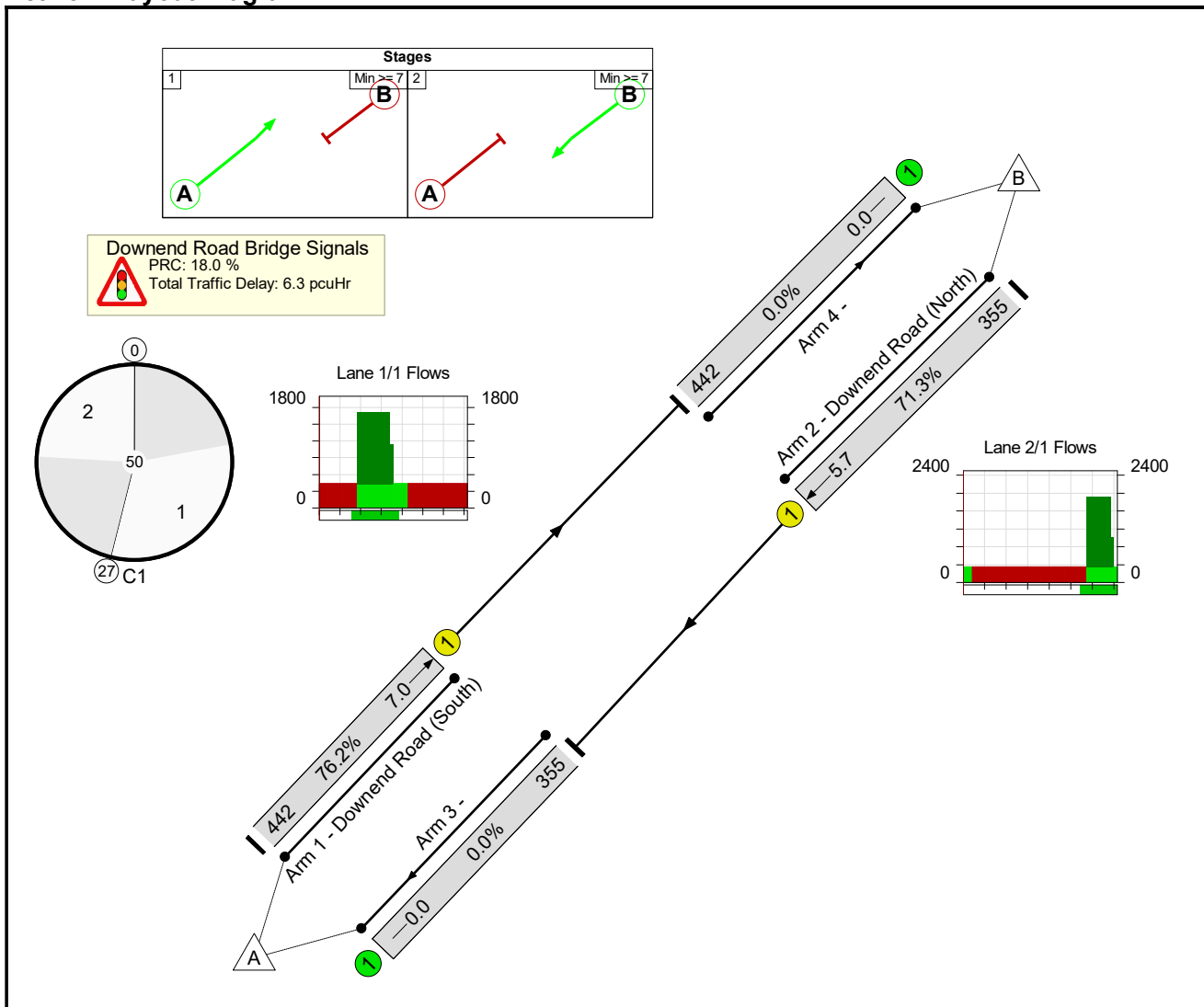
**Stage Timings**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 16 | 12 |
| Change Point | 0  | 27 |

**Signal Timings Diagram**



### Network Layout Diagram

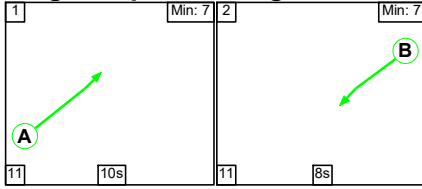


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item                                | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                   | Arrow Phase           | Num Greens                                    | Total Green (s)                    | Arrow Green (s)                         | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|-------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|------------------------------|-----------------------|---|------------------------------------|---|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 76.2%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 76.2%                |
| 1/1                                 | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A                            |                       | 1   | 16                                 | -                                       | 442                       | 1705                             | 580                        | 76.2%                |
| 2/1                                 | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B                            |                       | 1   | 12                                 | -                                       | 355                       | 1915                             | 498                        | 71.3%                |
| 3/1                                 |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 355                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                 |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 442                       | Inf                              | Inf                        | 0.0%                 |
| Item                                | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)  | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr)                  | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr)                     | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b> | -                          | -             | 0                                 | 0                            | 0                            | 3.5                   | 2.8   | 0.0                                | 6.3                                     | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                                 | 0                            | 0                            | 3.5                   | 2.8   | 0.0                                | 6.3                                     | -                         | -                                | -                          | -                    |
| 1/1                                 | 442                        | 442           | -                                 | -                            | -                            | 1.8                   | 1.6   | -                                  | 3.4                                     | 27.5                      | 5.4                              | 1.6                        | 7.0                  |
| 2/1                                 | 355                        | 355           | -                                 | -                            | -                            | 1.7                   | 1.2   | -                                  | 2.9                                     | 29.2                      | 4.4                              | 1.2                        | 5.7                  |
| 3/1                                 | 355                        | 355           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                 | 442                        | 442           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                  |                            |               | PRC for Signalled Lanes (%): 18.0 |                              | PRC Over All Lanes (%): 18.0 |                       | Total Delay for Signalled Lanes (pcuHr): 6.25 |                                    | Total Delay Over All Lanes(pcuHr): 6.25 |                           | Cycle Time (s): 50               |                            |                      |

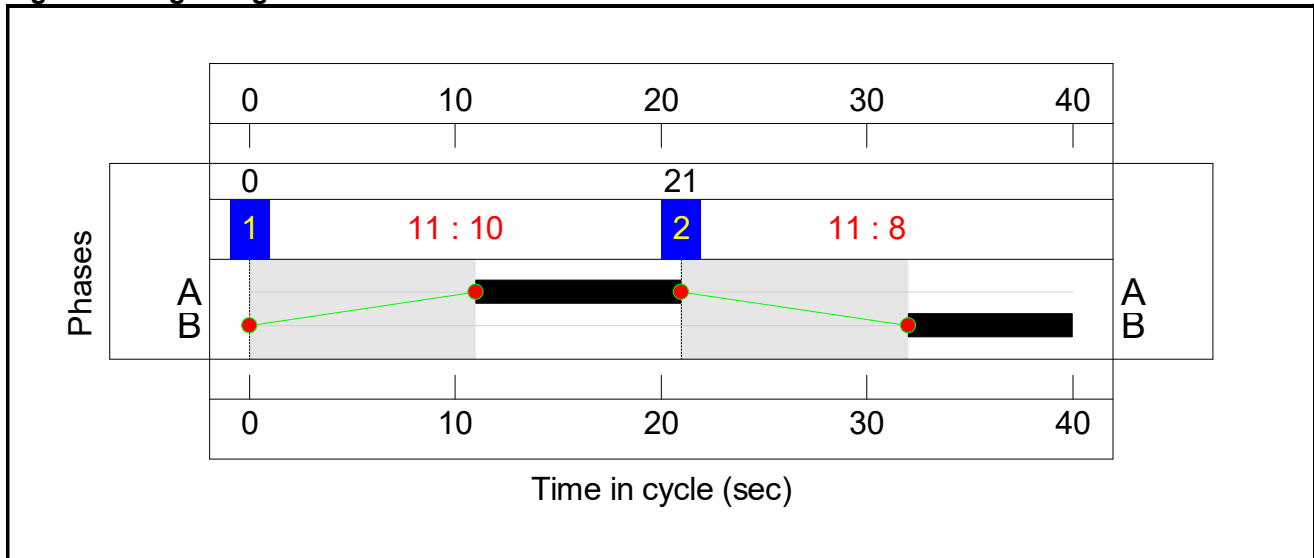
**Stage Sequence Diagram**



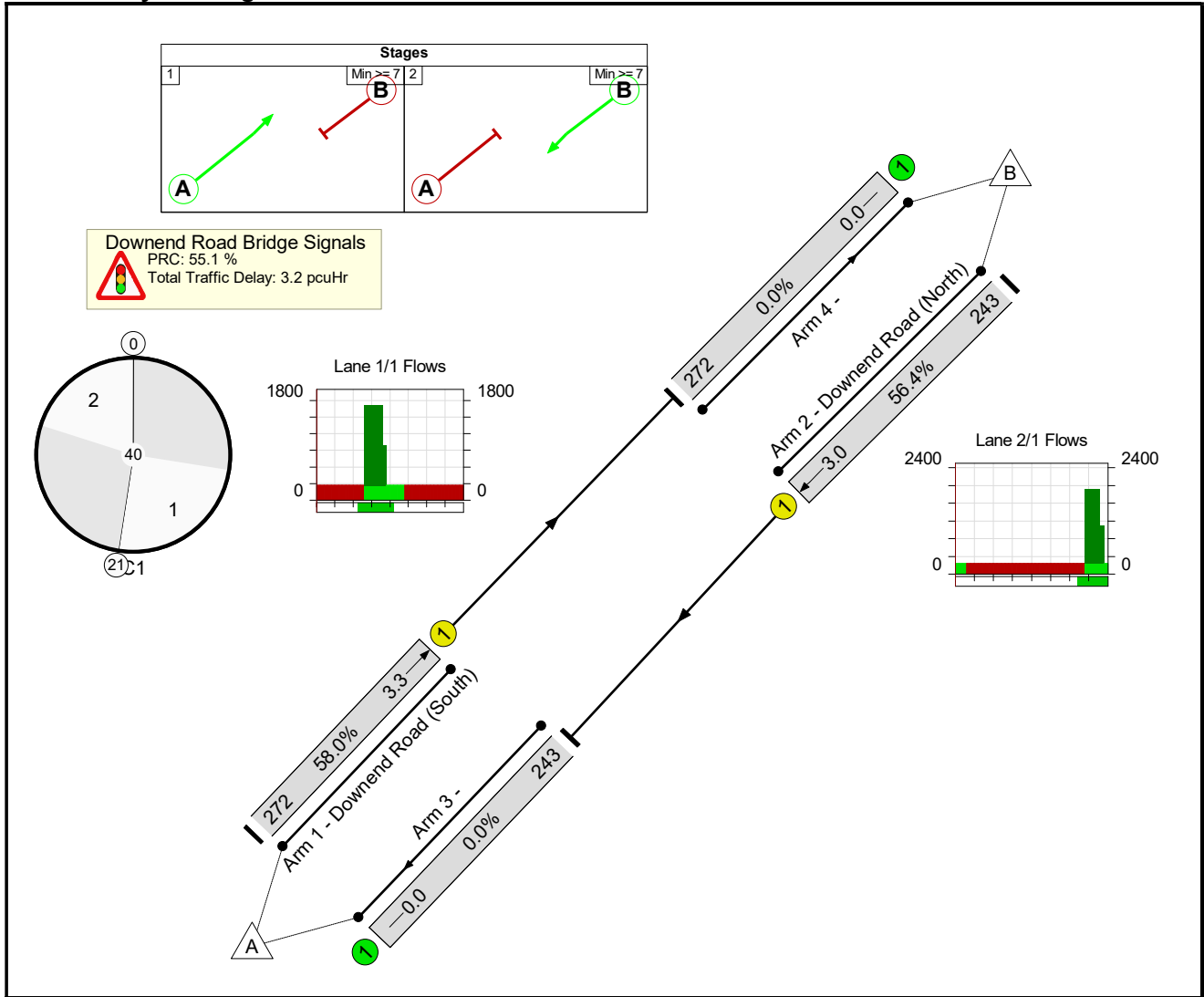
**Stage Timings**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 10 | 8  |
| Change Point | 0  | 21 |

**Signal Timings Diagram**



### Network Layout Diagram



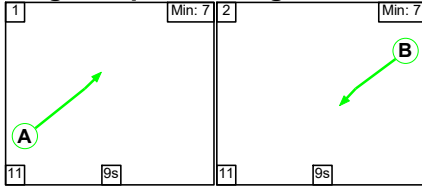
JCT Planning Submission Full Input Data And Results

**Network Results**

| Item                                | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                                    | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|-------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|---|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b> | -                          | -             | N/A                               | -                            | -   |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 58.0%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                               | -                            | -   |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 58.0%                |
| 1/1                                 | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A   |                       | 1                            | 10                                 | -                   | 272                       | 1705                             | 469                        | 58.0%                |
| 2/1                                 | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B   |                       | 1                            | 8                                  | -                   | 243                       | 1915                             | 431                        | 56.4%                |
| 3/1                                 |                            | U             | N/A                               | N/A                          | -   |                       | -                            | -                                  | -                   | 243                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                 |                            | U             | N/A                               | N/A                          | -   |                       | -                            | -                                  | -                   | 272                       | Inf                              | Inf                        | 0.0%                 |
| Item                                | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)                   | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b> | -                          | -             | 0                                 | 0                            | 0   | 1.9                   | 1.3                          | 0.0                                | 3.2                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                                 | 0                            | 0   | 1.9                   | 1.3                          | 0.0                                | 3.2                 | -                         | -                                | -                          | -                    |
| 1/1                                 | 272                        | 272           | -                                 | -                            | -   | 0.9                   | 0.7                          | -                                  | 1.6                 | 21.6                      | 2.6                              | 0.7                        | 3.3                  |
| 2/1                                 | 243                        | 243           | -                                 | -                            | -   | 0.9                   | 0.6                          | -                                  | 1.6                 | 23.3                      | 2.4                              | 0.6                        | 3.0                  |
| 3/1                                 | 243                        | 243           | -                                 | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                 | 272                        | 272           | -                                 | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                  |                            |               | PRC for Signalled Lanes (%): 55.1 |                              | Total Delay for Signalled Lanes (pcuHr): 3.20 |                       | Cycle Time (s): 40           |                                    |                     |                           |                                  |                            |                      |
|                                     |                            |               | PRC Over All Lanes (%): 55.1      |                              | Total Delay Over All Lanes(pcuHr): 3.20       |                       |                              |                                    |                     |                           |                                  |                            |                      |



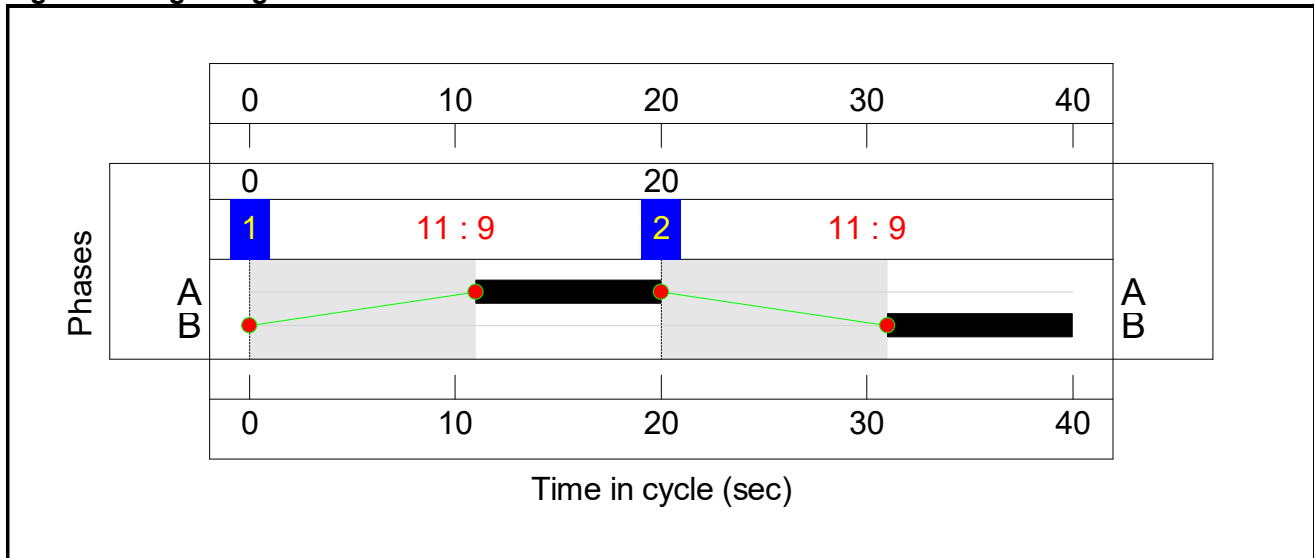
**Stage Sequence Diagram**



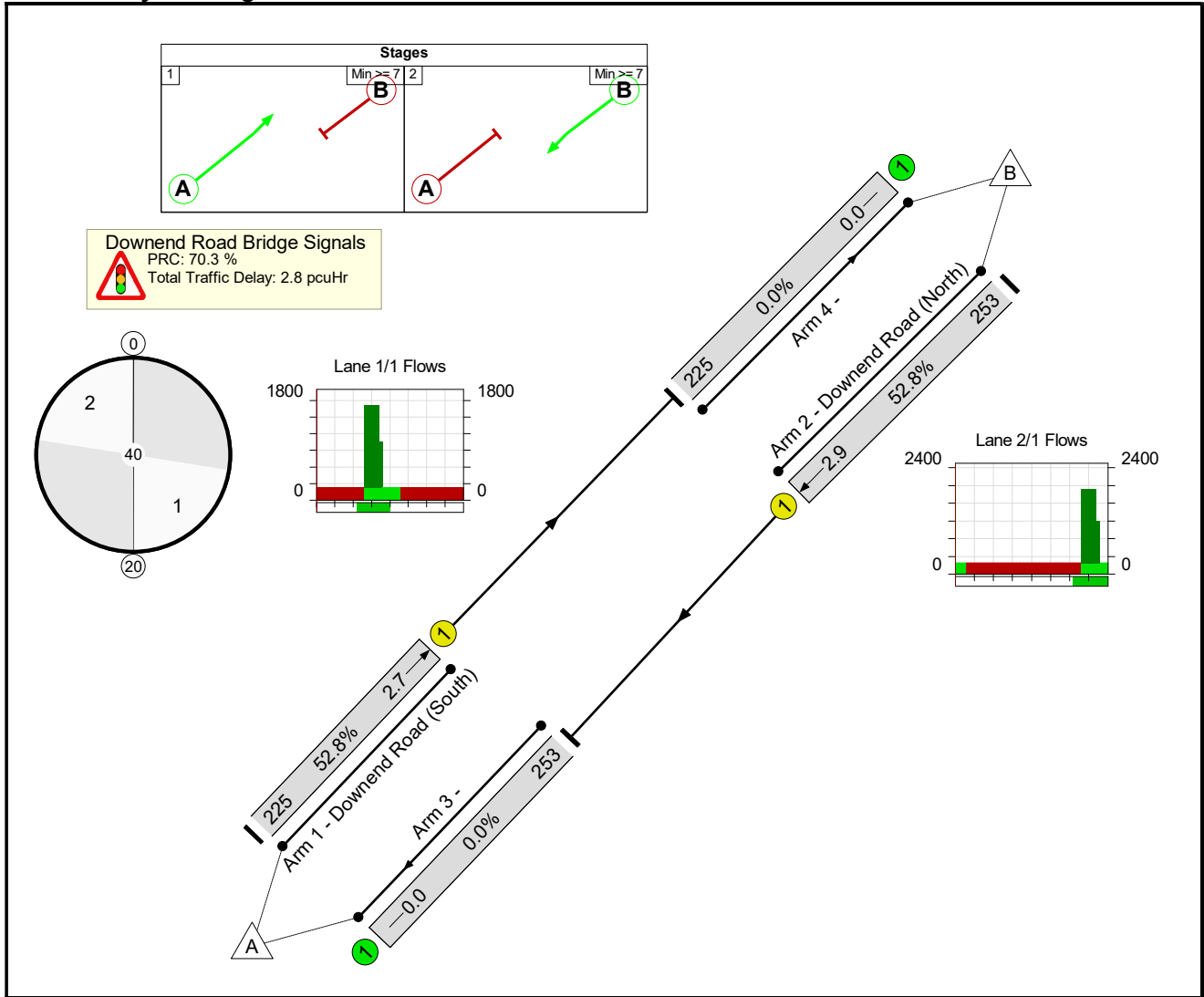
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 9 | 9  |
| Change Point | 0 | 20 |

**Signal Timings Diagram**



### Network Layout Diagram

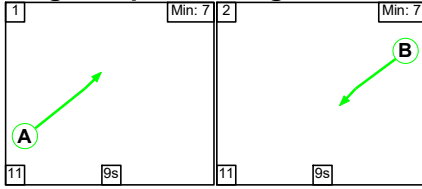


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item                                | Lane Description           | Lane Type     | Controller Stream   | Position In Filtered Route   | Full Phase   | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|-------------------------------------|----------------------------|---------------|---|------------------------------|--|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b> | -                          | -             | N/A   | -                            | -  |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 52.8%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A   | -                            | -  |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 52.8%                |
| 1/1                                 | Downend Road (South) Ahead | U             | N/A   | N/A                          | A  |                       | 1                            | 9                                  | -                   | 225                       | 1705                             | 426                        | 52.8%                |
| 2/1                                 | Downend Road (North) Ahead | U             | N/A   | N/A                          | B  |                       | 1                            | 9                                  | -                   | 253                       | 1915                             | 479                        | 52.8%                |
| 3/1                                 |                            | U             | N/A   | N/A                          | -  |                       | -                            | -                                  | -                   | 253                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                 |                            | U             | N/A   | N/A                          | -  |                       | -                            | -                                  | -                   | 225                       | Inf                              | Inf                        | 0.0%                 |
| Item                                | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)   | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)  | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b> | -                          | -             | 0   | 0                            | 0  | 1.7                   | 1.1                          | 0.0                                | 2.8                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0   | 0                            | 0  | 1.7                   | 1.1                          | 0.0                                | 2.8                 | -                         | -                                | -                          | -                    |
| 1/1                                 | 225                        | 225           | -   | -                            | -  | 0.8                   | 0.6                          | -                                  | 1.4                 | 21.9                      | 2.1                              | 0.6                        | 2.7                  |
| 2/1                                 | 253                        | 253           | -   | -                            | -  | 0.9                   | 0.6                          | -                                  | 1.5                 | 20.9                      | 2.4                              | 0.6                        | 2.9                  |
| 3/1                                 | 253                        | 253           | -   | -                            | -  | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                 | 225                        | 225           | -   | -                            | -  | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                  |                            |               | PRC for Signalled Lanes (%): 70.3<br>PRC Over All Lanes (%): 70.3 |                              | Total Delay for Signalled Lanes (pcuHr): 2.84<br>Total Delay Over All Lanes(pcuHr): 2.84 |                       |                              | Cycle Time (s): 40                 |                     |                           |                                  |                            |                      |

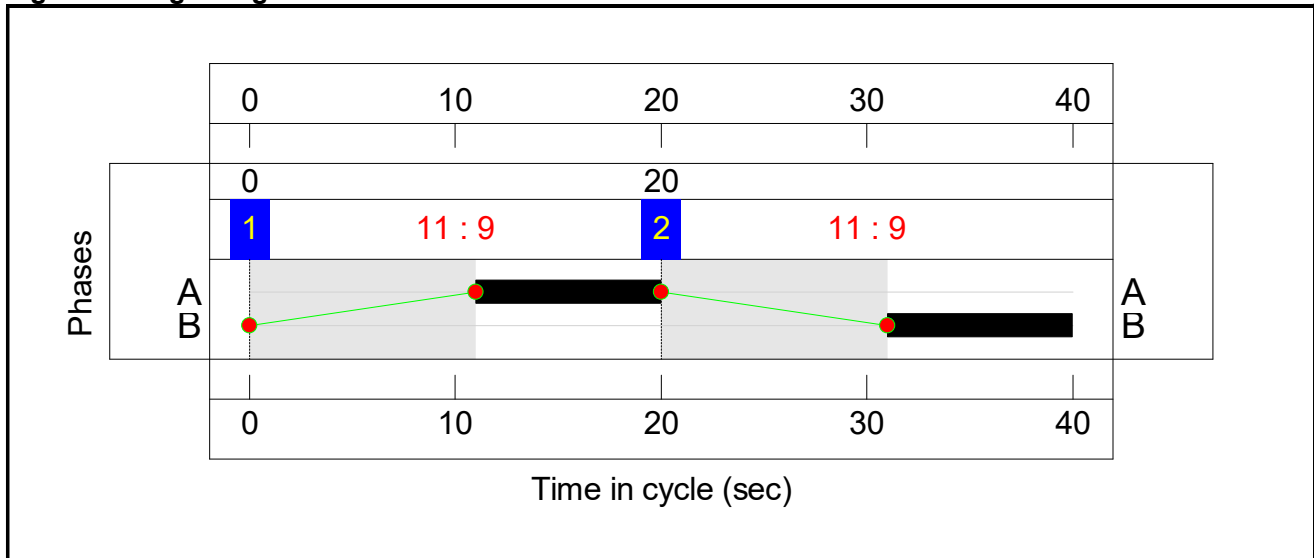
**Stage Sequence Diagram**



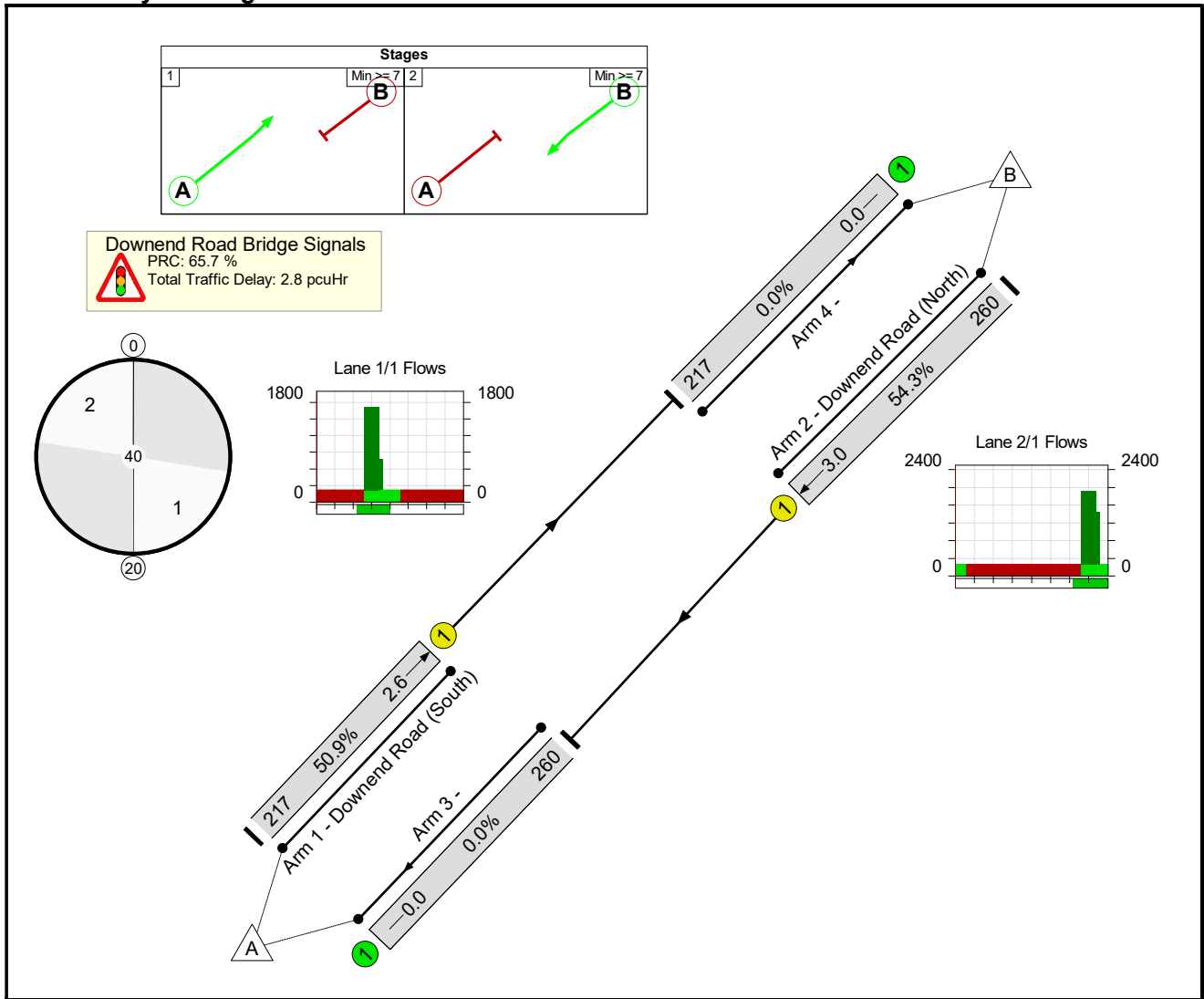
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 9 | 9  |
| Change Point | 0 | 20 |

**Signal Timings Diagram**



### Network Layout Diagram

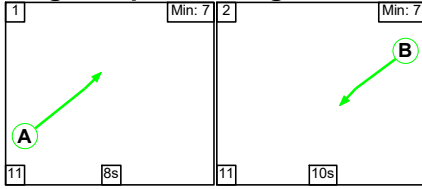


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item                                | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                                    | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|-------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|-----------------------------|-----------------------|---|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b> | -                          | -             | N/A                               | -                            | -                           |                       | -   | -                                  | -                   | -                         | -                                | -                          | 54.3%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                               | -                            | -                           |                       | -   | -                                  | -                   | -                         | -                                | -                          | 54.3%                |
| 1/1                                 | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A                           |                       | 1   | 9                                  | -                   | 217                       | 1705                             | 426                        | 50.9%                |
| 2/1                                 | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B                           |                       | 1   | 9                                  | -                   | 260                       | 1915                             | 479                        | 54.3%                |
| 3/1                                 |                            | U             | N/A                               | N/A                          | -                           |                       | -   | -                                  | -                   | 260                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                 |                            | U             | N/A                               | N/A                          | -                           |                       | -   | -                                  | -                   | 217                       | Inf                              | Inf                        | 0.0%                 |
| Item                                | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr)                  | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b> | -                          | -             | 0                                 | 0                            | 0                           | 1.7                   | 1.1   | 0.0                                | 2.8                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                                 | 0                            | 0                           | 1.7                   | 1.1   | 0.0                                | 2.8                 | -                         | -                                | -                          | -                    |
| 1/1                                 | 217                        | 217           | -                                 | -                            | -                           | 0.8                   | 0.5   | -                                  | 1.3                 | 21.5                      | 2.0                              | 0.5                        | 2.6                  |
| 2/1                                 | 260                        | 260           | -                                 | -                            | -                           | 0.9                   | 0.6   | -                                  | 1.5                 | 21.2                      | 2.5                              | 0.6                        | 3.0                  |
| 3/1                                 | 260                        | 260           | -                                 | -                            | -                           | 0.0                   | 0.0   | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                 | 217                        | 217           | -                                 | -                            | -                           | 0.0                   | 0.0   | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                  |                            |               | PRC for Signalled Lanes (%): 65.7 |                              | 65.7                        |                       | Total Delay for Signalled Lanes (pcuHr): 2.83 |                                    | 2.83                |                           | Cycle Time (s): 40               |                            |                      |
|                                     |                            |               | PRC Over All Lanes (%):           |                              |                             |                       | Total Delay Over All Lanes(pcuHr):            |                                    |                     |                           |                                  |                            |                      |

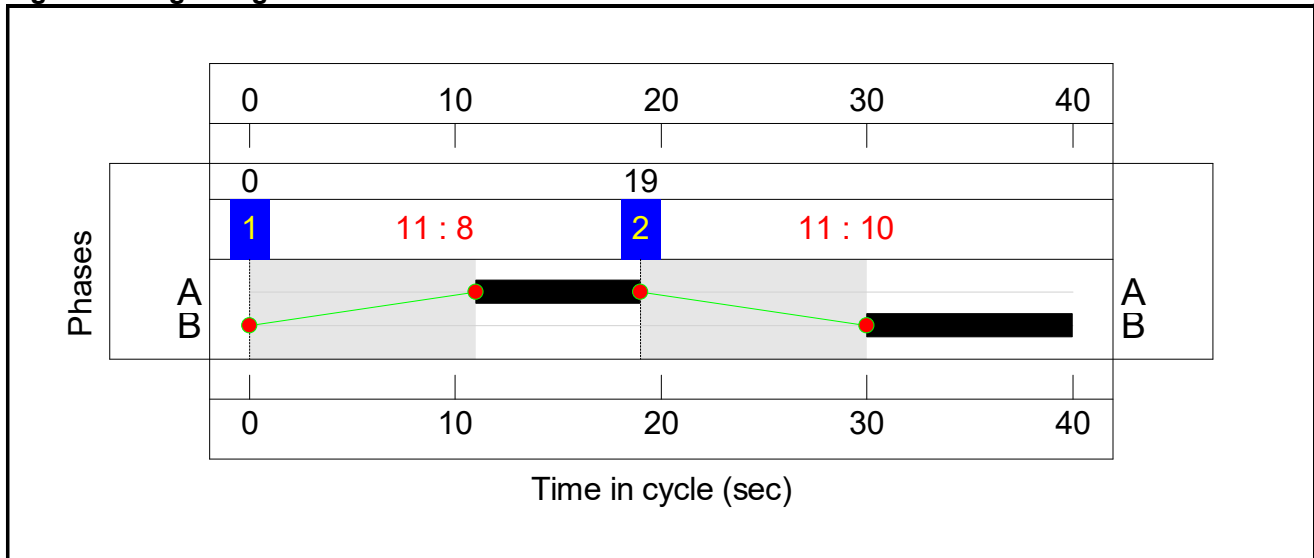
**Stage Sequence Diagram**



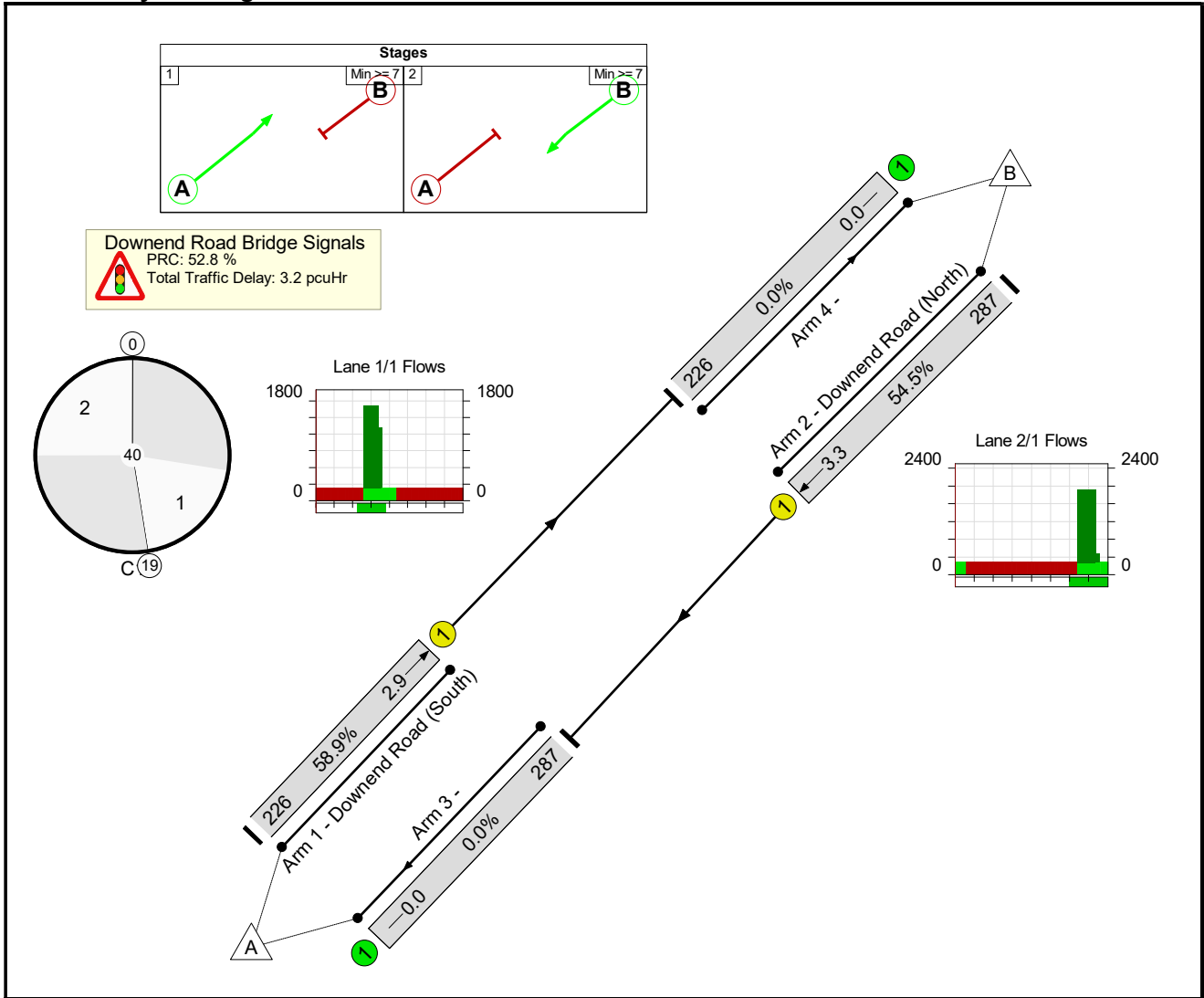
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 8 | 10 |
| Change Point | 0 | 19 |

**Signal Timings Diagram**



**Network Layout Diagram**



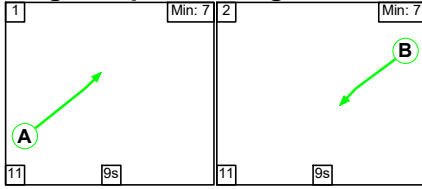


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 58.9%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 58.9%                |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 8                                  | -                   | 226                       | 1705                             | 384                        | 58.9%                |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 10                                 | -                   | 287                       | 1915                             | 527                        | 54.5%                |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 287                       | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 226                       | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b>   | -                          | -             | 0                     | 0                            | 0                           | 1.9                   | 1.3                          | 0.0                                | 3.2                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 1.9                   | 1.3                          | 0.0                                | 3.2                 | -                         | -                                | -                          | -                    |
| 1/1   | 226                        | 226           | -                     | -                            | -                           | 0.9                   | 0.7                          | -                                  | 1.6                 | 25.2                      | 2.2                              | 0.7                        | 2.9                  |
| 2/1   | 287                        | 287           | -                     | -                            | -                           | 1.0                   | 0.6                          | -                                  | 1.6                 | 19.8                      | 2.7                              | 0.6                        | 3.3                  |
| 3/1   | 287                        | 287           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 226                        | 226           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 52.8      Total Delay for Signalled Lanes (pcuHr): 3.16      Cycle Time (s): 40<br>PRC Over All Lanes (%): 52.8      Total Delay Over All Lanes(pcuHr): 3.16 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

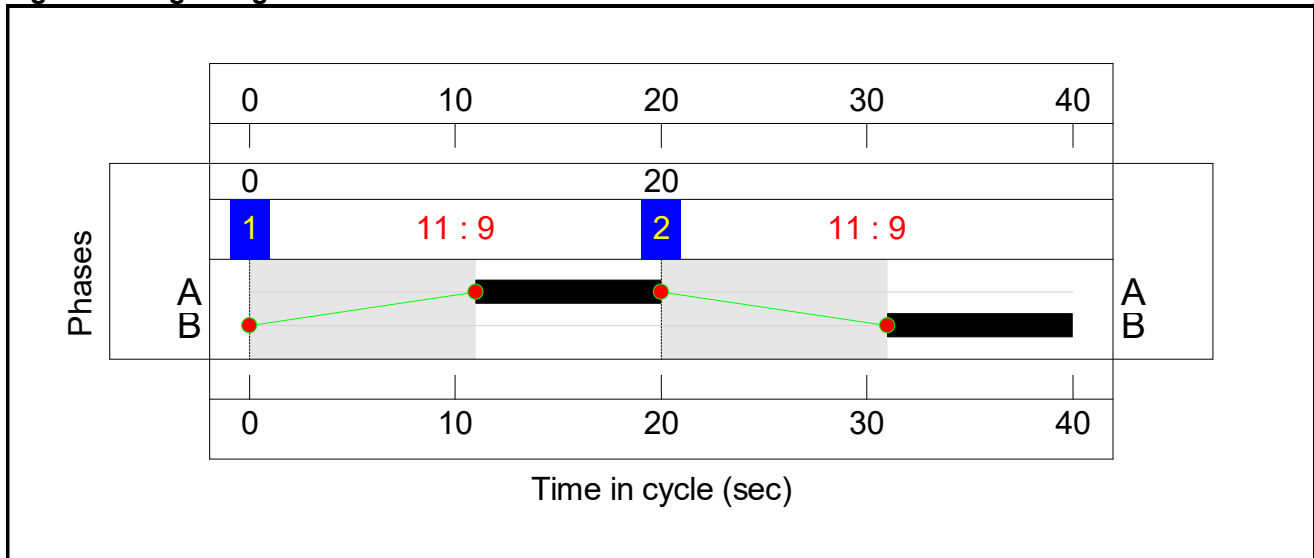
**Stage Sequence Diagram**



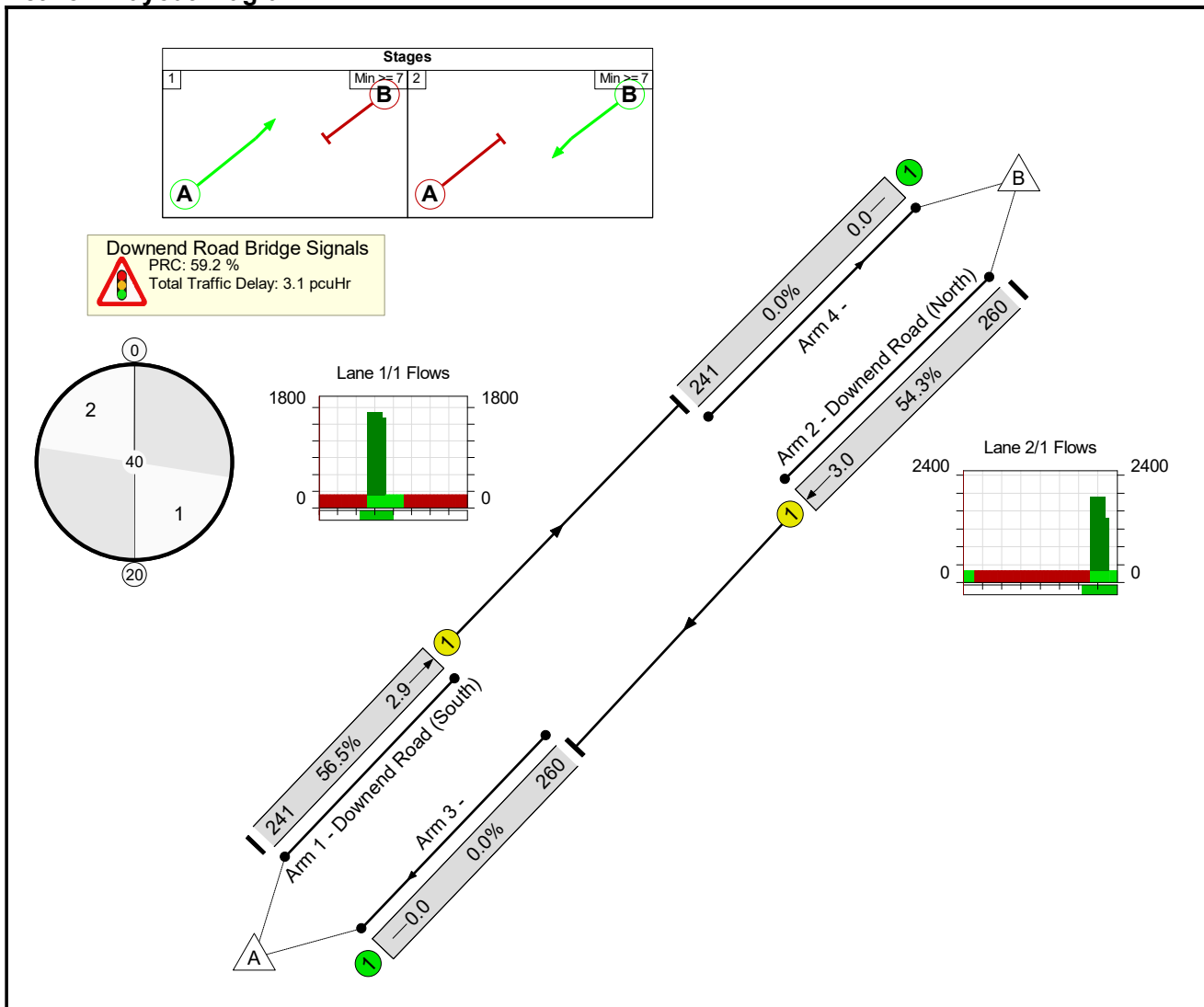
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 9 | 9  |
| Change Point | 0 | 20 |

**Signal Timings Diagram**



### Network Layout Diagram

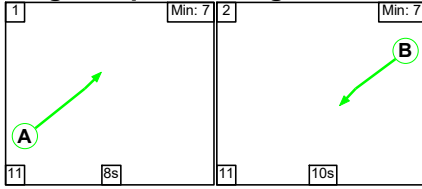


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item                                | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                                    | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)                         | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|-------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|---|-----------------------|------------------------------|------------------------------------|---|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b> | -                          | -             | N/A                               | -                            | -   |                       | -                            | -                                  | -                                       | -                         | -                                | -                          | 56.5%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                               | -                            | -   |                       | -                            | -                                  | -                                       | -                         | -                                | -                          | 56.5%                |
| 1/1                                 | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A   |                       | 1                            | 9                                  | -                                       | 241                       | 1705                             | 426                        | 56.5%                |
| 2/1                                 | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B   |                       | 1                            | 9                                  | -                                       | 260                       | 1915                             | 479                        | 54.3%                |
| 3/1                                 |                            | U             | N/A                               | N/A                          | -   |                       | -                            | -                                  | -                                       | 260                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                 |                            | U             | N/A                               | N/A                          | -   |                       | -                            | -                                  | -                                       | 241                       | Inf                              | Inf                        | 0.0%                 |
| Item                                | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)                   | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr)                     | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b> | -                          | -             | 0                                 | 0                            | 0   | 1.8                   | 1.2                          | 0.0                                | 3.1                                     | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                                 | 0                            | 0   | 1.8                   | 1.2                          | 0.0                                | 3.1                                     | -                         | -                                | -                          | -                    |
| 1/1                                 | 241                        | 241           | -                                 | -                            | -   | 0.9                   | 0.6                          | -                                  | 1.5                                     | 22.8                      | 2.3                              | 0.6                        | 2.9                  |
| 2/1                                 | 260                        | 260           | -                                 | -                            | -   | 0.9                   | 0.6                          | -                                  | 1.5                                     | 21.2                      | 2.5                              | 0.6                        | 3.0                  |
| 3/1                                 | 260                        | 260           | -                                 | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                 | 241                        | 241           | -                                 | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                  |                            |               | PRC for Signalled Lanes (%): 59.2 |                              | Total Delay for Signalled Lanes (pcuHr): 3.06 |                       | PRC Over All Lanes (%): 59.2 |                                    | Total Delay Over All Lanes(pcuHr): 3.06 |                           | Cycle Time (s): 40               |                            |                      |

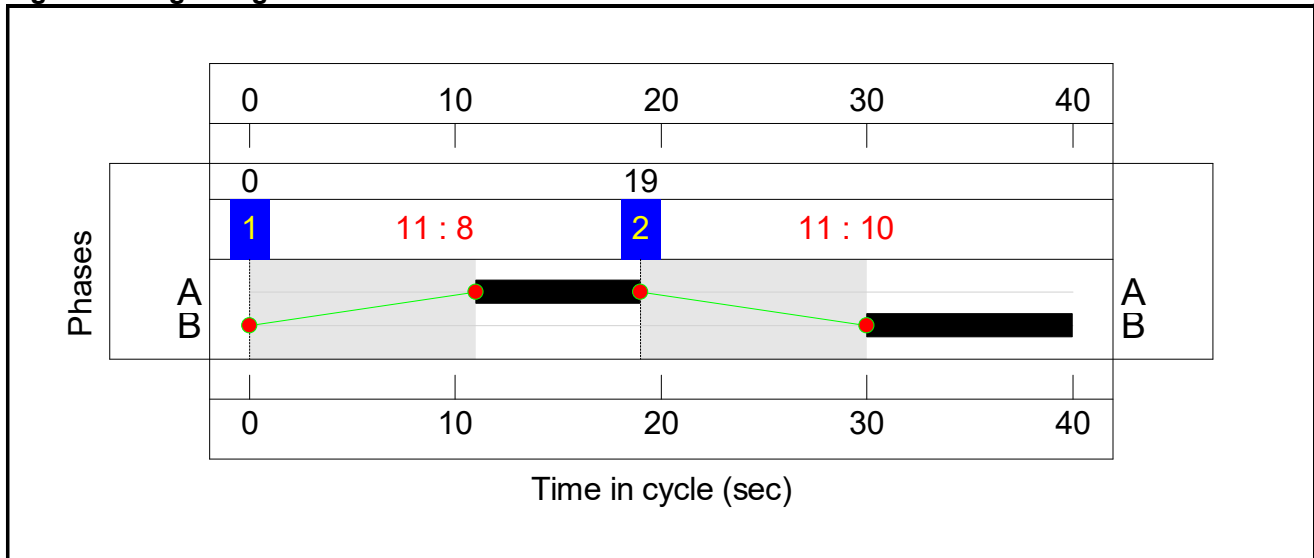
**Stage Sequence Diagram**



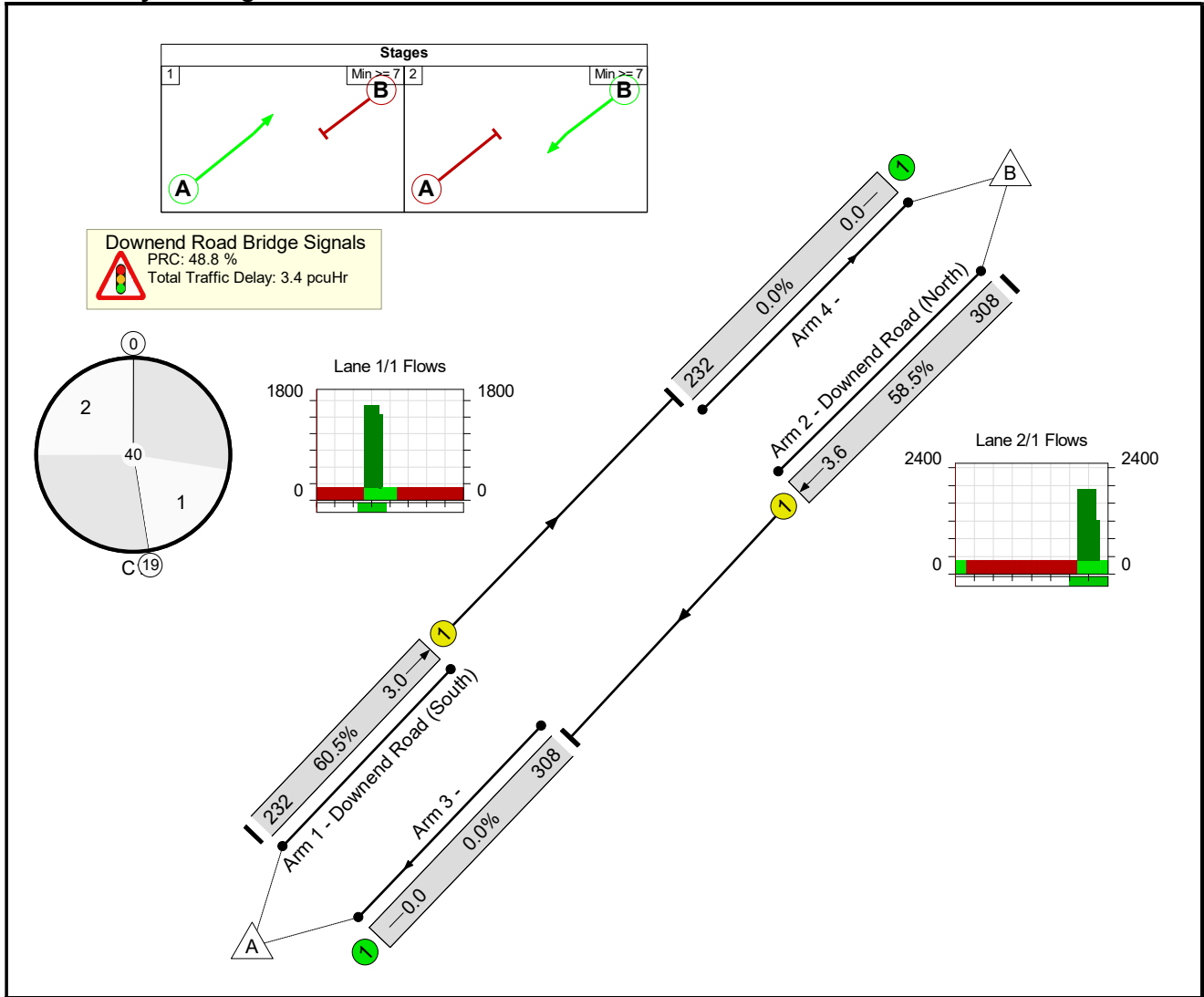
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 8 | 10 |
| Change Point | 0 | 19 |

**Signal Timings Diagram**



### Network Layout Diagram

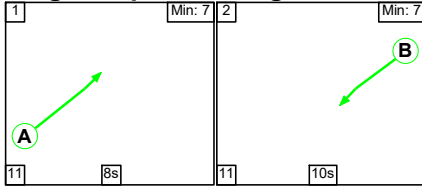


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item                                | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                                    | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)                         | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|-------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|---|-----------------------|------------------------------|------------------------------------|---|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b> | -                          | -             | N/A                               | -                            | -   |                       | -                            | -                                  | -                                       | -                         | -                                | -                          | 60.5%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                               | -                            | -   |                       | -                            | -                                  | -                                       | -                         | -                                | -                          | 60.5%                |
| 1/1                                 | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A   |                       | 1                            | 8                                  | -                                       | 232                       | 1705                             | 384                        | 60.5%                |
| 2/1                                 | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B   |                       | 1                            | 10                                 | -                                       | 308                       | 1915                             | 527                        | 58.5%                |
| 3/1                                 |                            | U             | N/A                               | N/A                          | -   |                       | -                            | -                                  | -                                       | 308                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                 |                            | U             | N/A                               | N/A                          | -   |                       | -                            | -                                  | -                                       | 232                       | Inf                              | Inf                        | 0.0%                 |
| Item                                | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)                   | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr)                     | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b> | -                          | -             | 0                                 | 0                            | 0   | 2.0                   | 1.5                          | 0.0                                | 3.4                                     | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                                 | 0                            | 0   | 2.0                   | 1.5                          | 0.0                                | 3.4                                     | -                         | -                                | -                          | -                    |
| 1/1                                 | 232                        | 232           | -                                 | -                            | -   | 0.9                   | 0.8                          | -                                  | 1.7                                     | 25.7                      | 2.3                              | 0.8                        | 3.0                  |
| 2/1                                 | 308                        | 308           | -                                 | -                            | -   | 1.1                   | 0.7                          | -                                  | 1.8                                     | 20.7                      | 2.9                              | 0.7                        | 3.6                  |
| 3/1                                 | 308                        | 308           | -                                 | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                 | 232                        | 232           | -                                 | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                  |                            |               | PRC for Signalled Lanes (%): 48.8 |                              | Total Delay for Signalled Lanes (pcuHr): 3.43 |                       | PRC Over All Lanes (%): 48.8 |                                    | Total Delay Over All Lanes(pcuHr): 3.43 |                           | Cycle Time (s): 40               |                            |                      |

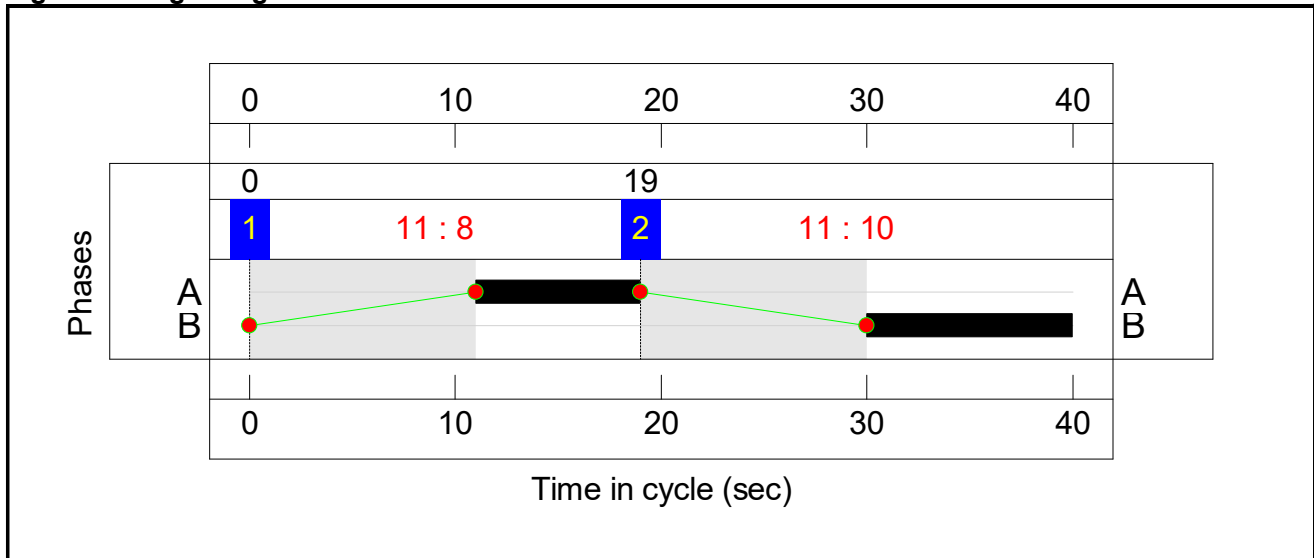
**Stage Sequence Diagram**



**Stage Timings**

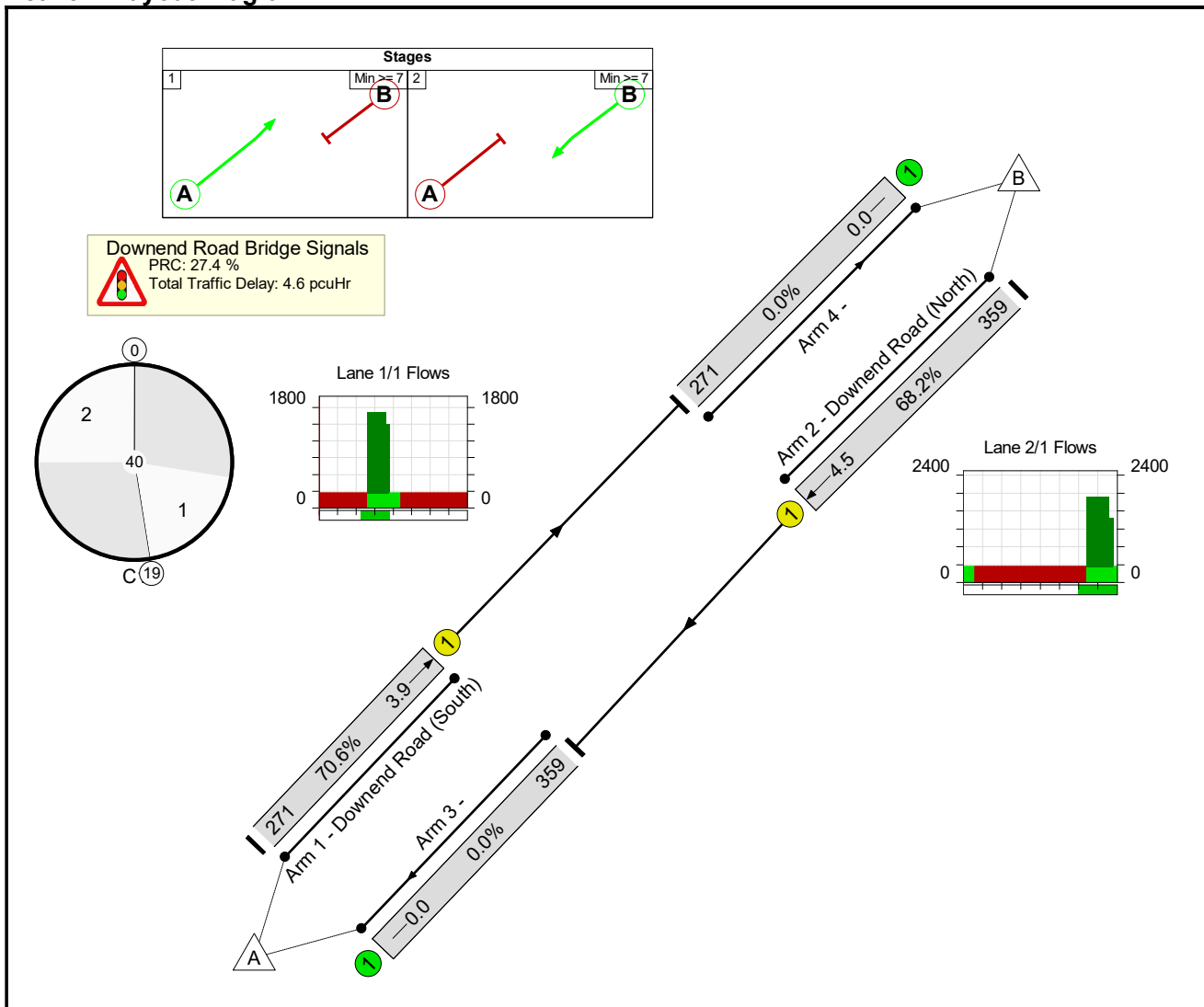
| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 8 | 10 |
| Change Point | 0 | 19 |

**Signal Timings Diagram**





### Network Layout Diagram

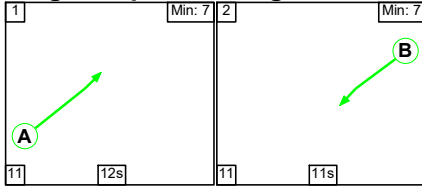


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item                                | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                                    | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|-------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|---|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b> | -                          | -             | N/A                               | -                            | -   |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 70.6%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                               | -                            | -   |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 70.6%                |
| 1/1                                 | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A   |                       | 1                            | 8                                  | -                   | 271                       | 1705                             | 384                        | 70.6%                |
| 2/1                                 | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B   |                       | 1                            | 10                                 | -                   | 359                       | 1915                             | 527                        | 68.2%                |
| 3/1                                 |                            | U             | N/A                               | N/A                          | -   |                       | -                            | -                                  | -                   | 359                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                 |                            | U             | N/A                               | N/A                          | -   |                       | -                            | -                                  | -                   | 271                       | Inf                              | Inf                        | 0.0%                 |
| Item                                | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)                   | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b> | -                          | -             | 0                                 | 0                            | 0   | 2.4                   | 2.2                          | 0.0                                | 4.6                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                                 | 0                            | 0   | 2.4                   | 2.2                          | 0.0                                | 4.6                 | -                         | -                                | -                          | -                    |
| 1/1                                 | 271                        | 271           | -                                 | -                            | -   | 1.1                   | 1.2                          | -                                  | 2.3                 | 29.9                      | 2.7                              | 1.2                        | 3.9                  |
| 2/1                                 | 359                        | 359           | -                                 | -                            | -   | 1.3                   | 1.1                          | -                                  | 2.3                 | 23.6                      | 3.5                              | 1.1                        | 4.5                  |
| 3/1                                 | 359                        | 359           | -                                 | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                 | 271                        | 271           | -                                 | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                  |                            |               | PRC for Signalled Lanes (%): 27.4 |                              | Total Delay for Signalled Lanes (pcuHr): 4.60 |                       | Cycle Time (s): 40           |                                    |                     |                           |                                  |                            |                      |
|                                     |                            |               | PRC Over All Lanes (%): 27.4      |                              | Total Delay Over All Lanes(pcuHr): 4.60       |                       |                              |                                    |                     |                           |                                  |                            |                      |

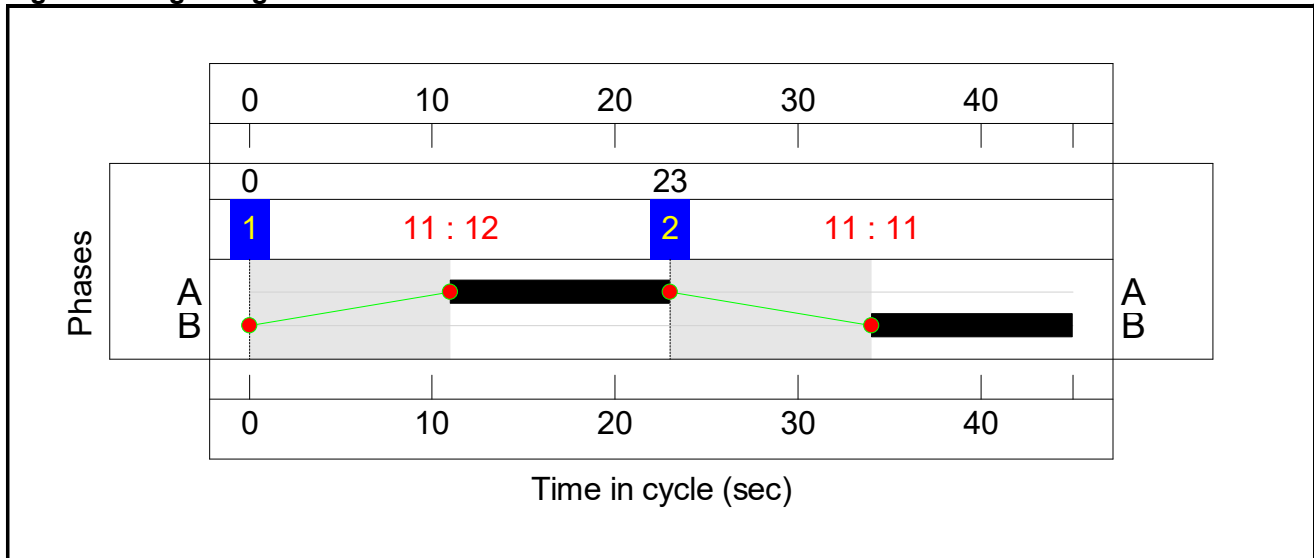
**Stage Sequence Diagram**



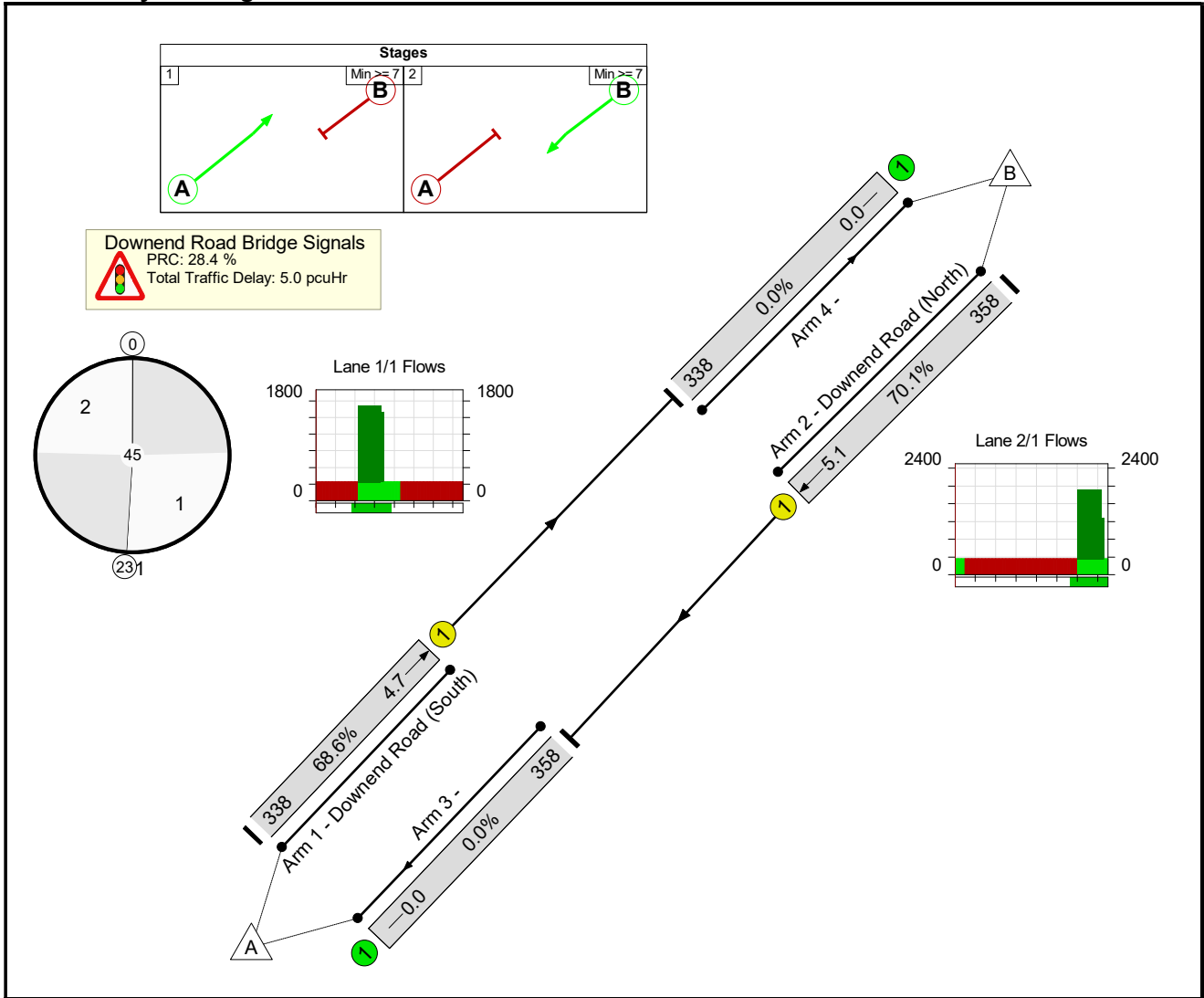
**Stage Timings**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 12 | 11 |
| Change Point | 0  | 23 |

**Signal Timings Diagram**



### Network Layout Diagram

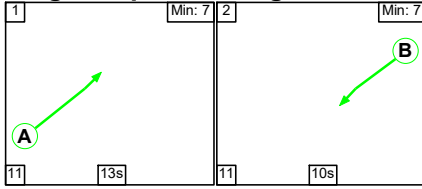


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item                                | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                                    | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|-------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|-----------------------------|-----------------------|---|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b> | -                          | -             | N/A                               | -                            | -                           |                       | -   | -                                  | -                   | -                         | -                                | -                          | 70.1%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                               | -                            | -                           |                       | -   | -                                  | -                   | -                         | -                                | -                          | 70.1%                |
| 1/1                                 | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A                           |                       | 1   | 12                                 | -                   | 338                       | 1705                             | 493                        | 68.6%                |
| 2/1                                 | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B                           |                       | 1   | 11                                 | -                   | 358                       | 1915                             | 511                        | 70.1%                |
| 3/1                                 |                            | U             | N/A                               | N/A                          | -                           |                       | -   | -                                  | -                   | 358                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                 |                            | U             | N/A                               | N/A                          | -                           |                       | -   | -                                  | -                   | 338                       | Inf                              | Inf                        | 0.0%                 |
| Item                                | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr)                  | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b> | -                          | -             | 0                                 | 0                            | 0                           | 2.8                   | 2.2   | 0.0                                | 5.0                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                                 | 0                            | 0                           | 2.8                   | 2.2   | 0.0                                | 5.0                 | -                         | -                                | -                          | -                    |
| 1/1                                 | 338                        | 338           | -                                 | -                            | -                           | 1.3                   | 1.1   | -                                  | 2.4                 | 25.7                      | 3.7                              | 1.1                        | 4.7                  |
| 2/1                                 | 358                        | 358           | -                                 | -                            | -                           | 1.5                   | 1.2   | -                                  | 2.6                 | 26.5                      | 4.0                              | 1.2                        | 5.1                  |
| 3/1                                 | 358                        | 358           | -                                 | -                            | -                           | 0.0                   | 0.0   | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                 | 338                        | 338           | -                                 | -                            | -                           | 0.0                   | 0.0   | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                  |                            |               | PRC for Signalled Lanes (%): 28.4 |                              | 28.4                        |                       | Total Delay for Signalled Lanes (pcuHr): 5.05 |                                    | 5.05                |                           | Cycle Time (s): 45               |                            |                      |
|                                     |                            |               | PRC Over All Lanes (%):           |                              | 28.4                        |                       | Total Delay Over All Lanes(pcuHr):            |                                    | 5.05                |                           |                                  |                            |                      |

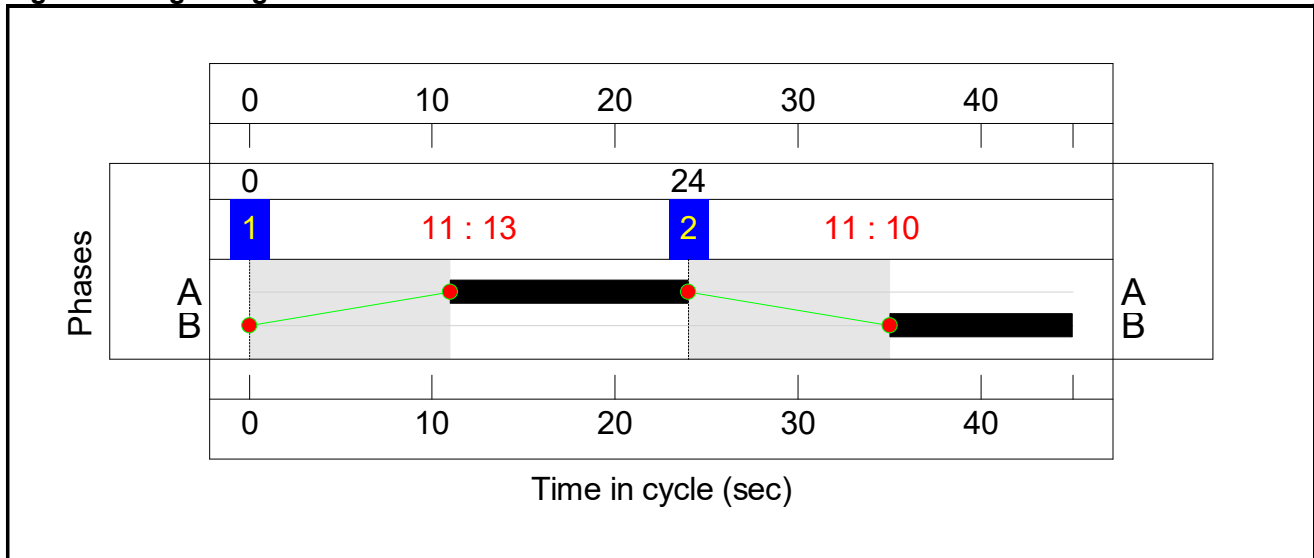
**Stage Sequence Diagram**



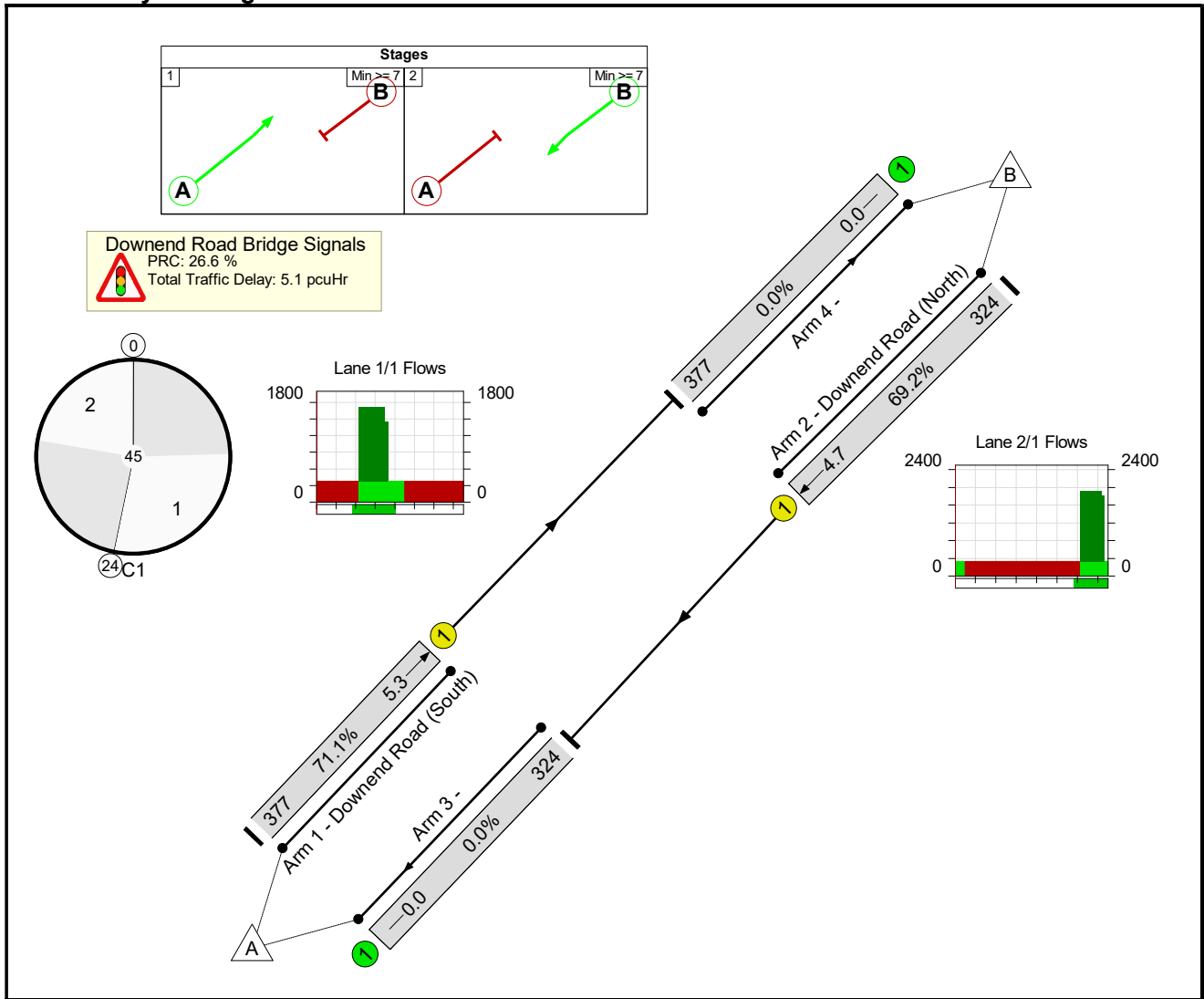
**Stage Timings**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 13 | 10 |
| Change Point | 0  | 24 |

**Signal Timings Diagram**



### Network Layout Diagram



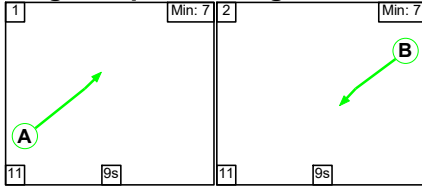
JCT Planning Submission Full Input Data And Results

**Network Results**

| Item                                | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                                    | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|-------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|-----------------------------|-----------------------|---|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b> | -                          | -             | N/A                               | -                            | -                           |                       | -   | -                                  | -                   | -                         | -                                | -                          | 71.1%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                               | -                            | -                           |                       | -   | -                                  | -                   | -                         | -                                | -                          | 71.1%                |
| 1/1                                 | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A                           |                       | 1   | 13                                 | -                   | 377                       | 1705                             | 530                        | 71.1%                |
| 2/1                                 | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B                           |                       | 1   | 10                                 | -                   | 324                       | 1915                             | 468                        | 69.2%                |
| 3/1                                 |                            | U             | N/A                               | N/A                          | -                           |                       | -   | -                                  | -                   | 324                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                 |                            | U             | N/A                               | N/A                          | -                           |                       | -   | -                                  | -                   | 377                       | Inf                              | Inf                        | 0.0%                 |
| Item                                | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr)                  | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b> | -                          | -             | 0                                 | 0                            | 0                           | 2.8                   | 2.3   | 0.0                                | 5.1                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                                 | 0                            | 0                           | 2.8                   | 2.3   | 0.0                                | 5.1                 | -                         | -                                | -                          | -                    |
| 1/1                                 | 377                        | 377           | -                                 | -                            | -                           | 1.4                   | 1.2   | -                                  | 2.6                 | 25.3                      | 4.1                              | 1.2                        | 5.3                  |
| 2/1                                 | 324                        | 324           | -                                 | -                            | -                           | 1.4                   | 1.1   | -                                  | 2.5                 | 27.8                      | 3.6                              | 1.1                        | 4.7                  |
| 3/1                                 | 324                        | 324           | -                                 | -                            | -                           | 0.0                   | 0.0   | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                 | 377                        | 377           | -                                 | -                            | -                           | 0.0                   | 0.0   | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                  |                            |               | PRC for Signalled Lanes (%): 26.6 |                              | 26.6                        |                       | Total Delay for Signalled Lanes (pcuHr): 5.14 |                                    | 5.14                |                           | Cycle Time (s): 45               |                            |                      |
|                                     |                            |               | PRC Over All Lanes (%):           |                              | 26.6                        |                       | Total Delay Over All Lanes(pcuHr):            |                                    | 5.14                |                           |                                  |                            |                      |



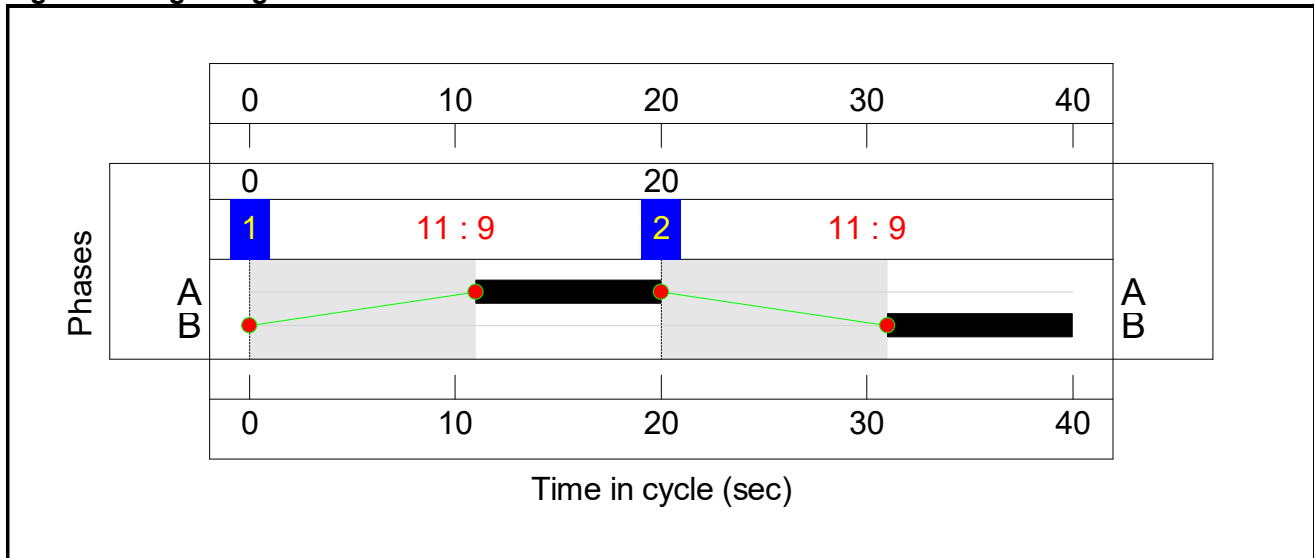
**Stage Sequence Diagram**



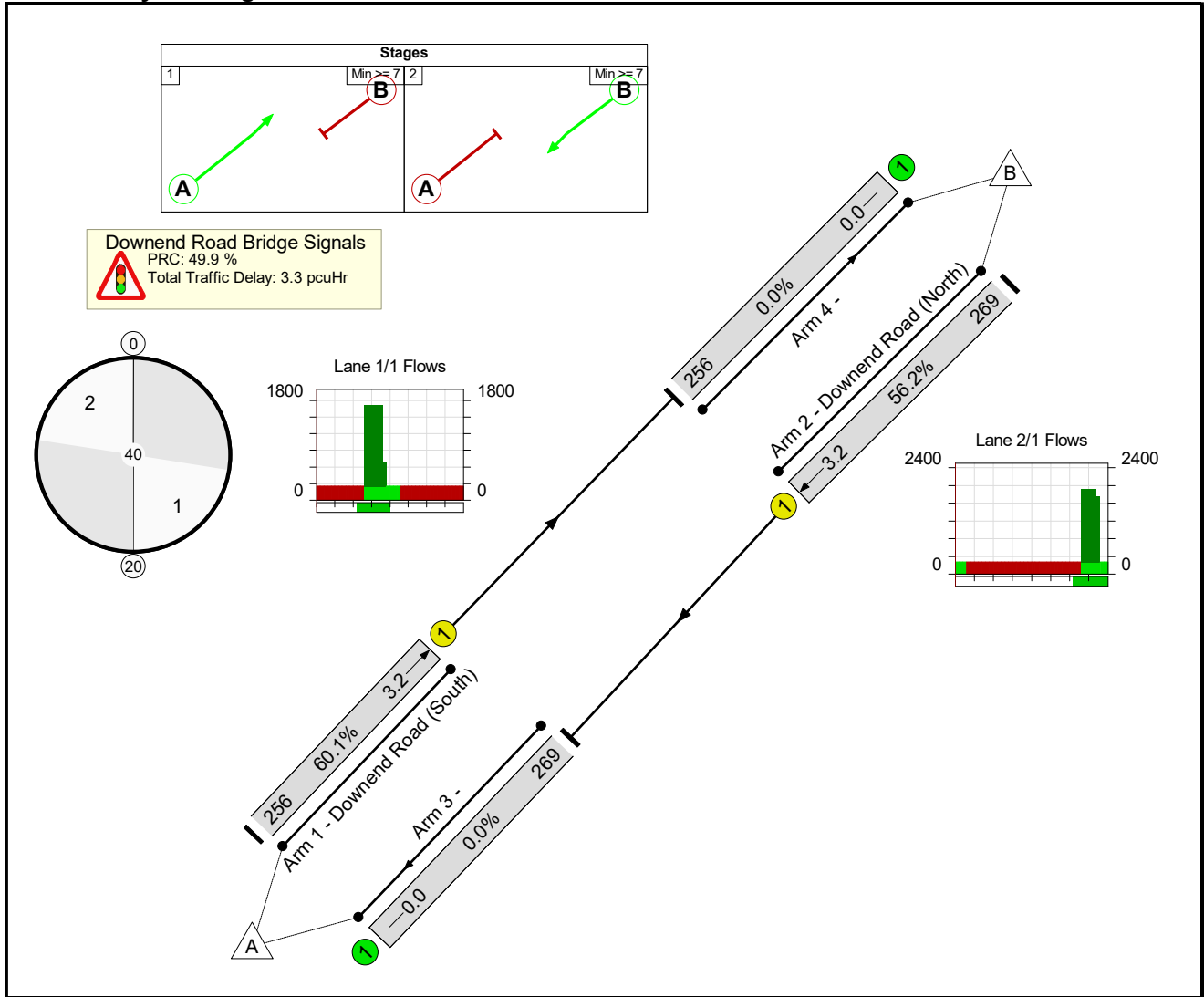
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 9 | 9  |
| Change Point | 0 | 20 |

**Signal Timings Diagram**



### Network Layout Diagram

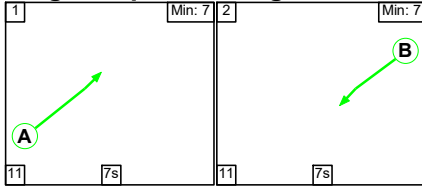


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item                                | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                                    | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|-------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|---|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b> | -                          | -             | N/A                               | -                            | -   |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 60.1%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                               | -                            | -   |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 60.1%                |
| 1/1                                 | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A   |                       | 1                            | 9                                  | -                   | 256                       | 1705                             | 426                        | 60.1%                |
| 2/1                                 | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B   |                       | 1                            | 9                                  | -                   | 269                       | 1915                             | 479                        | 56.2%                |
| 3/1                                 |                            | U             | N/A                               | N/A                          | -   |                       | -                            | -                                  | -                   | 269                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                 |                            | U             | N/A                               | N/A                          | -   |                       | -                            | -                                  | -                   | 256                       | Inf                              | Inf                        | 0.0%                 |
| Item                                | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)                   | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b> | -                          | -             | 0                                 | 0                            | 0   | 1.9                   | 1.4                          | 0.0                                | 3.3                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                                 | 0                            | 0   | 1.9                   | 1.4                          | 0.0                                | 3.3                 | -                         | -                                | -                          | -                    |
| 1/1                                 | 256                        | 256           | -                                 | -                            | -   | 0.9                   | 0.7                          | -                                  | 1.7                 | 23.7                      | 2.5                              | 0.7                        | 3.2                  |
| 2/1                                 | 269                        | 269           | -                                 | -                            | -   | 1.0                   | 0.6                          | -                                  | 1.6                 | 21.6                      | 2.5                              | 0.6                        | 3.2                  |
| 3/1                                 | 269                        | 269           | -                                 | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                 | 256                        | 256           | -                                 | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                  |                            |               | PRC for Signalled Lanes (%): 49.9 |                              | Total Delay for Signalled Lanes (pcuHr): 3.30 |                       | Cycle Time (s): 40           |                                    |                     |                           |                                  |                            |                      |
|                                     |                            |               | PRC Over All Lanes (%): 49.9      |                              | Total Delay Over All Lanes(pcuHr): 3.30       |                       |                              |                                    |                     |                           |                                  |                            |                      |

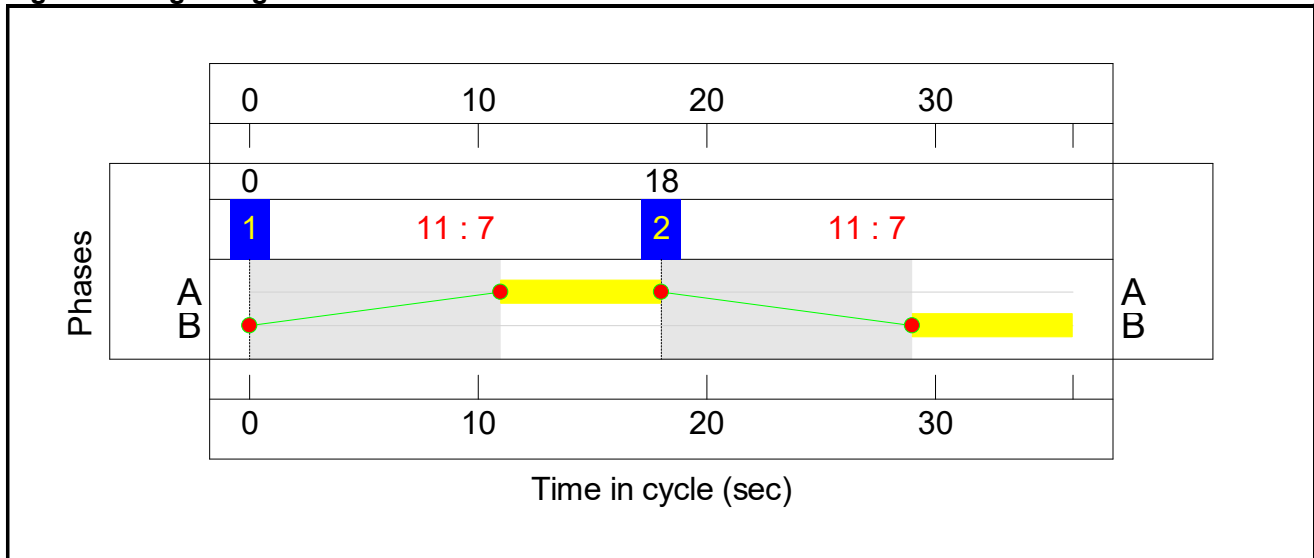
**Stage Sequence Diagram**



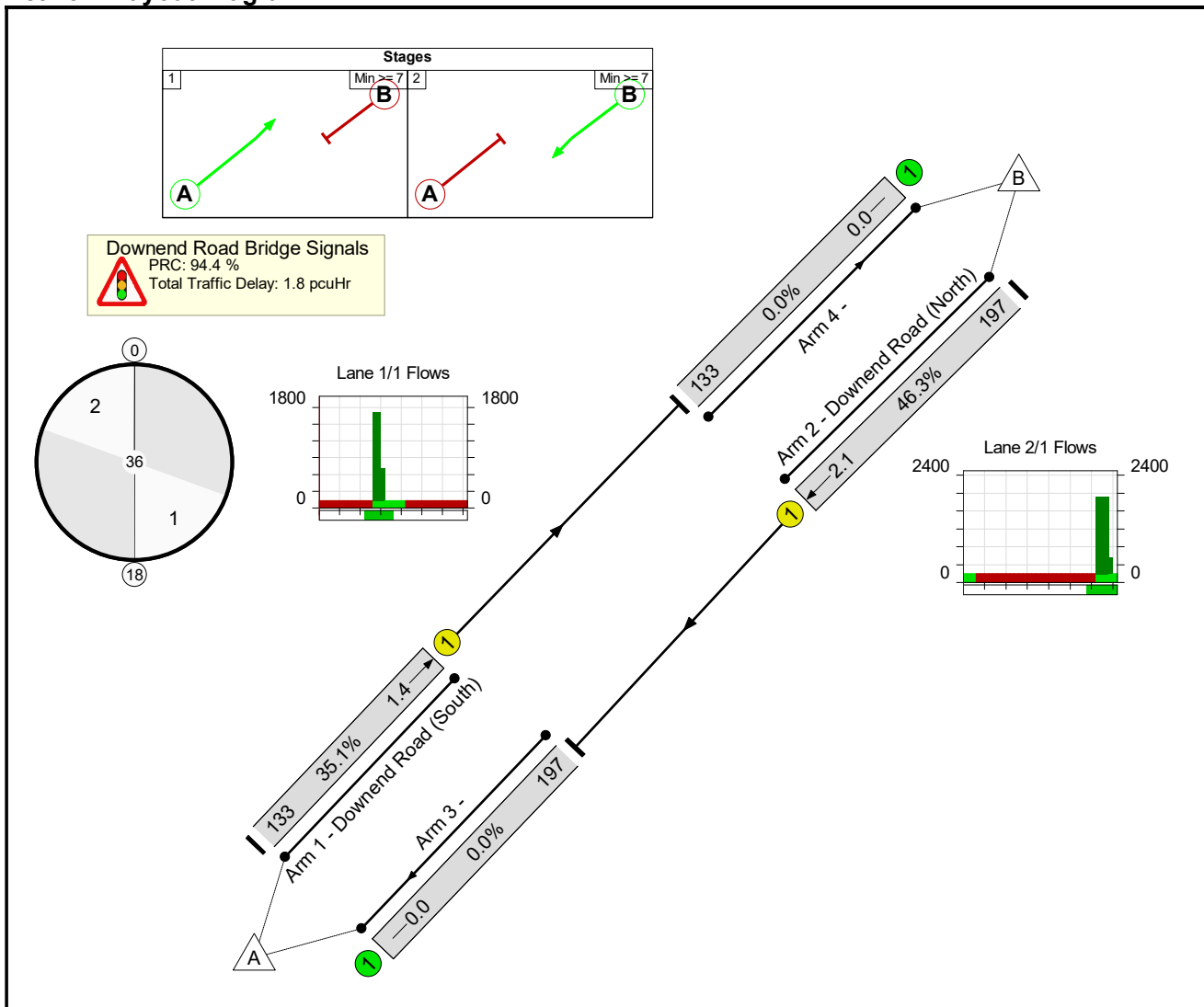
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 18 |

**Signal Timings Diagram**



### Network Layout Diagram

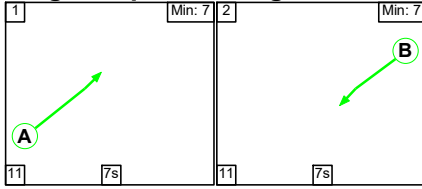


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item                                | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                   | Arrow Phase           | Num Greens                                    | Total Green (s)                    | Arrow Green (s)                         | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|-------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|------------------------------|-----------------------|---|------------------------------------|---|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 46.3%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 46.3%                |
| 1/1                                 | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A                            |                       | 1   | 7                                  | -                                       | 133                       | 1705                             | 379                        | 35.1%                |
| 2/1                                 | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B                            |                       | 1   | 7                                  | -                                       | 197                       | 1915                             | 426                        | 46.3%                |
| 3/1                                 |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 197                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                 |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 133                       | Inf                              | Inf                        | 0.0%                 |
| Item                                | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)  | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr)                  | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr)                     | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b> | -                          | -             | 0                                 | 0                            | 0                            | 1.1                   | 0.7   | 0.0                                | 1.8                                     | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                                 | 0                            | 0                            | 1.1                   | 0.7   | 0.0                                | 1.8                                     | -                         | -                                | -                          | -                    |
| 1/1                                 | 133                        | 133           | -                                 | -                            | -                            | 0.4                   | 0.3   | -                                  | 0.7                                     | 19.2                      | 1.1                              | 0.3                        | 1.4                  |
| 2/1                                 | 197                        | 197           | -                                 | -                            | -                            | 0.7                   | 0.4   | -                                  | 1.1                                     | 20.0                      | 1.7                              | 0.4                        | 2.1                  |
| 3/1                                 | 197                        | 197           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                 | 133                        | 133           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                  |                            |               | PRC for Signalled Lanes (%): 94.4 |                              | PRC Over All Lanes (%): 94.4 |                       | Total Delay for Signalled Lanes (pcuHr): 1.80 |                                    | Total Delay Over All Lanes(pcuHr): 1.80 |                           | Cycle Time (s): 36               |                            |                      |

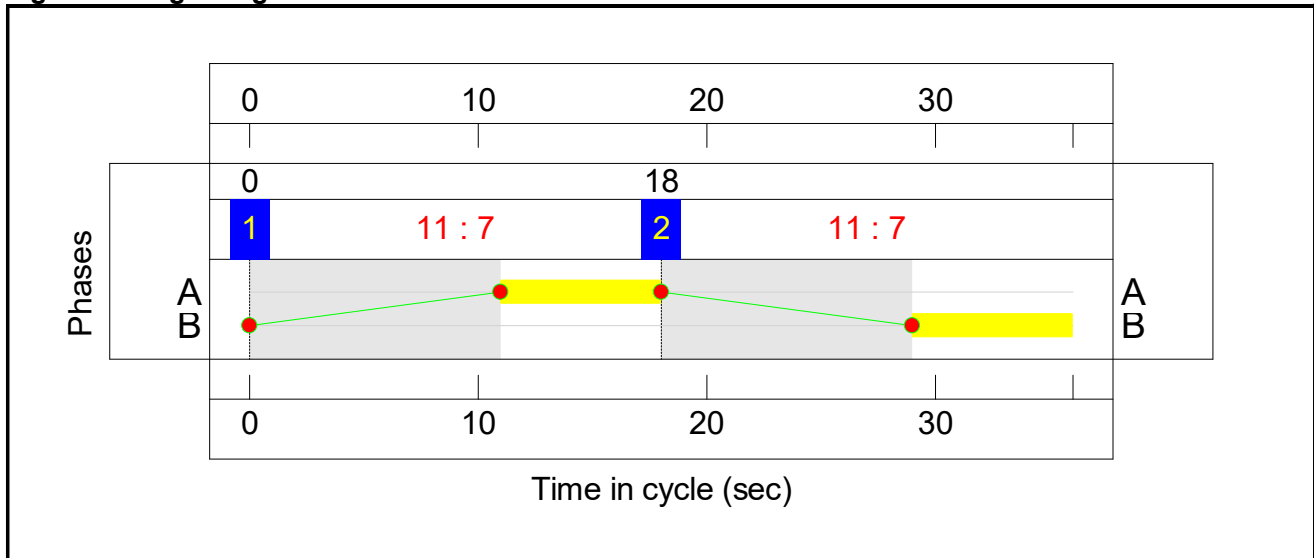
**Stage Sequence Diagram**



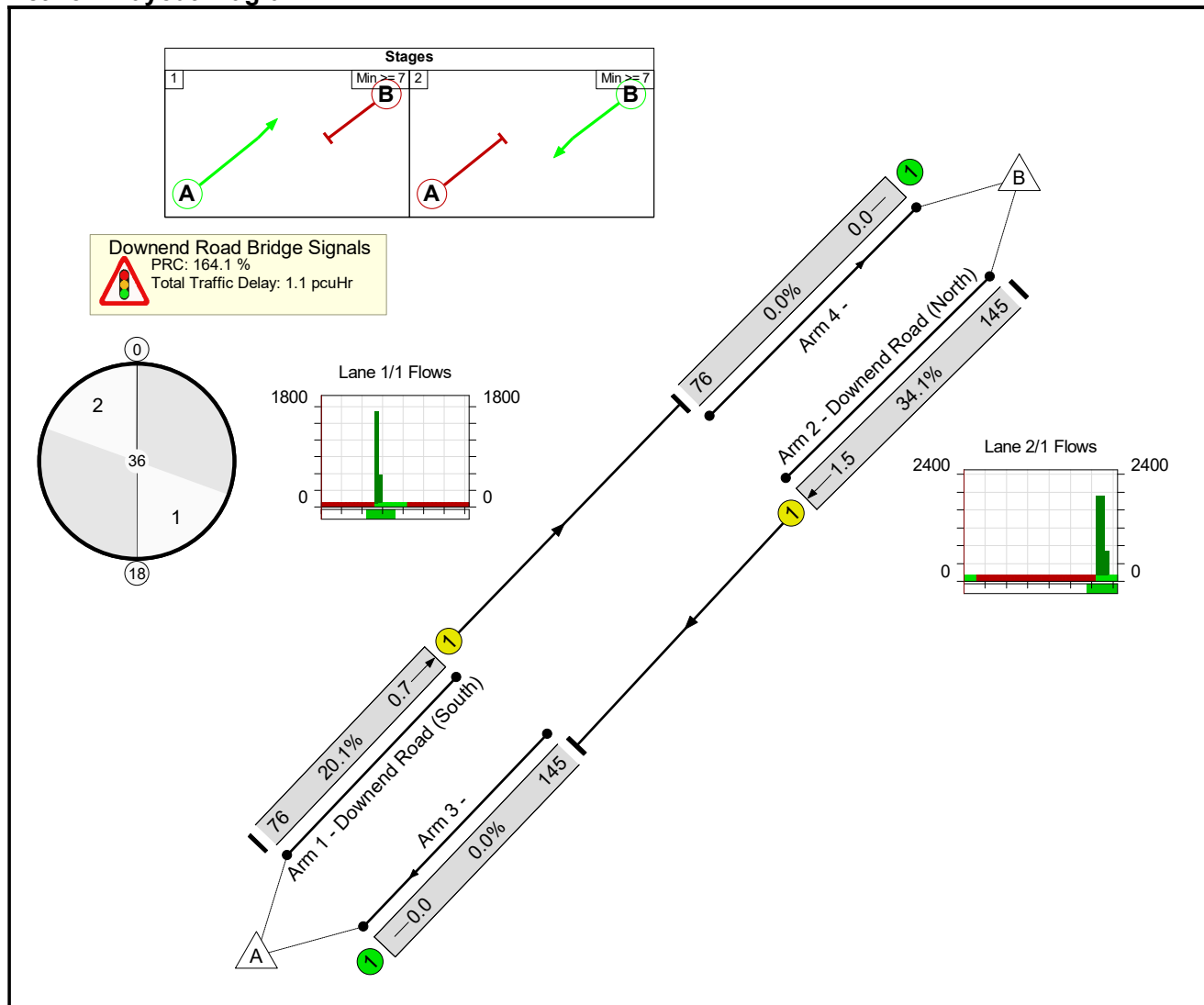
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 18 |

**Signal Timings Diagram**



### Network Layout Diagram



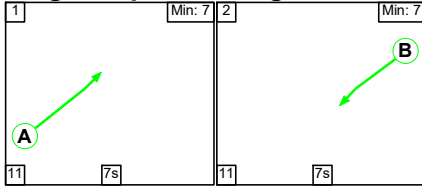


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 34.1%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 34.1%                |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 76                        | 1705                             | 379                        | 20.1%                |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 145                       | 1915                             | 426                        | 34.1%                |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 145                       | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 76                        | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b>   | -                          | -             | 0                     | 0                            | 0                           | 0.7                   | 0.4                          | 0.0                                | 1.1                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.7                   | 0.4                          | 0.0                                | 1.1                 | -                         | -                                | -                          | -                    |
| 1/1   | 76                         | 76            | -                     | -                            | -                           | 0.2                   | 0.1                          | -                                  | 0.4                 | 17.4                      | 0.6                              | 0.1                        | 0.7                  |
| 2/1   | 145                        | 145           | -                     | -                            | -                           | 0.5                   | 0.3                          | -                                  | 0.7                 | 18.2                      | 1.2                              | 0.3                        | 1.5                  |
| 3/1   | 145                        | 145           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 76                         | 76            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 164.1      Total Delay for Signalled Lanes (pcuHr): 1.10      Cycle Time (s): 36<br>PRC Over All Lanes (%): 164.1      Total Delay Over All Lanes(pcuHr): 1.10 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

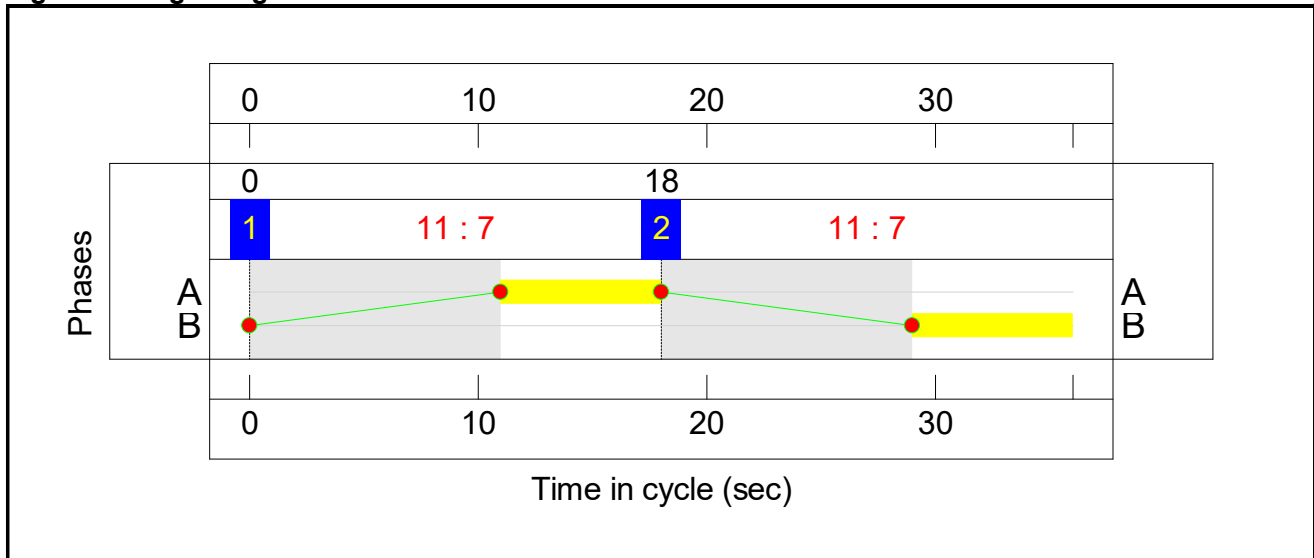
**Stage Sequence Diagram**



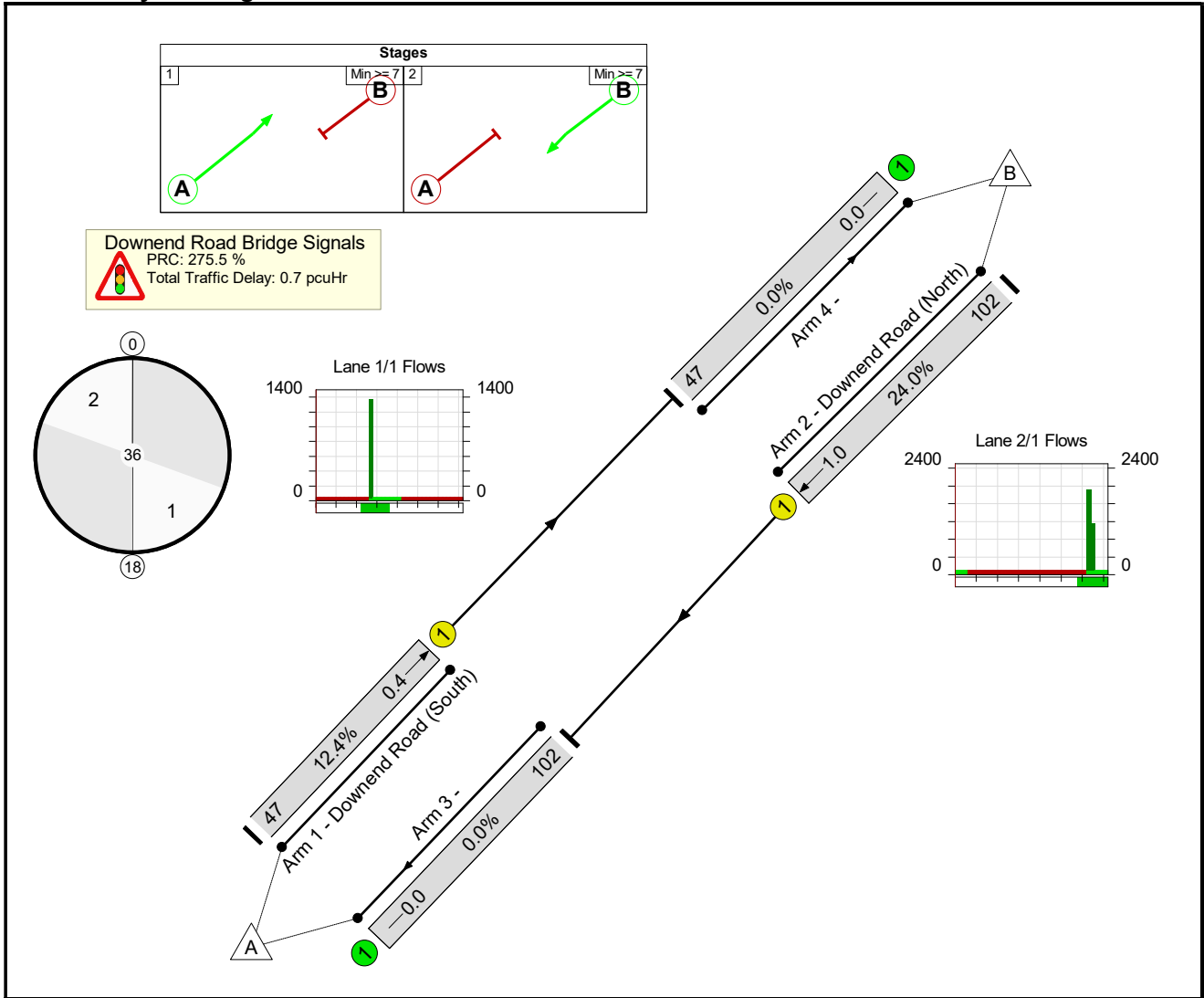
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 18 |

**Signal Timings Diagram**



Network Layout Diagram

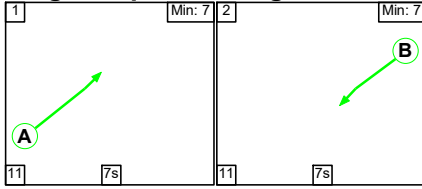


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 24.0%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 24.0%                |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 47                        | 1705                             | 379                        | 12.4%                |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 102                       | 1915                             | 426                        | 24.0%                |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 102                       | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 47                        | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b>   | -                          | -             | 0                     | 0                            | 0                           | 0.5                   | 0.2                          | 0.0                                | 0.7                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.5                   | 0.2                          | 0.0                                | 0.7                 | -                         | -                                | -                          | -                    |
| 1/1   | 47                         | 47            | -                     | -                            | -                           | 0.1                   | 0.1                          | -                                  | 0.2                 | 16.7                      | 0.4                              | 0.1                        | 0.4                  |
| 2/1   | 102                        | 102           | -                     | -                            | -                           | 0.3                   | 0.2                          | -                                  | 0.5                 | 17.1                      | 0.8                              | 0.2                        | 1.0                  |
| 3/1   | 102                        | 102           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 47                         | 47            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 275.5      Total Delay for Signalled Lanes (pcuHr): 0.70      Cycle Time (s): 36<br>PRC Over All Lanes (%): 275.5      Total Delay Over All Lanes(pcuHr): 0.70 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

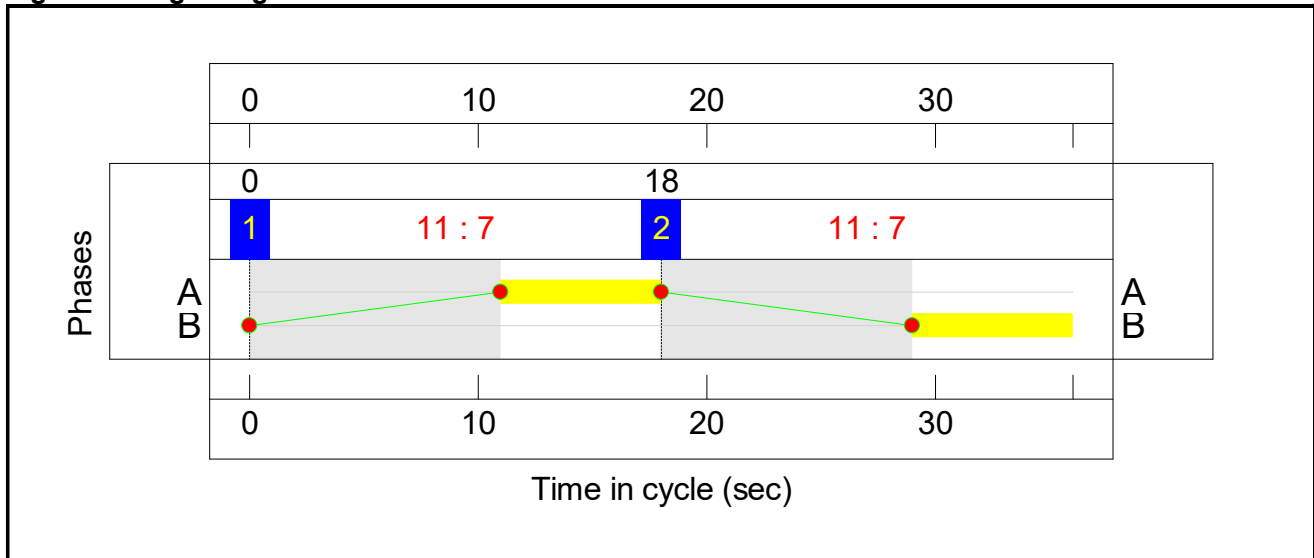
**Stage Sequence Diagram**



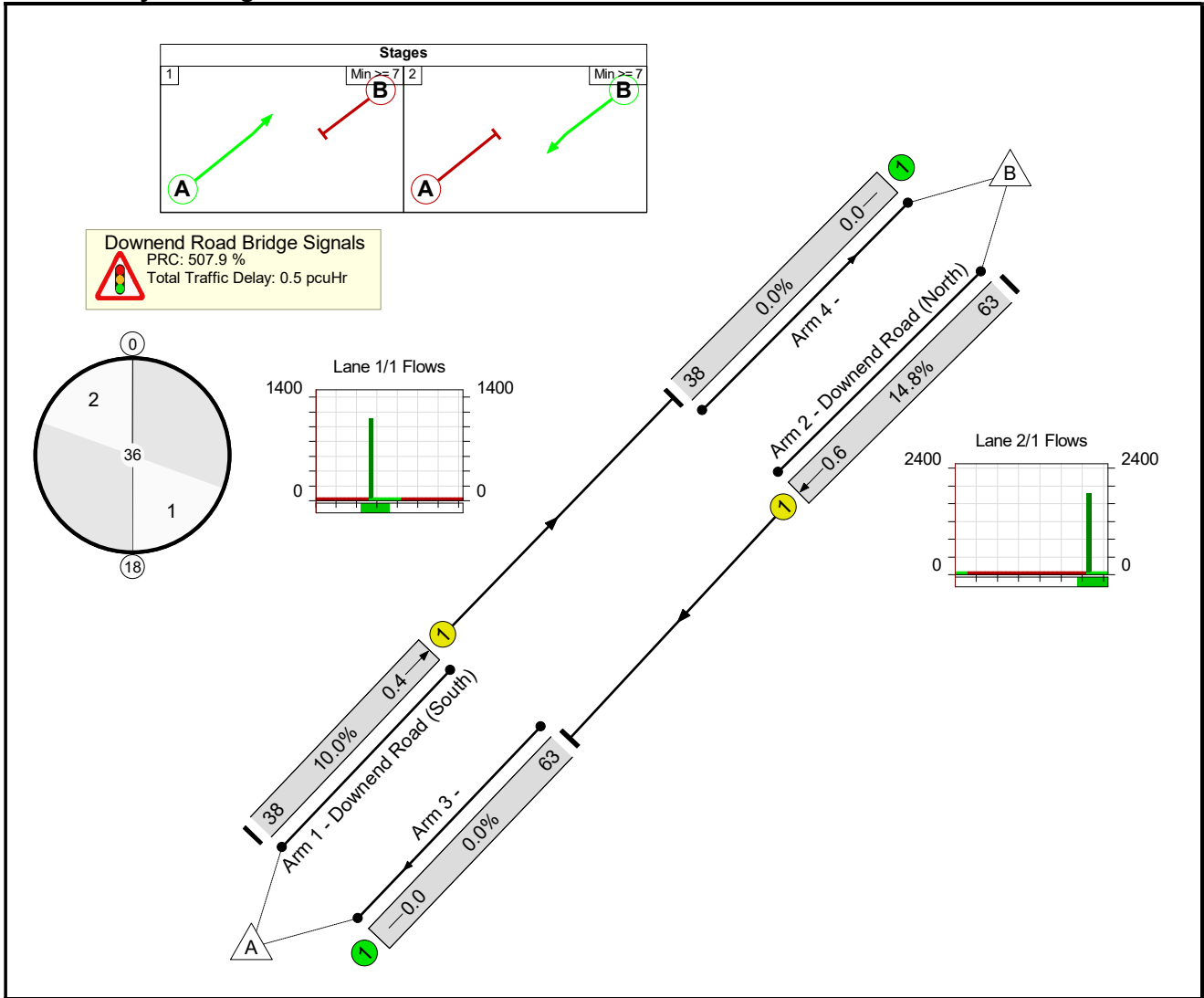
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 18 |

**Signal Timings Diagram**



### Network Layout Diagram

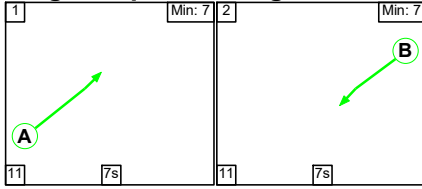


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 14.8%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 14.8%                |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 38                        | 1705                             | 379                        | 10.0%                |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 63                        | 1915                             | 426                        | 14.8%                |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 63                        | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 38                        | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b>   | -                          | -             | 0                     | 0                            | 0                           | 0.3                   | 0.1                          | 0.0                                | 0.5                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.3                   | 0.1                          | 0.0                                | 0.5                 | -                         | -                                | -                          | -                    |
| 1/1   | 38                         | 38            | -                     | -                            | -                           | 0.1                   | 0.1                          | -                                  | 0.2                 | 16.6                      | 0.3                              | 0.1                        | 0.4                  |
| 2/1   | 63                         | 63            | -                     | -                            | -                           | 0.2                   | 0.1                          | -                                  | 0.3                 | 16.2                      | 0.5                              | 0.1                        | 0.6                  |
| 3/1   | 63                         | 63            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 38                         | 38            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 507.9      Total Delay for Signalled Lanes (pcuHr): 0.46      Cycle Time (s): 36<br>PRC Over All Lanes (%): 507.9      Total Delay Over All Lanes(pcuHr): 0.46 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

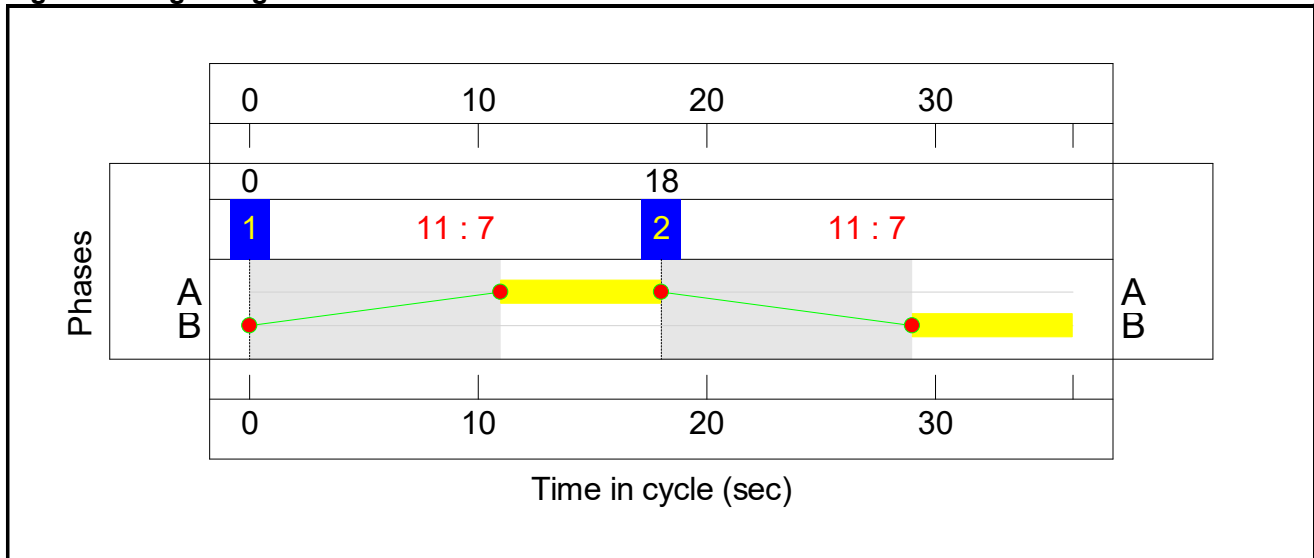
**Stage Sequence Diagram**



**Stage Timings**

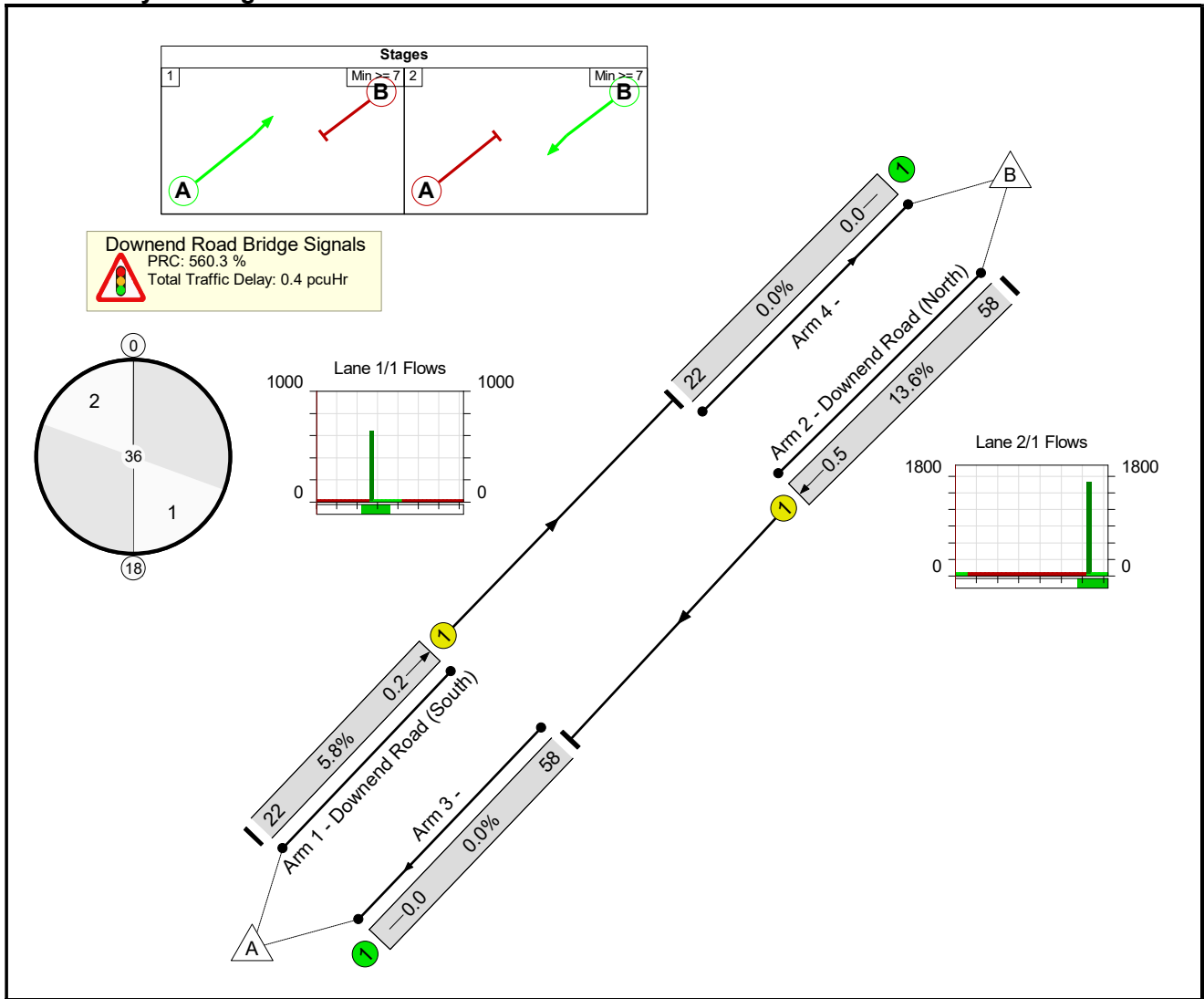
| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 18 |

**Signal Timings Diagram**





### Network Layout Diagram

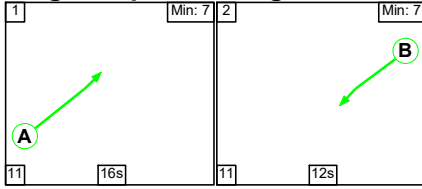


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 13.6%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 13.6%                |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 22                        | 1705                             | 379                        | 5.8%                 |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 58                        | 1915                             | 426                        | 13.6%                |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 58                        | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 22                        | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b>   | -                          | -             | 0                     | 0                            | 0                           | 0.3                   | 0.1                          | 0.0                                | 0.4                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.3                   | 0.1                          | 0.0                                | 0.4                 | -                         | -                                | -                          | -                    |
| 1/1   | 22                         | 22            | -                     | -                            | -                           | 0.1                   | 0.0                          | -                                  | 0.1                 | 16.3                      | 0.2                              | 0.0                        | 0.2                  |
| 2/1   | 58                         | 58            | -                     | -                            | -                           | 0.2                   | 0.1                          | -                                  | 0.3                 | 16.2                      | 0.5                              | 0.1                        | 0.5                  |
| 3/1   | 58                         | 58            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 22                         | 22            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 560.3      Total Delay for Signalled Lanes (pcuHr): 0.36      Cycle Time (s): 36<br>PRC Over All Lanes (%): 560.3      Total Delay Over All Lanes(pcuHr): 0.36 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

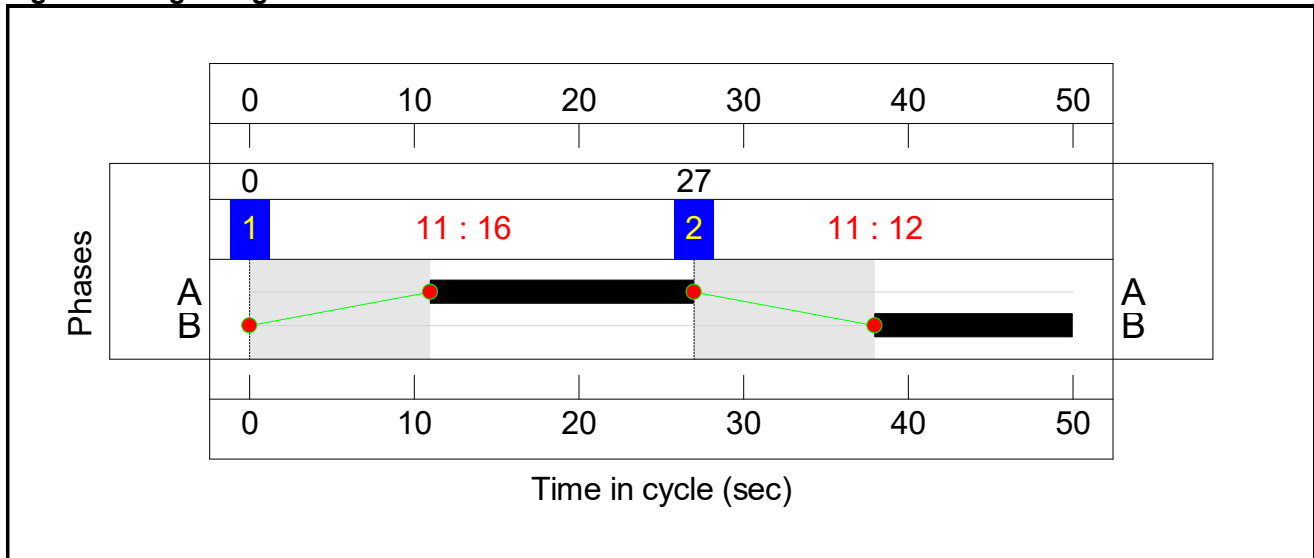
**Stage Sequence Diagram**



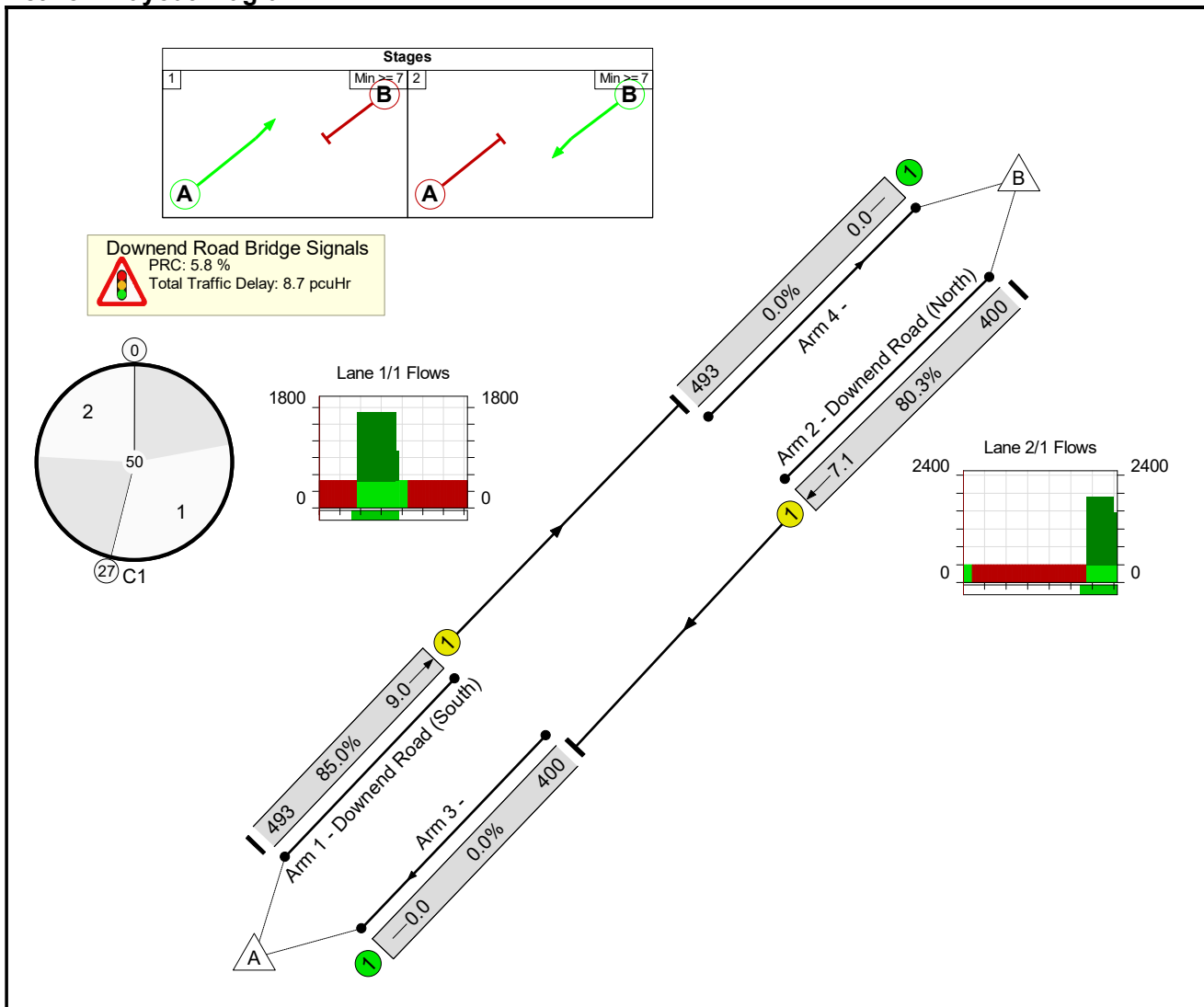
**Stage Timings**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 16 | 12 |
| Change Point | 0  | 27 |

**Signal Timings Diagram**



### Network Layout Diagram

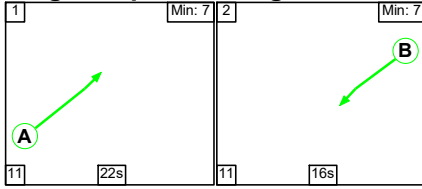


JCT Planning Submission Full Input Data And Results

**Network Results**

| Item                                | Lane Description           | Lane Type     | Controller Stream                | Position In Filtered Route   | Full Phase                                    | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)                         | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|-------------------------------------|----------------------------|---------------|----------------------------------|------------------------------|---|-----------------------|------------------------------|------------------------------------|---|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b> | -                          | -             | N/A                              | -                            | -   |                       | -                            | -                                  | -                                       | -                         | -                                | -                          | 85.0%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                              | -                            | -   |                       | -                            | -                                  | -                                       | -                         | -                                | -                          | 85.0%                |
| 1/1                                 | Downend Road (South) Ahead | U             | N/A                              | N/A                          | A   |                       | 1                            | 16                                 | -                                       | 493                       | 1705                             | 580                        | 85.0%                |
| 2/1                                 | Downend Road (North) Ahead | U             | N/A                              | N/A                          | B   |                       | 1                            | 12                                 | -                                       | 400                       | 1915                             | 498                        | 80.3%                |
| 3/1                                 |                            | U             | N/A                              | N/A                          | -   |                       | -                            | -                                  | -                                       | 400                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                 |                            | U             | N/A                              | N/A                          | -   |                       | -                            | -                                  | -                                       | 493                       | Inf                              | Inf                        | 0.0%                 |
| Item                                | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)            | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)                   | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr)                     | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b> | -                          | -             | 0                                | 0                            | 0   | 4.0                   | 4.6                          | 0.0                                | 8.7                                     | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                                | 0                            | 0   | 4.0                   | 4.6                          | 0.0                                | 8.7                                     | -                         | -                                | -                          | -                    |
| 1/1                                 | 493                        | 493           | -                                | -                            | -   | 2.1                   | 2.7                          | -                                  | 4.8                                     | 34.9                      | 6.3                              | 2.7                        | 9.0                  |
| 2/1                                 | 400                        | 400           | -                                | -                            | -   | 1.9                   | 2.0                          | -                                  | 3.9                                     | 35.0                      | 5.1                              | 2.0                        | 7.1                  |
| 3/1                                 | 400                        | 400           | -                                | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                 | 493                        | 493           | -                                | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                  |                            |               | PRC for Signalled Lanes (%): 5.8 |                              | Total Delay for Signalled Lanes (pcuHr): 8.66 |                       | PRC Over All Lanes (%): 5.8  |                                    | Total Delay Over All Lanes(pcuHr): 8.66 |                           | Cycle Time (s): 50               |                            |                      |

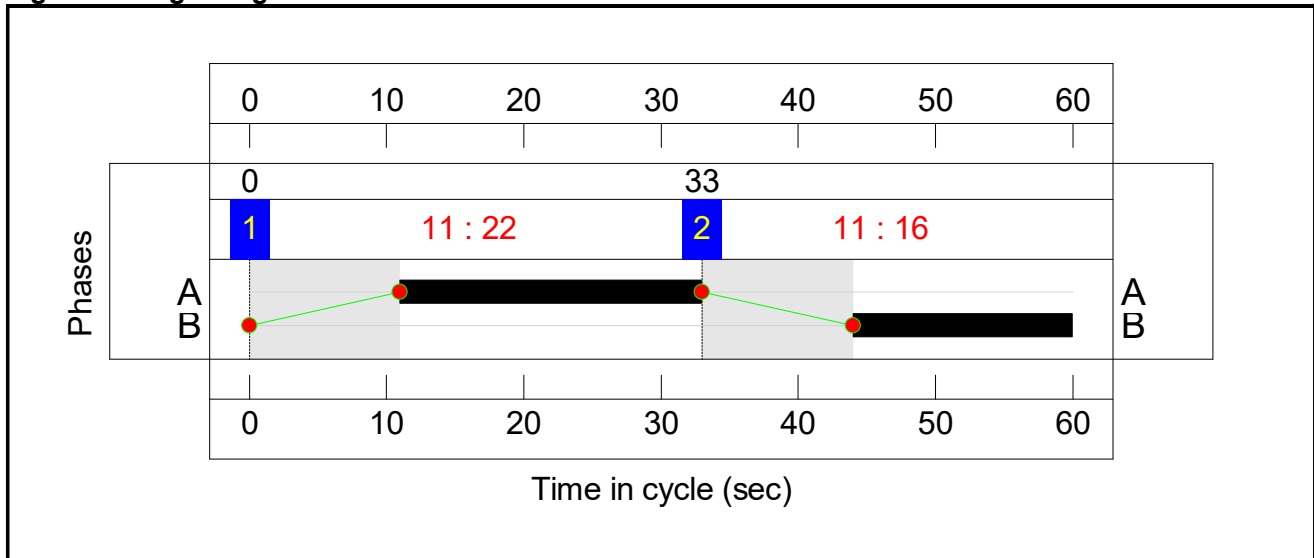
**Stage Sequence Diagram**



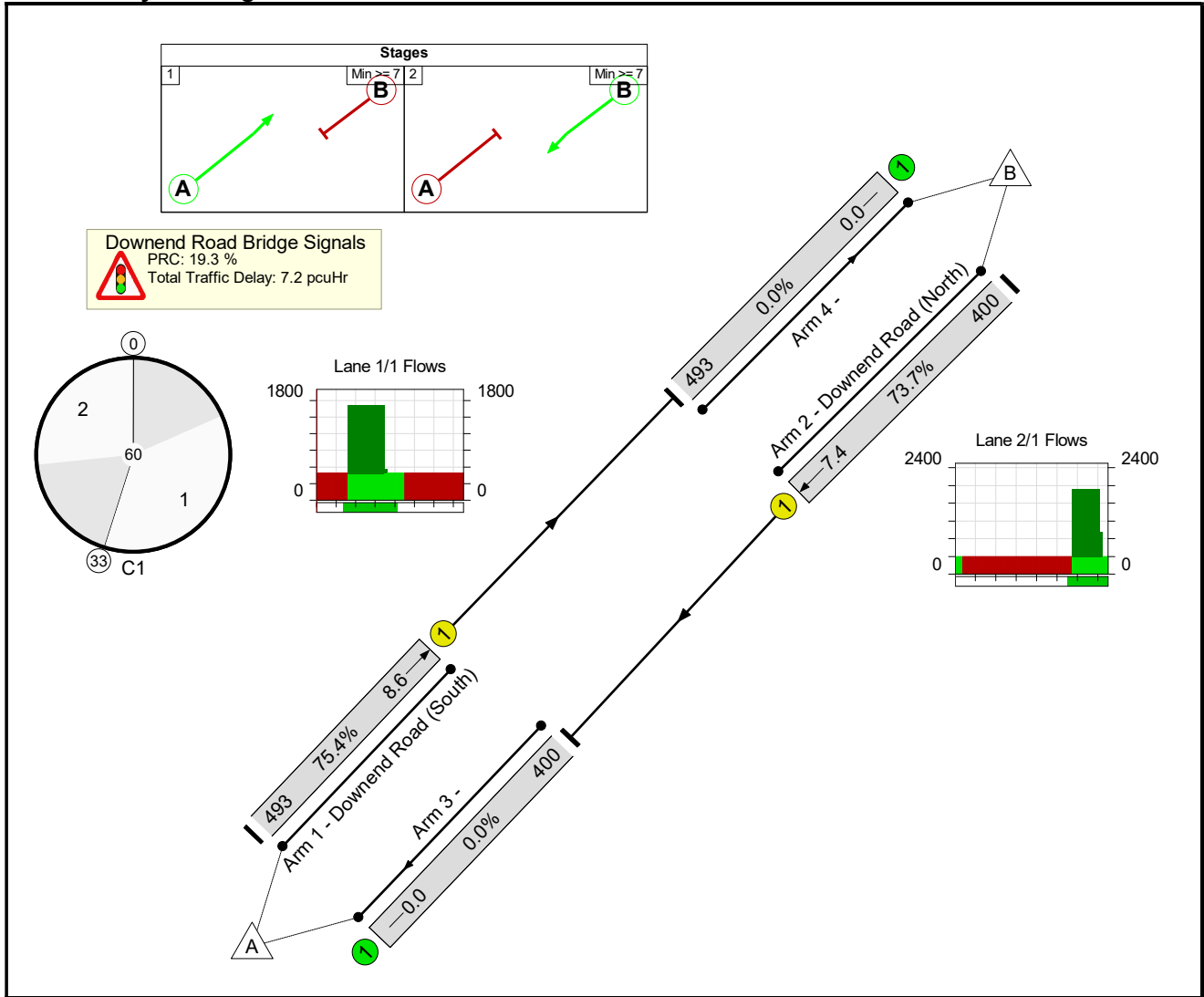
**Stage Timings**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 22 | 16 |
| Change Point | 0  | 33 |

**Signal Timings Diagram**



### Network Layout Diagram



JCT Planning Submission Full Input Data And Results

**Network Results**

| Item                                | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                   | Arrow Phase           | Num Greens                                    | Total Green (s)                    | Arrow Green (s)                         | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|-------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|------------------------------|-----------------------|---|------------------------------------|---|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Planning Submission</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 75.4%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 75.4%                |
| 1/1                                 | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A                            |                       | 1   | 22                                 | -                                       | 493                       | 1705                             | 654                        | 75.4%                |
| 2/1                                 | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B                            |                       | 1   | 16                                 | -                                       | 400                       | 1915                             | 543                        | 73.7%                |
| 3/1                                 |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 400                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                 |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 493                       | Inf                              | Inf                        | 0.0%                 |
| Item                                | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)  | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr)                  | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr)                     | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Planning Submission</b> | -                          | -             | 0                                 | 0                            | 0                            | 4.4                   | 2.9   | 0.0                                | 7.2                                     | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                                 | 0                            | 0                            | 4.4                   | 2.9   | 0.0                                | 7.2                                     | -                         | -                                | -                          | -                    |
| 1/1                                 | 493                        | 493           | -                                 | -                            | -                            | 2.2                   | 1.5   | -                                  | 3.7                                     | 27.1                      | 7.1                              | 1.5                        | 8.6                  |
| 2/1                                 | 400                        | 400           | -                                 | -                            | -                            | 2.2                   | 1.4   | -                                  | 3.5                                     | 31.9                      | 6.0                              | 1.4                        | 7.4                  |
| 3/1                                 | 400                        | 400           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                 | 493                        | 493           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                  |                            |               | PRC for Signalled Lanes (%): 19.3 |                              | PRC Over All Lanes (%): 19.3 |                       | Total Delay for Signalled Lanes (pcuHr): 7.25 |                                    | Total Delay Over All Lanes(pcuHr): 7.25 |                           | Cycle Time (s): 60               |                            |                      |





## **Appendix B**

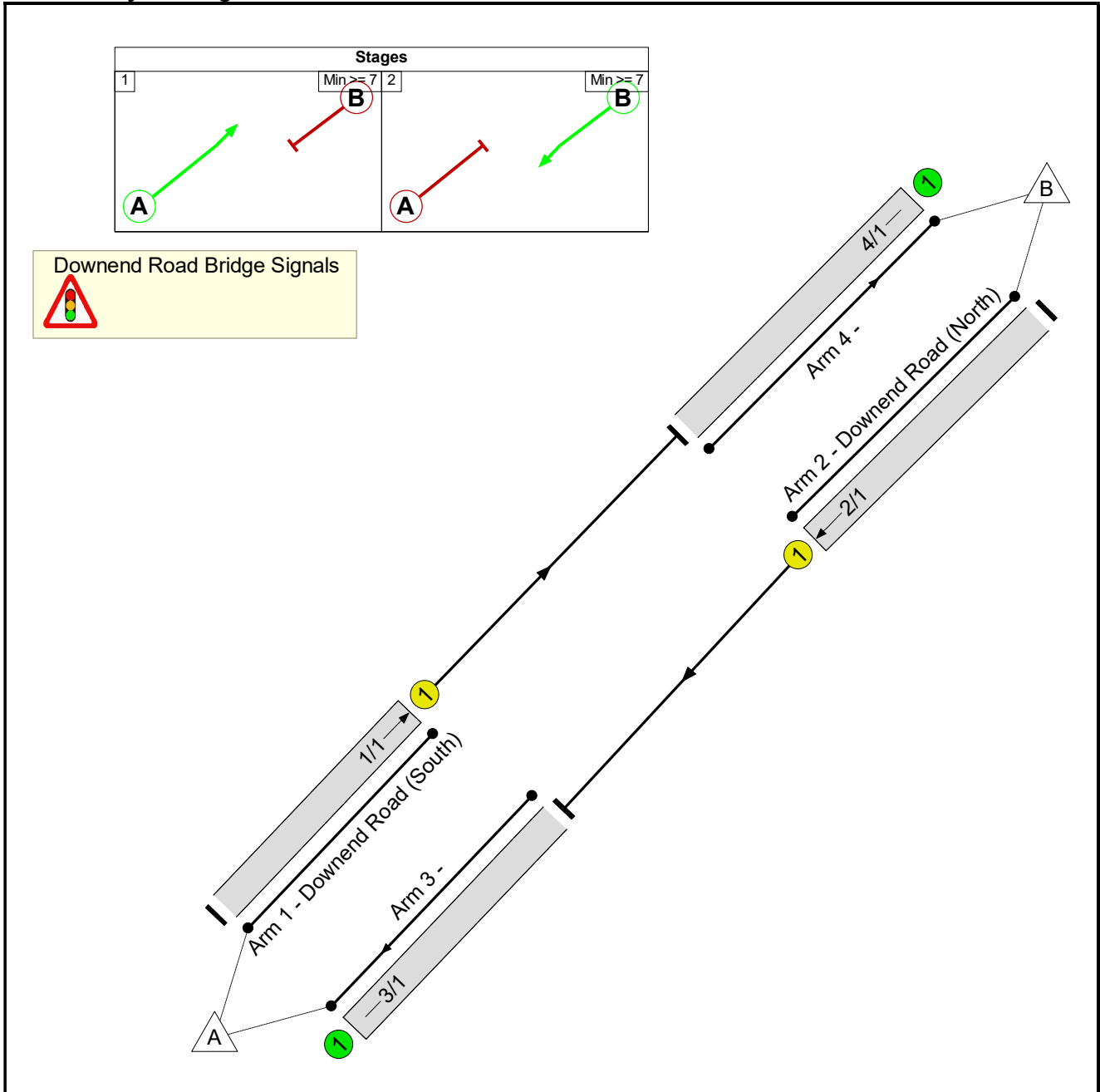
### JCT Revised Submission LinSig Data

JCT Revised Submission Full Input Data And Results  
**JCT Revised Submission Full Input Data And Results**

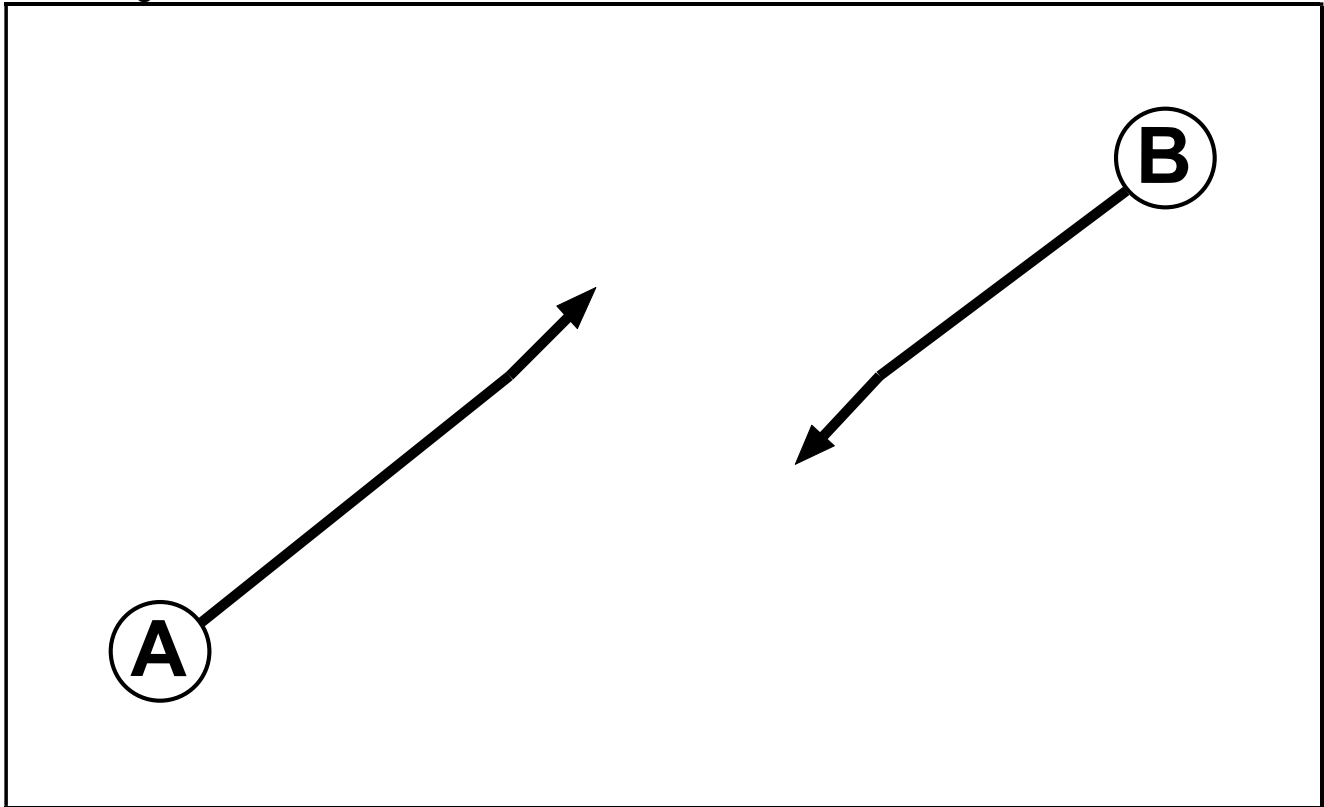
**User and Project Details**

|                           |  |
|---------------------------|--|
| <b>Project:</b>           | <b>20046 Downend Bridge Audit</b>  |
| <b>Title:</b>             | <b>Revised Submission</b>  |
| <b>Location:</b>          | Fareham  |
| <b>Client:</b>            | i-Transport  |
| <b>Design Layout Ref:</b> | ITB12212-GA-051 Rev D  |
| <b>Date Started:</b>      | 25/11/20   |
| <b>Date Completed:</b>    | 25/11/20   |
| <b>Model Assumptions:</b> | 07:30-08:30 AM Peak flows added as they were higher than the 7am-8am or the 8am-9am flows.<br>Increased the intergreens from 10" ro 12" to account for increased stopline to stopline distances in this layout |
| <b>Checked By:</b>        | Simon Swanston   |
| <b>Checked By Date:</b>   | 25/11/20   |
| <b>Additional detail:</b> |  |
| <b>File name:</b>         | Downend Bridge RS JCT.lsg3x  |
| <b>Author:</b>            | Stuart Hanson  |
| <b>Company:</b>           | JCT Consultancy  |
| <b>Address:</b>           | LinSig House, Nettleham, LN22LL  |

Network Layout Diagram



**Phase Diagram**



**Phase Input Data**

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|------------|----------|
| A          | Traffic    |              | 7          | 7        |
| B          | Traffic    |              | 7          | 7        |

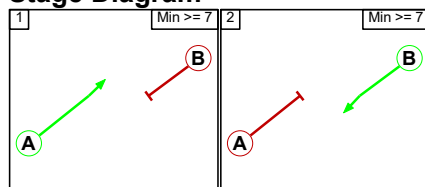
**Phase Intergreens Matrix**

|                   | Starting Phase |    |
|-------------------|----------------|----|
| Terminating Phase | A              | B  |
|                   | A              | 12 |
|                   | B              | 12 |

**Phases in Stage**

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | A               |
| 2         | B               |

**Stage Diagram**



**Phase Delays**

| Term. Stage                       | Start Stage | Phase | Type | Value | Cont value |
|-----------------------------------|-------------|-------|------|-------|------------|
| There are no Phase Delays defined |             |       |      |       |            |

**Prohibited Stage Change**

|            |   | To Stage |    |
|------------|---|----------|----|
|            |   | 1        | 2  |
| From Stage | 1 |          | 12 |
|            | 2 | 12       |    |

JCT Revised Submission Full Input Data And Results

**Give-Way Lane Input Data**

**Junction: Downend Road Bridge Signals**

There are no Opposed Lanes in this Junction

**Lane Input Data**

| Junction: Downend Road Bridge Signals |           |        |             |           |                       |               |                                   |                |          |               |             |                    |
|---------------------------------------|-----------|--------|-------------|-----------|-----------------------|---------------|-----------------------------------|----------------|----------|---------------|-------------|--------------------|
| Lane                                  | Lane Type | Phases | Start Disp. | End Disp. | Physical Length (PCU) | Sat Flow Type | Def User Saturation Flow (PCU/Hr) | Lane Width (m) | Gradient | Nearside Lane | Turns       | Turning Radius (m) |
| 1/1<br>(Downend Road (South))         | U         | A      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.00           | 5.00     | Y             | Arm 4 Ahead | Inf                |
| 2/1<br>(Downend Road (North))         | U         | B      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 3 Ahead | Inf                |
| 3/1                                   | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |
| 4/1                                   | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |

**Traffic Flow Groups**

| Flow Group                         | Start Time | End Time | Duration | Formula |
|------------------------------------|------------|----------|----------|---------|
| 1: '2026 with Dev AM 00-01'        | 00:00      | 01:00    | 01:00    |         |
| 2: '2026 with Dev AM 01-02'        | 01:00      | 02:00    | 01:00    |         |
| 3: '2026 with Dev AM 02-03'        | 02:00      | 03:00    | 01:00    |         |
| 4: '2026 with Dev AM 03-04'        | 03:00      | 04:00    | 01:00    |         |
| 5: '2026 with Dev AM 04-05'        | 04:00      | 05:00    | 01:00    |         |
| 6: '2026 with Dev AM 05-06'        | 05:00      | 06:00    | 01:00    |         |
| 7: '2026 with Dev AM 06-07'        | 06:00      | 07:00    | 01:00    |         |
| 8: '2026 with Dev AM 07-08'        | 07:00      | 08:00    | 01:00    |         |
| 9: '2026 with Dev AM 08-09'        | 08:00      | 09:00    | 01:00    |         |
| 10: '2026 with Dev AM 09-10'       | 09:00      | 10:00    | 01:00    |         |
| 11: '2026 with Dev AM 10-11'       | 10:00      | 11:00    | 01:00    |         |
| 12: '2026 with Dev AM 11-12'       | 11:00      | 12:00    | 01:00    |         |
| 13: '2026 with Dev PM 12-13'       | 12:00      | 13:00    | 01:00    |         |
| 14: '2026 with Dev PM 13-14'       | 13:00      | 14:00    | 01:00    |         |
| 15: '2026 with Dev PM 14-15'       | 14:00      | 15:00    | 01:00    |         |
| 16: '2026 with Dev PM 15-16'       | 15:00      | 16:00    | 01:00    |         |
| 17: '2026 with Dev PM 16-17'       | 16:00      | 17:00    | 01:00    |         |
| 18: '2026 with Dev PM 17-18'       | 17:00      | 18:00    | 01:00    |         |
| 19: '2026 with Dev PM 18-19'       | 18:00      | 19:00    | 01:00    |         |
| 20: '2026 with Dev PM 19-20'       | 19:00      | 20:00    | 01:00    |         |
| 21: '2026 with Dev PM 20-21'       | 20:00      | 21:00    | 01:00    |         |
| 22: '2026 with Dev PM 21-22'       | 21:00      | 22:00    | 01:00    |         |
| 23: '2026 with Dev PM 22-23'       | 22:00      | 23:00    | 01:00    |         |
| 24: '2026 with Dev PM 23-00'       | 23:00      | 00:00    | 01:00    |         |
| 25: '2026 with Dev AM 07:30-08:30' | 07:30      | 08:30    | 01:00    |         |



**Scenario 1: '1'** (FG1: '2026 with Dev AM 00-01', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |   |      |
|--------|------|-------------|---|------|
|        |      | A           | B | Tot. |
| Origin | A    | 0           | 6 | 6    |
|        | B    | 17          | 0 | 17   |
|        | Tot. | 17          | 6 | 23   |

**Traffic Lane Flows**

| Lane   | Scenario 1:<br>1 |
|--|------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                  |
| 1/1  | 6                |
| 2/1  | 17               |
| 3/1  | 17               |
| 4/1  | 6                |

**Lane Saturation Flows**

| <b>Junction: Downend Road Bridge Signals</b> |                          |          |               |               |                    |               |                   |                          |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))                | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))                | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

JCT Revised Submission Full Input Data And Results

**Scenario 2: '2'** (FG2: '2026 with Dev AM 01-02', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |   |      |
|--------|------|-------------|---|------|
|        |      | A           | B | Tot. |
| Origin | A    | 0           | 4 | 4    |
|        | B    | 9           | 0 | 9    |
|        | Tot. | 9           | 4 | 13   |

**Traffic Lane Flows**

| Lane   | Scenario 2:<br>2 |
|--|------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                  |
| 1/1  | 4                |
| 2/1  | 9                |
| 3/1  | 9                |
| 4/1  | 4                |

**Lane Saturation Flows**

| <b>Junction: Downend Road Bridge Signals</b> |                          |          |               |               |                    |               |                   |                          |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))                | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))                | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 3: '3'** (FG3: '2026 with Dev AM 02-03', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |   |      |
|--------|------|-------------|---|------|
|        |      | A           | B | Tot. |
| Origin | A    | 0           | 5 | 5    |
|        | B    | 3           | 0 | 3    |
|        | Tot. | 3           | 5 | 8    |

**Traffic Lane Flows**

| Lane   | Scenario 3:<br>3 |
|--|------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                  |
| 1/1  | 5                |
| 2/1  | 3                |
| 3/1  | 3                |
| 4/1  | 5                |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 4: '4'** (FG4: '2026 with Dev AM 03-04', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

| Origin | Destination |   |      |  |
|--------|-------------|---|------|--|
|        | A           | B | Tot. |  |
| A      | 0           | 7 | 7    |  |
| B      | 6           | 0 | 6    |  |
| Tot.   | 6           | 7 | 13   |  |

**Traffic Lane Flows**

| Lane                                  | Scenario 4:<br>4 |
|---------------------------------------|------------------|
| Junction: Downend Road Bridge Signals |                  |
| 1/1                                   | 7                |
| 2/1                                   | 6                |
| 3/1                                   | 6                |
| 4/1                                   | 7                |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

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**Scenario 5: '5'** (FG5: '2026 with Dev AM 04-05', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |    |      |
|--------|------|-------------|----|------|
|        |      | A           | B  | Tot. |
| Origin | A    | 0           | 11 | 11   |
|        | B    | 9           | 0  | 9    |
|        | Tot. | 9           | 11 | 20   |

**Traffic Lane Flows**

| Lane   | Scenario 5:<br>5 |
|--|------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                  |
| 1/1  | 11               |
| 2/1  | 9                |
| 3/1  | 9                |
| 4/1  | 11               |

**Lane Saturation Flows**

| <b>Junction: Downend Road Bridge Signals</b> |                          |          |               |               |                    |               |                   |                          |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))                | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))                | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 6: '6'** (FG6: '2026 with Dev AM 05-06', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |    |      |
|--------|------|-------------|----|------|
|        |      | A           | B  | Tot. |
| Origin | A    | 0           | 36 | 36   |
|        | B    | 30          | 0  | 30   |
|        | Tot. | 30          | 36 | 66   |

**Traffic Lane Flows**

| Lane   | Scenario 6:<br>6 |
|--|------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                  |
| 1/1  | 36               |
| 2/1  | 30               |
| 3/1  | 30               |
| 4/1  | 36               |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 7: '7'** (FG7: '2026 with Dev AM 06-07', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

| Origin | Destination |     |      |  |
|--------|-------------|-----|------|--|
|        | A           | B   | Tot. |  |
| A      | 0           | 197 | 197  |  |
| B      | 92          | 0   | 92   |  |
| Tot.   | 92          | 197 | 289  |  |

**Traffic Lane Flows**

| Lane                                  | Scenario 7:<br>7 |
|---------------------------------------|------------------|
| Junction: Downend Road Bridge Signals |                  |
| 1/1                                   | 197              |
| 2/1                                   | 92               |
| 3/1                                   | 92               |
| 4/1                                   | 197              |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

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**Scenario 8: '8'** (FG8: '2026 with Dev AM 07-08', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin |      | 0           | 443 | 443  |
|        | A    | 0           | 443 | 443  |
|        | B    | 354         | 0   | 354  |
|        | Tot. | 354         | 443 | 797  |

**Traffic Lane Flows**

| Lane   | Scenario 8:<br>8 |
|--|------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                  |
| 1/1  | 443              |
| 2/1  | 354              |
| 3/1  | 354              |
| 4/1  | 443              |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 9: '9'** (FG9: '2026 with Dev AM 08-09', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin |      | 0           | 442 | 442  |
|        | A    | 0           | 442 | 442  |
|        | B    | 355         | 0   | 355  |
|        | Tot. | 355         | 442 | 797  |

**Traffic Lane Flows**

| Lane   | Scenario 9:<br>9 |
|--|------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                  |
| 1/1  | 442              |
| 2/1  | 355              |
| 3/1  | 355              |
| 4/1  | 442              |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 10: '10'** (FG10: '2026 with Dev AM 09-10', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

| Origin | Destination |     |      |  |
|--------|-------------|-----|------|--|
|        | A           | B   | Tot. |  |
| A      | 0           | 272 | 272  |  |
| B      | 243         | 0   | 243  |  |
| Tot.   | 243         | 272 | 515  |  |

**Traffic Lane Flows**

| Lane   | Scenario 10: 10 |
|--|-----------------|
| <b>Junction: Downend Road Bridge Signals</b> |                 |
| 1/1  | 272             |
| 2/1  | 243             |
| 3/1  | 243             |
| 4/1  | 272             |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

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**Scenario 11: '11'** (FG11: '2026 with Dev AM 10-11', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 225 | 225  |
|        | B    | 253         | 0   | 253  |
|        | Tot. | 253         | 225 | 478  |

**Traffic Lane Flows**

| Lane   | Scenario 11:<br>11 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 225                |
| 2/1  | 253                |
| 3/1  | 253                |
| 4/1  | 225                |

**Lane Saturation Flows**

| <b>Junction: Downend Road Bridge Signals</b> |                          |          |               |               |                    |               |                   |                          |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))                | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))                | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 12: '12'** (FG12: '2026 with Dev AM 11-12', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 217 | 217  |
|        | B    | 260         | 0   | 260  |
|        | Tot. | 260         | 217 | 477  |

**Traffic Lane Flows**

| Lane   | Scenario 12:<br>12 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 217                |
| 2/1  | 260                |
| 3/1  | 260                |
| 4/1  | 217                |



**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 13: '13'** (FG13: '2026 with Dev PM 12-13', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 226 | 226  |
|        | B    | 287         | 0   | 287  |
|        | Tot. | 287         | 226 | 513  |

**Traffic Lane Flows**

| Lane                                  | Scenario 13: 13 |
|---------------------------------------|-----------------|
| Junction: Downend Road Bridge Signals |                 |
| 1/1                                   | 226             |
| 2/1                                   | 287             |
| 3/1                                   | 287             |
| 4/1                                   | 226             |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

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**Scenario 14: '14'** (FG14: '2026 with Dev PM 13-14', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 241 | 241  |
|        | B    | 260         | 0   | 260  |
|        | Tot. | 260         | 241 | 501  |

**Traffic Lane Flows**

| Lane   | Scenario 14:<br>14 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 241                |
| 2/1  | 260                |
| 3/1  | 260                |
| 4/1  | 241                |

**Lane Saturation Flows**

| <b>Junction: Downend Road Bridge Signals</b> |                          |          |               |               |                    |               |                   |                          |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))                | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))                | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 15: '15'** (FG15: '2026 with Dev PM 14-15', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 232 | 232  |
|        | B    | 308         | 0   | 308  |
|        | Tot. | 308         | 232 | 540  |

**Traffic Lane Flows**

| Lane   | Scenario 15:<br>15 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 232                |
| 2/1  | 308                |
| 3/1  | 308                |
| 4/1  | 232                |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 16: '16'** (FG16: '2026 with Dev PM 15-16', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 271 | 271  |
|        | B    | 359         | 0   | 359  |
|        | Tot. | 359         | 271 | 630  |

**Traffic Lane Flows**

| Lane                                  | Scenario 16: 16 |
|---------------------------------------|-----------------|
| Junction: Downend Road Bridge Signals |                 |
| 1/1                                   | 271             |
| 2/1                                   | 359             |
| 3/1                                   | 359             |
| 4/1                                   | 271             |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

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**Scenario 17: '17'** (FG17: '2026 with Dev PM 16-17', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 338 | 338  |
|        | B    | 358         | 0   | 358  |
|        | Tot. | 358         | 338 | 696  |

**Traffic Lane Flows**

| Lane   | Scenario 17:<br>17 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 338                |
| 2/1  | 358                |
| 3/1  | 358                |
| 4/1  | 338                |

**Lane Saturation Flows**

| <b>Junction: Downend Road Bridge Signals</b> |                          |          |               |               |                    |               |                   |                          |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))                | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))                | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 18: '18'** (FG18: '2026 with Dev PM 17-18', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 377 | 377  |
|        | B    | 324         | 0   | 324  |
|        | Tot. | 324         | 377 | 701  |

**Traffic Lane Flows**

| Lane   | Scenario 18:<br>18 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 377                |
| 2/1  | 324                |
| 3/1  | 324                |
| 4/1  | 377                |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 19: '19'** (FG19: '2026 with Dev PM 18-19', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 256 | 256  |
|        | B    | 269         | 0   | 269  |
|        | Tot. | 269         | 256 | 525  |

**Traffic Lane Flows**

| Lane                                  | Scenario 19: 19 |
|---------------------------------------|-----------------|
| Junction: Downend Road Bridge Signals |                 |
| 1/1                                   | 256             |
| 2/1                                   | 269             |
| 3/1                                   | 269             |
| 4/1                                   | 256             |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

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**Scenario 20: '20'** (FG20: '2026 with Dev PM 19-20', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 133 | 133  |
|        | B    | 197         | 0   | 197  |
|        | Tot. | 197         | 133 | 330  |

**Traffic Lane Flows**

| Lane   | Scenario 20:<br>20 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 133                |
| 2/1  | 197                |
| 3/1  | 197                |
| 4/1  | 133                |

**Lane Saturation Flows**

| <b>Junction: Downend Road Bridge Signals</b> |                          |          |               |               |                    |               |                   |                          |  |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|--|
| Lane   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |  |
| 1/1<br>(Downend Road (South))                | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |  |
| 2/1<br>(Downend Road (North))                | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |  |
| 3/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |  |
| 4/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |  |

**Scenario 21: '21'** (FG21: '2026 with Dev PM 20-21', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |    |      |
|--------|------|-------------|----|------|
|        |      | A           | B  | Tot. |
| Origin | A    | 0           | 76 | 76   |
|        | B    | 145         | 0  | 145  |
|        | Tot. | 145         | 76 | 221  |

**Traffic Lane Flows**

| Lane   | Scenario 21:<br>21 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 76                 |
| 2/1  | 145                |
| 3/1  | 145                |
| 4/1  | 76                 |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 22: '22'** (FG22: '2026 with Dev PM 21-22', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |    |      |
|--------|------|-------------|----|------|
|        |      | A           | B  | Tot. |
| Origin | A    | 0           | 47 | 47   |
|        | B    | 102         | 0  | 102  |
|        | Tot. | 102         | 47 | 149  |

**Traffic Lane Flows**

| Lane                                  | Scenario 22: 22 |
|---------------------------------------|-----------------|
| Junction: Downend Road Bridge Signals |                 |
| 1/1                                   | 47              |
| 2/1                                   | 102             |
| 3/1                                   | 102             |
| 4/1                                   | 47              |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

JCT Revised Submission Full Input Data And Results

**Scenario 23: '23'** (FG23: '2026 with Dev PM 22-23', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |    |      |
|--------|------|-------------|----|------|
|        |      | A           | B  | Tot. |
| Origin | A    | 0           | 38 | 38   |
|        | B    | 63          | 0  | 63   |
|        | Tot. | 63          | 38 | 101  |

**Traffic Lane Flows**

| Lane   | Scenario 23:<br>23 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 38                 |
| 2/1  | 63                 |
| 3/1  | 63                 |
| 4/1  | 38                 |

**Lane Saturation Flows**

| <b>Junction: Downend Road Bridge Signals</b> |                          |          |               |               |                    |               |                   |                          |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))                | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))                | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1  | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 24: '24'** (FG24: '2026 with Dev PM 23-00', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |    |      |
|--------|------|-------------|----|------|
|        |      | A           | B  | Tot. |
| Origin | A    | 0           | 22 | 22   |
|        | B    | 58          | 0  | 58   |
|        | Tot. | 58          | 22 | 80   |

**Traffic Lane Flows**

| Lane   | Scenario 24:<br>24 |
|--|--------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                    |
| 1/1  | 22                 |
| 2/1  | 58                 |
| 3/1  | 58                 |
| 4/1  | 22                 |



**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 25: 'AM Peak'** (FG25: '2026 with Dev AM 07:30-08:30', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 493 | 493  |
|        | B    | 400         | 0   | 400  |
|        | Tot. | 400         | 493 | 893  |

**Traffic Lane Flows**

| Lane                                  | Scenario 25:<br>AM Peak |
|---------------------------------------|-------------------------|
| Junction: Downend Road Bridge Signals |                         |
| 1/1                                   | 493                     |
| 2/1                                   | 400                     |
| 3/1                                   | 400                     |
| 4/1                                   | 493                     |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 26: 'AM Peak CT60'** (FG25: '2026 with Dev AM 07:30-08:30', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

Desired Flow :

|        |      | Destination |     |      |
|--------|------|-------------|-----|------|
|        |      | A           | B   | Tot. |
| Origin | A    | 0           | 493 | 493  |
|        | B    | 400         | 0   | 400  |
|        | Tot. | 400         | 493 | 893  |

**Traffic Lane Flows**

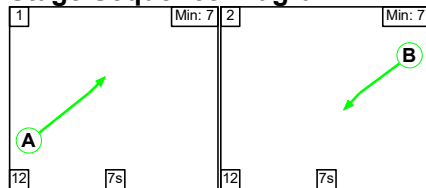
| Lane   | Scenario 26:<br>AM Peak CT60 |
|--|------------------------------|
| <b>Junction: Downend Road Bridge Signals</b> |                              |
| 1/1  | 493                          |
| 2/1  | 400                          |
| 3/1  | 400                          |
| 4/1  | 493                          |

**Lane Saturation Flows**

| Junction: Downend Road Bridge Signals |                          |          |               |               |                    |               |                   |                          |
|---------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                  | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Downend Road (South))         | 3.00                     | 5.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1705              | 1705                     |
| 2/1<br>(Downend Road (North))         | 3.00                     | 0.00     | Y             | Arm 3 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 3/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/1                                   | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 1: '1'** (FG1: '2026 with Dev AM 00-01', Plan 1: 'Network Control Plan 1')

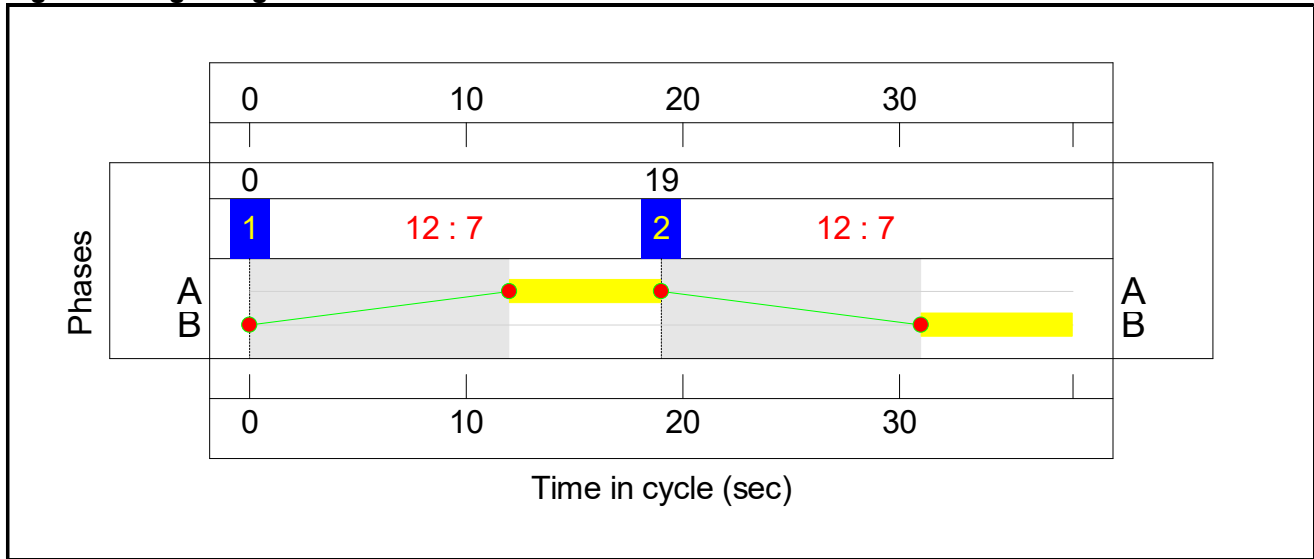
**Stage Sequence Diagram**



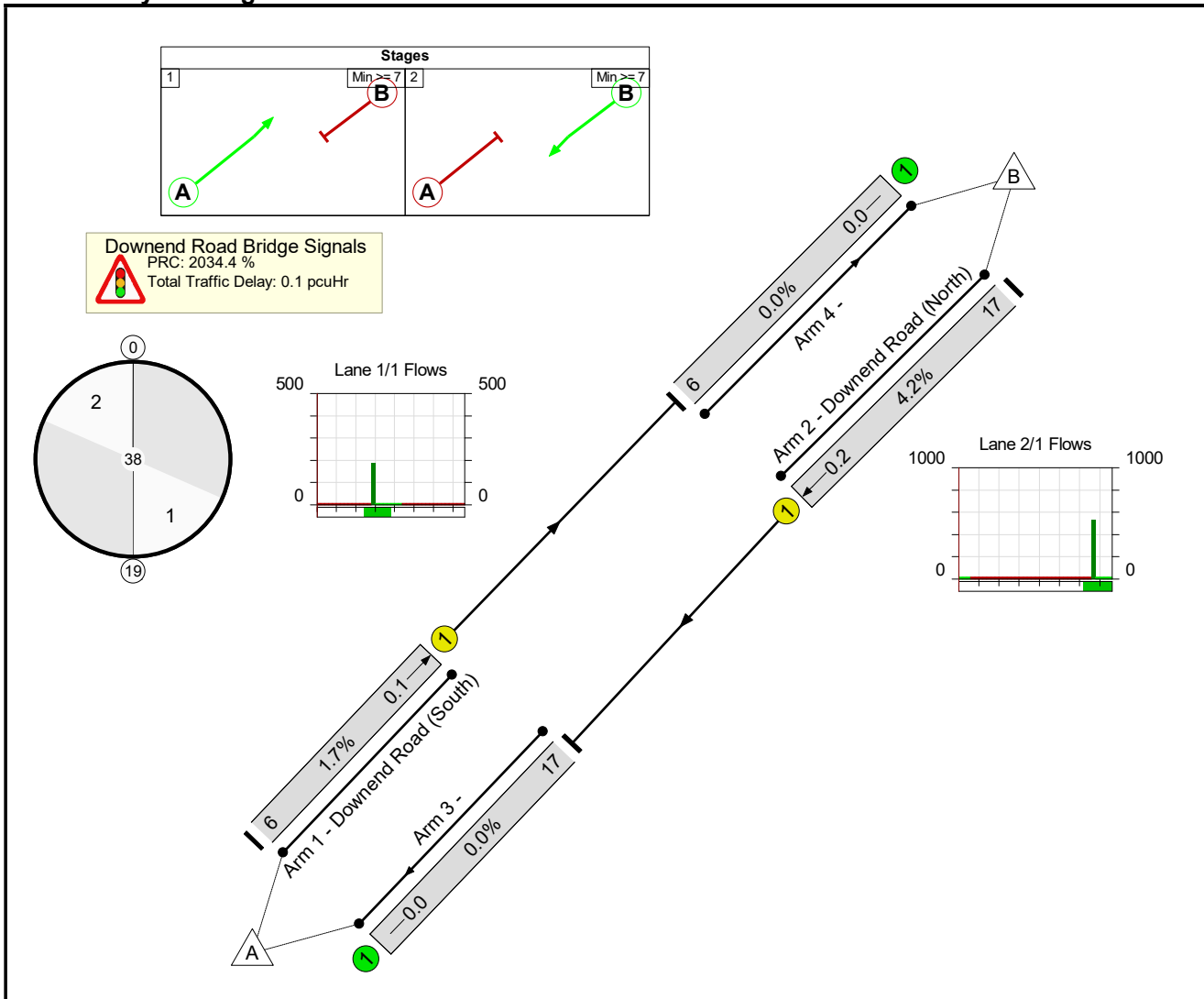
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 19 |

### Signal Timings Diagram



### Network Layout Diagram

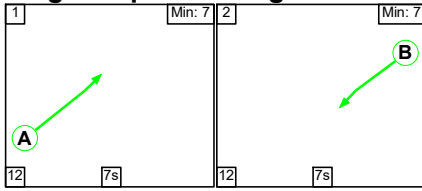


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 4.2%                 |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 4.2%                 |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 6                         | 1705                             | 359                        | 1.7%                 |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 17                        | 1915                             | 403                        | 4.2%                 |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 17                        | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 6                         | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.1                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.1                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| 1/1   | 6                          | 6             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 17.3                      | 0.1                              | 0.0                        | 0.1                  |
| 2/1   | 17                         | 17            | -                     | -                            | -                           | 0.1                   | 0.0                          | -                                  | 0.1                 | 16.9                      | 0.1                              | 0.0                        | 0.2                  |
| 3/1   | 17                         | 17            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 6                          | 6             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 2034.4      Total Delay for Signalled Lanes (pcuHr): 0.11      Cycle Time (s): 38<br>PRC Over All Lanes (%): 2034.4      Total Delay Over All Lanes(pcuHr): 0.11 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

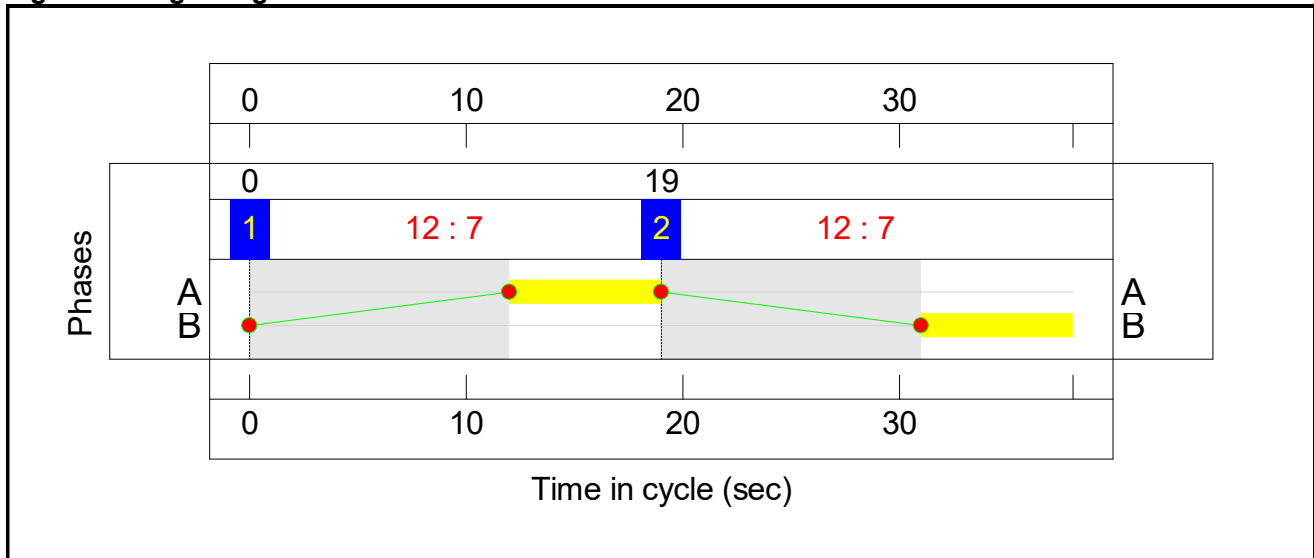
**Stage Sequence Diagram**



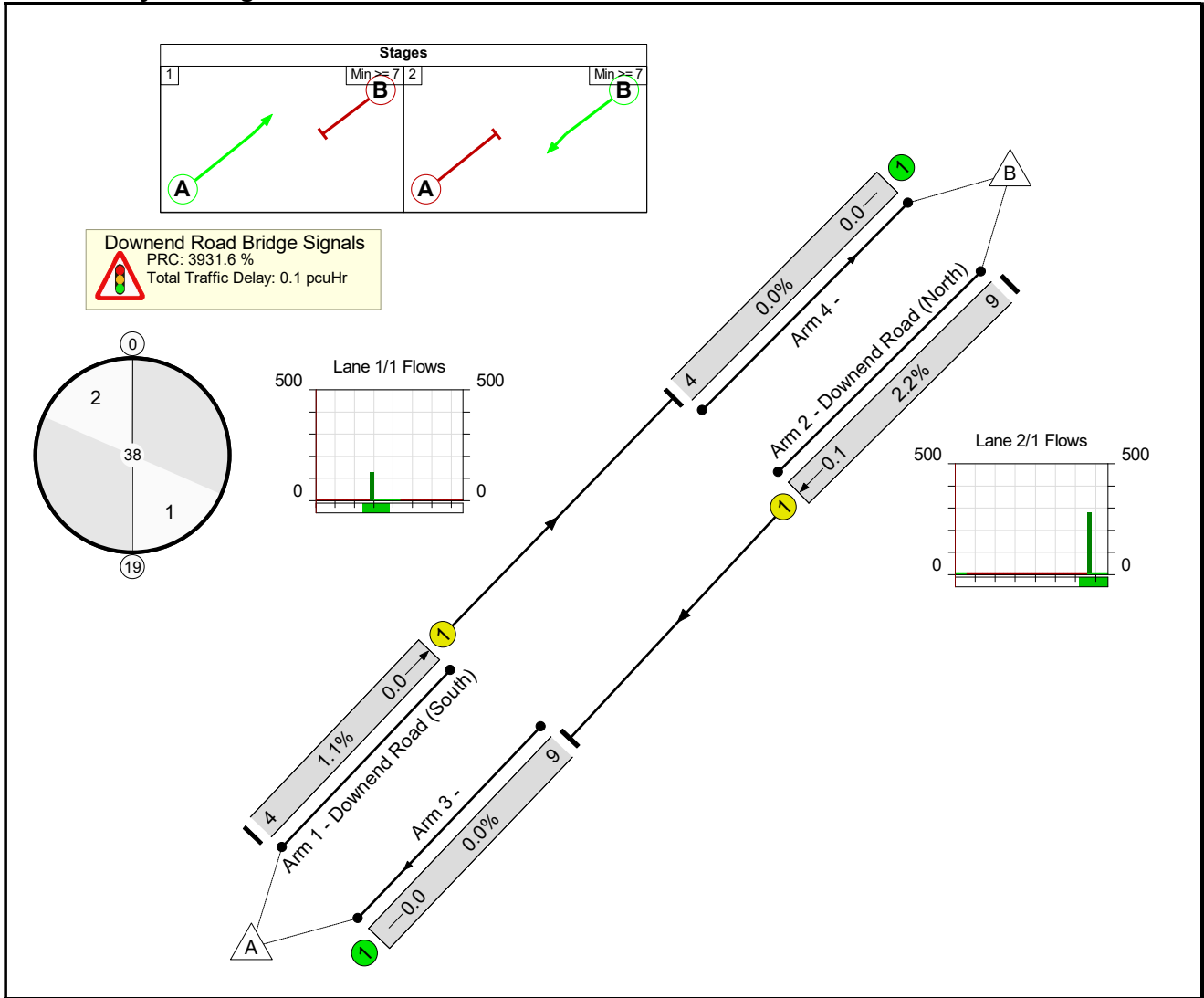
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 19 |

**Signal Timings Diagram**



### Network Layout Diagram

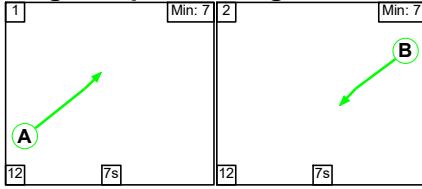


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 2.2%                 |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 2.2%                 |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 4                         | 1705                             | 359                        | 1.1%                 |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 9                         | 1915                             | 403                        | 2.2%                 |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 9                         | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 4                         | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.0                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.0                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| 1/1   | 4                          | 4             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 17.3                      | 0.0                              | 0.0                        | 0.0                  |
| 2/1   | 9                          | 9             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 16.8                      | 0.1                              | 0.0                        | 0.1                  |
| 3/1   | 9                          | 9             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 4                          | 4             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 3931.6      Total Delay for Signalled Lanes (pcuHr): 0.06      Cycle Time (s): 38<br>PRC Over All Lanes (%): 3931.6      Total Delay Over All Lanes(pcuHr): 0.06 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

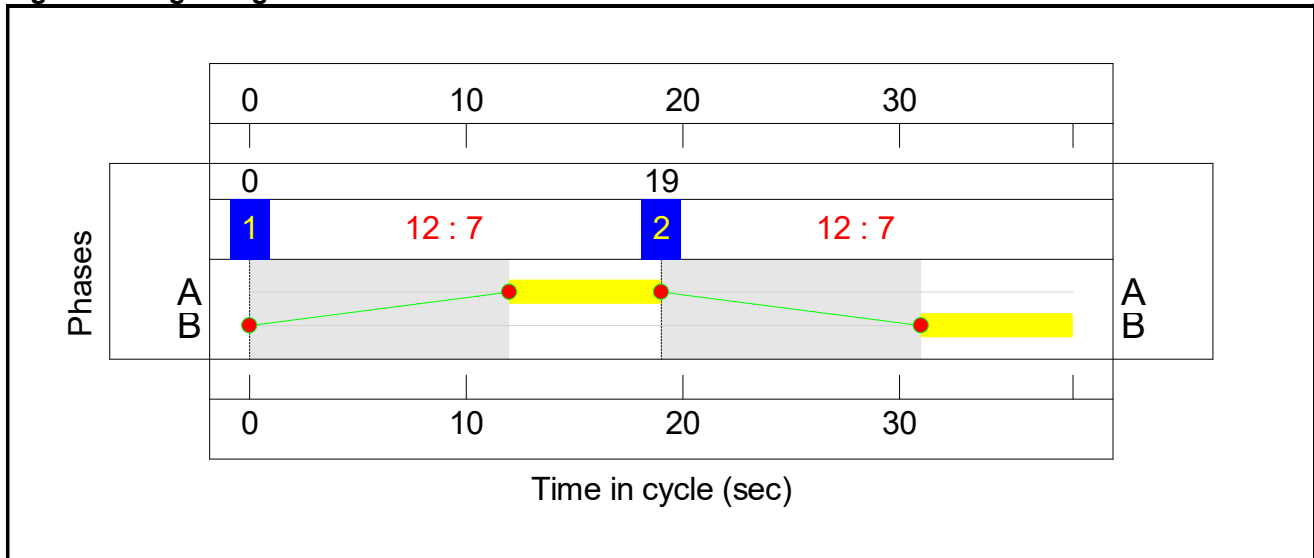
**Stage Sequence Diagram**



**Stage Timings**

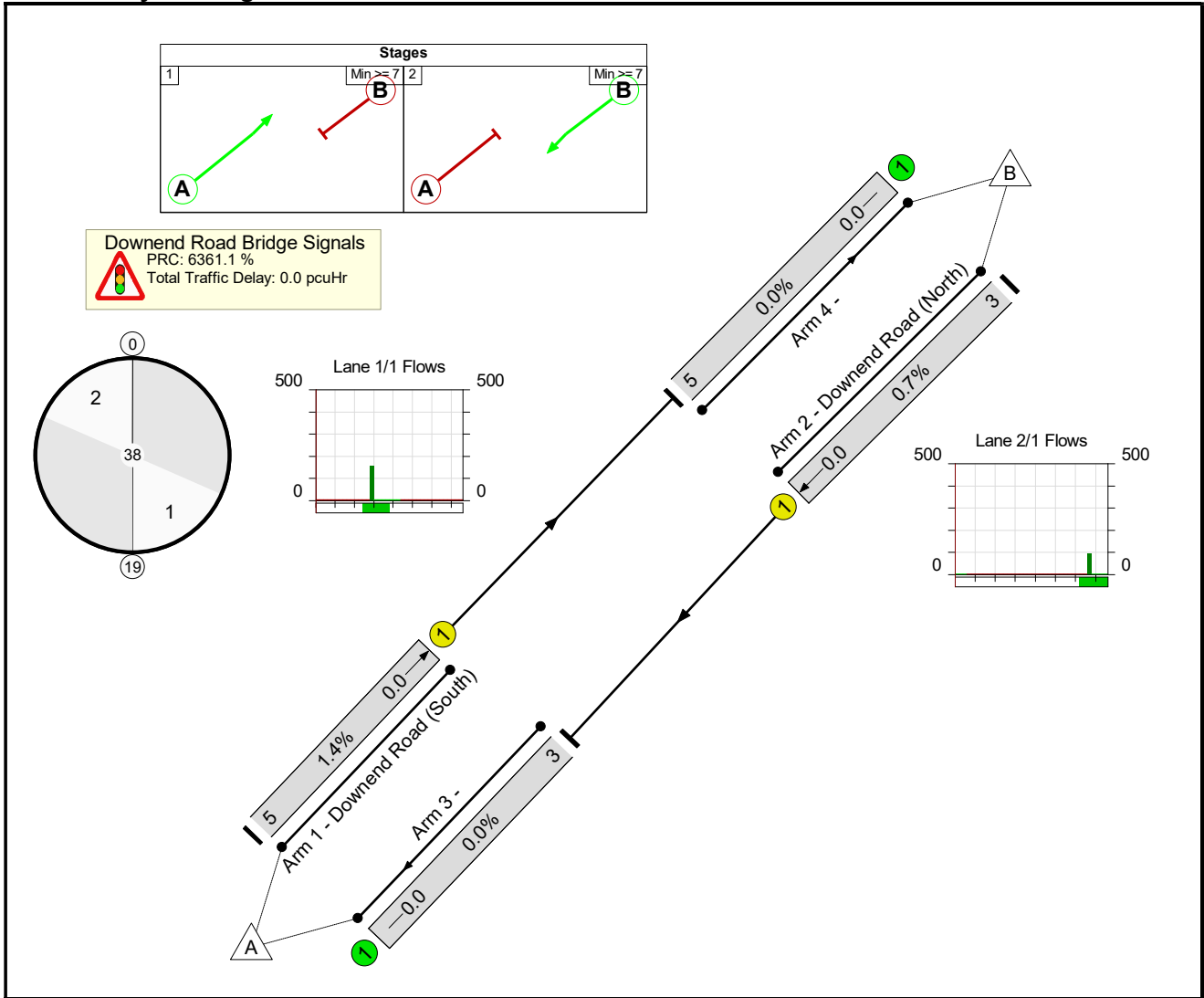
| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 19 |

**Signal Timings Diagram**





### Network Layout Diagram

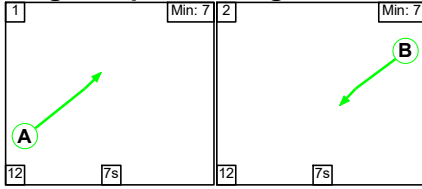


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 1.4%                 |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 1.4%                 |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 5                         | 1705                             | 359                        | 1.4%                 |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 3                         | 1915                             | 403                        | 0.7%                 |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 3                         | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 5                         | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.0                   | 0.0                          | 0.0                                | 0.0                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.0                   | 0.0                          | 0.0                                | 0.0                 | -                         | -                                | -                          | -                    |
| 1/1   | 5                          | 5             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 17.3                      | 0.0                              | 0.0                        | 0.0                  |
| 2/1   | 3                          | 3             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 16.7                      | 0.0                              | 0.0                        | 0.0                  |
| 3/1   | 3                          | 3             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 5                          | 5             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 6361.1      Total Delay for Signalled Lanes (pcuHr): 0.04      Cycle Time (s): 38<br>PRC Over All Lanes (%): 6361.1      Total Delay Over All Lanes(pcuHr): 0.04 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

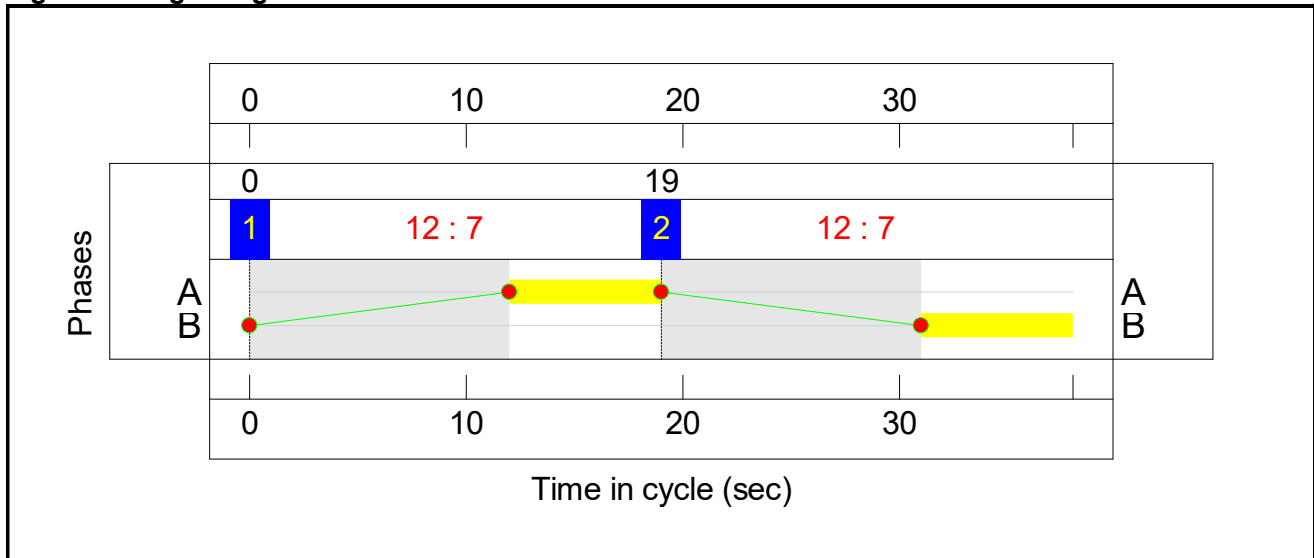
**Stage Sequence Diagram**



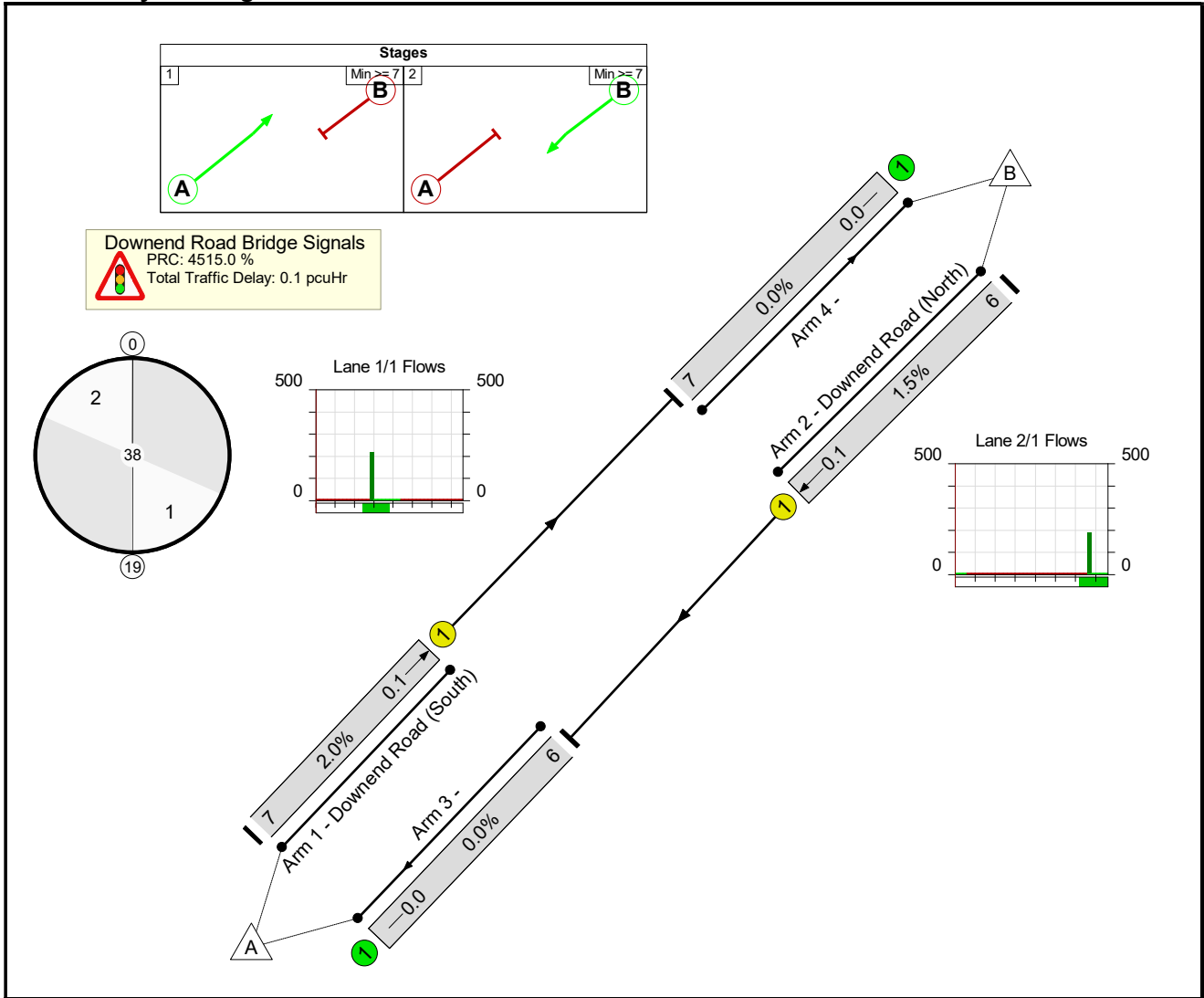
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 19 |

**Signal Timings Diagram**



**Network Layout Diagram**

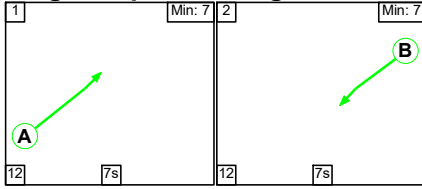


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 2.0%                 |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 2.0%                 |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 7                         | 1705                             | 359                        | 2.0%                 |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 6                         | 1915                             | 403                        | 1.5%                 |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 6                         | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 7                         | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.0                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.0                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| 1/1   | 7                          | 7             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 17.3                      | 0.1                              | 0.0                        | 0.1                  |
| 2/1   | 6                          | 6             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 16.8                      | 0.1                              | 0.0                        | 0.1                  |
| 3/1   | 6                          | 6             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 7                          | 7             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 4515.0      Total Delay for Signalled Lanes (pcuHr): 0.06      Cycle Time (s): 38<br>PRC Over All Lanes (%): 4515.0      Total Delay Over All Lanes(pcuHr): 0.06 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

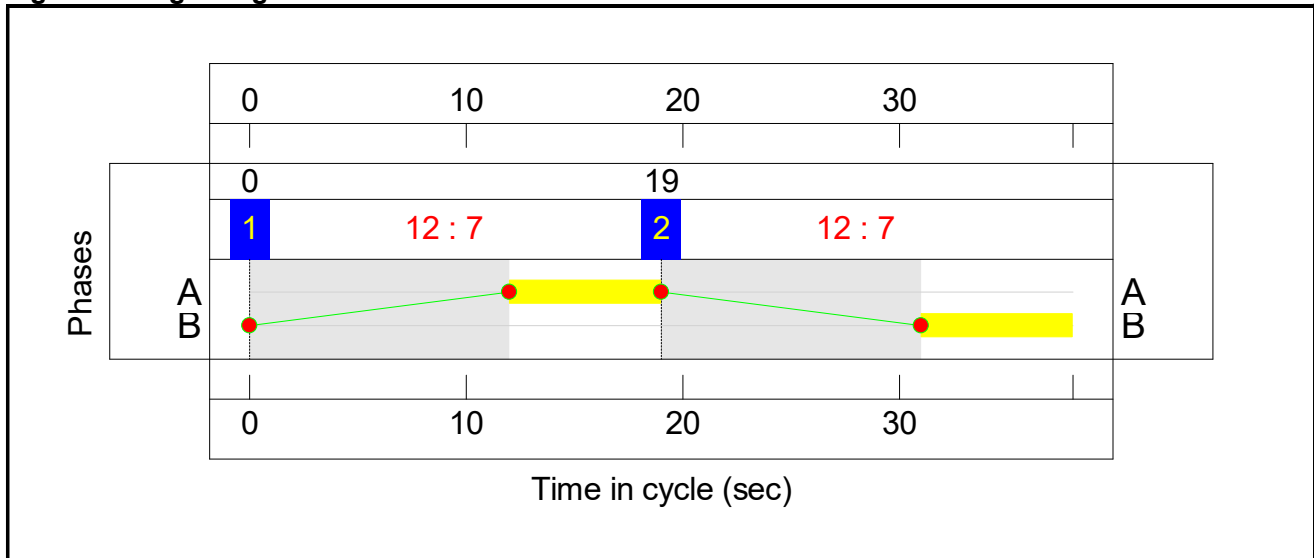
**Stage Sequence Diagram**



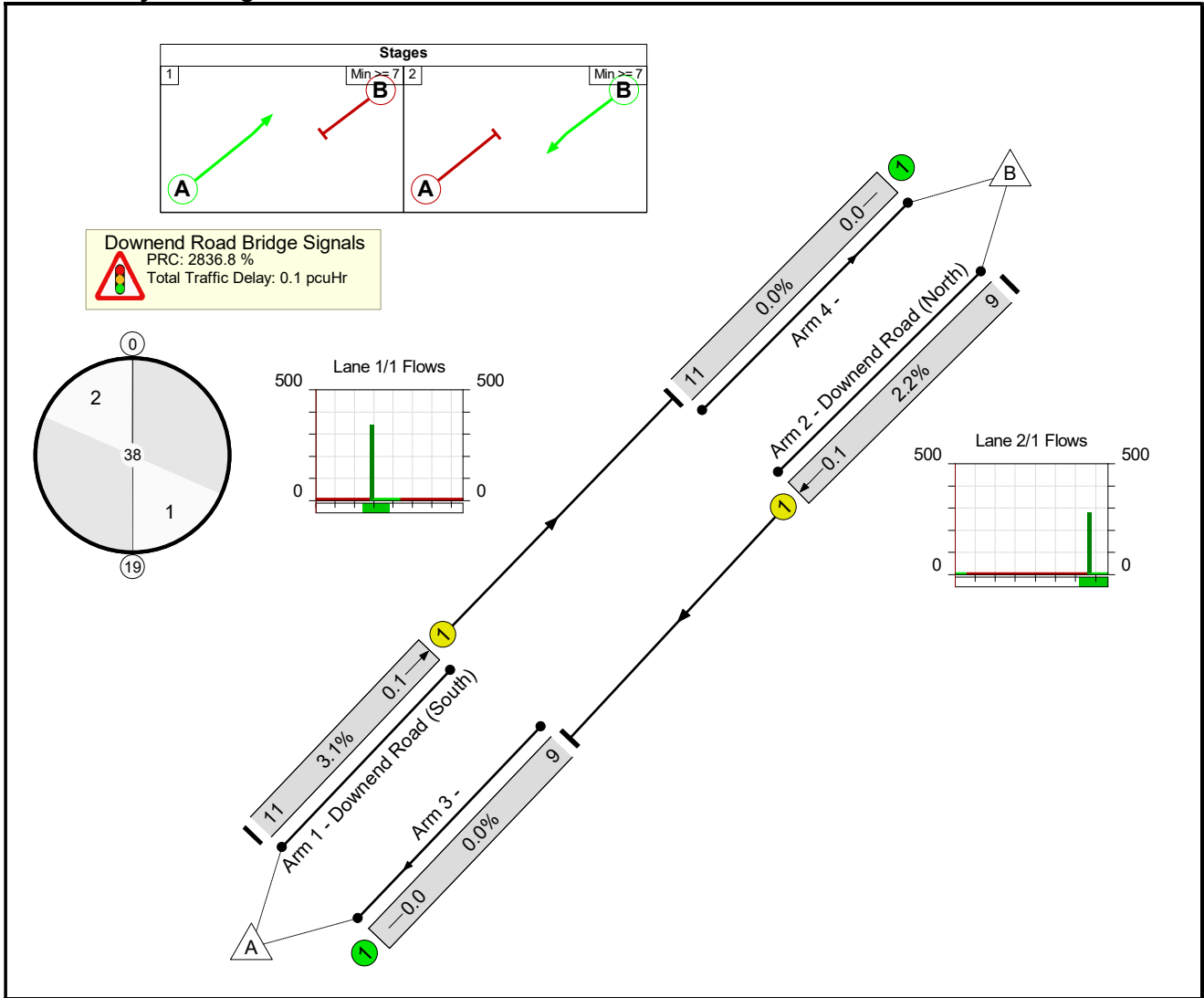
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 19 |

**Signal Timings Diagram**



**Network Layout Diagram**



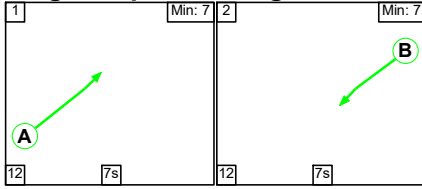
JCT Revised Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 3.1%                 |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 3.1%                 |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 11                        | 1705                             | 359                        | 3.1%                 |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 9                         | 1915                             | 403                        | 2.2%                 |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 9                         | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 11                        | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.1                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.1                   | 0.0                          | 0.0                                | 0.1                 | -                         | -                                | -                          | -                    |
| 1/1   | 11                         | 11            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.1                 | 17.4                      | 0.1                              | 0.0                        | 0.1                  |
| 2/1   | 9                          | 9             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 16.8                      | 0.1                              | 0.0                        | 0.1                  |
| 3/1   | 9                          | 9             | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 11                         | 11            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 2836.8      Total Delay for Signalled Lanes (pcuHr): 0.10      Cycle Time (s): 38<br>PRC Over All Lanes (%): 2836.8      Total Delay Over All Lanes(pcuHr): 0.10 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |



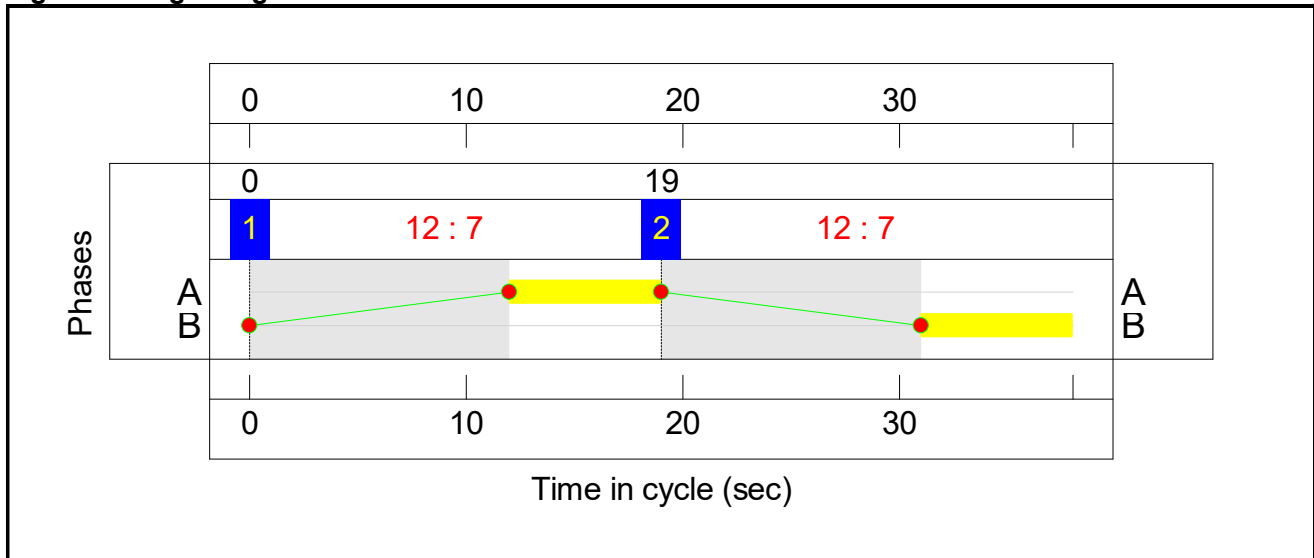
**Stage Sequence Diagram**



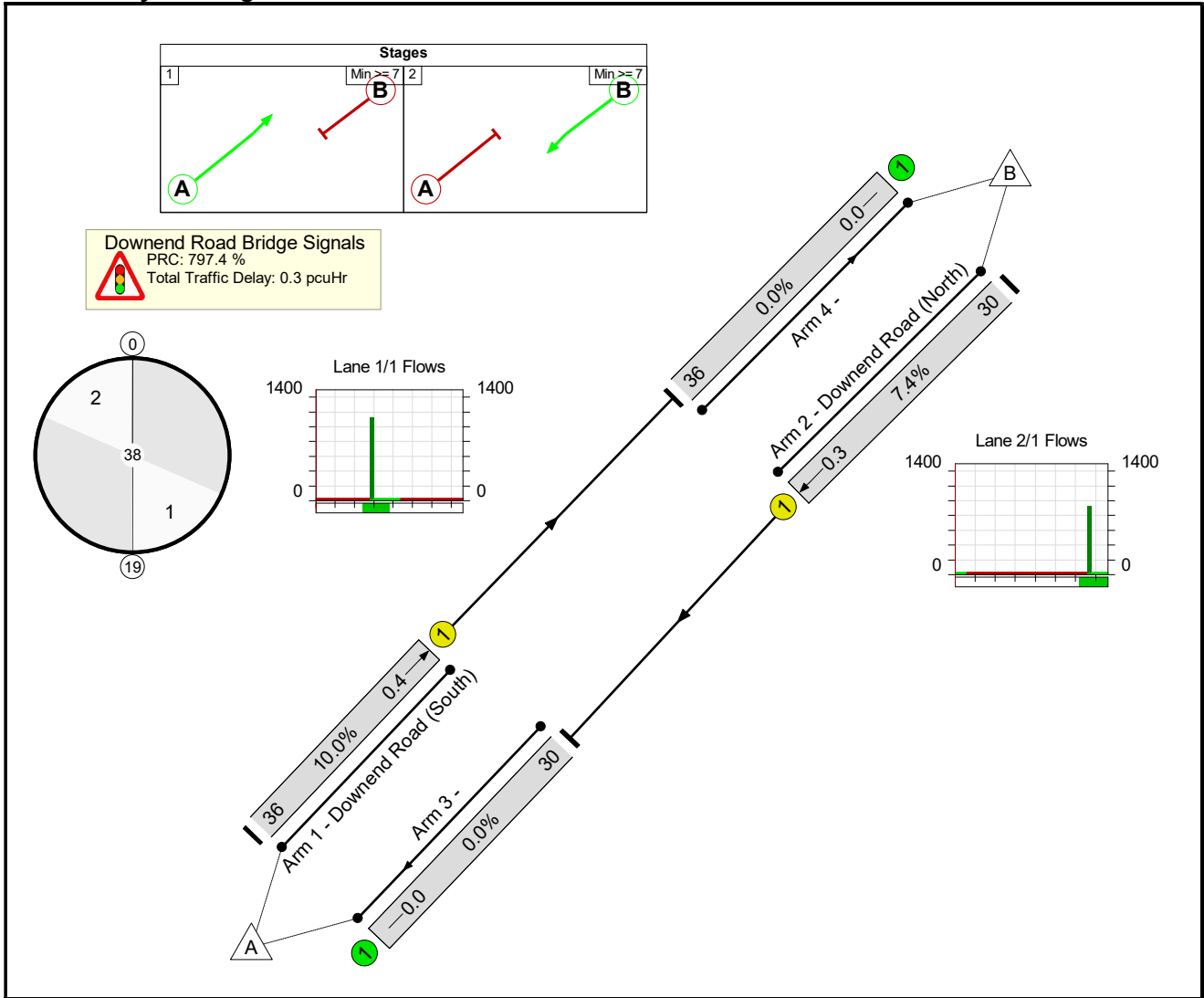
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 19 |

**Signal Timings Diagram**



### Network Layout Diagram

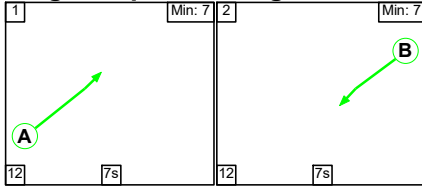


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 10.0%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 10.0%                |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 36                        | 1705                             | 359                        | 10.0%                |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 30                        | 1915                             | 403                        | 7.4%                 |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 30                        | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 36                        | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.2                   | 0.1                          | 0.0                                | 0.3                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.2                   | 0.1                          | 0.0                                | 0.3                 | -                         | -                                | -                          | -                    |
| 1/1   | 36                         | 36            | -                     | -                            | -                           | 0.1                   | 0.1                          | -                                  | 0.2                 | 17.8                      | 0.3                              | 0.1                        | 0.4                  |
| 2/1   | 30                         | 30            | -                     | -                            | -                           | 0.1                   | 0.0                          | -                                  | 0.1                 | 17.1                      | 0.2                              | 0.0                        | 0.3                  |
| 3/1   | 30                         | 30            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 36                         | 36            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 797.4      Total Delay for Signalled Lanes (pcuHr): 0.32      Cycle Time (s): 38<br>PRC Over All Lanes (%): 797.4      Total Delay Over All Lanes(pcuHr): 0.32 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

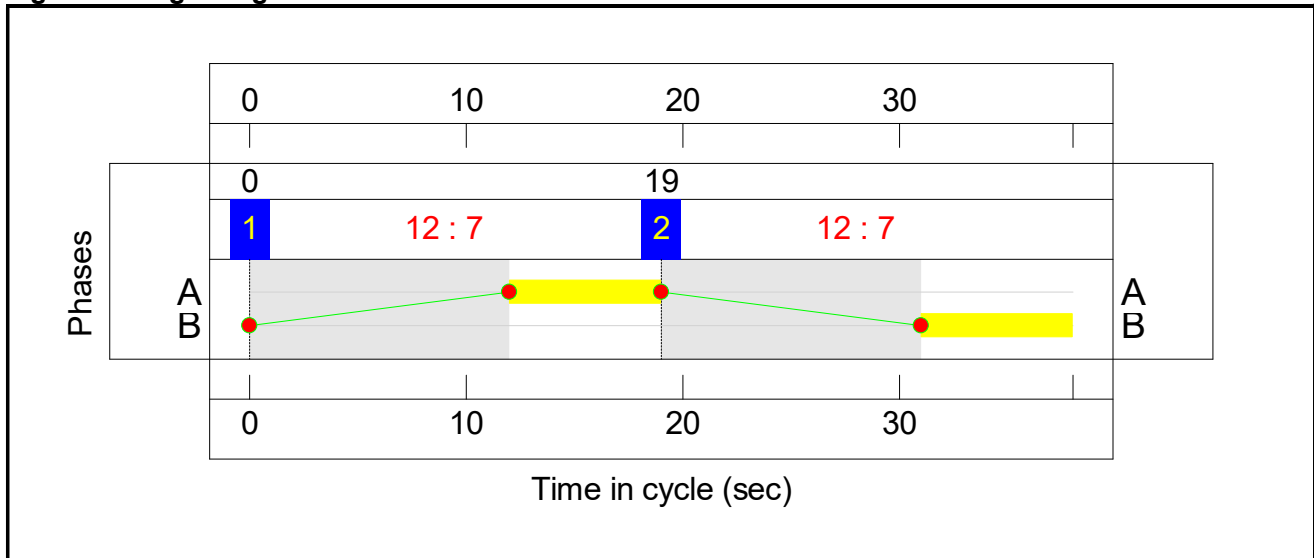
**Stage Sequence Diagram**



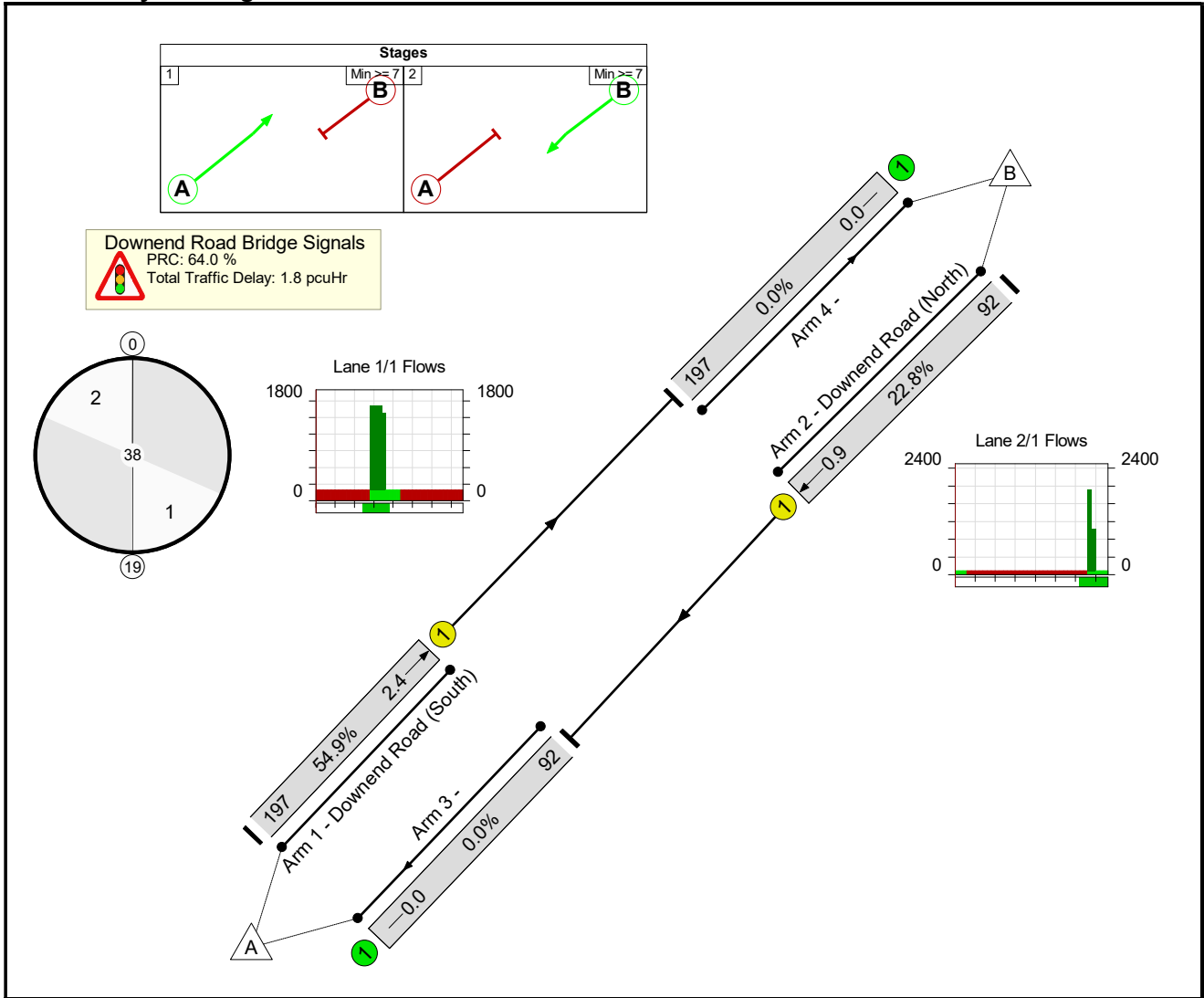
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 19 |

**Signal Timings Diagram**



### Network Layout Diagram

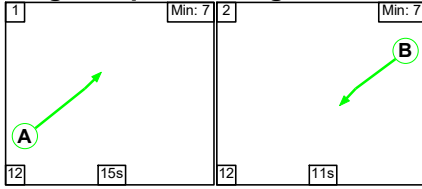


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item   | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|--|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 54.9%                |
| <b>Downend Road Bridge Signals</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 54.9%                |
| 1/1  | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 197                       | 1705                             | 359                        | 54.9%                |
| 2/1  | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 92                        | 1915                             | 403                        | 22.8%                |
| 3/1  |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 92                        | Inf                              | Inf                        | 0.0%                 |
| 4/1  |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 197                       | Inf                              | Inf                        | 0.0%                 |
| Item   | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>   | -                          | -             | 0                     | 0                            | 0                           | 1.1                   | 0.8                          | 0.0                                | 1.8                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>   | -                          | -             | 0                     | 0                            | 0                           | 1.1                   | 0.8                          | 0.0                                | 1.8                 | -                         | -                                | -                          | -                    |
| 1/1  | 197                        | 197           | -                     | -                            | -                           | 0.7                   | 0.6                          | -                                  | 1.3                 | 24.4                      | 1.8                              | 0.6                        | 2.4                  |
| 2/1  | 92                         | 92            | -                     | -                            | -                           | 0.3                   | 0.1                          | -                                  | 0.5                 | 18.3                      | 0.8                              | 0.1                        | 0.9                  |
| 3/1  | 92                         | 92            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1  | 197                        | 197           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| <p>C1      PRC for Signalled Lanes (%): 64.0      Total Delay for Signalled Lanes (pcuHr): 1.80      Cycle Time (s): 38<br/>                     PRC Over All Lanes (%): 64.0      Total Delay Over All Lanes(pcuHr): 1.80</p> |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

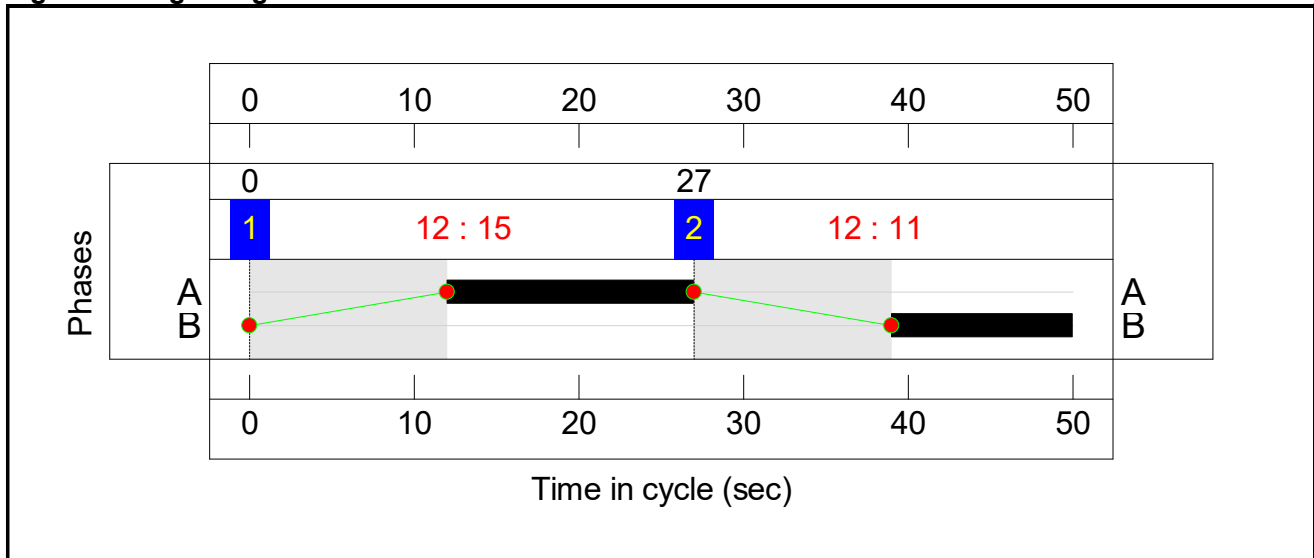
**Stage Sequence Diagram**



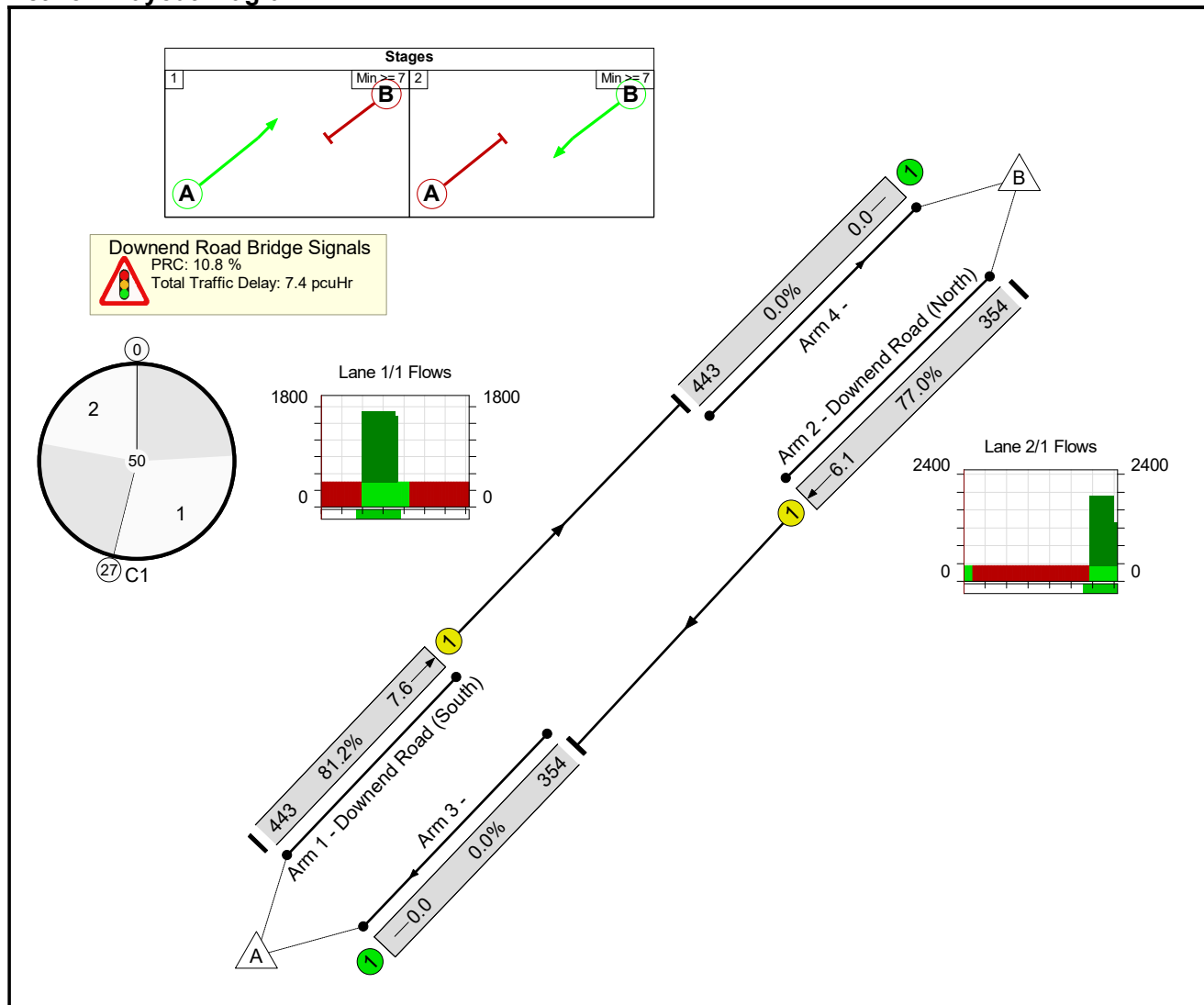
**Stage Timings**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 15 | 11 |
| Change Point | 0  | 27 |

**Signal Timings Diagram**



### Network Layout Diagram



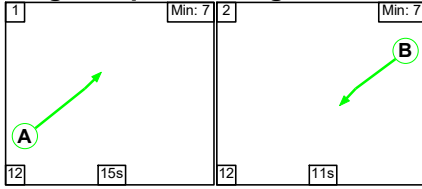


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item                               | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                   | Arrow Phase           | Num Greens                                    | Total Green (s)                    | Arrow Green (s)                         | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|------------------------------|-----------------------|---|------------------------------------|---|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 81.2%                |
| <b>Downend Road Bridge Signals</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 81.2%                |
| 1/1                                | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A                            |                       | 1   | 15                                 | -                                       | 443                       | 1705                             | 546                        | 81.2%                |
| 2/1                                | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B                            |                       | 1   | 11                                 | -                                       | 354                       | 1915                             | 460                        | 77.0%                |
| 3/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 354                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 443                       | Inf                              | Inf                        | 0.0%                 |
| Item                               | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)  | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr)                  | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr)                     | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b> | -                          | -             | 0                                 | 0                            | 0                            | 3.7                   | 3.7   | 0.0                                | 7.4                                     | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b> | -                          | -             | 0                                 | 0                            | 0                            | 3.7                   | 3.7   | 0.0                                | 7.4                                     | -                         | -                                | -                          | -                    |
| 1/1                                | 443                        | 443           | -                                 | -                            | -                            | 1.9                   | 2.1   | -                                  | 4.0                                     | 32.5                      | 5.5                              | 2.1                        | 7.6                  |
| 2/1                                | 354                        | 354           | -                                 | -                            | -                            | 1.7                   | 1.6   | -                                  | 3.4                                     | 34.3                      | 4.5                              | 1.6                        | 6.1                  |
| 3/1                                | 354                        | 354           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                | 443                        | 443           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                 |                            |               | PRC for Signalled Lanes (%): 10.8 |                              | PRC Over All Lanes (%): 10.8 |                       | Total Delay for Signalled Lanes (pcuHr): 7.37 |                                    | Total Delay Over All Lanes(pcuHr): 7.37 |                           | Cycle Time (s): 50               |                            |                      |

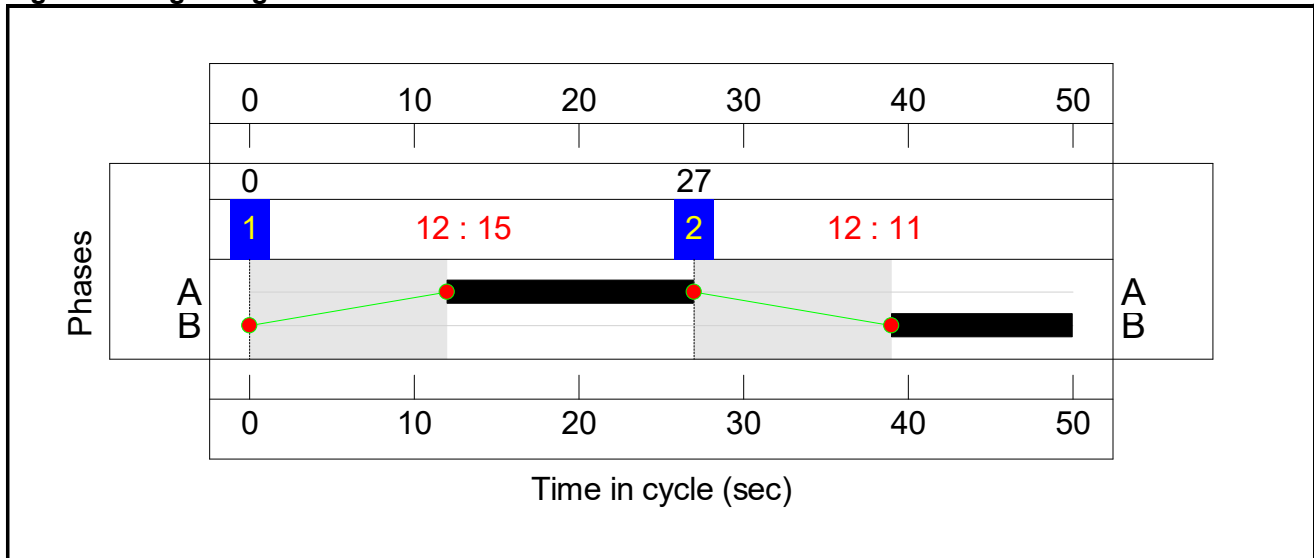
**Stage Sequence Diagram**



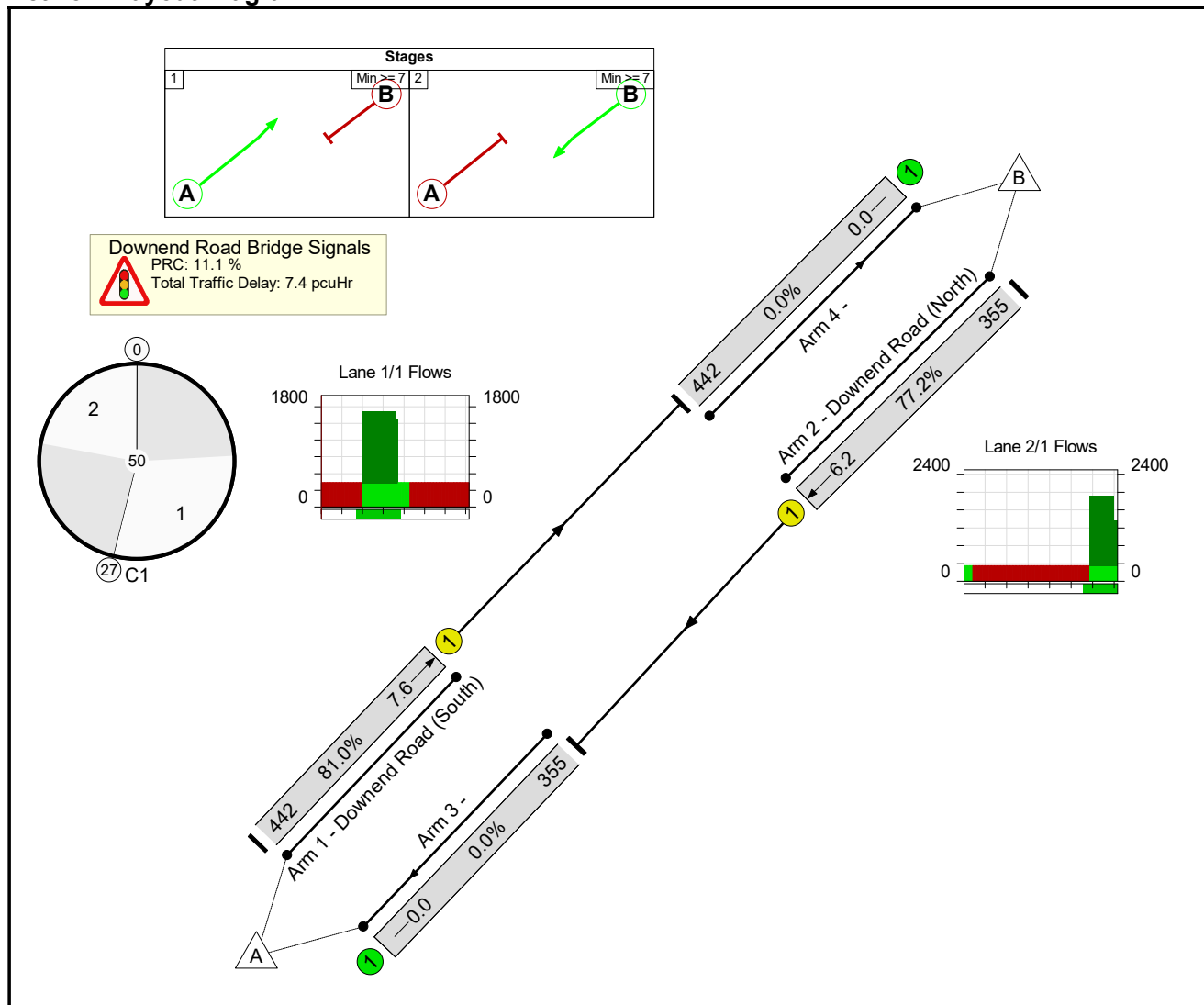
**Stage Timings**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 15 | 11 |
| Change Point | 0  | 27 |

**Signal Timings Diagram**



### Network Layout Diagram

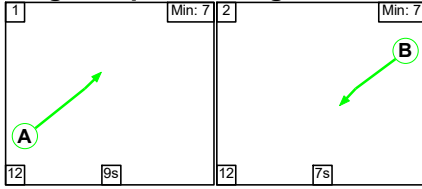


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item                               | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                   | Arrow Phase           | Num Greens                                    | Total Green (s)                    | Arrow Green (s)                         | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|------------------------------|-----------------------|---|------------------------------------|---|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 81.0%                |
| <b>Downend Road Bridge Signals</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 81.0%                |
| 1/1                                | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A                            |                       | 1   | 15                                 | -                                       | 442                       | 1705                             | 546                        | 81.0%                |
| 2/1                                | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B                            |                       | 1   | 11                                 | -                                       | 355                       | 1915                             | 460                        | 77.2%                |
| 3/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 355                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 442                       | Inf                              | Inf                        | 0.0%                 |
| Item                               | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)  | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr)                  | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr)                     | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b> | -                          | -             | 0                                 | 0                            | 0                            | 3.7                   | 3.7   | 0.0                                | 7.4                                     | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b> | -                          | -             | 0                                 | 0                            | 0                            | 3.7                   | 3.7   | 0.0                                | 7.4                                     | -                         | -                                | -                          | -                    |
| 1/1                                | 442                        | 442           | -                                 | -                            | -                            | 1.9                   | 2.1   | -                                  | 4.0                                     | 32.3                      | 5.5                              | 2.1                        | 7.6                  |
| 2/1                                | 355                        | 355           | -                                 | -                            | -                            | 1.7                   | 1.6   | -                                  | 3.4                                     | 34.4                      | 4.5                              | 1.6                        | 6.2                  |
| 3/1                                | 355                        | 355           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                | 442                        | 442           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                 |                            |               | PRC for Signalled Lanes (%): 11.1 |                              | PRC Over All Lanes (%): 11.1 |                       | Total Delay for Signalled Lanes (pcuHr): 7.36 |                                    | Total Delay Over All Lanes(pcuHr): 7.36 |                           | Cycle Time (s): 50               |                            |                      |

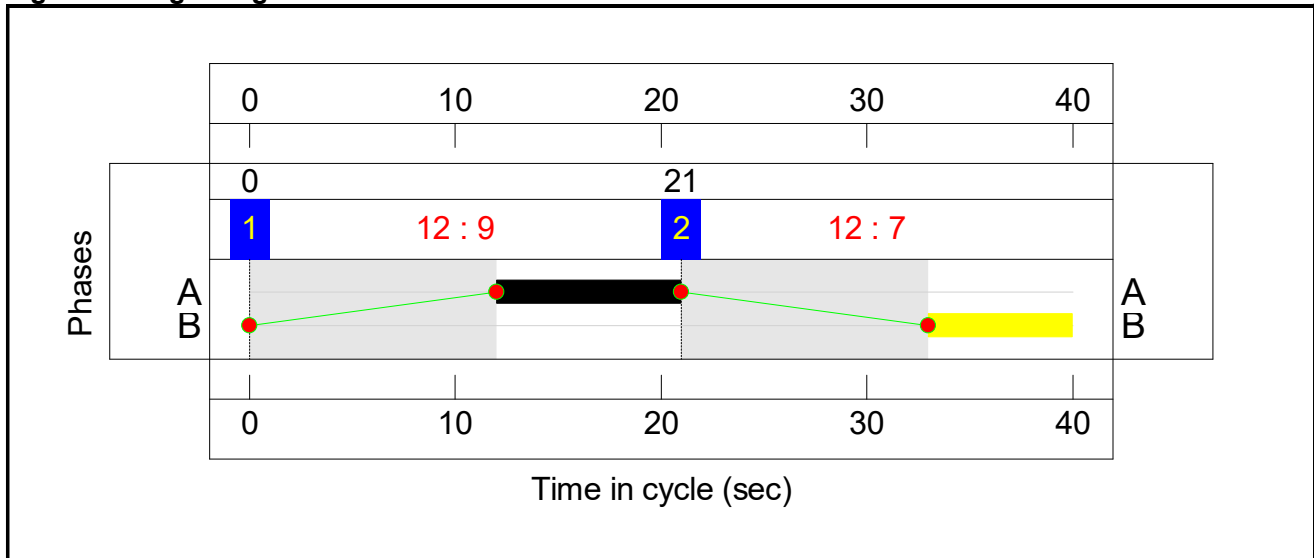
**Stage Sequence Diagram**



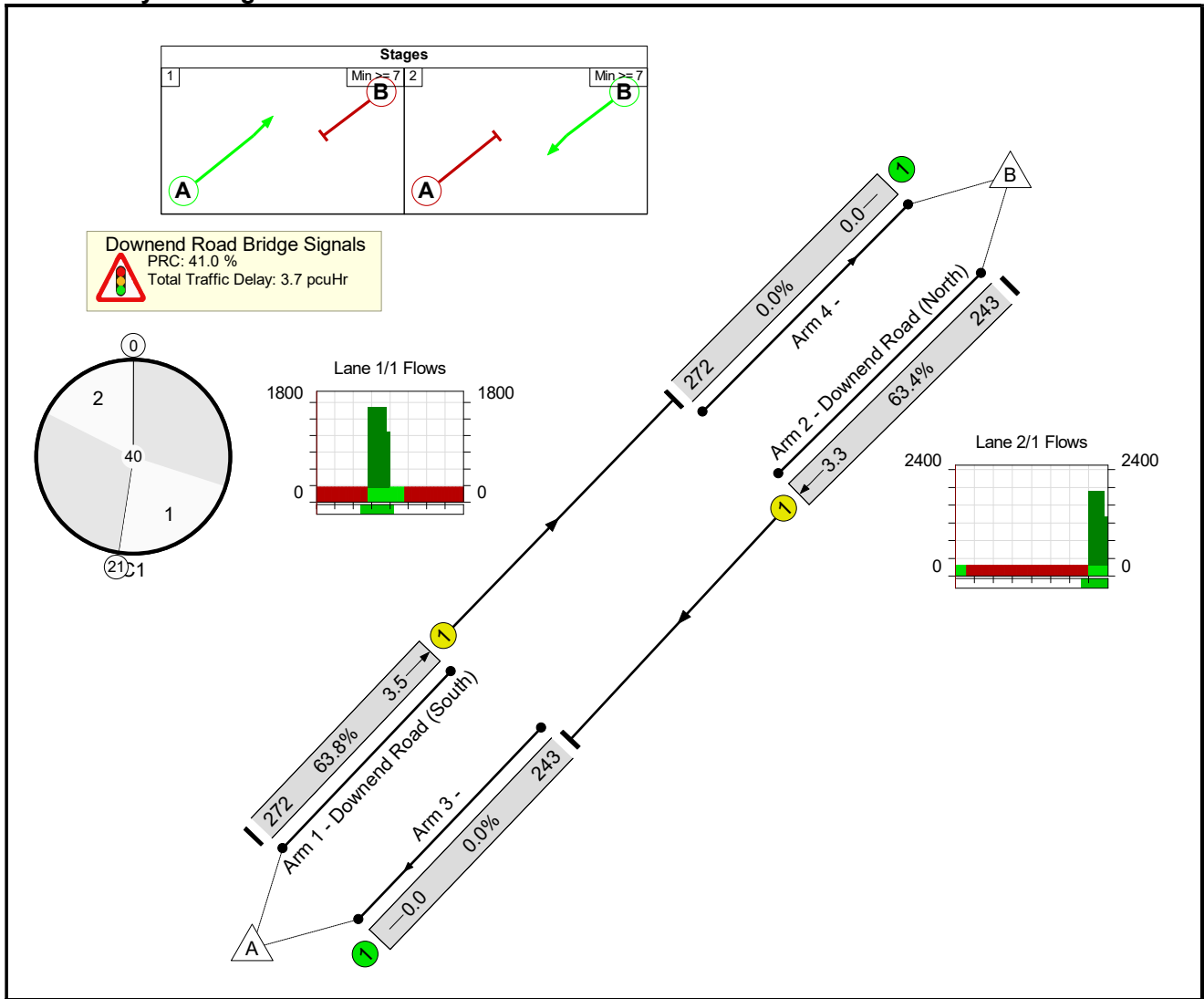
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 9 | 7  |
| Change Point | 0 | 21 |

**Signal Timings Diagram**



### Network Layout Diagram

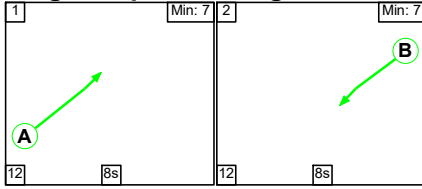


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item                               | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                                    | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)                         | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|---|-----------------------|------------------------------|------------------------------------|---|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b> | -                          | -             | N/A                               | -                            | -   |                       | -                            | -                                  | -                                       | -                         | -                                | -                          | 63.8%                |
| <b>Downend Road Bridge Signals</b> | -                          | -             | N/A                               | -                            | -   |                       | -                            | -                                  | -                                       | -                         | -                                | -                          | 63.8%                |
| 1/1                                | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A   |                       | 1                            | 9                                  | -                                       | 272                       | 1705                             | 426                        | 63.8%                |
| 2/1                                | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B   |                       | 1                            | 7                                  | -                                       | 243                       | 1915                             | 383                        | 63.4%                |
| 3/1                                |                            | U             | N/A                               | N/A                          | -   |                       | -                            | -                                  | -                                       | 243                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                |                            | U             | N/A                               | N/A                          | -   |                       | -                            | -                                  | -                                       | 272                       | Inf                              | Inf                        | 0.0%                 |
| Item                               | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)                   | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr)                     | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b> | -                          | -             | 0                                 | 0                            | 0   | 2.0                   | 1.7                          | 0.0                                | 3.7                                     | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b> | -                          | -             | 0                                 | 0                            | 0   | 2.0                   | 1.7                          | 0.0                                | 3.7                                     | -                         | -                                | -                          | -                    |
| 1/1                                | 272                        | 272           | -                                 | -                            | -   | 1.0                   | 0.9                          | -                                  | 1.9                                     | 24.9                      | 2.6                              | 0.9                        | 3.5                  |
| 2/1                                | 243                        | 243           | -                                 | -                            | -   | 1.0                   | 0.9                          | -                                  | 1.8                                     | 27.4                      | 2.4                              | 0.9                        | 3.3                  |
| 3/1                                | 243                        | 243           | -                                 | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                | 272                        | 272           | -                                 | -                            | -   | 0.0                   | 0.0                          | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                 |                            |               | PRC for Signalled Lanes (%): 41.0 |                              | Total Delay for Signalled Lanes (pcuHr): 3.73 |                       | PRC Over All Lanes (%): 41.0 |                                    | Total Delay Over All Lanes(pcuHr): 3.73 |                           | Cycle Time (s): 40               |                            |                      |

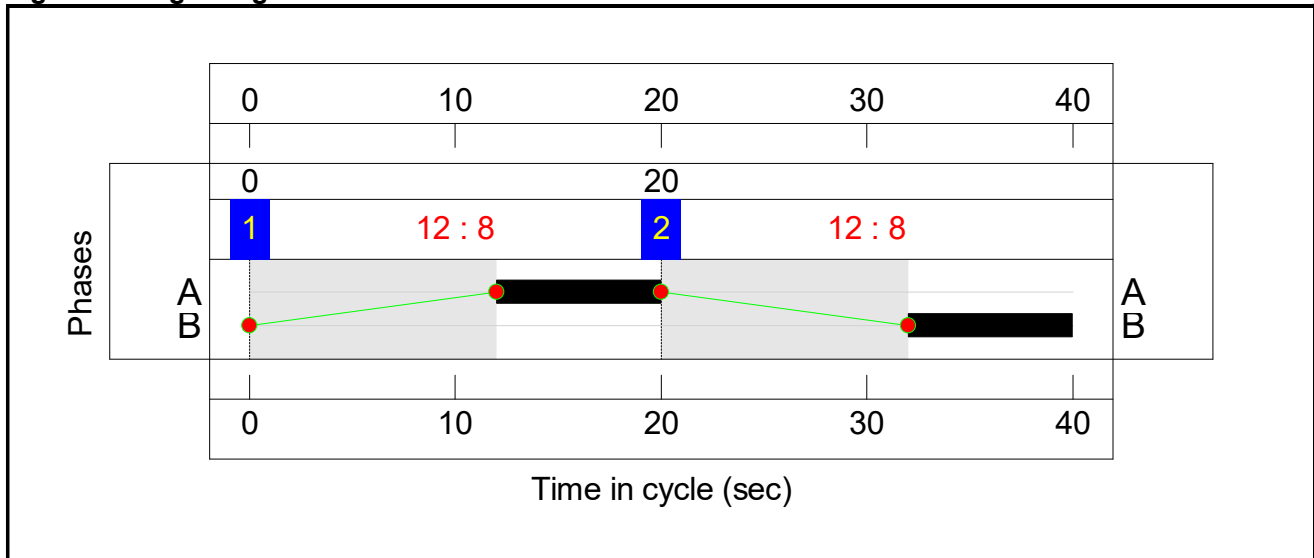
**Stage Sequence Diagram**



**Stage Timings**

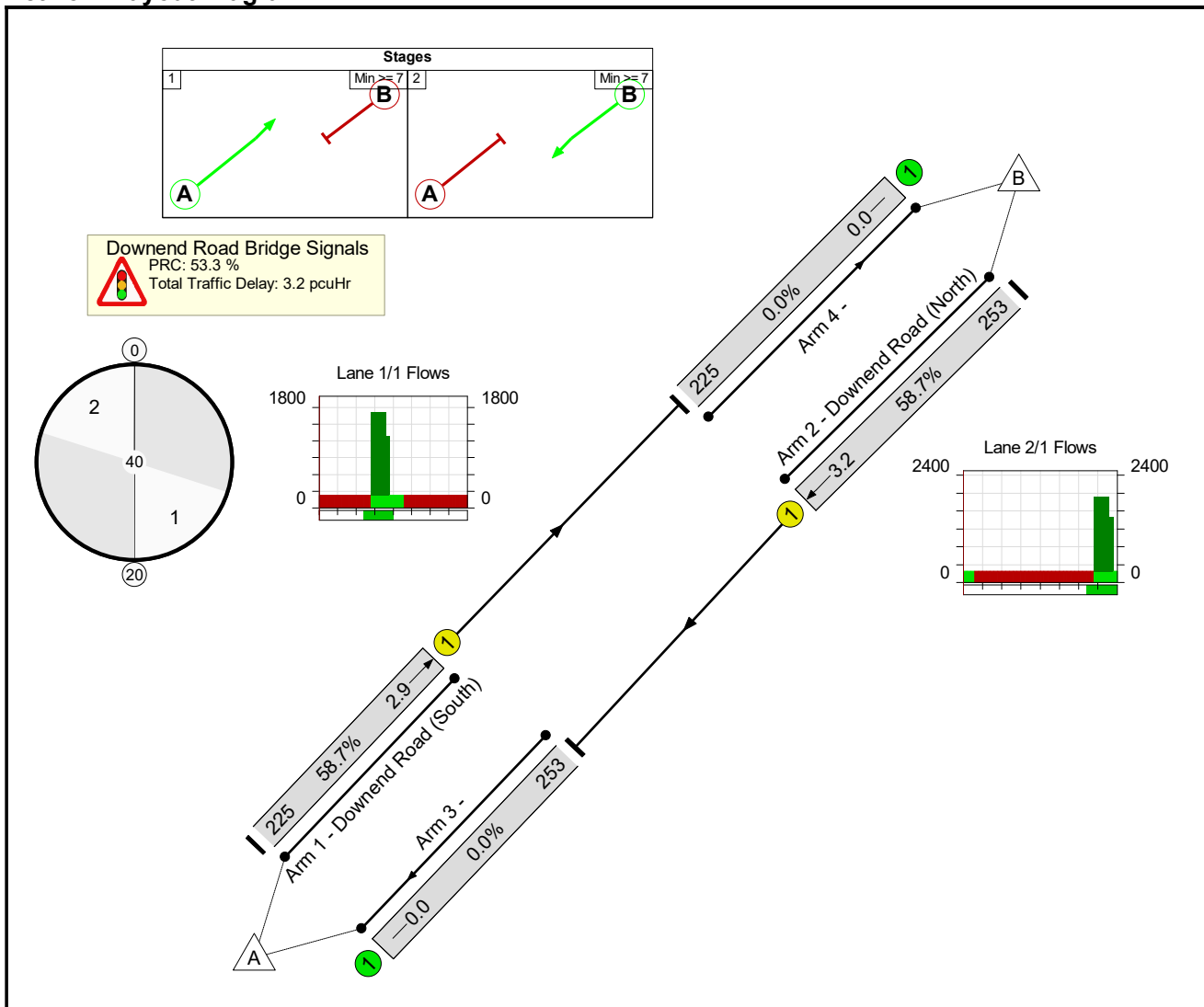
| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 8 | 8  |
| Change Point | 0 | 20 |

**Signal Timings Diagram**





### Network Layout Diagram

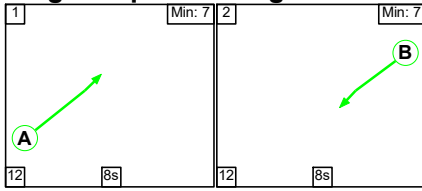


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 58.7%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 58.7%                |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 8                                  | -                   | 225                       | 1705                             | 384                        | 58.7%                |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 8                                  | -                   | 253                       | 1915                             | 431                        | 58.7%                |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 253                       | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 225                       | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 1.8                   | 1.4                          | 0.0                                | 3.2                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 1.8                   | 1.4                          | 0.0                                | 3.2                 | -                         | -                                | -                          | -                    |
| 1/1   | 225                        | 225           | -                     | -                            | -                           | 0.9                   | 0.7                          | -                                  | 1.6                 | 25.1                      | 2.2                              | 0.7                        | 2.9                  |
| 2/1   | 253                        | 253           | -                     | -                            | -                           | 1.0                   | 0.7                          | -                                  | 1.7                 | 23.9                      | 2.5                              | 0.7                        | 3.2                  |
| 3/1   | 253                        | 253           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 225                        | 225           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 53.3      Total Delay for Signalled Lanes (pcuHr): 3.25      Cycle Time (s): 40<br>PRC Over All Lanes (%): 53.3      Total Delay Over All Lanes(pcuHr): 3.25 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

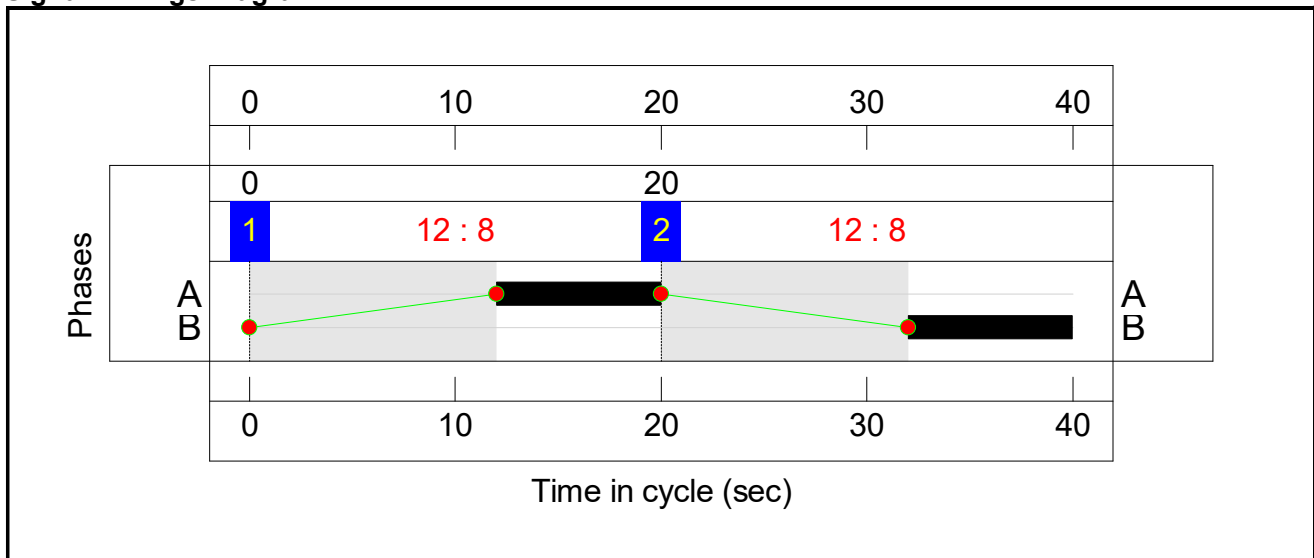
**Stage Sequence Diagram**



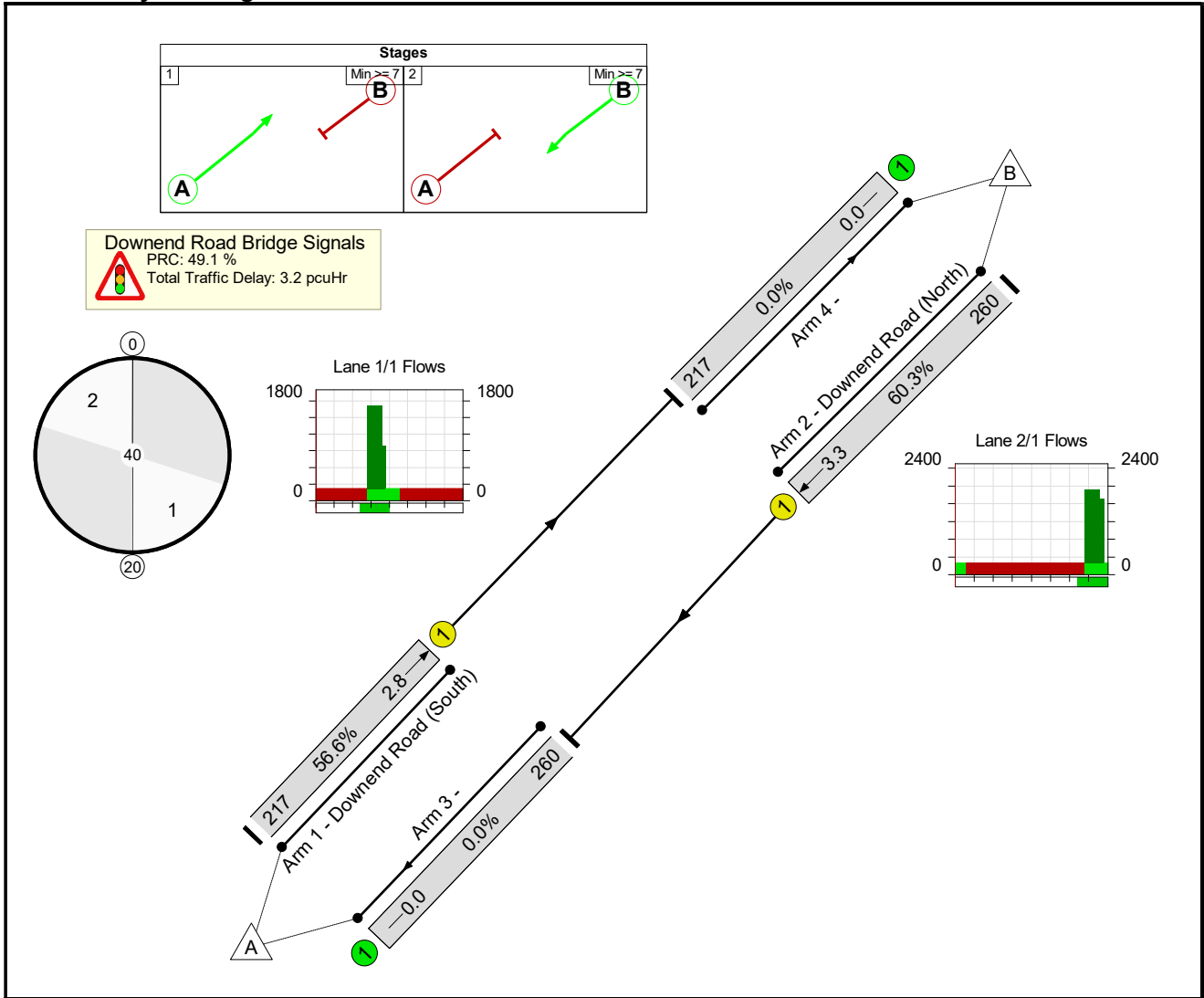
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 8 | 8  |
| Change Point | 0 | 20 |

**Signal Timings Diagram**



### Network Layout Diagram

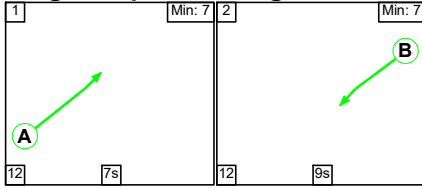


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 60.3%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 60.3%                |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 8                                  | -                   | 217                       | 1705                             | 384                        | 56.6%                |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 8                                  | -                   | 260                       | 1915                             | 431                        | 60.3%                |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 260                       | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 217                       | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 1.8                   | 1.4                          | 0.0                                | 3.2                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 1.8                   | 1.4                          | 0.0                                | 3.2                 | -                         | -                                | -                          | -                    |
| 1/1   | 217                        | 217           | -                     | -                            | -                           | 0.8                   | 0.6                          | -                                  | 1.5                 | 24.5                      | 2.1                              | 0.6                        | 2.8                  |
| 2/1   | 260                        | 260           | -                     | -                            | -                           | 1.0                   | 0.8                          | -                                  | 1.8                 | 24.4                      | 2.5                              | 0.8                        | 3.3                  |
| 3/1   | 260                        | 260           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 217                        | 217           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 49.1      Total Delay for Signalled Lanes (pcuHr): 3.24      Cycle Time (s): 40<br>PRC Over All Lanes (%): 49.1      Total Delay Over All Lanes(pcuHr): 3.24 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

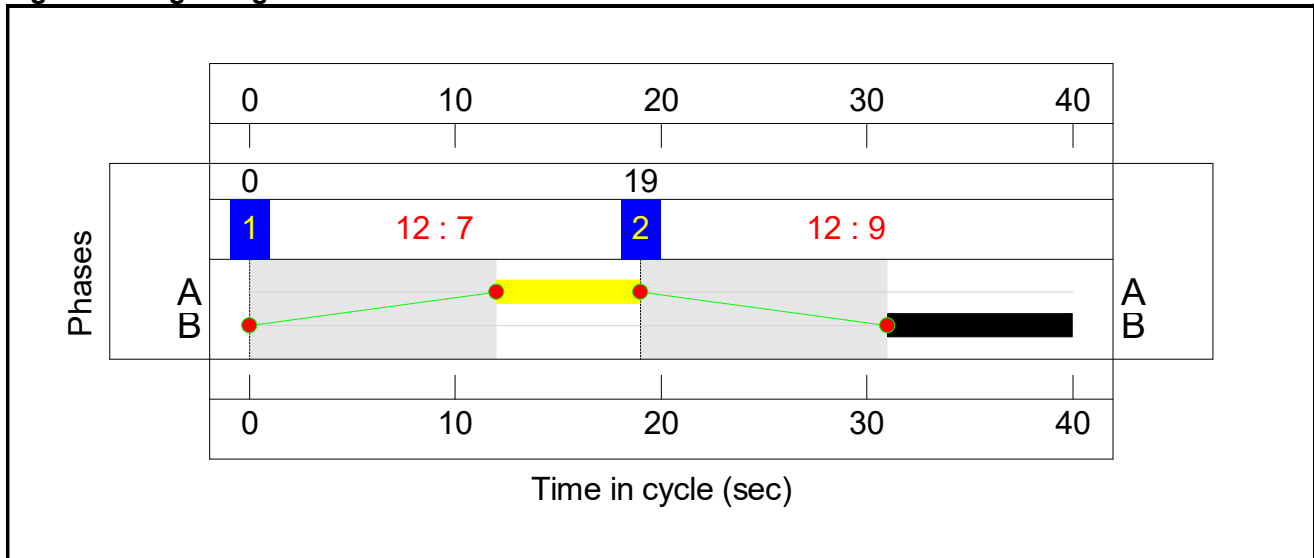
**Stage Sequence Diagram**



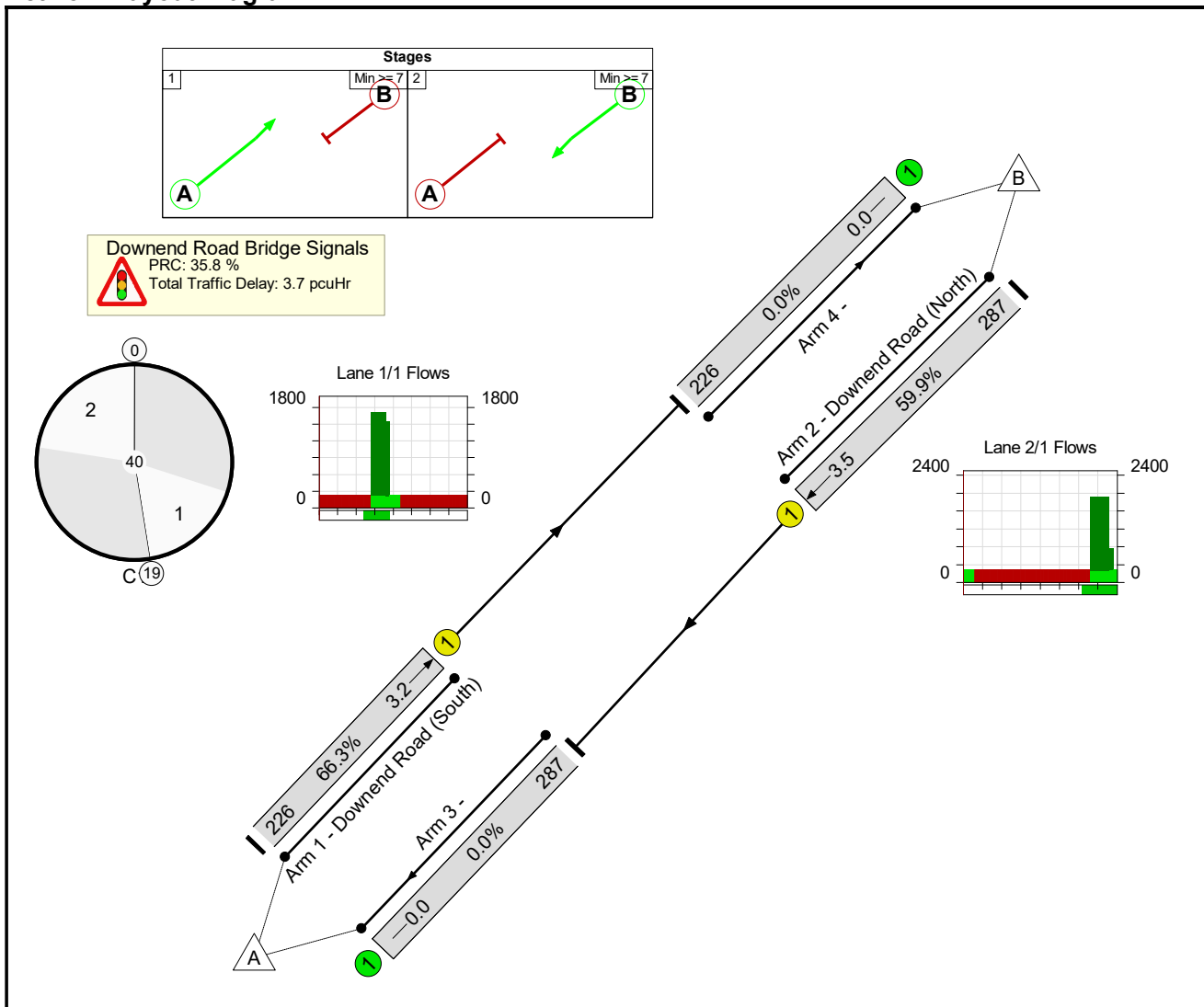
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 9  |
| Change Point | 0 | 19 |

**Signal Timings Diagram**



### Network Layout Diagram



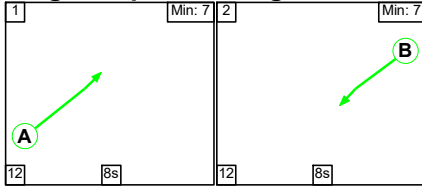
JCT Revised Submission Full Input Data And Results

**Network Results**

| Item                               | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                   | Arrow Phase           | Num Greens                                    | Total Green (s)                    | Arrow Green (s)                         | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|------------------------------|-----------------------|---|------------------------------------|---|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 66.3%                |
| <b>Downend Road Bridge Signals</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 66.3%                |
| 1/1                                | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A                            |                       | 1   | 7                                  | -                                       | 226                       | 1705                             | 341                        | 66.3%                |
| 2/1                                | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B                            |                       | 1   | 9                                  | -                                       | 287                       | 1915                             | 479                        | 59.9%                |
| 3/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 287                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 226                       | Inf                              | Inf                        | 0.0%                 |
| Item                               | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)  | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr)                  | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr)                     | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b> | -                          | -             | 0                                 | 0                            | 0                            | 2.0                   | 1.7   | 0.0                                | 3.7                                     | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b> | -                          | -             | 0                                 | 0                            | 0                            | 2.0                   | 1.7   | 0.0                                | 3.7                                     | -                         | -                                | -                          | -                    |
| 1/1                                | 226                        | 226           | -                                 | -                            | -                            | 0.9                   | 1.0   | -                                  | 1.9                                     | 30.2                      | 2.3                              | 1.0                        | 3.2                  |
| 2/1                                | 287                        | 287           | -                                 | -                            | -                            | 1.1                   | 0.7   | -                                  | 1.8                                     | 22.6                      | 2.8                              | 0.7                        | 3.5                  |
| 3/1                                | 287                        | 287           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                | 226                        | 226           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                 |                            |               | PRC for Signalled Lanes (%): 35.8 |                              | PRC Over All Lanes (%): 35.8 |                       | Total Delay for Signalled Lanes (pcuHr): 3.69 |                                    | Total Delay Over All Lanes(pcuHr): 3.69 |                           | Cycle Time (s): 40               |                            |                      |



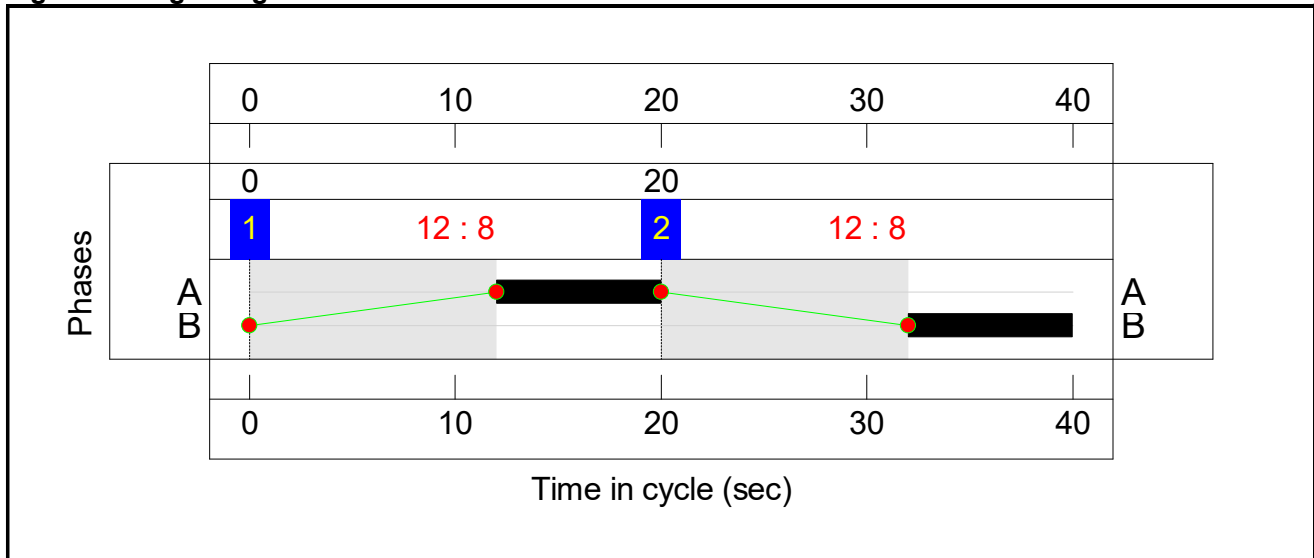
**Stage Sequence Diagram**



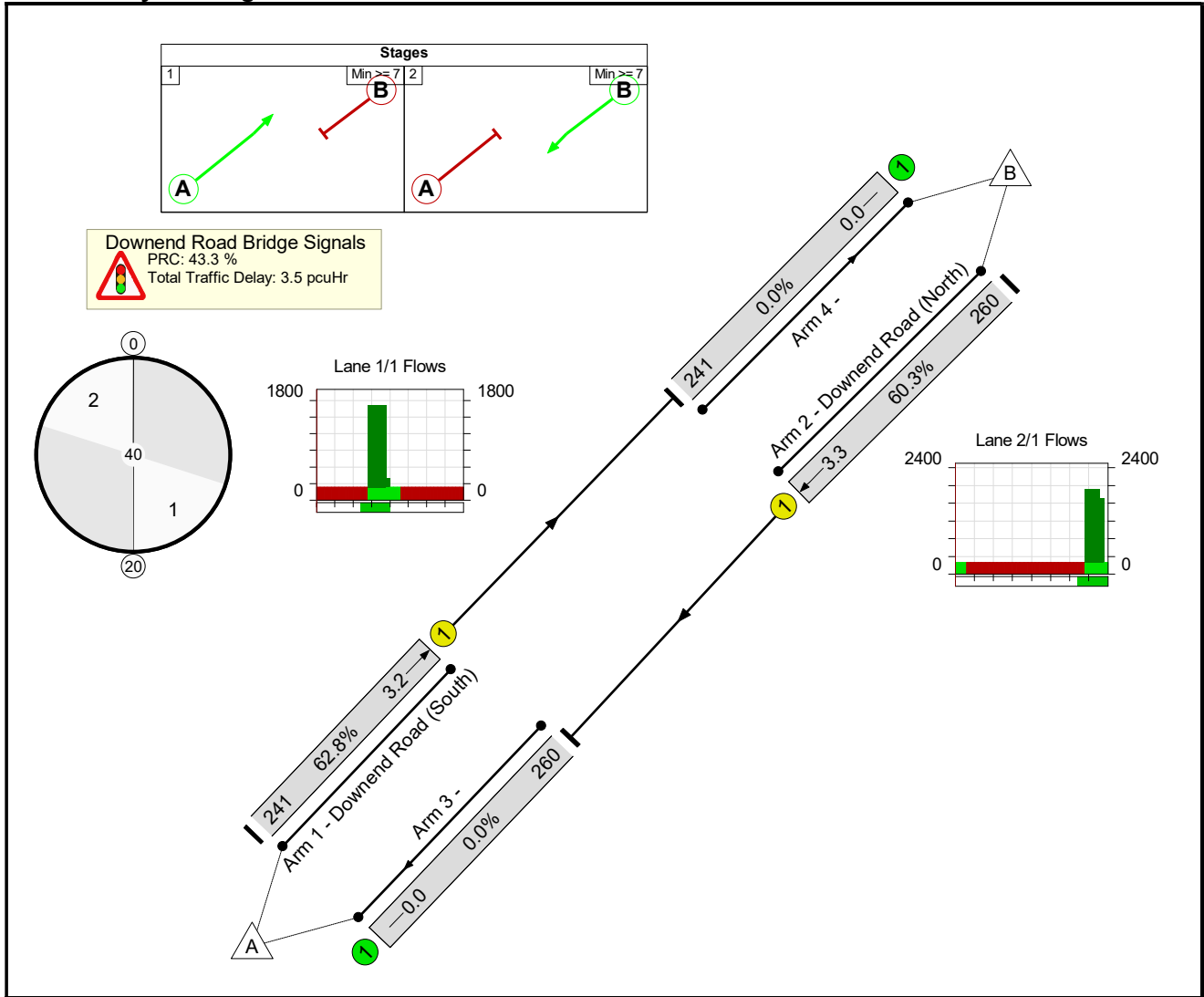
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 8 | 8  |
| Change Point | 0 | 20 |

**Signal Timings Diagram**



### Network Layout Diagram

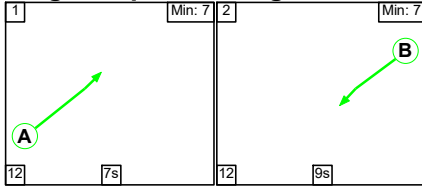


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item                               | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                   | Arrow Phase           | Num Greens                                    | Total Green (s)                    | Arrow Green (s)                         | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|------------------------------|-----------------------|---|------------------------------------|---|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 62.8%                |
| <b>Downend Road Bridge Signals</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 62.8%                |
| 1/1                                | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A                            |                       | 1   | 8                                  | -                                       | 241                       | 1705                             | 384                        | 62.8%                |
| 2/1                                | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B                            |                       | 1   | 8                                  | -                                       | 260                       | 1915                             | 431                        | 60.3%                |
| 3/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 260                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 241                       | Inf                              | Inf                        | 0.0%                 |
| Item                               | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)  | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr)                  | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr)                     | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b> | -                          | -             | 0                                 | 0                            | 0                            | 1.9                   | 1.6   | 0.0                                | 3.5                                     | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b> | -                          | -             | 0                                 | 0                            | 0                            | 1.9                   | 1.6   | 0.0                                | 3.5                                     | -                         | -                                | -                          | -                    |
| 1/1                                | 241                        | 241           | -                                 | -                            | -                            | 0.9                   | 0.8   | -                                  | 1.8                                     | 26.5                      | 2.4                              | 0.8                        | 3.2                  |
| 2/1                                | 260                        | 260           | -                                 | -                            | -                            | 1.0                   | 0.8   | -                                  | 1.8                                     | 24.4                      | 2.5                              | 0.8                        | 3.3                  |
| 3/1                                | 260                        | 260           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                | 241                        | 241           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                 |                            |               | PRC for Signalled Lanes (%): 43.3 |                              | PRC Over All Lanes (%): 43.3 |                       | Total Delay for Signalled Lanes (pcuHr): 3.53 |                                    | Total Delay Over All Lanes(pcuHr): 3.53 |                           | Cycle Time (s): 40               |                            |                      |

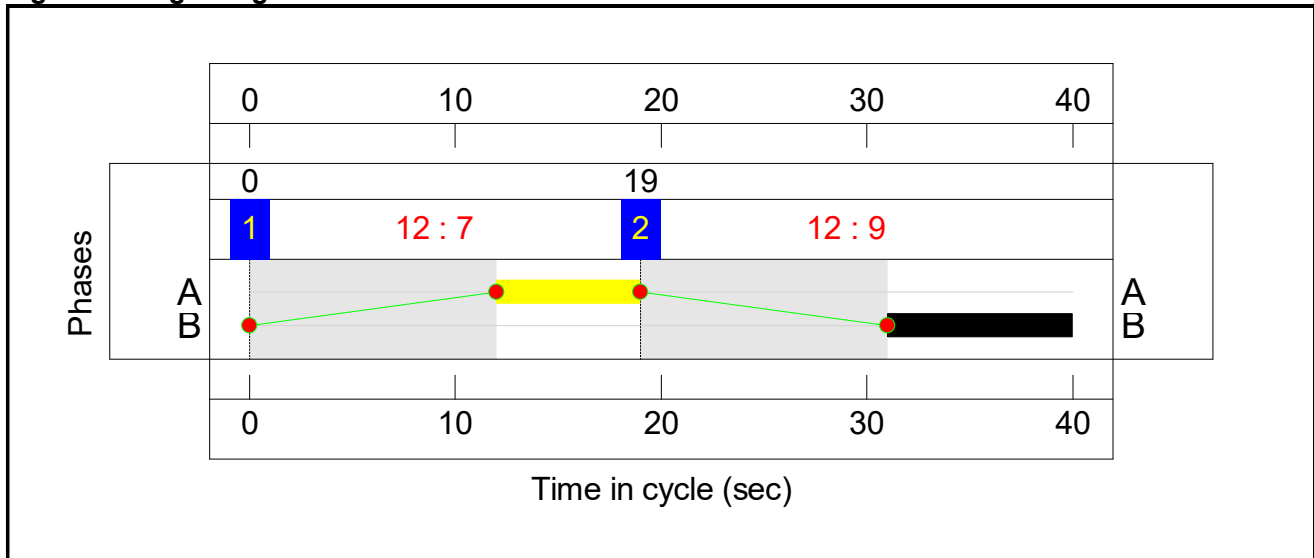
**Stage Sequence Diagram**



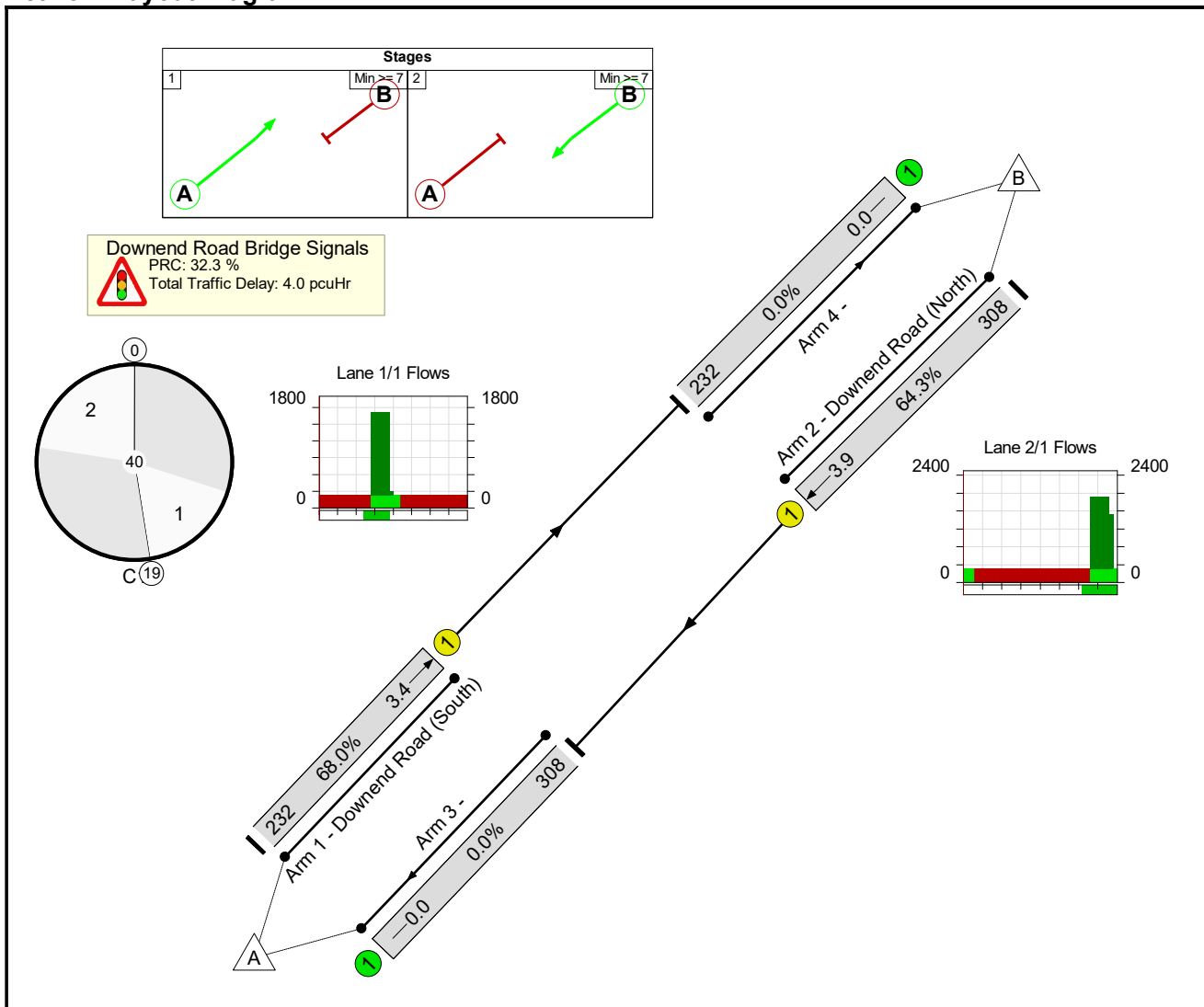
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 9  |
| Change Point | 0 | 19 |

**Signal Timings Diagram**



### Network Layout Diagram

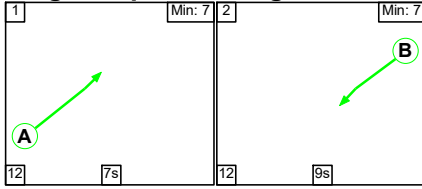


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 68.0%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 68.0%                |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 232                       | 1705                             | 341                        | 68.0%                |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 9                                  | -                   | 308                       | 1915                             | 479                        | 64.3%                |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 308                       | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 232                       | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 2.1                   | 1.9                          | 0.0                                | 4.0                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 2.1                   | 1.9                          | 0.0                                | 4.0                 | -                         | -                                | -                          | -                    |
| 1/1   | 232                        | 232           | -                     | -                            | -                           | 1.0                   | 1.0                          | -                                  | 2.0                 | 31.0                      | 2.4                              | 1.0                        | 3.4                  |
| 2/1   | 308                        | 308           | -                     | -                            | -                           | 1.1                   | 0.9                          | -                                  | 2.0                 | 23.9                      | 3.0                              | 0.9                        | 3.9                  |
| 3/1   | 308                        | 308           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 232                        | 232           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 32.3      Total Delay for Signalled Lanes (pcuHr): 4.04      Cycle Time (s): 40<br>PRC Over All Lanes (%): 32.3      Total Delay Over All Lanes(pcuHr): 4.04 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

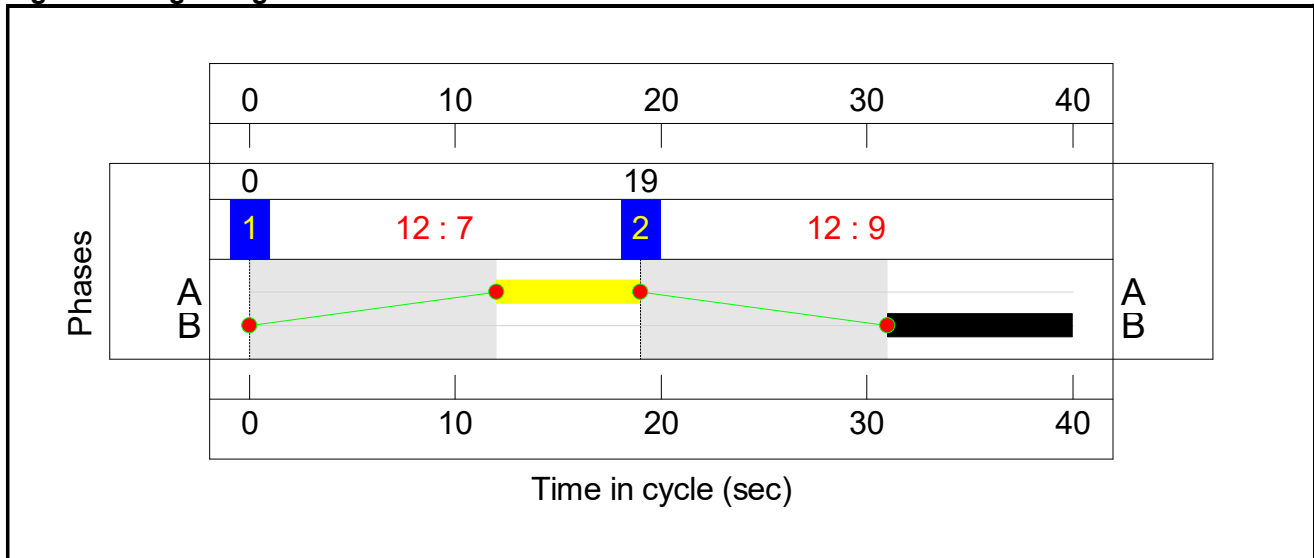
**Stage Sequence Diagram**



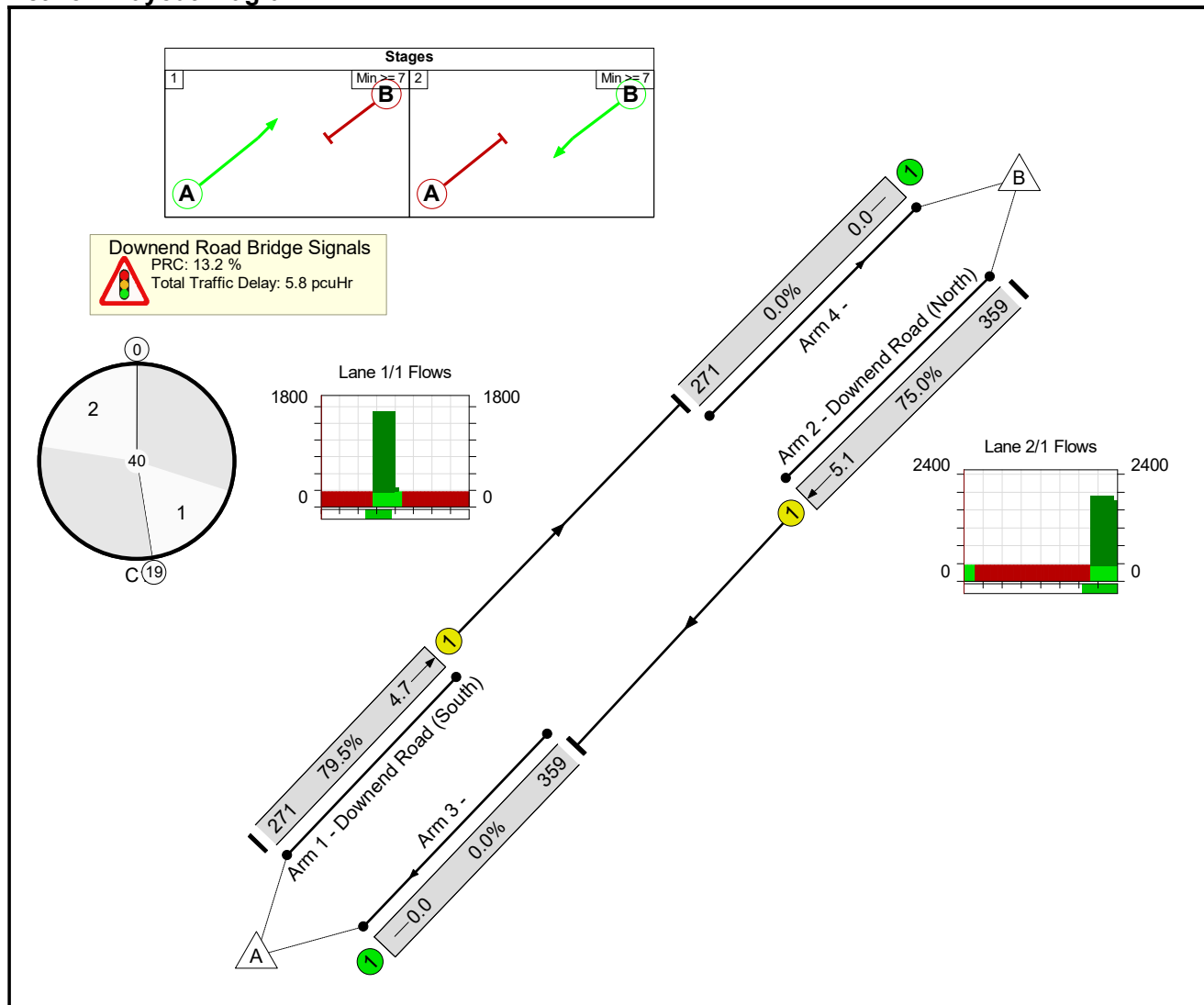
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 9  |
| Change Point | 0 | 19 |

**Signal Timings Diagram**



### Network Layout Diagram



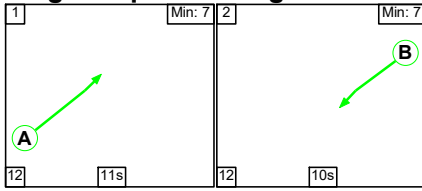


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 79.5%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 79.5%                |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 271                       | 1705                             | 341                        | 79.5%                |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 9                                  | -                   | 359                       | 1915                             | 479                        | 75.0%                |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 359                       | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 271                       | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 2.5                   | 3.3                          | 0.0                                | 5.8                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 2.5                   | 3.3                          | 0.0                                | 5.8                 | -                         | -                                | -                          | -                    |
| 1/1   | 271                        | 271           | -                     | -                            | -                           | 1.1                   | 1.8                          | -                                  | 3.0                 | 39.7                      | 2.9                              | 1.8                        | 4.7                  |
| 2/1   | 359                        | 359           | -                     | -                            | -                           | 1.4                   | 1.5                          | -                                  | 2.8                 | 28.5                      | 3.6                              | 1.5                        | 5.1                  |
| 3/1   | 359                        | 359           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 271                        | 271           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 13.2      Total Delay for Signalled Lanes (pcuHr): 5.83      Cycle Time (s): 40<br>PRC Over All Lanes (%): 13.2      Total Delay Over All Lanes(pcuHr): 5.83 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

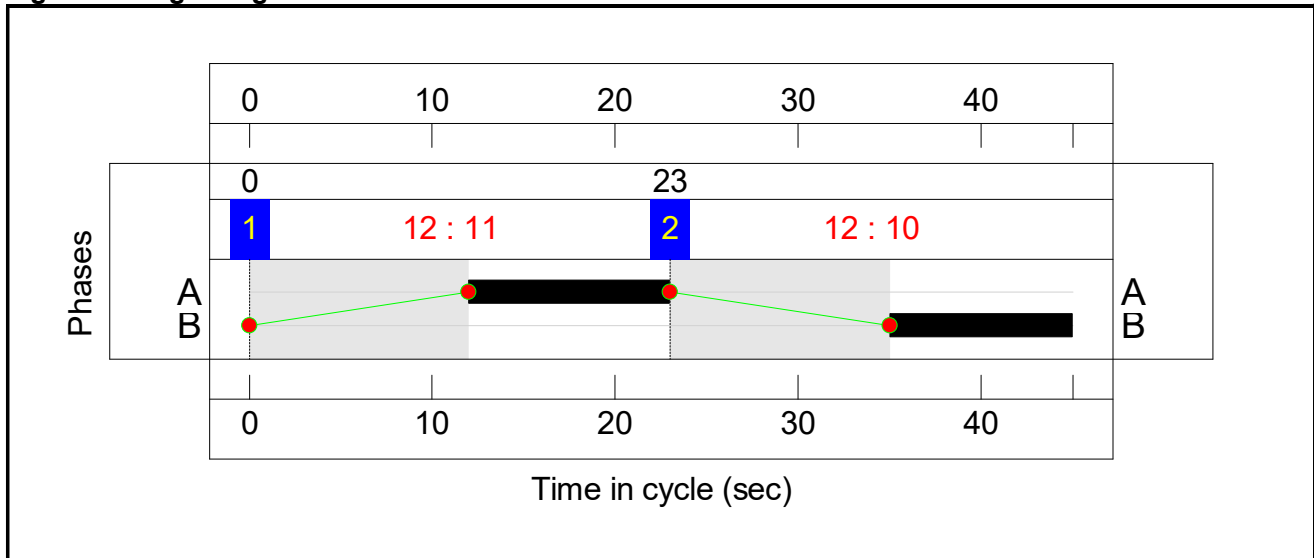
**Stage Sequence Diagram**



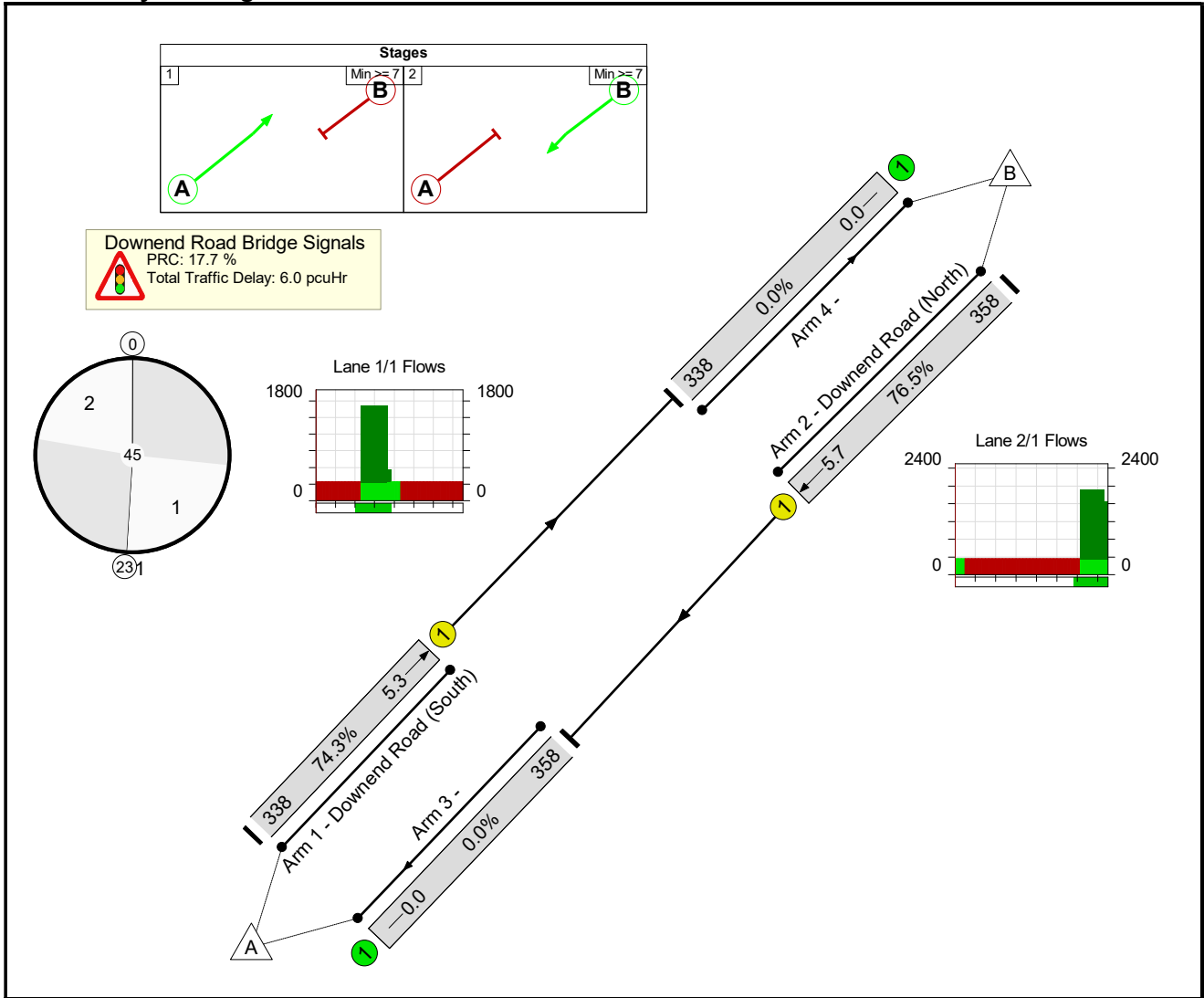
**Stage Timings**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 11 | 10 |
| Change Point | 0  | 23 |

**Signal Timings Diagram**



### Network Layout Diagram

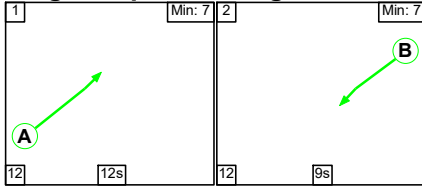


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item                               | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                   | Arrow Phase           | Num Greens                                    | Total Green (s)                    | Arrow Green (s)                         | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|------------------------------|-----------------------|---|------------------------------------|---|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 76.5%                |
| <b>Downend Road Bridge Signals</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 76.5%                |
| 1/1                                | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A                            |                       | 1   | 11                                 | -                                       | 338                       | 1705                             | 455                        | 74.3%                |
| 2/1                                | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B                            |                       | 1   | 10                                 | -                                       | 358                       | 1915                             | 468                        | 76.5%                |
| 3/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 358                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 338                       | Inf                              | Inf                        | 0.0%                 |
| Item                               | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)  | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr)                  | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr)                     | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b> | -                          | -             | 0                                 | 0                            | 0                            | 3.0                   | 3.0   | 0.0                                | 6.0                                     | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b> | -                          | -             | 0                                 | 0                            | 0                            | 3.0                   | 3.0   | 0.0                                | 6.0                                     | -                         | -                                | -                          | -                    |
| 1/1                                | 338                        | 338           | -                                 | -                            | -                            | 1.4                   | 1.4   | -                                  | 2.8                                     | 30.2                      | 3.8                              | 1.4                        | 5.3                  |
| 2/1                                | 358                        | 358           | -                                 | -                            | -                            | 1.6                   | 1.6   | -                                  | 3.2                                     | 31.7                      | 4.1                              | 1.6                        | 5.7                  |
| 3/1                                | 358                        | 358           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                | 338                        | 338           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                 |                            |               | PRC for Signalled Lanes (%): 17.7 |                              | PRC Over All Lanes (%): 17.7 |                       | Total Delay for Signalled Lanes (pcuHr): 5.98 |                                    | Total Delay Over All Lanes(pcuHr): 5.98 |                           | Cycle Time (s): 45               |                            |                      |

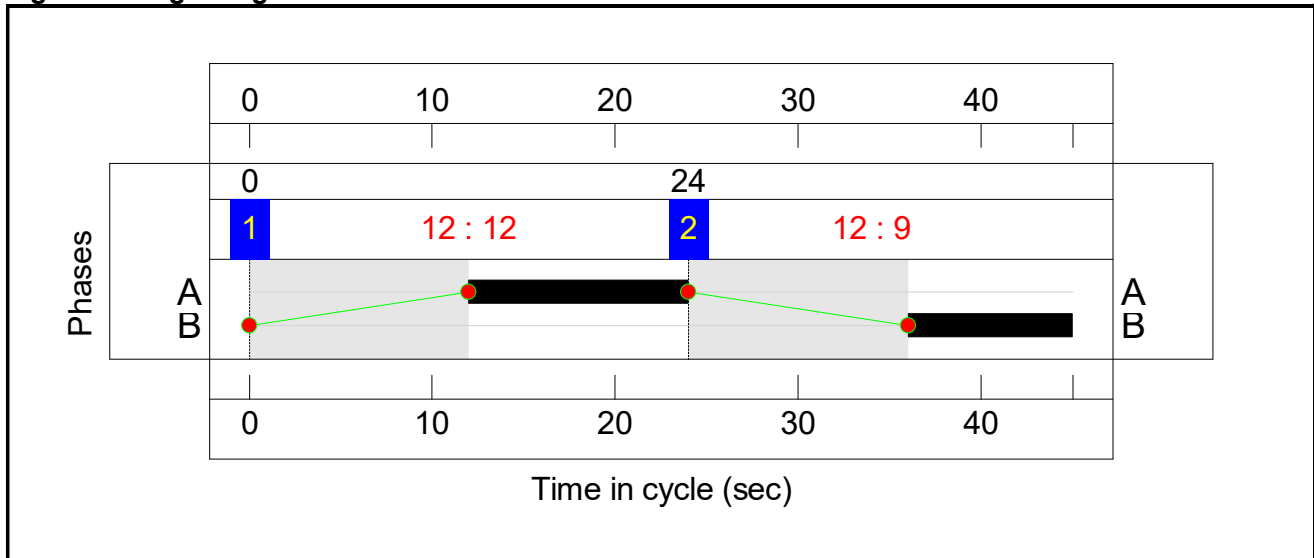
**Stage Sequence Diagram**



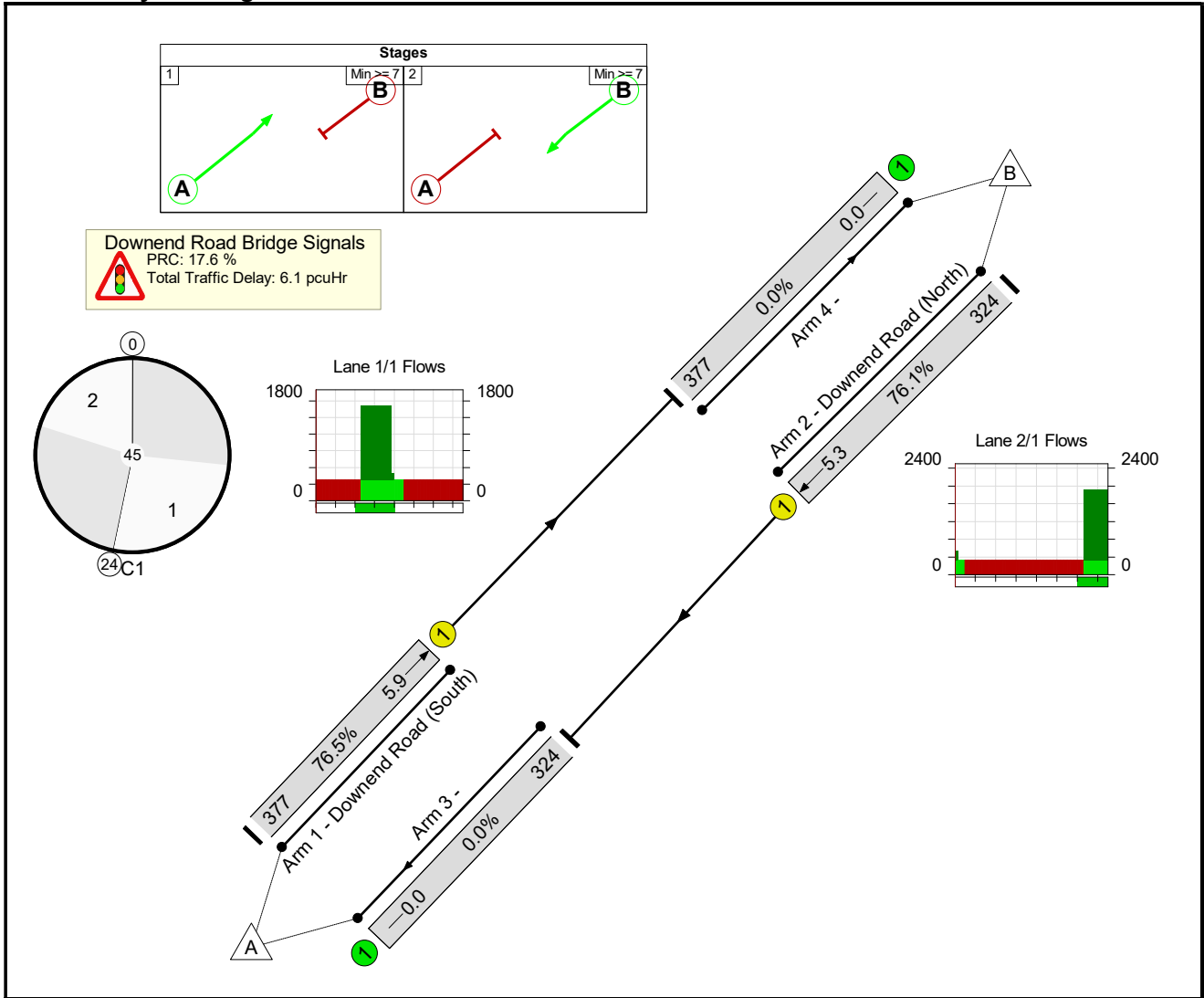
**Stage Timings**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 12 | 9  |
| Change Point | 0  | 24 |

**Signal Timings Diagram**



### Network Layout Diagram

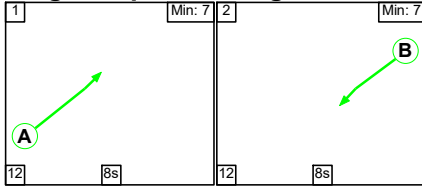


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item                               | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                   | Arrow Phase           | Num Greens                                    | Total Green (s)                    | Arrow Green (s)                         | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|------------------------------|-----------------------|---|------------------------------------|---|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 76.5%                |
| <b>Downend Road Bridge Signals</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 76.5%                |
| 1/1                                | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A                            |                       | 1   | 12                                 | -                                       | 377                       | 1705                             | 493                        | 76.5%                |
| 2/1                                | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B                            |                       | 1   | 9                                  | -                                       | 324                       | 1915                             | 426                        | 76.1%                |
| 3/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 324                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 377                       | Inf                              | Inf                        | 0.0%                 |
| Item                               | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)  | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr)                  | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr)                     | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b> | -                          | -             | 0                                 | 0                            | 0                            | 3.0                   | 3.1   | 0.0                                | 6.1                                     | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b> | -                          | -             | 0                                 | 0                            | 0                            | 3.0                   | 3.1   | 0.0                                | 6.1                                     | -                         | -                                | -                          | -                    |
| 1/1                                | 377                        | 377           | -                                 | -                            | -                            | 1.5                   | 1.6   | -                                  | 3.1                                     | 29.8                      | 4.3                              | 1.6                        | 5.9                  |
| 2/1                                | 324                        | 324           | -                                 | -                            | -                            | 1.5                   | 1.5   | -                                  | 3.0                                     | 33.6                      | 3.8                              | 1.5                        | 5.3                  |
| 3/1                                | 324                        | 324           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                | 377                        | 377           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                 |                            |               | PRC for Signalled Lanes (%): 17.6 |                              | PRC Over All Lanes (%): 17.6 |                       | Total Delay for Signalled Lanes (pcuHr): 6.14 |                                    | Total Delay Over All Lanes(pcuHr): 6.14 |                           | Cycle Time (s): 45               |                            |                      |

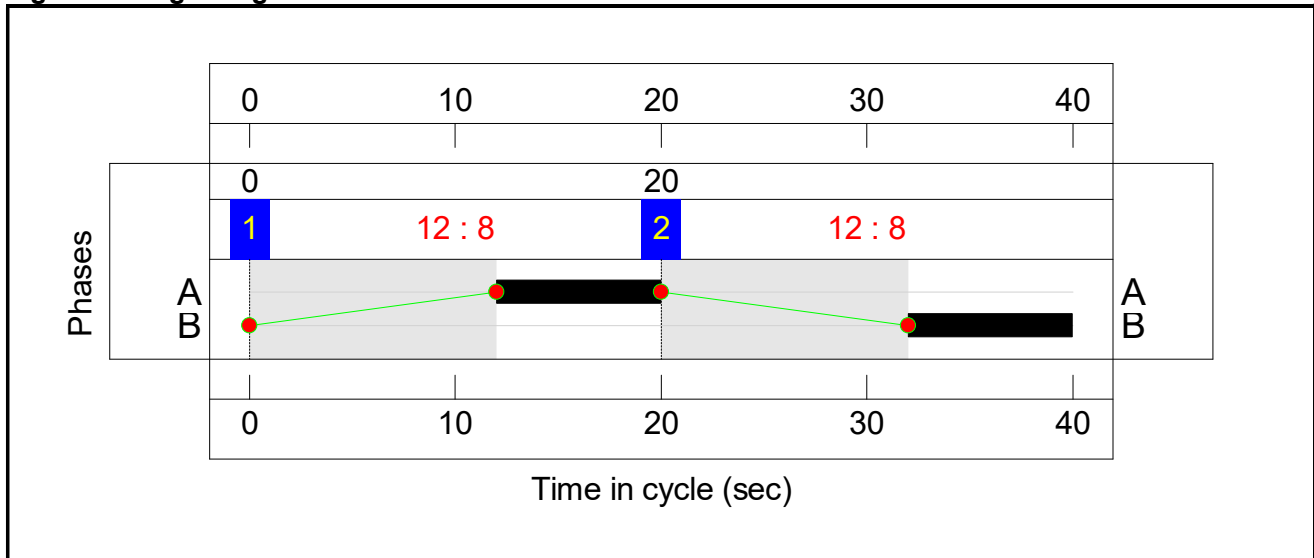
**Stage Sequence Diagram**



**Stage Timings**

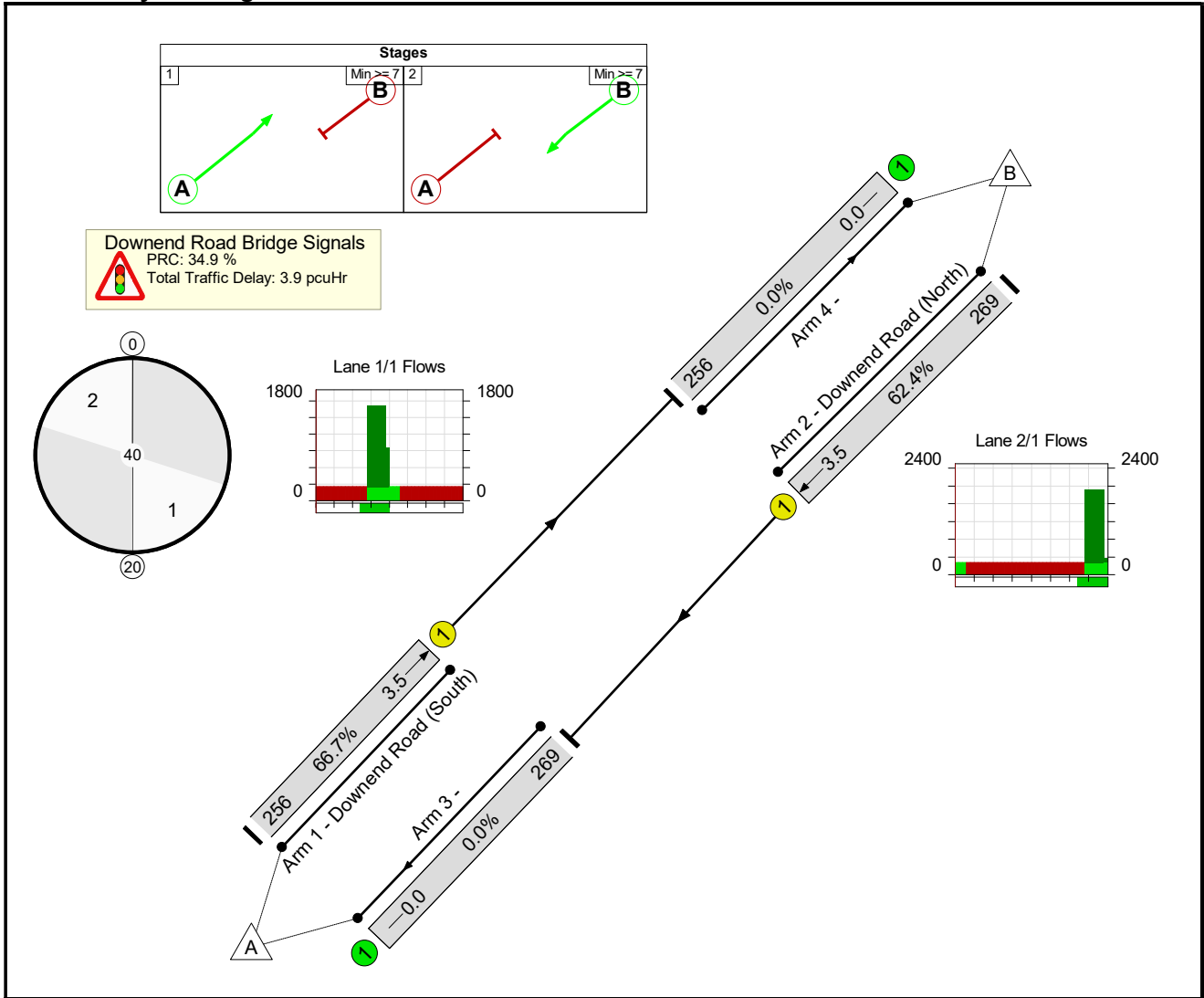
| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 8 | 8  |
| Change Point | 0 | 20 |

**Signal Timings Diagram**





### Network Layout Diagram

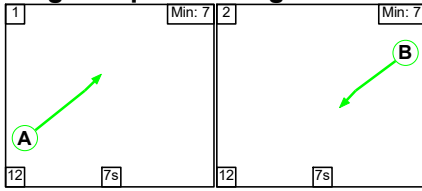


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item                               | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                   | Arrow Phase           | Num Greens                                    | Total Green (s)                    | Arrow Green (s)                         | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|------------------------------|-----------------------|---|------------------------------------|---|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 66.7%                |
| <b>Downend Road Bridge Signals</b> | -                          | -             | N/A                               | -                            | -                            |                       | -   | -                                  | -                                       | -                         | -                                | -                          | 66.7%                |
| 1/1                                | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A                            |                       | 1   | 8                                  | -                                       | 256                       | 1705                             | 384                        | 66.7%                |
| 2/1                                | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B                            |                       | 1   | 8                                  | -                                       | 269                       | 1915                             | 431                        | 62.4%                |
| 3/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 269                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -   | -                                  | -                                       | 256                       | Inf                              | Inf                        | 0.0%                 |
| Item                               | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)  | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr)                  | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr)                     | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b> | -                          | -             | 0                                 | 0                            | 0                            | 2.1                   | 1.8   | 0.0                                | 3.9                                     | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b> | -                          | -             | 0                                 | 0                            | 0                            | 2.1                   | 1.8   | 0.0                                | 3.9                                     | -                         | -                                | -                          | -                    |
| 1/1                                | 256                        | 256           | -                                 | -                            | -                            | 1.0                   | 1.0   | -                                  | 2.0                                     | 28.0                      | 2.6                              | 1.0                        | 3.5                  |
| 2/1                                | 269                        | 269           | -                                 | -                            | -                            | 1.0                   | 0.8   | -                                  | 1.9                                     | 25.0                      | 2.7                              | 0.8                        | 3.5                  |
| 3/1                                | 269                        | 269           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                | 256                        | 256           | -                                 | -                            | -                            | 0.0                   | 0.0   | -                                  | 0.0                                     | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                 |                            |               | PRC for Signalled Lanes (%): 34.9 |                              | PRC Over All Lanes (%): 34.9 |                       | Total Delay for Signalled Lanes (pcuHr): 3.86 |                                    | Total Delay Over All Lanes(pcuHr): 3.86 |                           | Cycle Time (s): 40               |                            |                      |

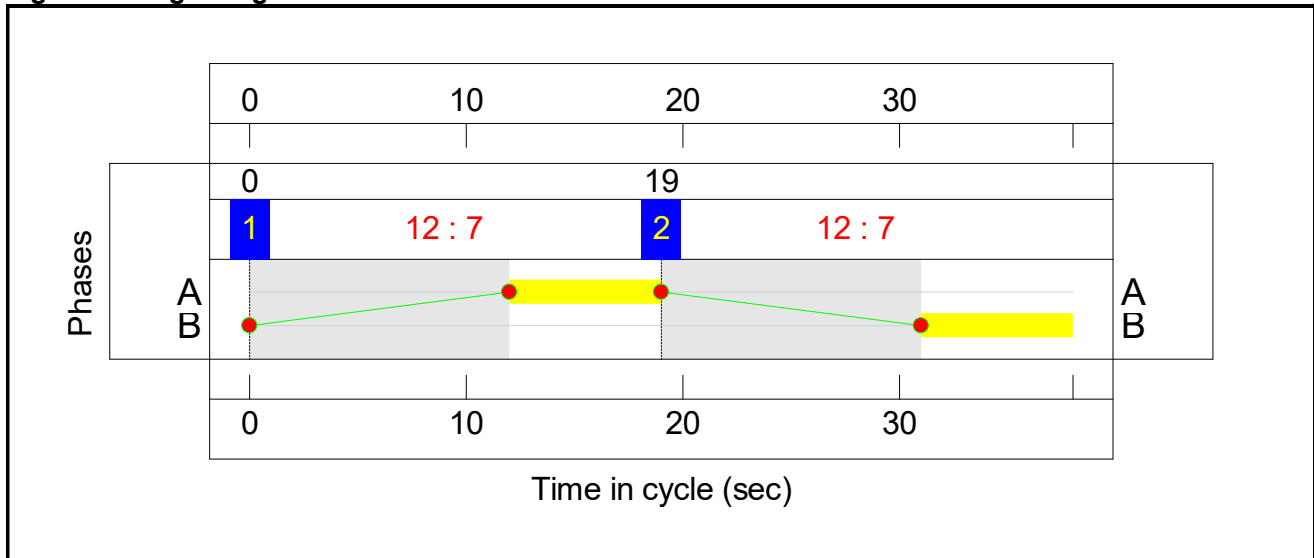
**Stage Sequence Diagram**



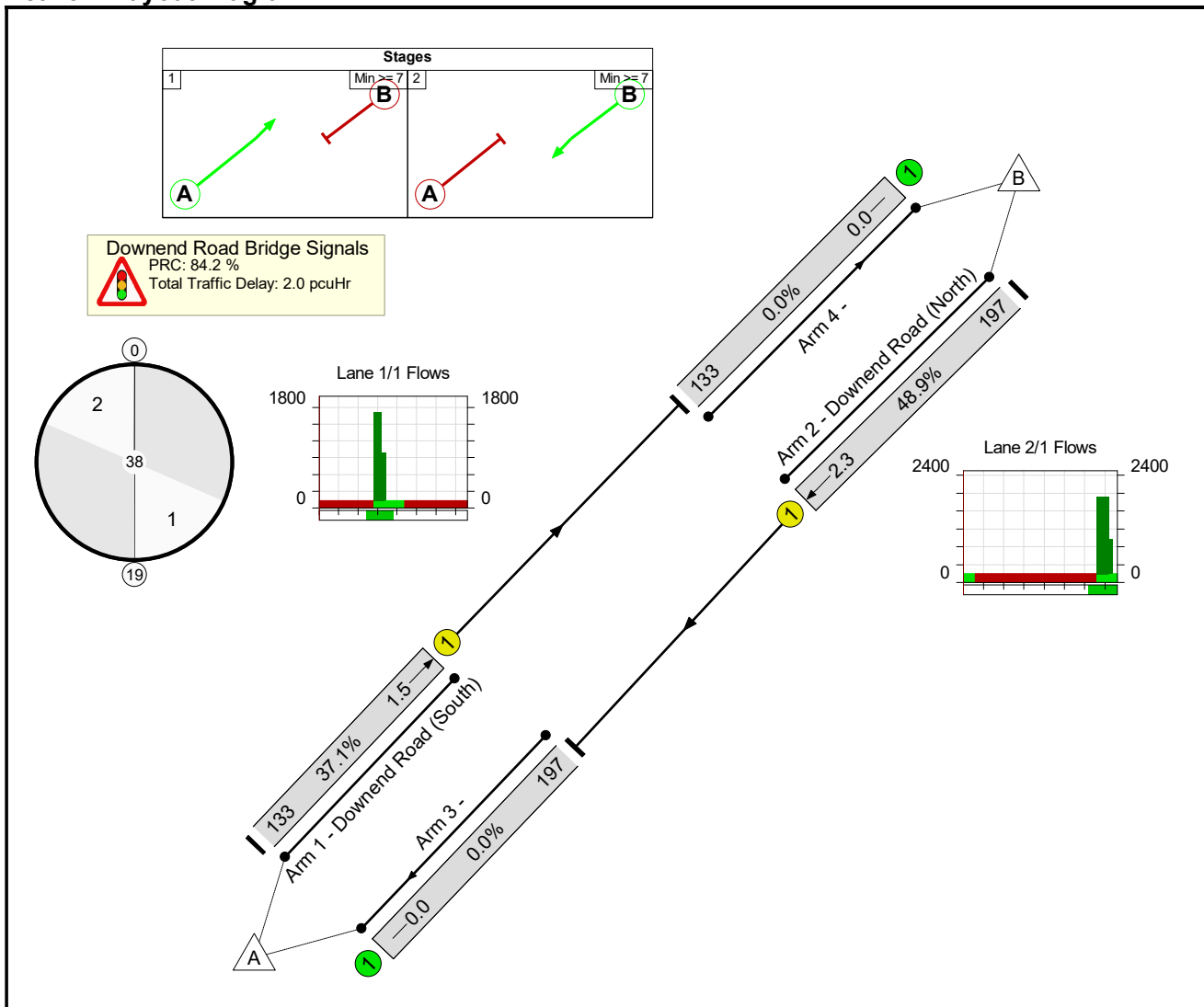
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 19 |

**Signal Timings Diagram**



### Network Layout Diagram

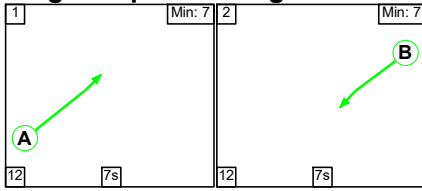


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item   | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|--|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 48.9%                |
| <b>Downend Road Bridge Signals</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 48.9%                |
| 1/1  | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 133                       | 1705                             | 359                        | 37.1%                |
| 2/1  | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 197                       | 1915                             | 403                        | 48.9%                |
| 3/1  |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 197                       | Inf                              | Inf                        | 0.0%                 |
| 4/1  |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 133                       | Inf                              | Inf                        | 0.0%                 |
| Item   | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>   | -                          | -             | 0                     | 0                            | 0                           | 1.2                   | 0.8                          | 0.0                                | 2.0                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>   | -                          | -             | 0                     | 0                            | 0                           | 1.2                   | 0.8                          | 0.0                                | 2.0                 | -                         | -                                | -                          | -                    |
| 1/1  | 133                        | 133           | -                     | -                            | -                           | 0.5                   | 0.3                          | -                                  | 0.8                 | 20.8                      | 1.2                              | 0.3                        | 1.5                  |
| 2/1  | 197                        | 197           | -                     | -                            | -                           | 0.7                   | 0.5                          | -                                  | 1.2                 | 21.9                      | 1.8                              | 0.5                        | 2.3                  |
| 3/1  | 197                        | 197           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1  | 133                        | 133           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| <p>C1      PRC for Signalled Lanes (%): 84.2      Total Delay for Signalled Lanes (pcuHr): 1.97      Cycle Time (s): 38<br/>                     PRC Over All Lanes (%): 84.2      Total Delay Over All Lanes(pcuHr): 1.97</p> |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

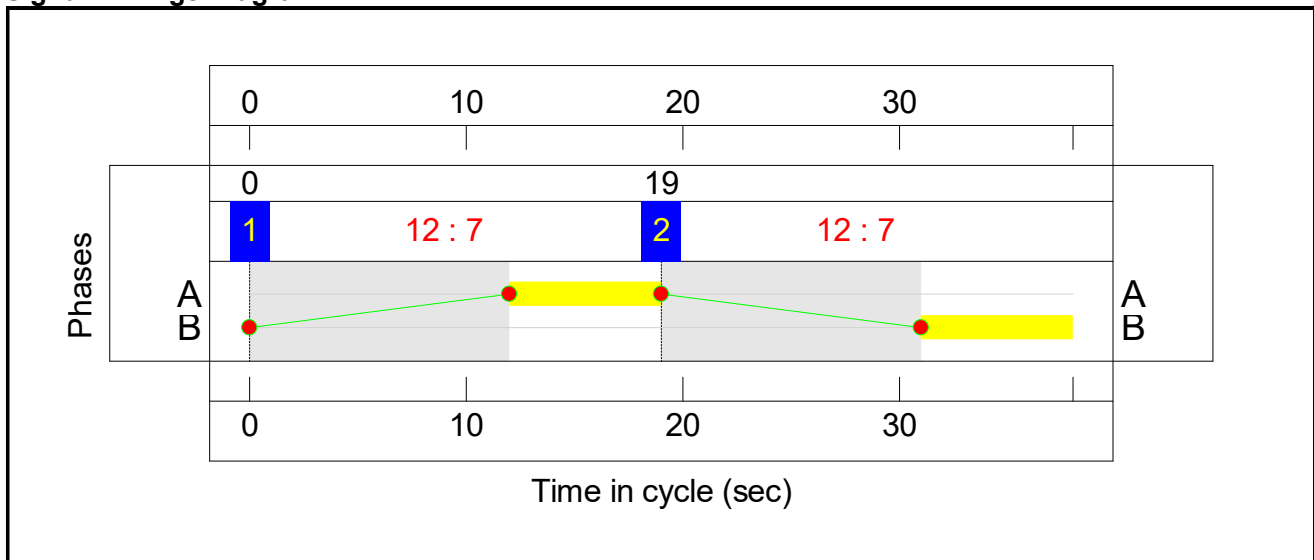
**Stage Sequence Diagram**



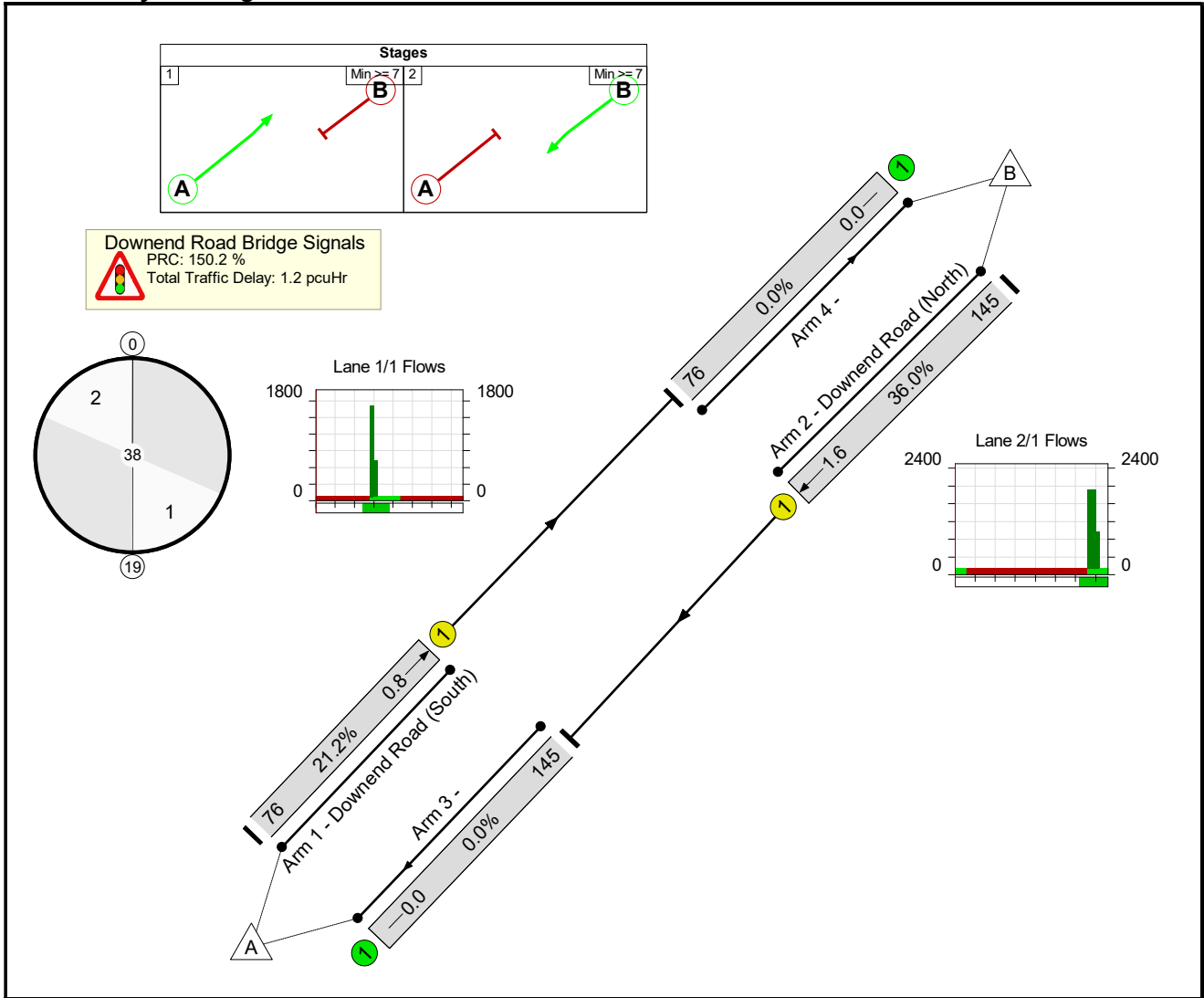
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 19 |

**Signal Timings Diagram**



### Network Layout Diagram



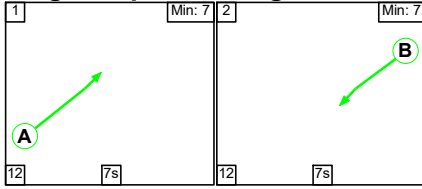
JCT Revised Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 36.0%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 36.0%                |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 76                        | 1705                             | 359                        | 21.2%                |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 145                       | 1915                             | 403                        | 36.0%                |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 145                       | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 76                        | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.8                   | 0.4                          | 0.0                                | 1.2                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.8                   | 0.4                          | 0.0                                | 1.2                 | -                         | -                                | -                          | -                    |
| 1/1   | 76                         | 76            | -                     | -                            | -                           | 0.3                   | 0.1                          | -                                  | 0.4                 | 18.8                      | 0.7                              | 0.1                        | 0.8                  |
| 2/1   | 145                        | 145           | -                     | -                            | -                           | 0.5                   | 0.3                          | -                                  | 0.8                 | 19.8                      | 1.3                              | 0.3                        | 1.6                  |
| 3/1   | 145                        | 145           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 76                         | 76            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 150.2      Total Delay for Signalled Lanes (pcuHr): 1.20      Cycle Time (s): 38<br>PRC Over All Lanes (%): 150.2      Total Delay Over All Lanes(pcuHr): 1.20 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |



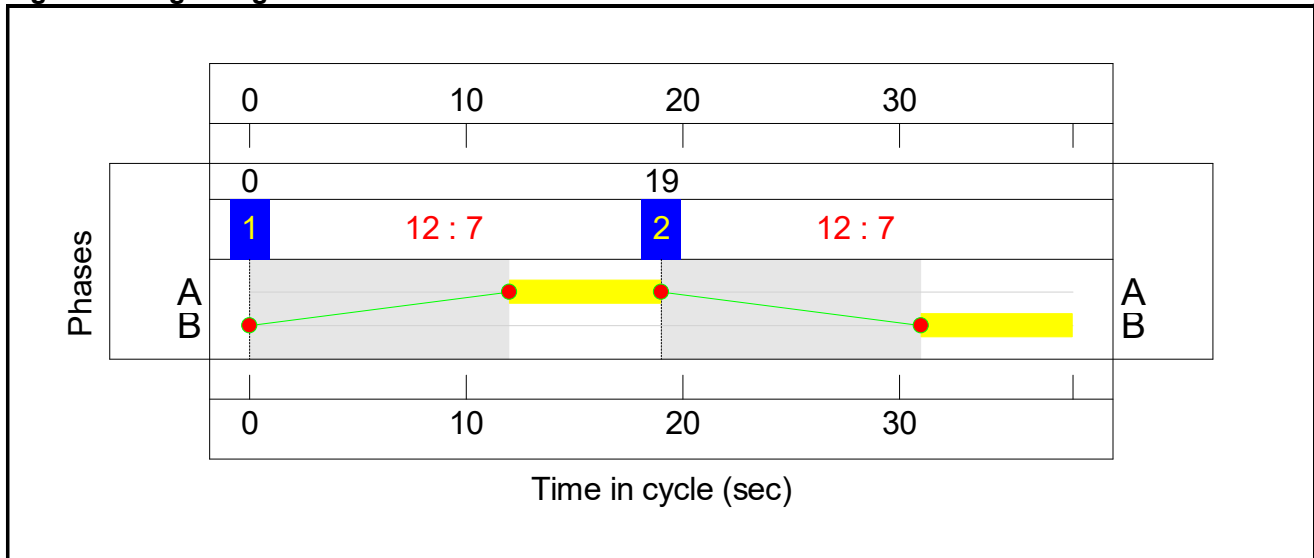
**Stage Sequence Diagram**



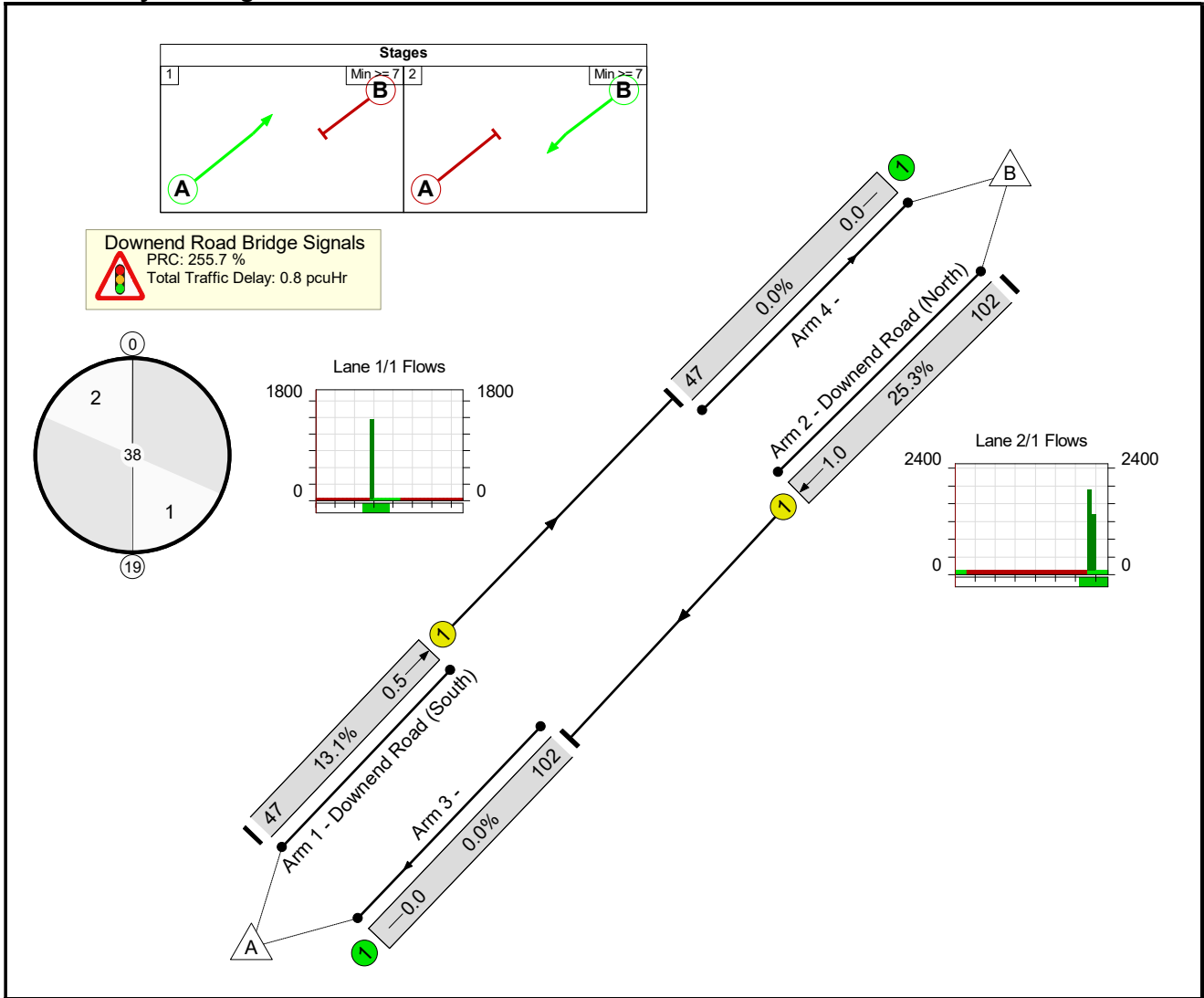
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 19 |

**Signal Timings Diagram**



### Network Layout Diagram

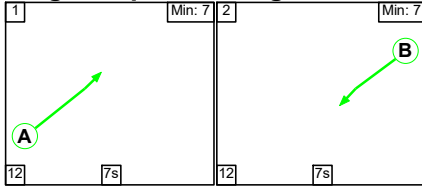


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 25.3%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 25.3%                |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 47                        | 1705                             | 359                        | 13.1%                |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 102                       | 1915                             | 403                        | 25.3%                |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 102                       | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 47                        | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.5                   | 0.2                          | 0.0                                | 0.8                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.5                   | 0.2                          | 0.0                                | 0.8                 | -                         | -                                | -                          | -                    |
| 1/1   | 47                         | 47            | -                     | -                            | -                           | 0.2                   | 0.1                          | -                                  | 0.2                 | 18.0                      | 0.4                              | 0.1                        | 0.5                  |
| 2/1   | 102                        | 102           | -                     | -                            | -                           | 0.4                   | 0.2                          | -                                  | 0.5                 | 18.5                      | 0.9                              | 0.2                        | 1.0                  |
| 3/1   | 102                        | 102           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 47                         | 47            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 255.7      Total Delay for Signalled Lanes (pcuHr): 0.76      Cycle Time (s): 38<br>PRC Over All Lanes (%): 255.7      Total Delay Over All Lanes(pcuHr): 0.76 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

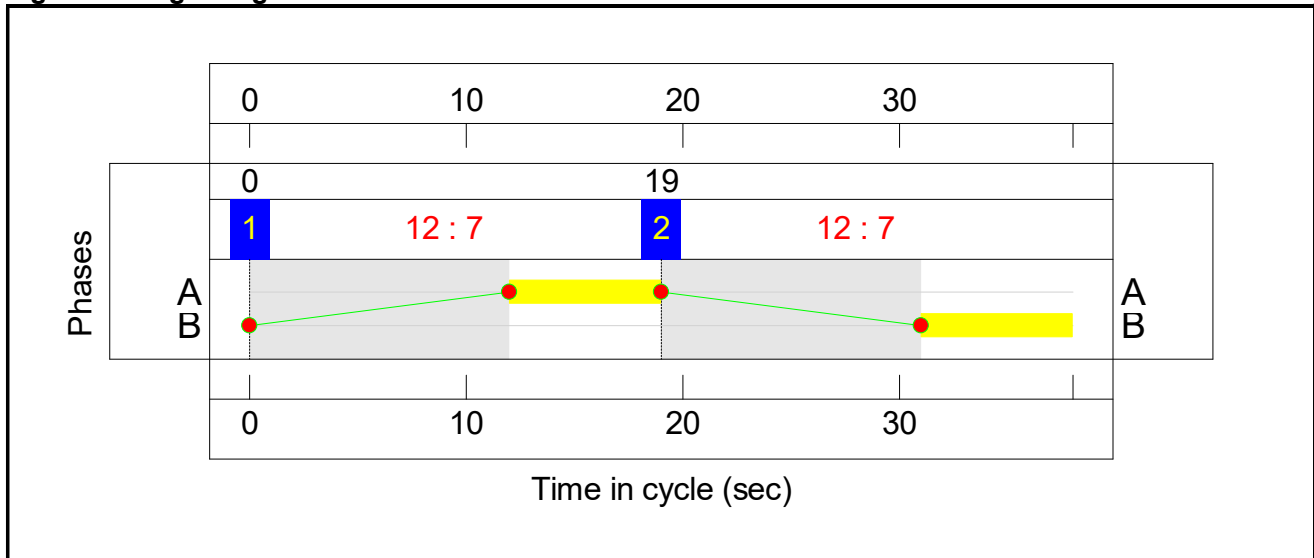
**Stage Sequence Diagram**



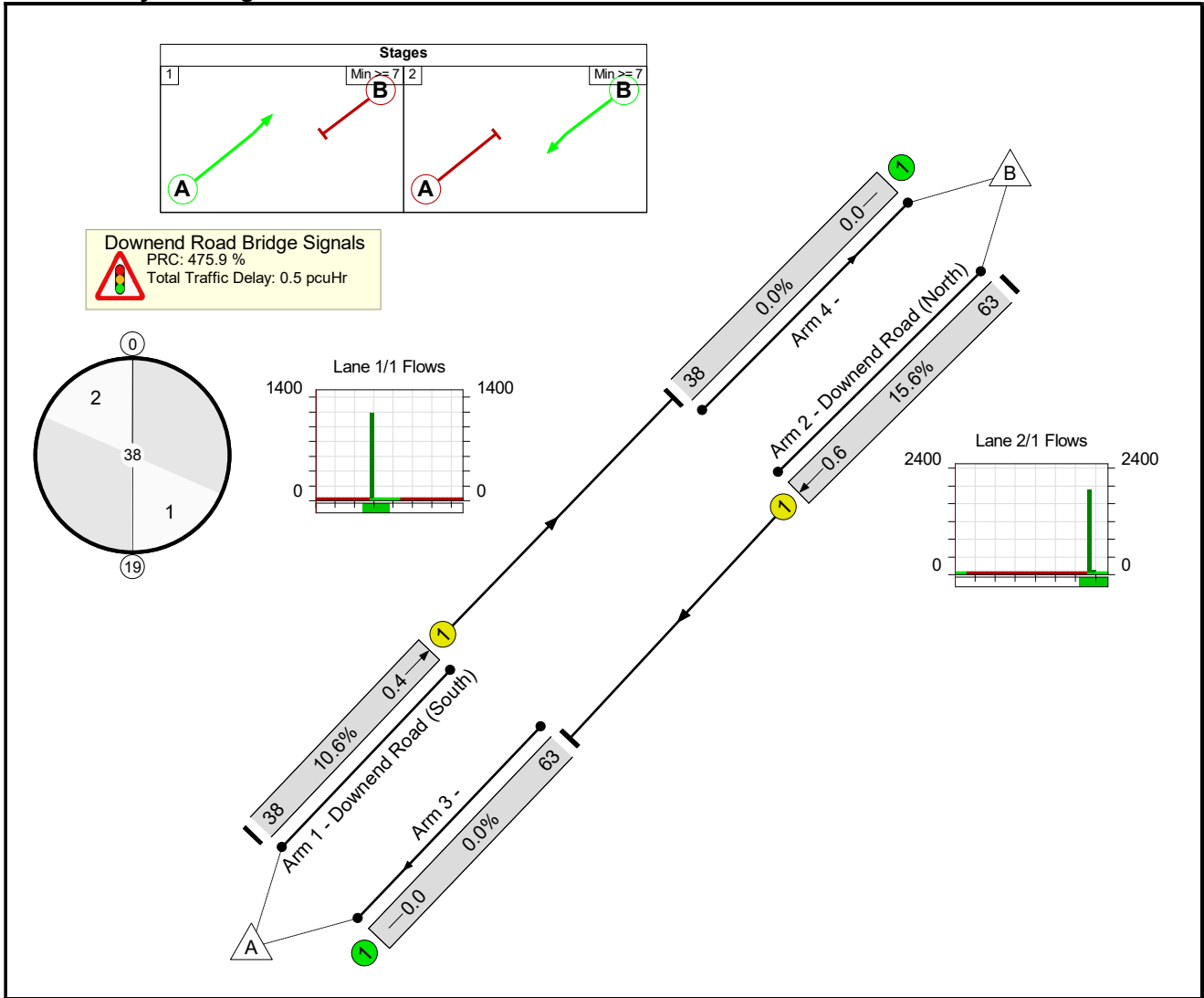
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 19 |

**Signal Timings Diagram**



### Network Layout Diagram

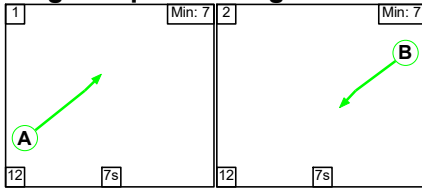


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item   | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|--|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 15.6%                |
| <b>Downend Road Bridge Signals</b>   | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 15.6%                |
| 1/1  | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 38                        | 1705                             | 359                        | 10.6%                |
| 2/1  | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 63                        | 1915                             | 403                        | 15.6%                |
| 3/1  |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 63                        | Inf                              | Inf                        | 0.0%                 |
| 4/1  |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 38                        | Inf                              | Inf                        | 0.0%                 |
| Item   | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>   | -                          | -             | 0                     | 0                            | 0                           | 0.3                   | 0.2                          | 0.0                                | 0.5                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>   | -                          | -             | 0                     | 0                            | 0                           | 0.3                   | 0.2                          | 0.0                                | 0.5                 | -                         | -                                | -                          | -                    |
| 1/1  | 38                         | 38            | -                     | -                            | -                           | 0.1                   | 0.1                          | -                                  | 0.2                 | 17.8                      | 0.3                              | 0.1                        | 0.4                  |
| 2/1  | 63                         | 63            | -                     | -                            | -                           | 0.2                   | 0.1                          | -                                  | 0.3                 | 17.5                      | 0.5                              | 0.1                        | 0.6                  |
| 3/1  | 63                         | 63            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1  | 38                         | 38            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| <p>C1      PRC for Signalled Lanes (%): 475.9      Total Delay for Signalled Lanes (pcuHr): 0.50      Cycle Time (s): 38<br/>                     PRC Over All Lanes (%): 475.9      Total Delay Over All Lanes(pcuHr): 0.50</p> |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

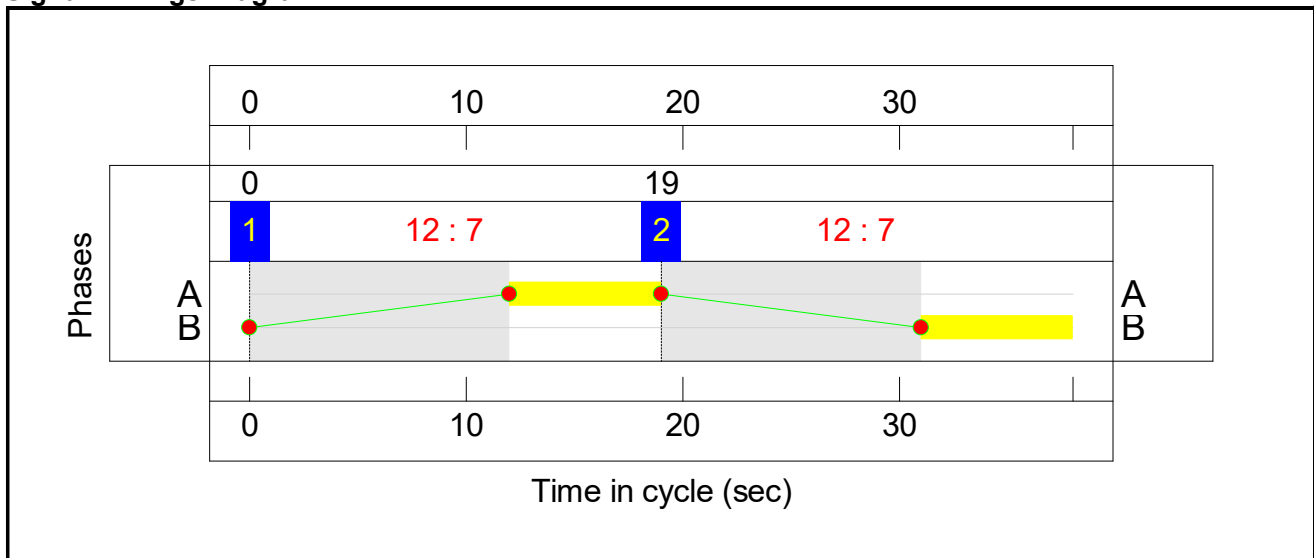
**Stage Sequence Diagram**



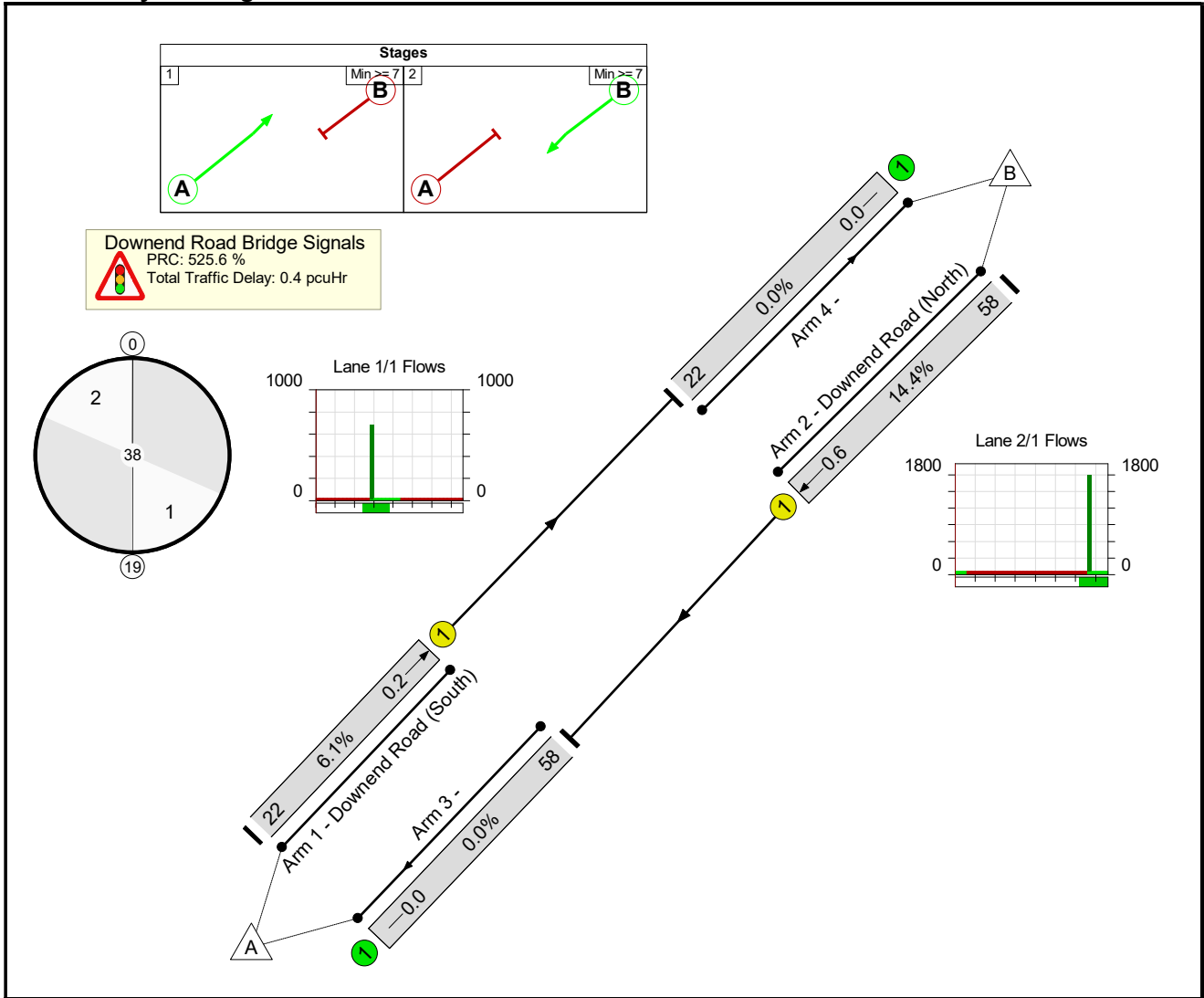
**Stage Timings**

| Stage        | 1 | 2  |
|--------------|---|----|
| Duration     | 7 | 7  |
| Change Point | 0 | 19 |

**Signal Timings Diagram**



### Network Layout Diagram



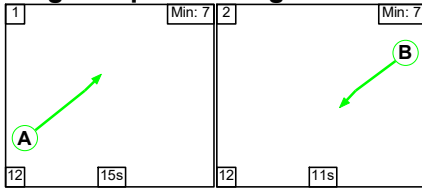


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 14.4%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 14.4%                |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 7                                  | -                   | 22                        | 1705                             | 359                        | 6.1%                 |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 7                                  | -                   | 58                        | 1915                             | 403                        | 14.4%                |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 58                        | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 22                        | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.3                   | 0.1                          | 0.0                                | 0.4                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 0.3                   | 0.1                          | 0.0                                | 0.4                 | -                         | -                                | -                          | -                    |
| 1/1   | 22                         | 22            | -                     | -                            | -                           | 0.1                   | 0.0                          | -                                  | 0.1                 | 17.6                      | 0.2                              | 0.0                        | 0.2                  |
| 2/1   | 58                         | 58            | -                     | -                            | -                           | 0.2                   | 0.1                          | -                                  | 0.3                 | 17.4                      | 0.5                              | 0.1                        | 0.6                  |
| 3/1   | 58                         | 58            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 22                         | 22            | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 525.6      Total Delay for Signalled Lanes (pcuHr): 0.39      Cycle Time (s): 38<br>PRC Over All Lanes (%): 525.6      Total Delay Over All Lanes(pcuHr): 0.39 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

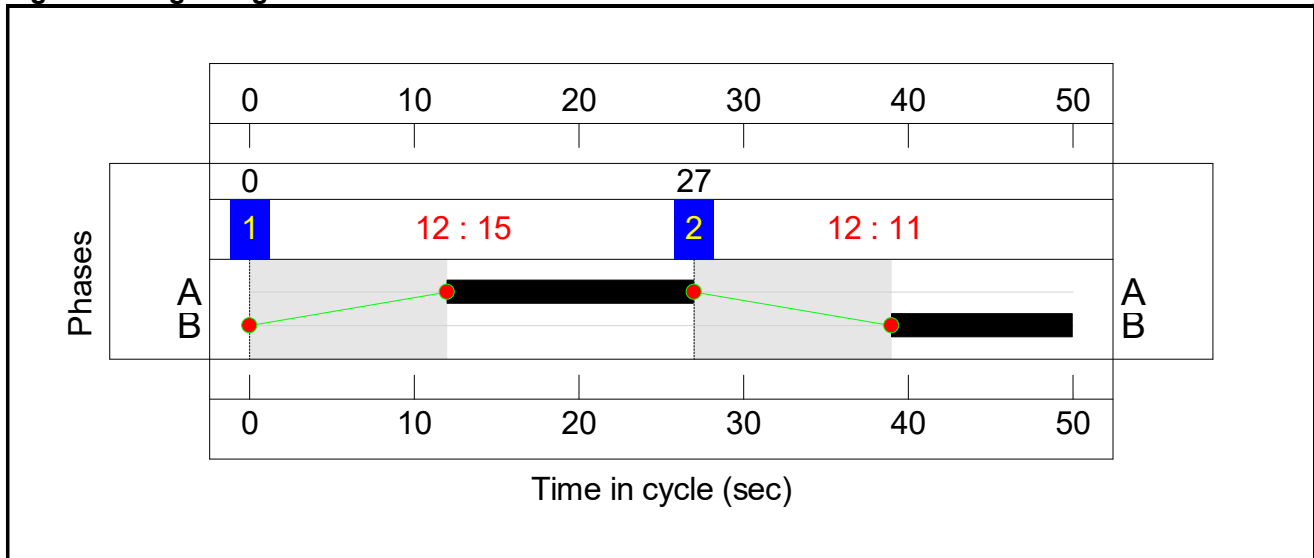
**Stage Sequence Diagram**



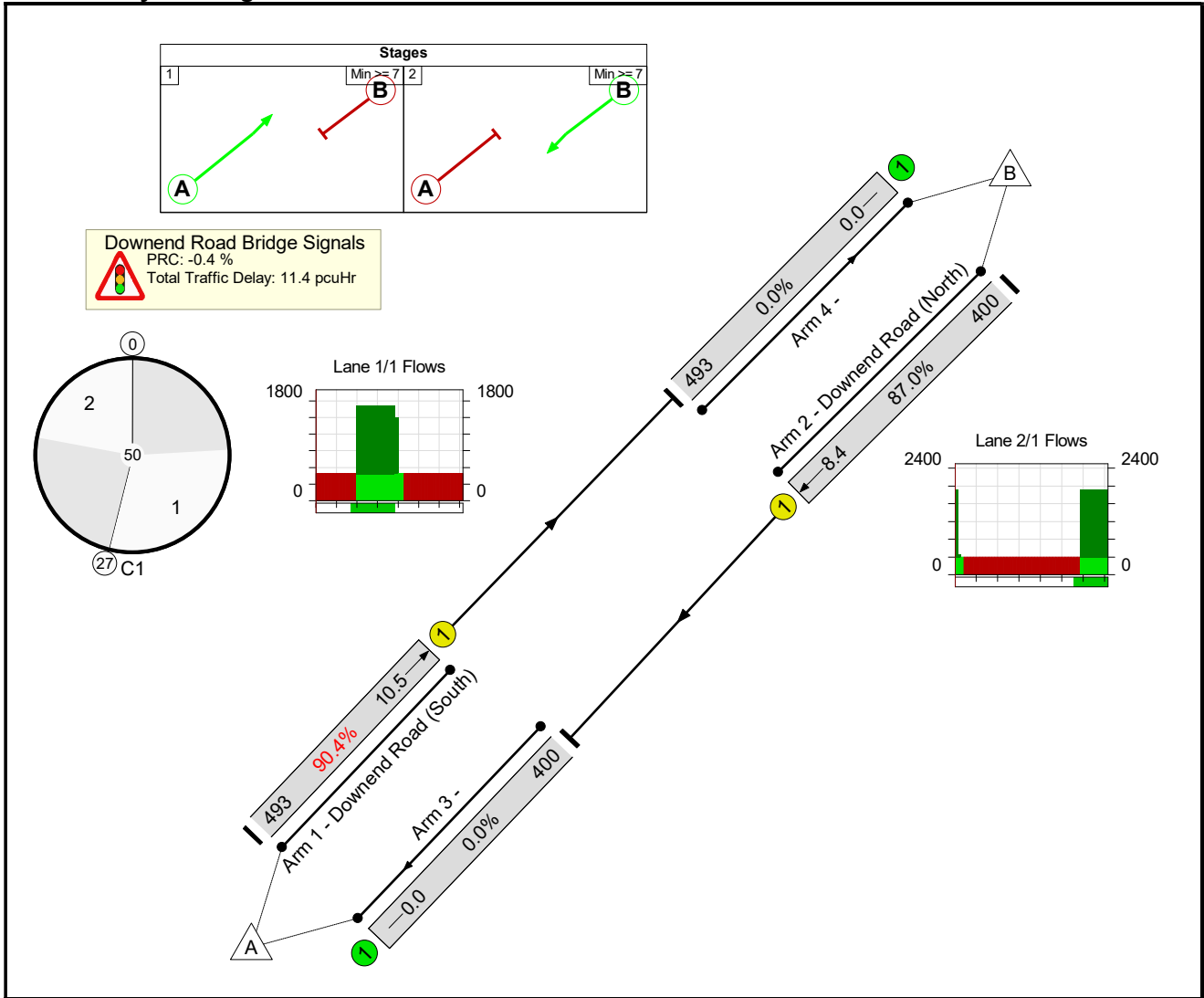
**Stage Timings**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 15 | 11 |
| Change Point | 0  | 27 |

**Signal Timings Diagram**



### Network Layout Diagram

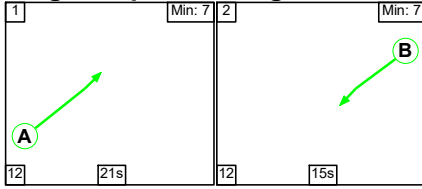


JCT Revised Submission Full Input Data And Results

**Network Results**

| Item                               | Lane Description           | Lane Type     | Controller Stream                 | Position In Filtered Route   | Full Phase                   | Arrow Phase           | Num Greens                                     | Total Green (s)                    | Arrow Green (s)                          | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|------------------------------------|----------------------------|---------------|-----------------------------------|------------------------------|------------------------------|-----------------------|--|------------------------------------|--|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b> | -                          | -             | N/A                               | -                            | -                            |                       | -  | -                                  | -  | -                         | -                                | -                          | 90.4%                |
| <b>Downend Road Bridge Signals</b> | -                          | -             | N/A                               | -                            | -                            |                       | -  | -                                  | -  | -                         | -                                | -                          | 90.4%                |
| 1/1                                | Downend Road (South) Ahead | U             | N/A                               | N/A                          | A                            |                       | 1  | 15                                 | -  | 493                       | 1705                             | 546                        | 90.4%                |
| 2/1                                | Downend Road (North) Ahead | U             | N/A                               | N/A                          | B                            |                       | 1  | 11                                 | -  | 400                       | 1915                             | 460                        | 87.0%                |
| 3/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -  | -                                  | -  | 400                       | Inf                              | Inf                        | 0.0%                 |
| 4/1                                |                            | U             | N/A                               | N/A                          | -                            |                       | -  | -                                  | -  | 493                       | Inf                              | Inf                        | 0.0%                 |
| Item                               | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu)             | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)  | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr)                   | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr)                      | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b> | -                          | -             | 0                                 | 0                            | 0                            | 4.3                   | 7.1  | 0.0                                | 11.4                                     | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b> | -                          | -             | 0                                 | 0                            | 0                            | 4.3                   | 7.1  | 0.0                                | 11.4                                     | -                         | -                                | -                          | -                    |
| 1/1                                | 493                        | 493           | -                                 | -                            | -                            | 2.2                   | 4.1  | -                                  | 6.3                                      | 45.9                      | 6.4                              | 4.1                        | 10.5                 |
| 2/1                                | 400                        | 400           | -                                 | -                            | -                            | 2.0                   | 3.0  | -                                  | 5.1                                      | 45.7                      | 5.3                              | 3.0                        | 8.4                  |
| 3/1                                | 400                        | 400           | -                                 | -                            | -                            | 0.0                   | 0.0  | -                                  | 0.0                                      | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                | 493                        | 493           | -                                 | -                            | -                            | 0.0                   | 0.0  | -                                  | 0.0                                      | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                 |                            |               | PRC for Signalled Lanes (%): -0.4 |                              | PRC Over All Lanes (%): -0.4 |                       | Total Delay for Signalled Lanes (pcuHr): 11.36 |                                    | Total Delay Over All Lanes(pcuHr): 11.36 |                           | Cycle Time (s): 50               |                            |                      |

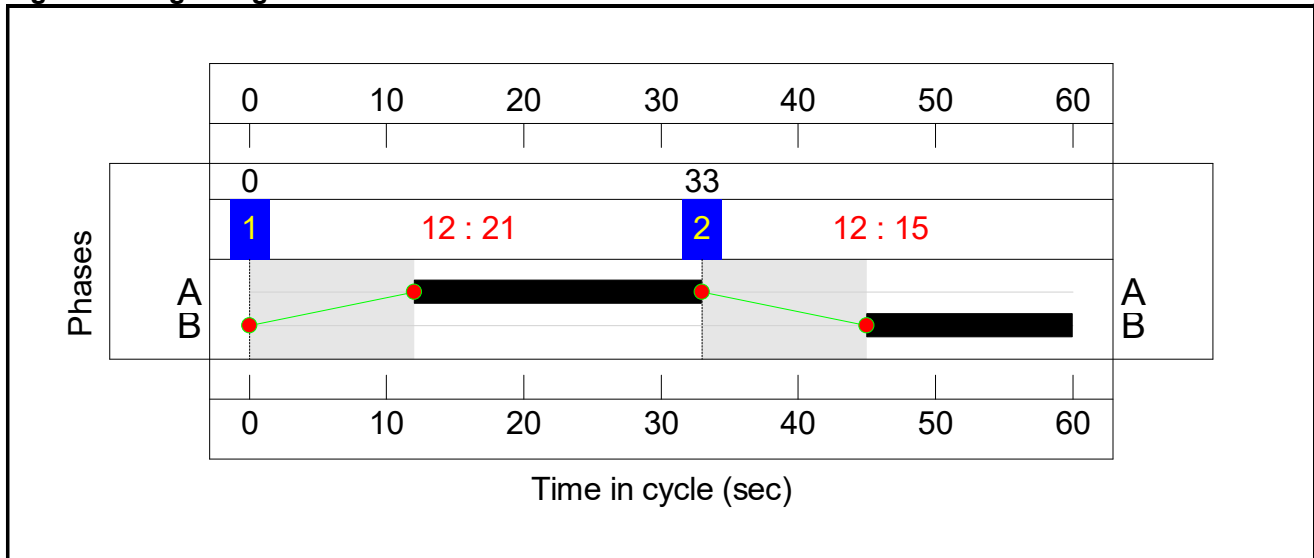
**Stage Sequence Diagram**



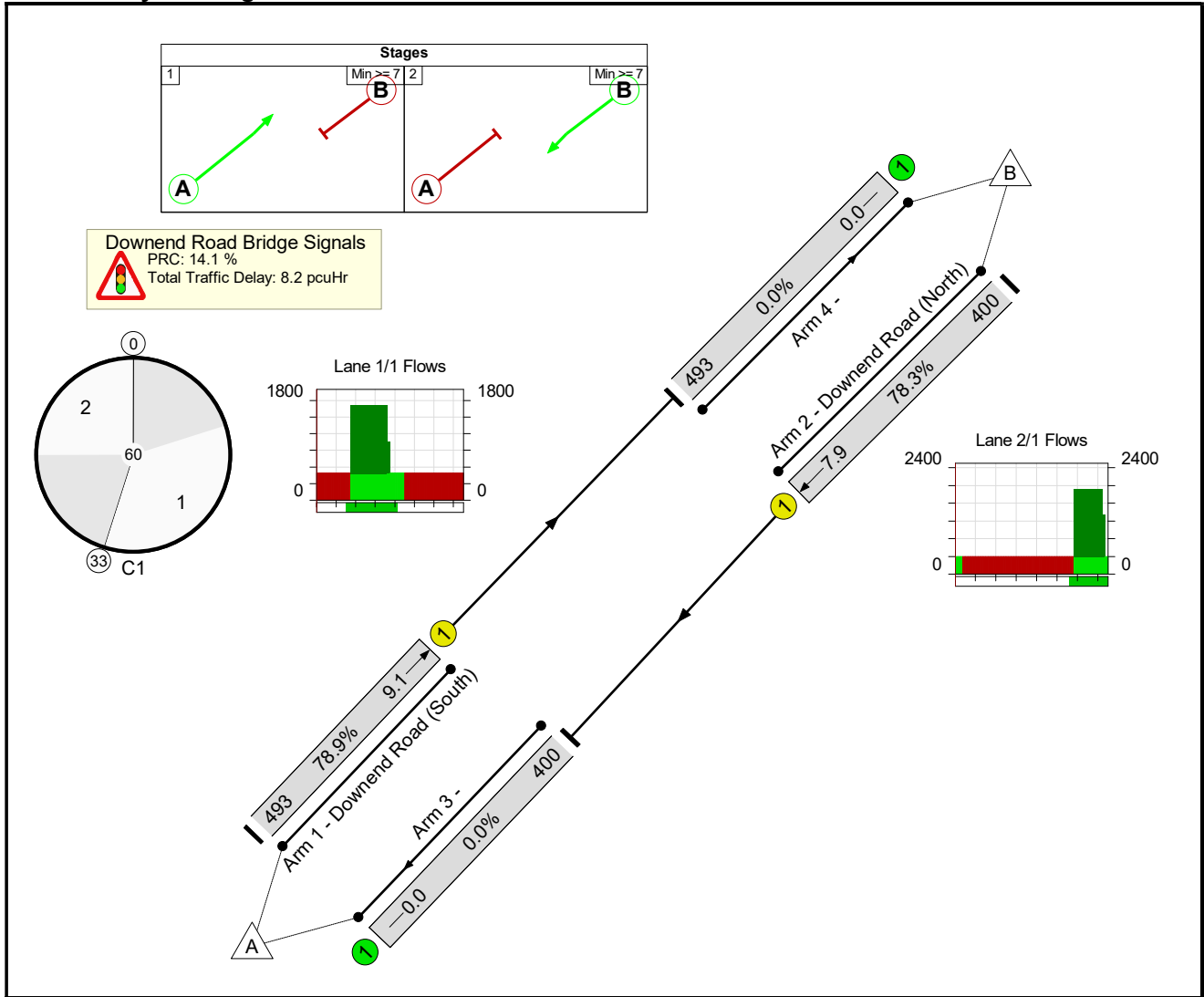
**Stage Timings**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 21 | 15 |
| Change Point | 0  | 33 |

**Signal Timings Diagram**



### Network Layout Diagram



JCT Revised Submission Full Input Data And Results

**Network Results**

| Item  | Lane Description           | Lane Type     | Controller Stream     | Position In Filtered Route   | Full Phase                  | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Sat Flow (pcu/Hr)                | Capacity (pcu)             | Deg Sat (%)          |
|---|----------------------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: Revised Submission</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 78.9%                |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | N/A                   | -                            | -                           |                       | -                            | -                                  | -                   | -                         | -                                | -                          | 78.9%                |
| 1/1   | Downend Road (South) Ahead | U             | N/A                   | N/A                          | A                           |                       | 1                            | 21                                 | -                   | 493                       | 1705                             | 625                        | 78.9%                |
| 2/1   | Downend Road (North) Ahead | U             | N/A                   | N/A                          | B                           |                       | 1                            | 15                                 | -                   | 400                       | 1915                             | 511                        | 78.3%                |
| 3/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 400                       | Inf                              | Inf                        | 0.0%                 |
| 4/1   |                            | U             | N/A                   | N/A                          | -                           |                       | -                            | -                                  | -                   | 493                       | Inf                              | Inf                        | 0.0%                 |
| Item  | Arriving (pcu)             | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
| <b>Network: Revised Submission</b>  | -                          | -             | 0                     | 0                            | 0                           | 4.6                   | 3.6                          | 0.0                                | 8.2                 | -                         | -                                | -                          | -                    |
| <b>Downend Road Bridge Signals</b>  | -                          | -             | 0                     | 0                            | 0                           | 4.6                   | 3.6                          | 0.0                                | 8.2                 | -                         | -                                | -                          | -                    |
| 1/1   | 493                        | 493           | -                     | -                            | -                           | 2.3                   | 1.8                          | -                                  | 4.1                 | 30.2                      | 7.3                              | 1.8                        | 9.1                  |
| 2/1   | 400                        | 400           | -                     | -                            | -                           | 2.3                   | 1.8                          | -                                  | 4.0                 | 36.2                      | 6.1                              | 1.8                        | 7.9                  |
| 3/1   | 400                        | 400           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1   | 493                        | 493           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1      PRC for Signalled Lanes (%): 14.1      Total Delay for Signalled Lanes (pcuHr): 8.15      Cycle Time (s): 60<br>PRC Over All Lanes (%): 14.1      Total Delay Over All Lanes(pcuHr): 8.15 |                            |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |

## Rachel Stout

---

**From:** Stuart Hanson <consultancy@jctconsultancy.co.uk>  
**Sent:** 27 November 2020 13:35  
**To:** Tim Wall  
**Subject:** Re: Downend Road, Portchester - LINSIG Model Audit

Hi Tim.

We would not argue at all with your methodology for calculating the intergreens and like you said (and we also made reference to in the report), with vehicle detection in place, the intergreens would be variable. At this design stage we took an overly robust approach in the report to make sure that vehicles leaving one stopline would clear the subsequent stopline. This resulted in the junction still operating within capacity. As you mentioned, once commissioned the intergreens would be adjusted on site but a junction that operates within capacity and with intergreens on the higher side for robustness would give confidence that any downwards adjustment on site would only give greater benefits to the capacity.

I hope this clears up any confusion.

Stuart

On Fri, 27 Nov 2020 at 11:40, Tim Wall <[tim.wall@i-transport.co.uk](mailto:tim.wall@i-transport.co.uk)> wrote:

Hi Stuart,

Thank you for preparing the Audit which is helpful.

I do have one question / comment in relation to the calculation of the Intergreen period for the model, which is one of the main adjustments you applied in your revised model. I would be grateful if you would offer your views and further consideration on this please.

As you will of course know, Traffic Signs Manual (TSM) Ch6 identifies that:

*6.6.2. The intergreen period for conflicts between two traffic phases is measured by identifying the probable collision points, measuring the distance that traffic has to travel from the stop lines to reach the collision points and then calculating the path differences. In all cases the path difference is considered as the distance travelled to the conflict point by the traffic losing right of way minus the distance travelled to the same conflict point by the traffic gaining right of way. This means that when calculating path differences the calculations will result in some negative values. When determining which path difference is critical between conflicting phases, all the relevant path differences should be measured and the highest value should always be taken as the 'x' distance. These path differences are then used in conjunction with a table to determine an appropriate intergreen time in seconds.*



On this basis, in our models we had calculated the probable collision points and then derived the x-distance from that.

I attach an analysis **Drawing ITB12212-GA-065** which demonstrates how we identified the probable collision points, using swept path analysis and taking this as the point where two vehicles can no longer safely pass. There is about 10-12m ahead of each stop line where the proposed road widths are >5m and two vehicles can safely pass, and so a collision in this area is not therefore probable in our view.

For the Revised scheme (with the northern stop line adjustment), this identifies:

- Northbound / eastbound X-distance of 38m (52m – 14m)
- Southbound / westbound x-distance of 42m (54m – 12m)

Both of these x-distances support the use of a 9 second Intergreen when using Table 6-1 of the TSM, albeit we applied a 10s Intergreen for robustness.

**Table 6-1 Intergreen values**

| Distance 'x' (m) | ≤ 9 | 10-18 | 19-27 | 28-37 | 38-46 | 47-55 | 56-64 | 65-73 |
|------------------|-----|-------|-------|-------|-------|-------|-------|-------|
| Intergreen (s)   | 5   | 6     | 7     | 8     | 9     | 10    | 11    | 12    |

In a practical sense, the use of a 12-second Intergreen may prove to be a bit long. TSM confirms that:

*6.5.6. A short intergreen period is potentially dangerous but equally a period that is too long leads to delay, frustration and disobedience, again potentially encouraging drivers to ignore the red signal.*

Assuming a cruise speed of say 25mph, it will take vehicles around 6 seconds to clear the junction area (~67m between stop lines).

If a 12 second Intergreen is applied that will mean that vehicles gaining priority will need to wait around 5-6 seconds after the last vehicle in the opposing priority stream has cleared the junction area before they can go (allowing for Red/Amber period and queue clearance). This is potentially quite a significant time for vehicles to wait and may lead to some frustration and increased delay.

The ultimate Intergreen time is of course something that will be established on site and validated when operational, and you will know that there is an ability to extend the Intergreen in the event of slow-moving traffic in a particular cycle, using junction detection, which may support the use of shorter Intergreen values.

I appreciate that your Audit has only suggested that the Intergreen times used (10 seconds) could be considered too low, and therefore your revised model provides an assessment of what would happen if a longer Intergreen is applied, but nevertheless I would appreciate your views on our approach to calculating the Intergreen times.

Happy to discuss as required.

Kind regards

Tim



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for i-Transport LLP

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**From:** Stuart Hanson <[consultancy@jctconsultancy.co.uk](mailto:consultancy@jctconsultancy.co.uk)>

**Sent:** 26 November 2020 14:09

**To:** Tim Wall <[tim.wall@i-transport.co.uk](mailto:tim.wall@i-transport.co.uk)>

**Subject:** Re: Downend Road, Portchester - LINSIG Model Audit [Filed 27 Nov 2020 10:32]

Hi Tim,

Attached is a zip folder containing our audit comments within the technical note. I've also attached updated LinSig models for the planning submission and revised submission layouts.

Any questions please let me know.

Stuart

**Stuart Hanson BSc, MIHE, EngTech**

*Assistant Engineer*

JCT Consultancy Ltd

LinSig House

Deepdale Lane

Nettleham

Lincoln

LN2 2LL

Tel: 01522 751010

On Mon, 23 Nov 2020 at 15:16, Tim Wall <[tim.wall@i-transport.co.uk](mailto:tim.wall@i-transport.co.uk)> wrote:

Good Afternoon Stuart,

Please see attached relevant information for your review / Audit of the model, comprising:

- Drawing ITB12212-GA-51 Rev C – This is the planning stage improvement drawing.

- Linsig File (Downend Bridge GA51 24hr) – This is the model that underpinned the Transport Assessment, agreed with HCC.
- Downend Bridge GA051 24hr flows results – This is the summary results of the model pertaining to the attached model.
- DE Road Traffic Flow Profiles – 24hr – These are the flow profiles for the LINSIG model. The flows are derived from:
  - 2016 ATC data, using the 5-day average values (attached)
  - Growth rates derived from TEMPRO (2016-2026) – see traffic growth study attached
  - PCU factors of 1.5 for Mediums and 2.m for Heavies
  - Development Trips from TRICS (Private Housing Only - Attached), of which the distribution model demonstrated 70% will route to and from Downend Road south of the site (can provide if needed)

As we discussed, as a result of design changes requested by HCC, during the course of the planning application a revision to the scheme was agreed, essentially to move the northern stop line north by 4m to improved SSD and swept paths. This resulted in the drawing ITB12212-GA-051 Rev D being submitted and which was the determined drawing.

As a result of the amendment to the scheme, we have updated the Linsig model. It would be useful if your Audit covered this model update and comment on it too. I attach the drawing, model and results summary. The data inputs remain identical to the submission model.

Happy to discuss as needed and please advise me of anything else you need to complete the Audit.

Kind regards

Tim



Partner  
for i-Transport LLP

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**From:** Stuart Hanson <[consultancy@jctconsultancy.co.uk](mailto:consultancy@jctconsultancy.co.uk)>  
**Sent:** 20 November 2020 09:47  
**To:** Tim Wall <[tim.wall@i-transport.co.uk](mailto:tim.wall@i-transport.co.uk)>  
**Subject:** Re: Downend Road, Portchester - LINSIG Model Audit vs MOT

Morning Tim.

Attached is an example of our MOT audit. This would certainly be the best option in this particular case as the model is relatively straightforward and it'll keep your costs down to £320.

The example shows that we check the key modelling input parameters and make comments where there are any issues and highlight the severity of the issues (some 'errors' would have no/little impact on results)

We then issue you with the completed pdf and a password protected Excel file of the MOT as you'll see there is a space for your modelling team to make responses based on our comments.

If you wish to call me on 01522 751010 we can discuss further and talk about timescales etc as i'm interested to learn if there is anything specific about this model that has been flagged as 'an issue'.

Stuart Hanson

**Stuart Hanson BSc, MIHE, EngTech**

*Assistant Engineer*

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LN2 2LL

Tel: 01522 751010

On Thu, 19 Nov 2020 at 21:51, Tim Wall <[tim.wall@i-transport.co.uk](mailto:tim.wall@i-transport.co.uk)> wrote:

Good Evening JCT,

I am working for a developer proposing to convert an existing two-way road over rail bridge to a one way working signal-controlled shuttle operation, in order to achieve a footway improvement.

We have prepared a LINSIG model of the junction, and are now seeking to have this Audited to confirm that the model has been appropriately constructed.

I see you offer both a Detailed Audit / Tech Note service and also an MOT service.

Can you advise the costs and timescales for each option please, and provide some examples of the reporting under each option so I can advise my client how to proceed.

I attach the model, summary results and scheme drawings so you can see the scope of the model and would be happy to chat over this as needed.

Thanks

Tim



for i-Transport LLP

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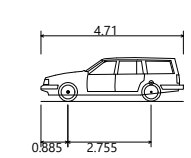
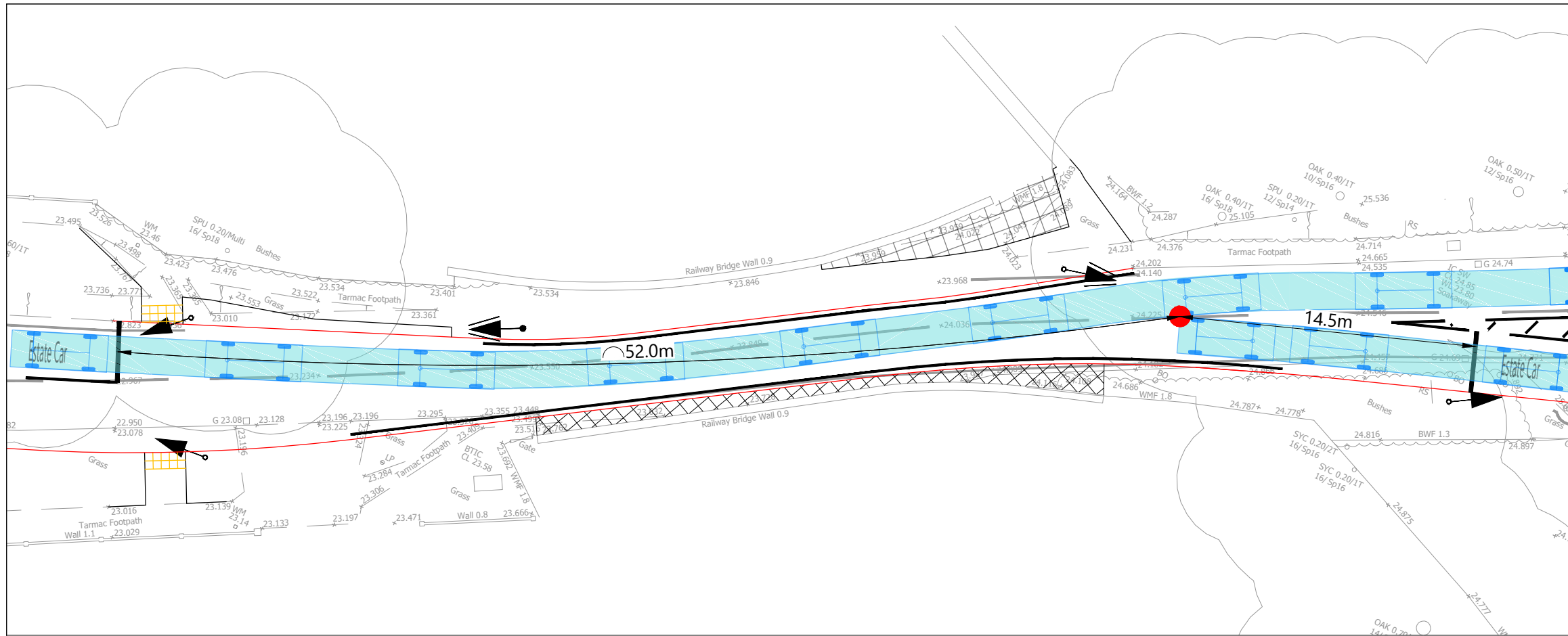
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|                             |        |
|-----------------------------|--------|
| Estate Car                  | 4.710m |
| Overall Length              | 1.804m |
| Overall Width               | 1.442m |
| Overall Body Height         | 0.207m |
| Min Body Ground Clearance   | 1.756m |
| Max Track Width             | 4.00s  |
| Lock to lock time           | 5.950m |
| Kerb to Kerb Turning Radius |        |

| REV | DATE | BY | DESCRIPTION | CHK | APD |
|-----|------|----|-------------|-----|-----|
|-----|------|----|-------------|-----|-----|

STATUS: FOR INFORMATION



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TITLE: COLLISION POINT ANALYSIS TO INFORM INTERGREEN TIMES

PROJECT: DOWNEND ROAD, PORTCHESTER

CLIENT: MILLER HOMES

|                      |                   |                |
|----------------------|-------------------|----------------|
| DRAWN: JD            | CHECKED: TW       | APPROVED: TW   |
| PROJECT No: ITB12212 | SCALE @ A3: 1:250 | DATE: 27.11.20 |

DRAWING No: ITB12212-GA-065

T:\Projects\12000 Series\Project Numbers\12121218 Downend Road, Portchester\Tech\Acad\Transport Drawings\Working Drawings\GA\ITB12212-GA-065.dwg

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