AQUIND Limited

AQUIND INTERCONNECTOR

Supplementary Transport Assessment Addendum

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WSP

WSP House

70 Chancery Lane

London

WC2A 1AF

+44 20 7314 5000

www.wsp.com

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Prepared By	S. Gander
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Approved By	C. Williams
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APPENDICES

1. INTRODUCTION

1.1.1.1. The Applicant has completed the following technical submissions at Deadline 6 and 7 which have altered the assessments contained within the Environmental Statement Addendum – Appendix 11 Supplementary Transport Assessment (REP1-142):

- Joint Bay Technical Note (REP6-070);
- Day Lane Technical Note (REP6-073);
- Portsmouth City Council Road Safety Note (REP6-071);
- Hampshire County Council Road Safety Note (REP6-075);
- Technical Note 'Collision Analysis on Highways England Roads' completed in response to Annex B of Highways England Deadline 4 submission (REP4-043). This is included in Appendix 1; and
- Additional junction capacity assessments of A3(M) Junction 2 and 3 contained within Technical Note 'HE03 – Response to Highways England Technical Note TN03' completed in response to Annex D of Highways England Deadline 1 submission (REP1-208). This is included in Appendix 2.

1.1.1.2. This report forms an addendum which summarises the changes to the Supplementary Transport Assessment (STA) as a result of the aforementioned documents.

1.1.1.3. For each of the above submissions, this STA Addendum summarises the relevant content and provides an updated assessment where necessary.

1.1.1.4. There are no changes to the STA (REP1-142) within the following sections:

- Section 2: Construction Programme Updates; and
- Section 6: Bus Journey Time Assessment.

2. CONSTRUCTION TRAFFIC ACCESS

2.1. INTRODUCTION

2.1.1.1. This section summarises updates made to Chapter 3 of the STA regarding construction traffic access.

2.2. CONVERTER STATION ACCESS JUNCTION

2.2.1.1. An additional paragraph has been included directly after existing paragraph 3.2.2.6. of the STA. This additional paragraph includes reference to the now agreed status of the access junction proposals with HCC as the Local Highway Authority. The additional paragraph is as follows:

- Following further discussions, it is the understanding of the Applicant that the proposed access is now agreed in principal with HCC, subject to the completion of a Stage 1 Road Safety Audit (RSA). The RSA has been completed and submitted to HCC in draft on the 20/01/21 and It is the view of the Applicant that the outcomes of the Road Safety Audit will result in only minor updates to the proposals, which can be agreed with the LHA.

2.3. MANAGEMENT OF HGV TRAFFIC MOVEMENTS ON DAY LANE AND BROADWAY LANE

2.3.1.1. Section 3.4 of the STA (REP1-142) in reference to the management of HGV traffic movements on Day Lane and Broadway Lane has been entirely superseded following further discussions with HCC. Section 3.4 of the STA (REP1-142) has therefore been replaced in its entirety by the following paragraph:

- As part on-going discussions with HCC since Deadline 1, the management strategy for HGV traffic movements on Day Lane and Broadway Lane has been revised and submitted into the Examination at Deadline 6 as part of the Day Lane Technical Note (REP6-073). Further to submission of REP6-073 and further discussions with the HCC, the strategy has been updated in agreement with the highway authority for submission at Deadline 7.
- In summary. The amended strategy uses three main methods of construction vehicle management for mitigating the impacts of movements of such vehicles. These three methods are as follows:
    - Introduction of passing bays on Day Lane to ensure adequate width is available for traffic for pass HGVs if necessary;
    - Strategic management of arrivals and departures of HGVs, which includes:

  - arrival HGV's needed to 'check-in' to an off-site location and then be escorted to site in a convoy of three HGVs;
  - departing HGVs being held on-site until able to depart in convoy of vehicles, which will be escorted off-site; and
  - the use of a booking system and communication between arrival and departure controls to ensure that HGVs to not meet on Day Lane.
- Use of banksmen and traffic marshals to control traffic on Day Lane.

- This strategy will be included within the Framework Construction Traffic Management Plan and therefore secured via Requirement 17 of the dDCO. The delivery of the passing bays is a matter which is agreed with HCC and in relation to which a Section 106 Agreement with HCC is progressing. Therefore the delivery of the proposed passing bays is also secured, and their future delivery presents no impediment to the implementation of the strategy.

2.4. JOINT BAY AND HDD COMPOUND CONSTRUCTION TRAFFIC ESTIMATES

2.4.1.1. Updates to Section 3.8 of the STA are required due to further work undertaken in regard to Bay locations. This further work can be found in the Joint Bay Technical Note (REP6-070) submitted at Deadline 6, which provides indicative Joint Bay locations for the entirety of the Onshore Cable Route, evidencing the feasibility of their delivery in the manner provided for.

2.4.1.2. In order to account for the updates to the proposed numbering and changes in location of indicative Joint Bays in the vicinity of Locksway Road and Kingsley Road, paragraph 3.8.4.1., 3.8.4.2., 3.8.4.3. and 3.8.4.4. of the STA (REP1-142) have been superseded and replaced with the below:

- Taking account of the requirements to temporarily suspend on-street parking, analysis has been completed of existing on-street car parking capacity on Locksway Road and Kingsley Road in Portsmouth in relation to:
  - Joint Bay 33: located in the grassed area to the south of the University of Portsmouth sports pitches;
  - Joint Bay 34: located at the eastern end of Kingsley Road south of the Milton Allotments; and
  - HDD-2: located at the eastern end of Kingsley Road south of the Milton Allotments.

- It is estimated that during start-up, demobilisation or delivery of cable drums suspension of approximately 20-30 on-street parking spaces would be required on Locksway Road / Longshore Way and suspension of 70 on-street parking spaces would be required on Kingsley Road to provide adequate highway width for construction vehicles. To inform an analysis of existing demand and capacity of on-street parking of these roads, overnight residential parking surveys were carried out in July 2020 on the following roads within the area of Locksway Road, Longshore Way and Kingsley Road:
  - Warren Avenue between Milton Road and Mayles Road, Shelford Road, Crofton Road, Hollam Road, Catisfield Road, Meon Road, Weston Road, Milton Park Avenue, Cromarty Avenue, Locksway Road, Fair Oak Road, Cheriton Road, Oakdene Road, Furze Lane, Broom Square, Longshore Way, Waterlock Gardens, Seaway Crescent, Rosetta Road, Bertie Road, Pleasant Road, Stowe Road, Morgan road, Ironbridge Lane, Trevis Road, Meryle Road, Towpath Mead, Perth Road, Gurney Road, Hester Road, Old Canal, Melrose Close, Shirley Avenue, Berney Road, Redlands Grove, Tideway Gardens, Maurice Road, Dunbar Road, Kingsley Road, Tranmere Road, Glasgow Road, Amayas Court, Yeo Court, Torfrida Court, Wake Lawn, Holne Court, Lightfoot Lawn and Leofric Court;
- These surveys followed the Lambeth parking survey methodology, which is a generally accepted method of surveying residential parking demand, with a snapshot survey completed between the hours of 00:30 and 05:30 on two separate weekday nights (Monday to Thursday) when residential parking demand is likely to be at its highest. A summary of the methodology used in the calculation of parking capacity, occupancy and resulting stress is as follows:
  - Areas within a Controlled Parking Zone (CPZ):
    - Only Resident Permit Holder Bays and Shared Bays which allow residents parking (these may be shared with Pay-and-Display parking and/or Business Permit Holders) were counted;
    - Calculation of parking capacity was recorded by measuring the total length of each parking bay and this length then divided by five, within each vehicle assumed to be 5m; and
    - In any other areas where cars can legally park overnight, the number of cars were counted and noted separately. These typically comprise of Single Yellow Lines or short-term parking or Pay-and-Display bays.
  - Areas which are not within a CPZ:
    - All areas of unrestricted parking were counted; and

- Calculation of parking capacity was recorded by measuring the total length of the road, accounting for any obstructions to parking (drive-way accesses, junctions etc.), and then divided by five. This number was then rounded down to the nearest whole number in order to conservatively approximate capacity.

- These surveys showed that across the surveyed area, there was an average overnight available capacity for 200 vehicles. This means that displaced parking from Locksway Road, Longshore Way and Kingsley Road can be accommodated within the surrounding residential streets, if required.

2.5. ABNORMAL LOADS ASSOCIATED WITH CABLE DRUM DELIVERIES

2.5.1.1. In order to provide further clarity regarding the number of deliveries generated by Joint Bays, paragraph 3.9.2.2. of the STA (REP1-142) has been replaced with the following:

- The cable drums will be delivered to each Joint Bay via HGV before being offloaded and pulled through the cable ducts using winches. Typical drum dimensions for a 2,000m cable are 4.9m outside drum diameter and drum width of 3.0m, with a mass of 50 tonnes and can therefore be defined as an Abnormal Indivisible Load (AIL). One Joint Bay is required for each one of the circuits and each Joint Bay will generate four cable drum deliveries if cables are being pulled in both directions at the Joint Bay in question (eight deliveries if a double Joint Bay is proposed at that location) with these vehicles travelling outside of the AM (08:00-09:00) and PM (17:00-18:00) peak periods. The cable drum delivery vehicles would be on site for approximately one hour whilst the cable drum is off-loaded from the vehicle.

2.5.1.2. As the remainder of Section 3.9 of the STA (REP1-142) provided an assessment of cable drum deliveries to indicative Joint Bay locations, updates are made which reflect the amended numbering of Joint Bays and, where relevant, the amended locations of such Joint Bays which are set out in the 'UK Joint Bay Locations Feasibility Report' (REP6-070). Paragraph's 3.9.4.4. through 3.9.4.75. of the STA (REP1-142) have been superseded and replaced with the following:

- The anticipated route between the Cargo Terminal of Portsmouth International Port and all Joint Bays on Portsea Island consists mainly of dual-carriageway with two lanes in each direction up until reaching A2030 Goldsmith Avenue, which is a wide single carriageway road with advisory cycle lanes. All of this route is subject to a 30mph speed limit and to Double Yellow Lines which restrict parking on carriageway. From the Goldsmith Avenue it is anticipated that the cable drum delivery vehicles will use Fratton Way and Rodney Road before turning onto A2030 Velder Avenue or A288 Milton Road to access individual Joint Bay locations. These routes are discussed in more detail below.
- The anticipated route to be used for all Joint Bays outside of Portsea Island will use the A3 Mile End Road, M275 and A27 with locations within the HCC highway network also using the A3(M). The A3 Mile End Road and M275 are part of the PCC primary road network and are dual-carriageway roads with 2/3 lanes in each direction. Each of these roads provide direct links from the Cargo Terminal of Portsmouth International Port and can therefore accommodate HGV and abnormal load vehicles. The A27 and A3(M) fall under the jurisdiction of Highways England and form part of the strategic road network. They are dual-carriageway roads subject to a 70mph speed limit.
- A preliminary assessment has been completed of the indicative Joint Bay locations which are set out in the 'UK Joint Bay Locations Feasibility Report' which was submitted into the examination at Deadline 6 to confirm if cable drum deliveries will be required to all Joint Bays. This is on the basis that cables do not need to be pulled from each direction along the Onshore Cable Route. This assessment of the indicative locations has confirmed that delivery of cable drums will be required to only 17 of the indicative Joint Bay locations as follows and as shown on Plate 1:
  - Joint Bay 01: Double Joint Bay within fields south of Converter Station;
  - Joint Bay 04: Double Joint Bay within fields south of Anmore Road (at Kings Pond Meadows);
  - Joint Bay 07: Double Joint Bay within Hambledon Road spur road north of the junction with Fennell Close;
  - Joint Bay 10: Double Joint Bay within A3 London Road 60m east of Corbett Road (within bus lane);
  - Joint Bay 14: Single Joint Bay within A3 London Road 340m south of Ladybridge roundabout (within bus lane);
  - Joint Bay 15: Single Joint Bay within A3 London Road approximately 70m north of Bushy Mead;

- Joint Bay 17: Double Joint Bay within Portsdown Hill Car Park, south of Portsdown Hill Road;
- Joint Bay 18: Single Joint Bay within Farlington Avenue, north of the junction with Burnham Road;
- Joint Bay 19: Single Joint Bay within Farlington Avenue, south of the junction with Moortown Avenue;
- Joint Bay 22: Double Joint Bay within Zetland Fields adjacent to A2030 Eastern Road;
- Joint Bay 23: Double Joint Bay within Sainsbury's car park;
- Joint Bay 24: Double Joint Bay within Farlington Playing Fields;
- Joint Bay 25: Double Joint Bay within Kendalls Wharf;
- Joint Bay 29: Double Joint Bay north of Milton Common, adjacent to A2030 Eastern Road;
- Joint Bay 31: Double Joint Bay south western corner of Milton Common, accessed from Moorings Way;
- Joint Bay 33: Double Joint Bay within the grassed area south of Portsmouth University sports pitches;
- Joint Bay 35: Double Joint Bay within the southern edge of Bransbury Park; and
- Joint Bay 36: Double Joint Bay at Landfall at Fort Cumberland open space car park (Transition Joint Bay).

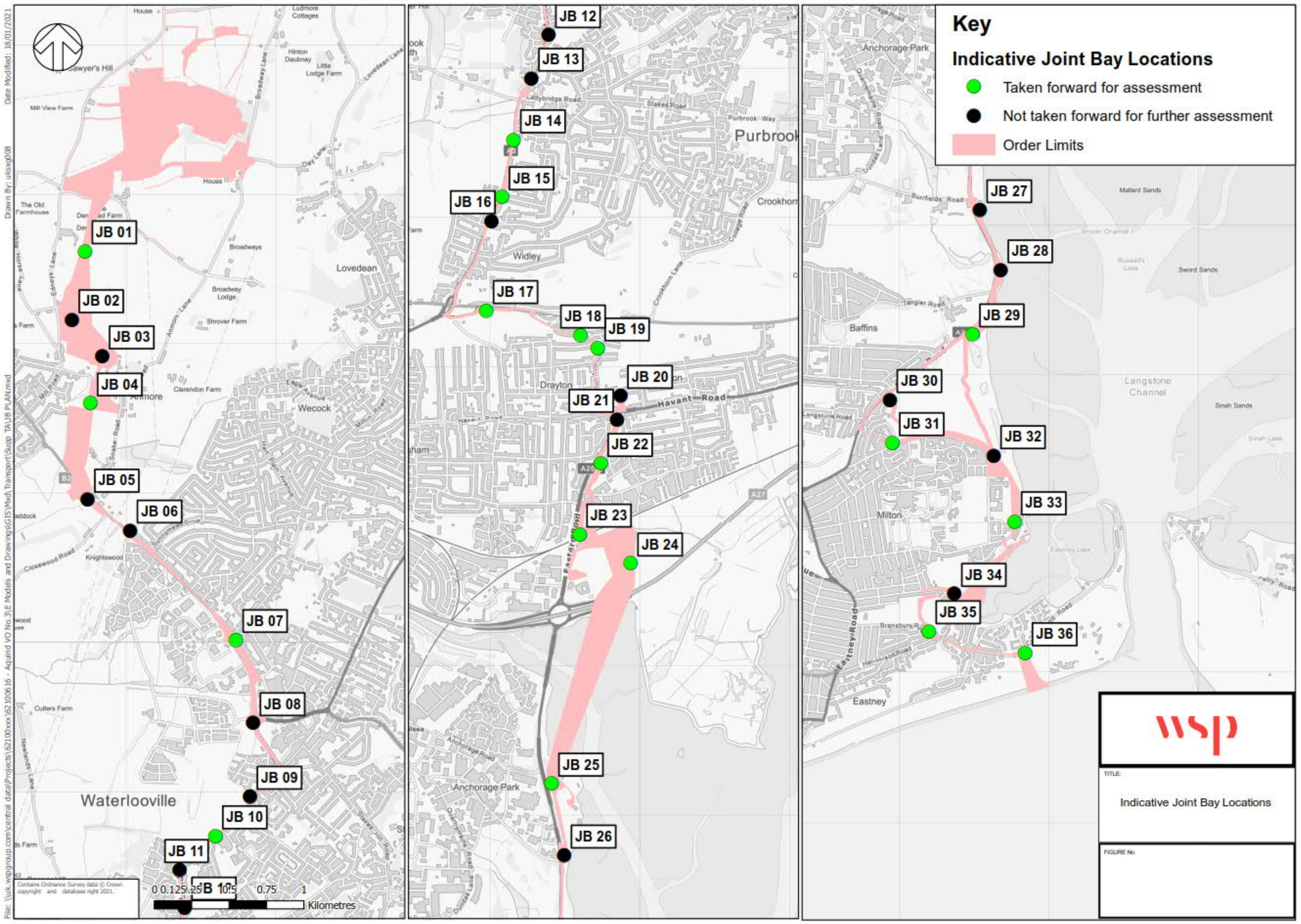

Plate 1 - Indicative Joint Bay Locations

- The assessment of cable drum delivery routes is based upon these indicative Joint Bay locations which are representative of all the likely locations. The cable drum delivery routes will be provided to PCC and HCC (as appropriate) for approval as part of the approval process for the Joint Bay locations when detailed design approvals are obtained. This is secured by Requirement 17 of the dDCO.
- The routing considers both access and egress from each of the indicative Joint Bay locations. In all instances, a swept path analysis exercise has been undertaken to assess that the necessary manoeuvres can be accommodated. Drawings showing these swept paths are provided in Appendix 3.
- In all cases, the routing to and from each indicative Joint Bay is based upon maximising the use of the strategic and primary routes networks wherever possible, given these generally have suitable infrastructure provision and sufficient weight restrictions to cater for abnormal loads.
- To facilitate access by cable drum delivery vehicles (and all construction activities) the Draft Development Consent Order includes powers to temporarily alter the layout of any street (Article 10) and implement Temporary Traffic Regulation Orders (TTROs) to permit, prohibit or restrict stopping, parking, waiting or loading of vehicles on any road (Article 16). Details of where such measures may be required would be approved by the relevant highway authority prior to them being carried out, with the necessity for these confirmed as part of the detailed design process secured by Requirement 17 of the dDCO.
- Plate 2, Plate 3, and Plate 4 show the anticipated cable drum delivery routes to all assessed indicative Joint Bays.

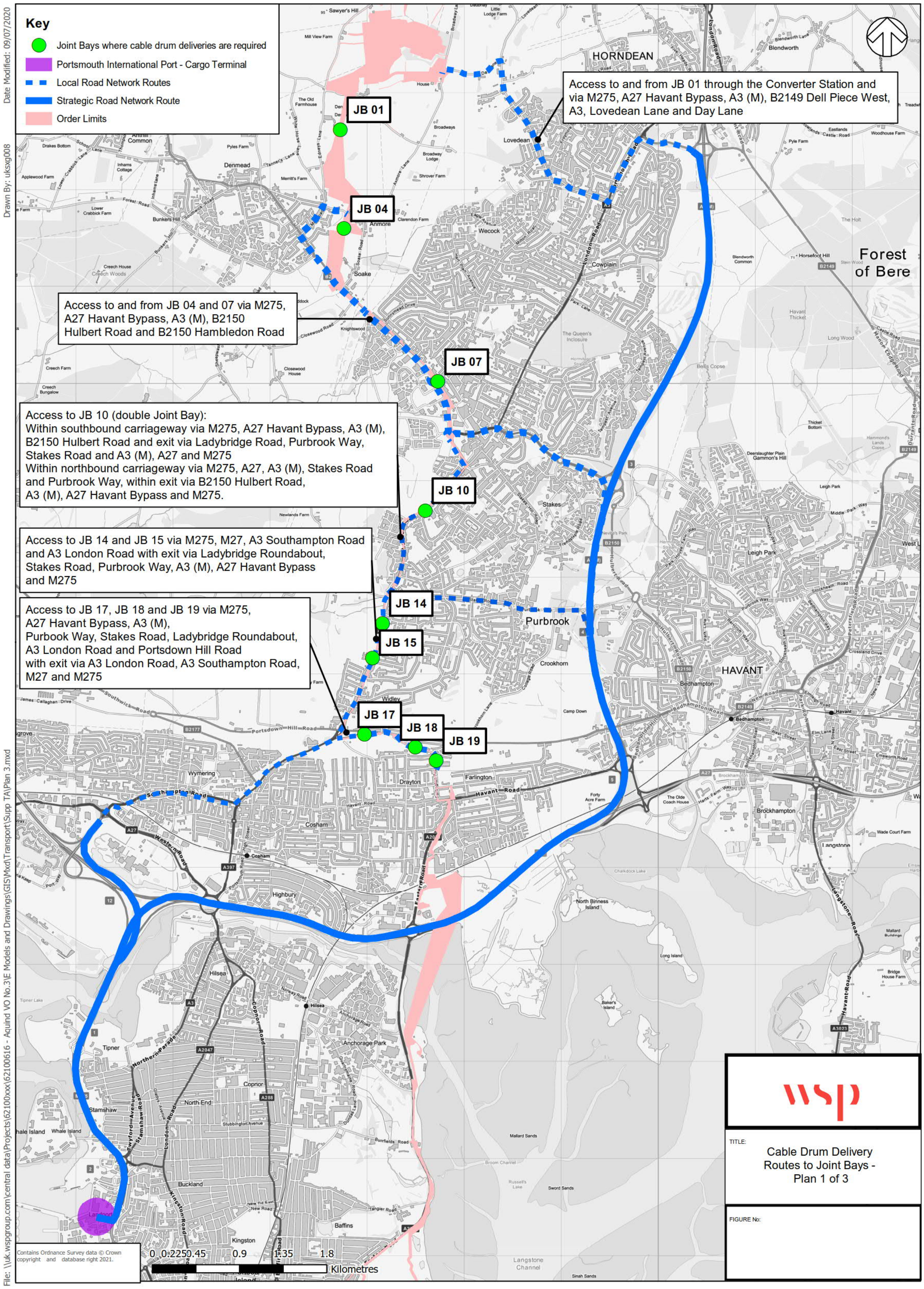

Plate 2 - Joint Bay Cable Drum Delivery Routes 1 of 3

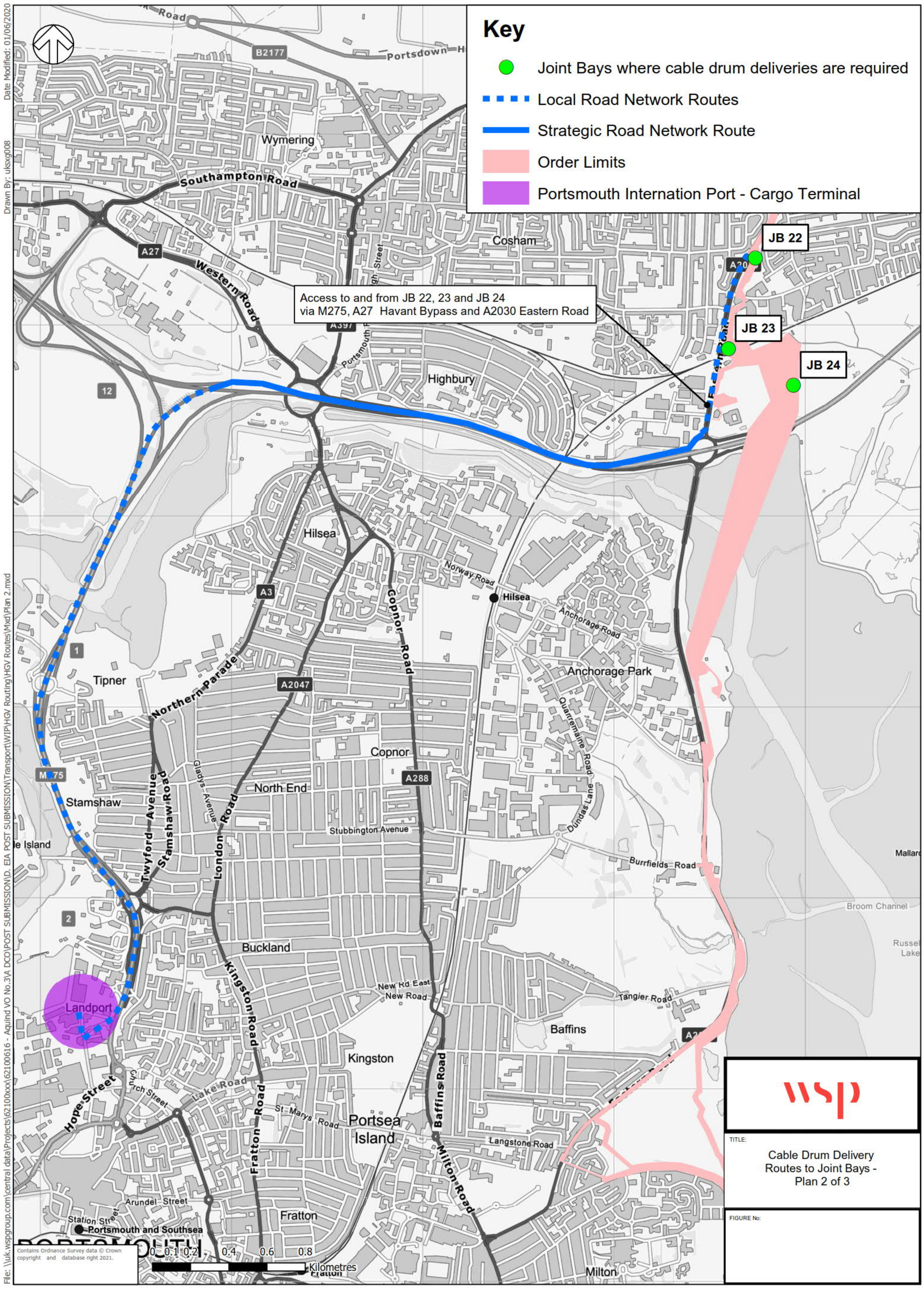

Plate 3 - Joint Bay Cable Drum Delivery Routes 2 of 3

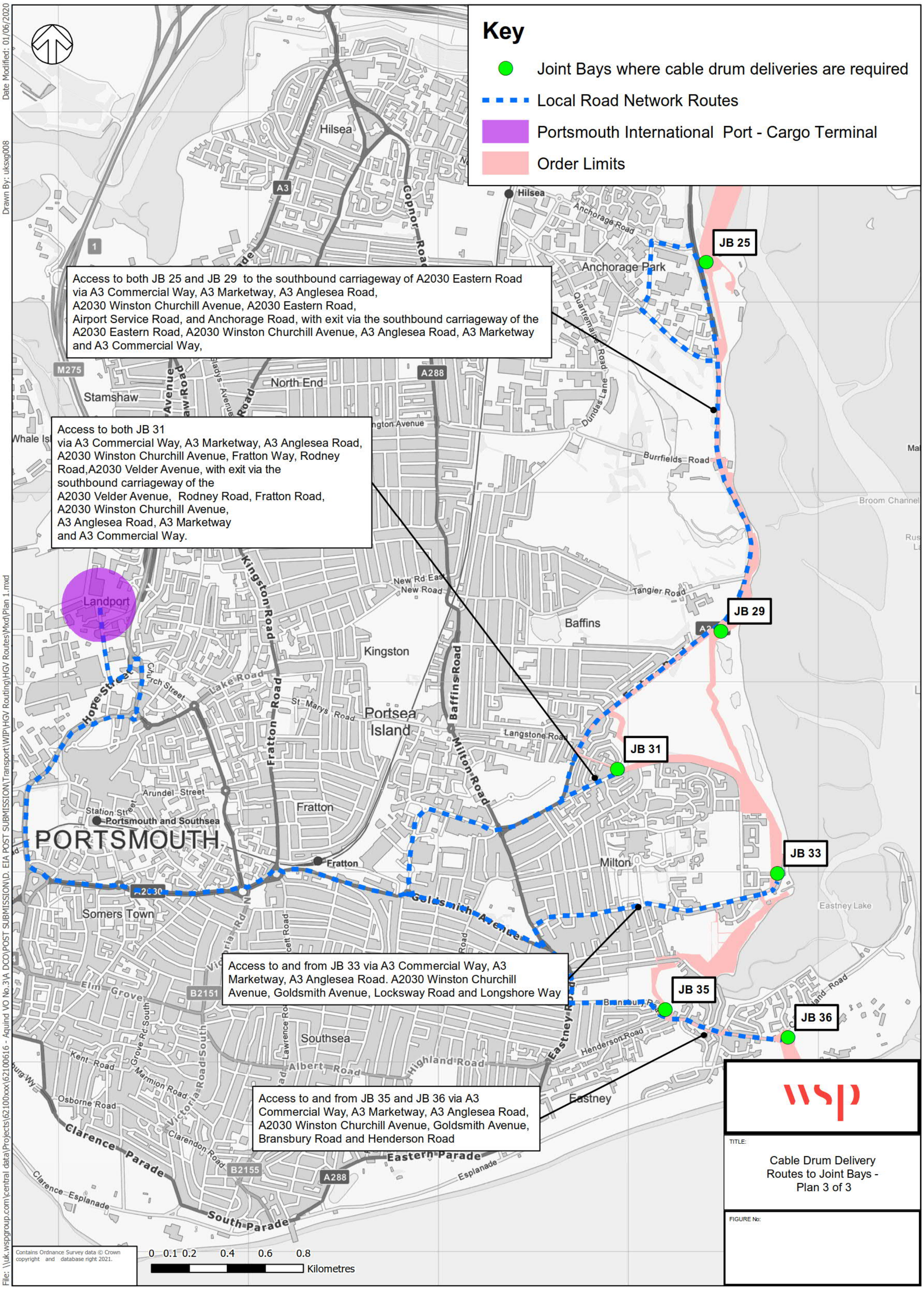

Plate 4 - Joint Bay Cable Drum Delivery Routes 3 of 3

Joint Bay 01: within fields south of Converter Station

- The cable drum delivery vehicles would use A3 Mile End Road, M275, A27 and A3(M), exiting at Junction 2 onto:
    - B2149 Dell Piece West: a wide single carriageway road which serves Hazleton Industrial Estate and is subject to a 40mph speed limit;
    - A3 Portsmouth Rd / London Road: a wide single carriageway road with northbound bus lanes for the majority of the section used as a delivery route, subject to a 30mph speed limit;
    - Lovedean Lane: A single carriageway road with a 30mph speed limit, which provides access mainly to residential properties but also some commercial premises; and
    - Day Lane: a rural lane, generally wide enough to accommodate normal two-way traffic, subject to national speed limit.
- This follows the construction traffic route between the A3(M) and Converter Station site for all vehicles associated with construction of the Proposed Development. Access to the Converter Station site would be from the proposed site access at Broadway Lane / Day Lane discussed in Section 2.2 and controlled via the construction vehicle management strategy set-out in the Framework Construction Traffic Management Plan (REP3-032).
- The swept path analysis of this route shown on Drawing 62100616/ATR/010, which is provided in Appendix 1, has shown that all manoeuvres can be accommodated within the existing highway layout. At the A3 Portsmouth Road / Dell Piece West / Catherington Lane traffic signals it will be necessary for the cable drum delivery vehicle to use off-side approach lanes through the junction to avoid overrunning traffic signal poles and guard railing located on the traffic islands. This manoeuvre will be completed with use of escort vehicles to manage conflicting traffic movements at the junction.
- Entry and exit from this Joint Bay location would be achieved via the same route.

Joint Bay 04: within fields south of Anmore Road (At Kings Pond Meadows)

- The cable drum delivery vehicles would use A3 Mile End Road, M275, A27 and A3(M), exiting at Junction 3 onto:
    - B2150 Hulbert Road and A3 Maurepas Way: dual-carriageway roads with two lanes in each direction, subject to a 40mph speed limit;
    - B2150 Hambledon Road between Maurepas Way and Milton Road: a dual-carriageway road with two lanes in each direction, subject to a 40mph speed limit, which provides access to Wellington Retail Park, Aston Road industrial estate and Brambles Business Park;

- B2150 Hambledon Road between Milton Road and Mill Road: a single-carriageway road with a 30mph speed limit providing residential access a and primary route between Denmead and Waterlooville;
- Mill Road: a residential road subject to a 30mph speed limit, with unrestricted on-street parking; and
- Anmore Road: a rural lane, generally wide enough to accommodate normal two-way traffic, providing some residential access, subject to a 30mph speed limit.

- The swept path analysis of this route shown on Drawing 62100616/ATR/020 shows that some vehicle overrun of footways occurs on entry / exit to Mill Road from B2150 Hambledon Road, however, this would not impede access. A TTRO would be required on Mill Road to temporarily restrict on-street car parking when the cable drum is being delivered.
- As shown on 62100616/ATR/021, the cable drum delivery vehicle would overhang the footway located on the southern side of Anmore Road for approximately 50m. The turning movement to / from fields south of Anmore Road would be facilitated by provision of a temporary construction access point shown as location AC/2/a on Sheet 3 of the Access and Rights of Way Plans (REP6-012).
- Entry and exit from this Joint Bay location would be achieved via the same route.

Joint Bay 07: within Hambledon Road north of the junction with Fennell Close

- The cable drum delivery vehicles would use the same route as for Joint Bay 04, up until the junction of B2150 Hambledon Road / Milton Road roundabout. Access from the Hambledon Road spur road would be taken from the southbound carriageway of the B2150 Hambledon Road after completing a U-turn at the B2150 Hambledon Road / Milton Road roundabout. During delivery of the cable drums, the delivery vehicle would stop on carriageway on Hambledon Road spur road. Suitable traffic management would be employed in this scenario to provide a temporary lane closure., with two-way traffic maintained at all times.
- Exit from the site, under banksman control, would be via the same route with cable drum delivery vehicles turning within the carriageway to access the southbound lane of the B2150 Hambledon Road.
- The swept path analysis of this route shown on Drawing 62100616/ATR/030 has shown that all manoeuvres can be accommodated by the existing highway layout.

Joint Bay 10: A3 London Road 60m east of Corbett Road (within bus lane)

- Two single Joint Bays are indicatively shown at this location. The cable drum delivery vehicles would use A3 Mile End Road, M275, A27 and A3(M), exiting at Junction 3 onto:

- B2150 Hulbert Road and A3 Maurepas Way: dual-carriageway roads with two lanes in each direction, subject to a 40mph speed limit; and
    - A3 London Road: a wide single carriageway road with bus lanes in both directions for the majority of its length, subject to a 30mph speed limit.
- During delivery of the cable drums, the delivery vehicle would stop on the carriageway of the A3 London Road. Suitable traffic management would be employed in this scenario to provide a temporary lane closure, with two-way traffic maintained at all times.
- Exit from the site would be via the southbound carriageway of the A3 London Road, with the delivery vehicle continuing to Ladybridge roundabout and Ladybridge Road / Stakes Road / Purbrook Way to access A3(M) Junction 4. Ladybridge Road and Stakes Road are single-carriageway roads subject to a 30mph speed limit while Purbrook Way is a part wide single-carriageway / part dual-carriageway road with a 40mph speed limit.
- The swept path analysis of this route is shown on Drawings 62100616/ATR/040, 041 and 042. This swept path analysis has shown other than overhang of the traffic island on approach to Forest End roundabout, which may require temporary removal of the existing bollard, all manoeuvres can be accommodated by the existing highway layout
- Deliveries to this Joint Bay will be undertaken either out of hours or overnight to minimise disruption to the highway network.

Joint Bay 14: A3 London Road 340m south of Ladybridge roundabout (within bus lane)

- The cable drum delivery vehicles would use A3 Mile End Road, M275, A27 and A3(M), exiting at Junction 4 onto:
    - Purbrook Way: a part wide single-carriageway / part dual-carriageway road with a 40mph speed limit;
    - Ladybridge Road / Stakes Road: a single-carriageway road, subject to a 30mph speed limit; and
    - A3 London Road: a wide single carriageway road with bus lanes in both directions for the majority of its length, subject to a 30mph speed limit.
- During delivery of the cable drums, the delivery vehicle would stop on the southbound carriageway of the A3 London Road. Suitable traffic management would be employed in this scenario to provide a temporary lane closure, with two-way traffic maintained at all times.

- Exit from the site would be via the southbound carriageway of the A3 London Road to Cosham, with the delivery vehicle continuing along A3 Southampton Road to reach the M275 / M27. The A3 Southampton Road is a dual-carriageway road with two lanes in each direction and is subject to a 40mph speed limit.
- The swept path analysis of this route shown on Drawing 62100616/ATR/050 and 051 has shown that all manoeuvres can be accommodated by the existing highway layout.
- Deliveries to this Joint Bay will be undertaken either out of hours or overnight to minimise disruption to the highway network.

Joint Bay 15: A3 London Road 70m north of Bushy Mead

- The cable drum delivery vehicles would use the same entry and exit route as Joint Bay 14. During delivery of the cable drums, the delivery vehicle would stop on the southbound carriageway of the A3 London Road. Suitable traffic management would be employed in this scenario to provide a temporary lane closure, with two-way traffic maintained at all times.
- The swept path analysis of this route shown on Drawing 62100616/ATR/050 and 051 has shown that all manoeuvres can be accommodated by the existing highway layout.
- Deliveries to this Joint Bay will be undertaken either out of hours or overnight to minimise disruption to the highway network.

Joint Bay 17: Portsdown Hill Car Park, south of Portsdown Hill Road

- The cable drum delivery vehicles would use the M275, A27 Havant Bypass and the A3 (M), upon exiting A3 (M) at Junction 4, the construction vehicle would travel westbound along Purbrook Way, Stakes Road and Ladybridge Road before travelling south on A3 London Road and onto B2177 Portsdown Hill Road. Upon arrival, the delivery vehicles, under control of banksman, would reverse into the Portsdown Hill Car Park to offload the cable drum and avoid blocking the public highway. Exit would then be taken in forward gear onto B2177 Portsdown Hill Road, before travelling onwards southbound on A3 London Road and A3 Southampton Road. Finally, the vehicle would enter M275 and travel southbound towards Portsmouth Cargo Terminal.
- The swept path analysis of this route shown on Drawing 62100616/ATR/060 has shown that all manoeuvres on approach to Portsdown Hill car park can be accommodated by the existing highway layout. To enter and exit the car park itself, the existing traffic island and posts at the access junction will need to be temporarily removed as shown on Drawing 62100616/ATR/061.

- It is noted that the vehicle would be required to travel under a road bridge on A3 London Road, a bridge which forms part of B2177 Portsdown Hill Road. The cable drum delivery vehicle will have a maximum height of 4.9m, and as the road bridge in question is not specifically signposted to state otherwise, a headroom of at least 5.03m is available as per guidance set out in paragraph 104 of DfT guidance document "*Prevention of Strikes on Bridges over Highways*"[1].

Joint Bay 18: Single Joint Bay within Farlington Avenue, north of the junction with Burnham Road

- The cable drum delivery vehicles would use the same route as identified for Joint Bay 17 with vehicles continuing along Portsdown Hill Road to access Farlington Avenue. During delivery of the cable drums, the delivery vehicle would stop on the carriageway of Farlington Avenue with deliveries undertaken either out of hours or overnight to minimise disruption to the highway network. A temporary road closure of Farlington Avenue would be required during delivery of the cable drum with this process taking approximately one hour to complete.
- Exit would then be taken via Farlington Avenue in the northbound direction, with the cable drum delivery vehicles completing a three point turn using either Burnham Road and Moortown Road under banksman control. From the B2177 Portsdown Hill Road, before travelling onwards southbound on A3 London Road and A3 Southampton Road. Finally, the vehicle would enter M275 and travel southbound towards Portsmouth Cargo Terminal.
- The swept path analysis of this route shown on Drawing 62100616/ATR/064 and 065 has shown that all manoeuvres on approach to and from Farlington Avenue can be accommodated by the existing highway layout. A number of Temporary Traffic Regulation Order's (TTRO's) may also be required to temporarily suspend on-street parking on parts of Farlington Avenue to facilitate cable drum delivery

Joint Bay 19: Single Joint Bay within Farlington Avenue, south of the junction with Moortown Avenue;

- The cable drum delivery vehicles would use the same entry and exit route as identified for Joint Bay 18. During delivery of the cable drums, the delivery vehicle would stop on the carriageway of Farlington Avenue with deliveries undertaken either out of hours or overnight to minimise disruption to the highway network. A temporary road closure of Farlington Avenue would be required during delivery of the cable drum with this process taking approximately one hour to complete.
- The swept path analysis of this route shown on Drawing 62100616/ATR/064 and 065 has shown that all manoeuvres on approach to and from Farlington Avenue can be accommodated by the existing highway layout. A number of TTRO's may also be required to temporarily suspend on-street parking on parts of Farlington Avenue to facilitate cable drum delivery.

Joint Bay 22: within Zetland Fields adjacent to A2030 Eastern Road

- The cable drum delivery vehicles would use A3 Mile End Road, M275 and A27 and exiting at the junction with A2030 Eastern Road onto:
    - A2030 Eastern Road (north of the A27): a dual-carriageway road with two lanes in each direction, subject to a 40mph speed limit.
- Access to Zetland Fields would be via the A2030 Eastern Road northbound carriageway, under banksman control, towards the northern boundary of the open space area. Access would be facilitated by provision of a temporary construction access junction to / from Zetland Fields shown as location AC/7/a on Sheet 7 of the Access and Rights of Way Plans (REP6-012).
- Exit from the site would be achieved via the same route with delivery vehicles manoeuvring back onto the A2030 Eastern Road southbound carriageway under control of banksman.
- The swept path analysis of this route shown on Drawing 62100616/ATR/070 shows how the cable drum delivery vehicles would access Zetland Fields from A2030 Eastern Road, requiring overrun of the existing centre island and temporary removal of fencing at the Zetland Fields boundary.

Joint Bay 23: within Sainsbury's car park

- The cable drum delivery vehicles would use A3 Mile End Road, M275 and A27 and A2030 Eastern Road as with Joint Bay 17. Access into Sainsbury's car park would be via the A2030 Eastern Road / Fitzherbert Road traffic signal junction which is designed to accommodate HGV traffic due to it providing an access point to the retail part and Farlington industrial estate.
- Entry and exit from this Joint Bay location would be achieved via the same route.
- The swept path analysis of this route shown on Drawing 62100616/ATR/080 has shown that entry into Sainsbury's car park will require overrun of the existing central island. On exit the temporary removal of traffic signal poles may be required on the nearside footway of Fitzherbert Road to provide adequate width for the cable drum delivery vehicles.

Joint Bay 24: within Farlington Playing Fields

- The cable drum delivery vehicles would use A3 Mile End Road, M275 and A27 and A2030 Eastern Road as with Joint Bay 23. Access into Farlington Playing Fields would be via the existing access to the public car park under the control of banksman.
- As shown on Drawing 0616-ATR-002, the cable drum delivery vehicle can access the site by straddling the offside and nearside lanes of the northbound carriageway of the A2030 Eastern Road. At the entrance to the Farlington Playing

Fields car park, the cable drum delivery vehicle would overrun the existing central island and grass verge on the inside corner.

- The verge on the inside corner of the entrance to Farlington Playing Fields car park has a small earth bank, which already appears to have been partly flattened through existing vehicle use and there is no kerb where the overrun is anticipated to occur. This creates a wider carriageway width than shown on the OS mapping but, if required, the bank will be temporarily flattened to facilitate access, before being reinstated once works are complete. The central island is also in a poor state of repair and would be removed to facilitate access and reinstated on completion of construction.
- Further into the Farlington Playing Fields site there are wooden bollards adjacent to the carriageway and a width / height restricting barrier which would need to be removed to facilitate access and then reinstated once works are complete.
- Exit from Farlington Playing Fields would use the same access point for entry, with the cable drum delivery vehicle turning left onto the A2030 Eastern Road southbound carriageway under control of a banksman. This is to avoid conflicts with vehicles using the Shell Petrol Filling Station and Holiday Inn site.
- Vehicle overhang of the existing grass verges at the entrance to the Farlington Playing Fields car park would occur on the nearside and offside of the vehicle. Like ingress, the existing central island would be over-run. To turn left onto the A2030 Eastern Road southbound carriageway, vehicle over-run would occur on the nearside verge and vehicle overhang would occur on the central island separating the two carriageways of the A2030 Eastern Road. The existing Advanced Directional Sign on the nearside verge and guard-railing situated in the central island would not be affected.

Joint Bay 25: Kendalls Wharf, adjacent to the A2030 Eastern Road

- The cable drum delivery vehicle would use A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:
  - Fratton Way / Rodney Road: a single-carriageway road which provides access into Fratton industrial estate and subject to a 30mph speed limit;
  - A2030 Velder Avenue: a single-carriageway road with one lane northbound and two lanes southbound, subject to a 30mph speed limit; and
  - A2030 Eastern Road: a mixture of single-carriageway and dual-carriageway with two lanes northbound and two lanes southbound for all but a 1.0km section adjacent to Milton Common, which has two lanes northbound and one lane southbound. The A2030 also has a mix of speed limits ranging from 30mph to 50mph.

- At the A288 Milton Road / A2030 Velder Avenue / Rodney Road traffic signal junction, cable drum delivery vehicles would be required to use the westbound exit lane (to Rodney Road) to travel through the junction to avoid overrunning traffic signal poles on the existing traffic islands. This is shown on Drawing 62100616/ATR/090. This manoeuvre would be completed with support from escort vehicles to manage vehicle conflicts at the junction.
- The indicative Joint Bay location is in Kendall Wharf, directly accessible via Anchorage Road at the junction of A2030 Eastern Road / Anchorage Road / Kendalls Wharf. As vehicles are not permitted to turn right into Kendalls Wharf when travelling from the A2030 Eastern Road (south) approach, access to this arm must be from the Anchorage Road approach, as such access is proposed using the existing highway network via the following:
  - Airport Service Road: a wide single-carriageway road that provides access to various industrial and commercial units, subject to a 30mph speed limit;
  - Robinson Way: a single-carriageway road, which provides access to Interchange Park industrial estate and other commercial premises, subject to a 30mph speed limit; and
  - Anchorage Road: a part wide single-carriageway / dual-carriageway with two lanes in each direction, subject to a 30mph speed limit.
- At the A2030 Eastern Road / Anchorage Road traffic signal junction, cable drum delivery vehicles would be required to use the westbound exit lane (to Anchorage Road) to travel through the junction to avoid overrunning traffic signal poles on the existing traffic islands. This is shown on Drawing 62100616/ATR/091.This manoeuvre would be completed with support from escort vehicles to manage vehicle conflicts at the junction.
- Following this manoeuvre, the cable drum delivery vehicle would gain access to the Joint Bay from the existing Kendalls Wharf access road. Entry and exit would be completed in forward gear under the control of a banksman. Access to this Joint Bay will be facilitated by provision of a temporary construction access point shown as location AC/8/a on Sheet 8 of the Access and Rights of Way Plans (REP6-012)
- Vehicles exiting the site would travel north along the A2030 Eastern Road and onto the A27.

Joint Bay 29: adjacent to the A2030 Eastern Road north of Milton Common

- The cable drum delivery vehicle would use A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:
  - Fratton Way / Rodney Road: a single-carriageway road which provides access into Fratton industrial estate and subject to a 30mph speed limit;
  - A2030 Velder Avenue: a single-carriageway road with one lane northbound and two lanes southbound, subject to a 30mph speed limit; and
  - A2030 Eastern Road: a mixture of single-carriageway and dual-carriageway with two lanes northbound and two lanes southbound for all but a 1.0km section adjacent to Milton Common, which has two lanes northbound and one lane southbound. The A2030 also has a mix of speed limits ranging from 30mph to 50mph.
- The same manoeuvre would be required at the A288 Milton Road / A2030 Velder Avenue / Rodney Road traffic signal junction as described for access to Joint Bay 25 as shown on Drawing 62100616/ATR/091
- Given that the indicative Joint Bay location is adjacent to the southern carriageway of the A2030 Eastern Road and on a dual-carriageway link subject to a 50mph speed limit it would not be recommended that cable drum delivery vehicles turn across the carriageway, even if this manoeuvre was to be completed with banksmen. Instead the delivery vehicles would use the existing highway network to access the southbound carriageway of the A2030 via the following:
  - Anchorage Road: a part wide single-carriageway / dual-carriageway with two lanes in each direction, subject to a 30mph speed limit;
  - Robinson Way: a single-carriageway road, which provides access to Interchange Park industrial estate and other commercial premises, subject to a 30mph speed limit; and
  - Airport Service Road: a wide single-carriageway road that provides access to various industrial and commercial units, subject to a 30mph speed limit.
- Following this manoeuvre, the cable drum delivery vehicle would gain access to the A2030 Eastern Road southbound carriageway. Access to the Joint Bay from A2030 Eastern Road will be facilitated by provision of a temporary construction access point shown as location AC/9/a on Sheet 9 of the Access and Rights of Way Plans (REP6-012). Entry and exit would be completed in forward gear under the control of a banksman.

- Cable drum delivery vehicles leaving the site would continue southbound along the A2030 Eastern Road and follow A2030 Velder Avenue, Fratton Way / Rodney Road, A2030 Goldsmith Avenue, A2030 Victoria Road North, A2030 Winston Churchill Avenue, A3 Anglesea Road, A3 Marketway and A3 Hope Street to reach Portsmouth Cargo Port.
- The swept path analysis of this route shown on Drawing 0616/ATR/090, which as shown that other than at the A288 Milton Road / A2030 Velder Avenue / Rodney Road traffic signal junction, all manoeuvres can be accommodated by the existing highway layout.

Joint Bay 31: south west corner of Milton Common accessed from Moorings Way

- The cable drum delivery vehicle would use A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:
  - Fratton Way / Rodney Road: a single-carriageway road which provides access into Fratton industrial estate and subject to a 30mph speed limit;
  - A2030 Velder Avenue: a single-carriageway road with one lane northbound and two lanes southbound, subject to a 30mph speed limit; and
  - Moorings Way: a single-carriageway residential road, subject to a 20mph speed limit
- On Moorings Way, the cable drum delivery vehicles will pull off carriageway and alongside the Joint Bays in order for the cable drums to be offloaded. On exit, cable drum delivery vehicles would be required to complete a three-point turn using Warren Avenue under banksman control.
- Cable drum delivery vehicles leaving the site would continue southbound along the A2030 Velder Avenue, Fratton Way / Rodney Road, A2030 Goldsmith Avenue, A2030 Victoria Road North, A2030 Winston Churchill Avenue, A3 Anglesea Road, A3 Marketway and A3 Hope Street to reach Portsmouth Cargo Port.
- The swept path analysis of this route shown on Drawing 0616/ATR/100, which as shown that other than at the A288 Milton Road / A2030 Velder Avenue / Rodney Road traffic signal junction, all manoeuvres can be accommodated by the existing highway layout. A number of TTRO's may also be required to temporarily suspend on-street parking on parts of Moorings Way to facilitate cable drum delivery.

Joint Bay 33: within the grassed area south of Portsmouth University sports pitches, accessed via Locksway Road

- The cable drum delivery vehicle would use via A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:
  - Fratton Way / Rodney Road: a single-carriageway road which provides access into Fratton industrial estate and subject to a 30mph speed limit;
  - A288 Milton Road: a wide single-carriageway with one lane northbound and two lanes southbound, subject to a 30mph speed limit; and
  - Locksway Road / Longshore Way: Single-carriageway mainly residential roads which also provides access to St James' Hospital and University of Portsmouth Langstone Campus, subject to a 20mph speed limit.
- At the A288 Milton Road / A2030 Velder Avenue / Rodney Road traffic signal junction, cable drum delivery vehicles would be required to use the westbound exit lane (to Rodney Road) to turn right at the junction to avoid overrunning traffic signal poles on the existing traffic islands. This is shown on Drawing 62100616/ATR/200. This manoeuvre would be completed with support from escort vehicles to manage vehicle conflicts at the junction.
- Access to the grassed area to the south of University of Portsmouth land would be completed in reverse and would be controlled by banksmen, therefore allowing the cable drum delivery vehicles to exit in forward gear. To facilitate access by cable drum delivery vehicles it may be necessary to temporarily remove the existing sign and traffic island at the access junction, as shown on Drawing 62100616/ATR/200. On exit, the cable drum delivery vehicles would head north along Milton Road and A2030 Eastern Road to reach the A27.
- The swept path analysis of this route shown on Drawing 62100616/ATR/200, 201 and 202 shows that some vehicle overrun occurs on entry and exit at the Milton Road / Locksway Road mini-roundabout. Existing bollards at this roundabout would therefore need to be temporarily removed to facilitate access and reinstated once the cable drums have been delivered.
- A number of TTROs would be required on Locksway Road / Longshore Way to temporarily restrict on-street car parking when the cable drum is being delivered. These restrictions would be kept to a minimum.

Joint Bay 35: within the southern edge of Bransbury Park

- The cable drum delivery vehicle would use via A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:

- Fratton Way / Rodney Road: a single-carriageway road which provides access into Fratton industrial estate and subject to a 30mph speed limit;
- A288 Milton Road: a wide single-carriageway with on-street parking passing through Milton local centre, subject to a 30mph speed limit; and
- Bransbury Road: a wide single-carriageway residential road with on-street parking, subject to a 30mph speed limit.

- The same manoeuvre would be required at the A288 Milton Road / A2030 Velder Avenue / Rodney Road traffic signal junction as described for access to Joint Bay 33.
- Access to the south of Bransbury Park will be gained via Bransbury Park car park and the existing access junction. Entry and exit from the site would be in forward gear, controlled by banksmen. The existing gate and fence would need to be temporarily removed to facilitate access by cable drum delivery vehicles.
- The swept path analysis of this route shown on Drawing 0616/ATR/302 and 304 has shown that all manoeuvres can be accommodated by the existing highway layout, including on-street parking that occurs on Milton Road and Bransbury Road.
- On exit, the cable drum delivery vehicles would head north along Milton Road and A2030 Eastern Road to reach the A27. At the A288 Milton Road / Goldsmith Avenue traffic signal junction the cable drum delivery vehicles would need to use the southbound exit lane to travel through the junction to avoid overrunning traffic signal poles on the existing traffic islands. This is shown on Drawing 62100616/ATR/303. This manoeuvre would be completed with support from escort vehicles to manage vehicle conflicts at the junction.

Joint 36: Landfall at Fort Cumberland open space car park (Transition Joint Bay)

- The cable drum delivery vehicle would use via A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:
  - Fratton Way / Rodney Road: a single-carriageway road which provides access into Fratton industrial estate and subject to a 30mph speed limit;
  - A288 Milton Road: a wide single-carriageway with on-street parking passing through Milton local centre, subject to a 30mph speed limit;
  - Bransbury Road: a wide single-carriageway residential road with on-street parking, subject to a 30mph speed limit;
  - Henderson Road: a wide single-carriageway with on-street parking, subject to a 30mph speed limit; and

- Fort Cumberland Road: a single-carriageway residential road with some on-street parking, subject to a 30mph speed limit.

- The same manoeuvre would be required at the A288 Milton Road / A2030 Velder Avenue / Rodney Road traffic signal junction as described for access to Joint Bay 33.
- Access to the Fort Cumberland car park would be in the vicinity of the existing access junction, albeit facilitated by construction of a temporary construction access point shown at location AC/10/c on Sheet 10 of the Access and Rights of Way Plans (REP6-012). Entry and exit from the site would be in forward gear, controlled by banksmen.
- On exit, the cable drum delivery vehicles would head north along Milton Road and A2030 Eastern Road to reach the A27, with the same manoeuvre required at the A288 Milton Road / Goldsmith Avenue traffic signal junction as described for access to Joint Bay 35.
- The swept path analysis of this route shown on Drawing 62100616/ATR/300, 301, 302 and 303 has shown that all manoeuvres can be accommodated by the existing highway layout, with the exception of manoeuvres through the A288 Milton Road / A2030 Velder Avenue / Rodney Road and A288 Milton Road / Goldsmith Avenue traffic signal junctions described above. This includes on-street parking that occurs on Milton Road, Bransbury Road and Henderson Road.

2.5.1.3. The updates to indicative Joint Bay locations has not altered the conclusion drawn in paragraph 3.9.4.72 of the STA. The assessment has shown that access by cable drum delivery vehicles is achievable in all circumstances representative of where Joint Bays may be located, evidencing an achievable solution for the delivery of the entire Onshore Cable Route. Use of either TTROs to restrict on-street parking or temporary removal and reinstatement of street furniture would be required for the short durations that the cable drum delivery vehicles are present in some locations. Powers to facilitate such measures are included for within the Draft DCO along with the requirement for the reinstatement of any alterations after construction is complete to the satisfaction of the relevant highway authority.

3. COLLISION ANALYSIS

3.1. INTRODUCTION

3.1.1.1. This Chapter provides a summary of the additional technical submissions completed since Deadline 1 in relation to road safety across the local and strategic highway networks

3.2. ADDITIONAL ASSESSMENT OF ROAD SAFETY IMPACTS ON PORTSMOUTH CITY COUNCIL HIGHWAY NETWORK

3.2.1.1. At a meeting dated 11/08/20 to discuss the Applicant's submission of the Eastern Road Further Traffic Assessment Technical Note (Appendix E of the STA) (REP1-142), PCC noted that there was a concerns that the impacts of traffic redistribution and increased queuing on road safety had not been fully assessed within this document. This concern was also raised by PCC in their Local Impact Report (REP1-173).

3.2.1.2. In responses to these comments the Applicant has completed a Road Safety Technical Note (REP6-071), submitted at Deadline 6. This considered the road safety implications of the traffic management measures required to facilitate construction of the Onshore Cable Route and resultant traffic reassignment through further detailed analysis of traffic flow increases across the PCC highway network. In doing so, this note included the following additional assessment to that included within the STA:

- A further assessment of the impact of increased temporary queueing at junction which may occur as a result of the proposed works;
- Further assessments of the impact of temporary increased traffic flows on links which are anticipated to experience an increase in traffic flows as a result of vehicles redistributing away from the proposed construction works on the Onshore Cable Corridor; and
- An assessment of the possible road safety implications at traffic management locations on the Onshore Cable Corridor.

3.2.1.3. A summary of this assessment is provided below for reference.

3.2.2. ASSESSMENT OF JUNCTIONS

3.2.2.1. Based upon analysis completed within the TA (APP-448) and STA (REP1-142), an assessment was completed of junctions within the study area and within PCC's jurisdiction that experience increases in vehicle queues above the 50m between the DM and DS scenarios.

3.2.2.2. This was completed to provide an assessment of the impact of predicted temporary increases in queue lengths at junctions with respect to subsequent impact on upstream receptors. The junctions identified for assessment were as follows:

- A2030 Eastern Road / Anchorage Road Traffic Signal Junction;
- A2030 Eastern Road / Airport Service Road Traffic Signal Junction;
- A2030 Eastern Road / Burrfields Road Traffic Signal Junction;
- A2030 Eastern Road / Hayling Avenue Priority T-Junction;
- Copnor Road / Burrfields Road Traffic Signal Junction; and
- A3 Mile End Road / Church Street / Hope Street / Commercial Road Signalised Roundabout.

3.2.2.3. Of the junctions assessed, only the Church Street / Commercial Road /Hope Street / A3 Mile End Road junction was considered to lead to some temporary adverse impacts on road safety during the construction period. This is a result of forecast queue lengths extending back through upstream junctions on Church Street and Commercial Road approaches which may increase risks of collisions between vehicles using these junctions.

Mitigation of Impacts

3.2.2.4. To mitigate this potential impact it is recommended that temporary signage is installed at upstream junction advising driver not to block junctions when queueing, which would be secured by the traffic management strategies for construction works on A2030 Eastern Road.

3.2.3. ASSESSMENT OF HIGHWAY LINKS

3.2.3.1. Further to the assessment contained within Chapter 11 of the TA (APP-448) and updated road safety and accident analysis contained within Chapter 4 of the STA (REP1-142), this additional analysis of highway links provided an assessment of traffic flow increases and potential associated road safety implications on sensitive receptors.

3.2.3.2. This assessment considered highway links categorised as having a medium or high sensitivity within the Chapter 22 of the ES (APP-137) and ES Addendum (REP1-139) were considered and additionally links which are cycle routes, obvious routes to nurseries / schools, roads with shops / community facilities or roads where two-way traffic flow was hindered by on-street parking.

3.2.3.3. The assessment of road safety implications was based upon a quantitative and qualitative approach using the forecast traffic flow changes between the SRTM Do-Minimum and Do-Something scenarios and the characteristics of each street, including link sensitivity derived in Chapter 22 of the ES and ES Addendum, to determine potential safety impacts of increased traffic. The impacts reported are therefore considered as the environmental effect of the Proposed Development, taking into account the matrix for classifying the significance of effects shown in Table 22.6 of the Chapter 22 of the ES (APP-137).

3.2.3.4. In summary, this assessment concluded there would be moderate adverse effects on road safety on the following links within the PCC highway network before the consideration of appropriate mitigation:

- Evelegh Road (Section 5): As a result of the increase in traffic flows past Solent Infant School;
- Gilman Road (Section 5): As a result of traffic flow increases associated with construction work taking place on Havant Road and / or the closure of Farlington Avenue;
- Grove Road (Section 6): As a result of the increase in traffic in proximity to Springfield School;
- Station Road (Section 6): As a result of the increase in traffic in proximity to Springfield School; and
- Dundas Lane (Section 8): As a result of the increase in traffic in proximity to Admiral Lord Nelson School.

Mitigation of Impacts

3.2.3.5. To mitigate these impacts, a number of specific measures are included within the FTMS (REP6-030) which are summarised below and which are in addition to the following holistic mitigations:

- Communication Strategy: The proposed Communication Strategy for the construction stage of the Proposed Development is identified within the Onshore Cable Route Construction Impacts on Access to Properties and Car Parking and Communication Strategy (Appendix 1 of the FTMS (REP6-030)). This document sets out proposals to communicate all upcoming and current construction works with the traveling public and other key stakeholders, which includes local businesses, residential associations and schools thereby ensuring that informed travel choices can be made during this period.

- The Framework CTMP (REP6-032) includes the provision of a road safety and liaison officer who will be responsible for the monitoring of traffic management measures, the proactive management of road safety and responding to road safety problems which may occur during construction of the Onshore Cable Route. This road safety officer will also oversee the implementation of all measures which aid road safety management, including the implementation and crucially review of the signage strategy together with capturing feedback / lessons learned in relation to traffic management operation and signage at sites. This will enable a consistent review and implementation process during the operation of all sites together with areas of traffic management as they come online.

Evelegh Road and Gilman Road

3.2.3.6. The FTMS contained a range of programme restrictions to mitigate the direct impact of construction works and indirect impacts associated with traffic reassigning onto alternative routes. While the scenario modelled in the SRTM included construction works on Havant Road at the Farlington Avenue / Havant Road / A2030 Eastern Road traffic signal junction, the forecast impacts are also representative of construction works on Farlington Avenue, which will require a full road closure. However, as wok requiring the full closure of Farlington Avenue is restricted to the school holidays this will mitigate the road safety impacts associated with traffic flows in proximity to Solent Infant School.

3.2.3.7. The Framework Signage Strategy contained within Appendix 3 of the FTMS also contained the following measures to mitigate the potential for traffic flow increases along Evelegh Road. Gilman Road and other residential roads in the vicinity of Farlington Avenue / Havant Road:

- During the full road closure of Farlington Avenue, signed diversion routes will also be installed between the Havant Road / Farlington Avenue and Portsdown Hill Road / Farlington Avenue junctions to direct traffic along suitable routes. These will be accompanied by signage on residential roads to the east and west of Farlington Avenue that will discourage reassignment along these routes.
- Advanced warning or Variable Message Sign (VMS) signs will be located at the A3 London Road / Portsdown Hill Road junction, A27 / A2030 Eastern Road roundabout, A3 London Road / Spur Road / A397 / Southampton Road roundabout and A3(M) Junction 5 to communicate upcoming or current construction works, thereby allowing drivers of use suitable alternative routes.

3.2.3.8. Should construction take place on Havant Road during the school term that results in traffic flow increases on Evelegh Road traffic marshalling can also be provided These traffic marshals will help direct and manage traffic flow in the vicinity of the school at the start and end of the school day and will provide regular / responsive communication to the designated road safety officer to ensure that any issues that may arise can be identified and resolved.

3.2.3.9. It is the view of the Applicant that these measures will mitigate the road safety impacts identified on Evelegh Road and Gilman Road in the Road Safety Note.

Grove Road and Station Road

3.2.3.10. The mitigation of road safety impacts associated with increased traffic flows on Grove Road, Station Road and in proximity to Springfield School will be achieved using similar strategies as those identified for Evelegh Road and Gilman Road above. For example, the programme restrictions contained within the FTMS that prohibit the full closure of Farlington Avenue to school holidays will fully mitigate traffic reassigning within the vicinity of Springfield School as a result of these works during term time.

3.2.3.11. The Framework Signage Strategy proposed that signs to discourage use of routes will be placed at the northern and southern end of South Road, Station Road and Lower Drayton lane in addition to those measures identified in Paragraph 3.2.3.7. The combination of these will encourage drivers to use suitable alternative routes and avoid the use of Grove Road and Station Road to reassign away from the works.

3.2.3.12. Should construction take place on Havant Road during school term time, traffic marshalling will also be provided in the vicinity of Springfield School to mitigate road safety impacts associated with residual traffic reassignment onto these links.

3.2.3.13. Taking these measures into account, the Applicant considers that the road safety impacts identified on Grove Road and Station Road will be mitigated.

Dundas Lane

3.2.3.14. The Road Safety Note identified a potential road safety impact associated with increased traffic flows in the vicinity of Admiral Lord Nelson school as traffic reassigns away from construction works on the A2030 Eastern Road. The main mitigation of this impact will be the programme restrictions contained within the FTMS, which will permit construction work on the A2030 Eastern Road during the school term only during June and the first half of July.

3.2.3.15. Furthermore, the Framework Signage Strategy proposed use of VMS and advanced warning signs across the local and strategic highway networks to ensure that drivers are aware of construction works on the A2030 Eastern Road prior to reaching it, thereby allowing numerous opportunities to reassign onto other suitable routes rather than use Dundas Lane.

3.2.3.16. Should work take place on a section of the A2030 Eastern Road that leads to traffic reassigning onto Dundas Lane it is also intended that traffic marshalling is employed to mitigate the impact of increased traffic flows in the vicinity of Admiral Lord Nelson School at the start and end of the school day. These traffic marshals will help direct and manage traffic flow in the vicinity of the school at the start and end of the school day and will provide regular / responsive communication to the designated road safety officer to ensure that any issues that may arise can be identified and resolved.

3.2.3.17. With these measures in place, it is the Applicant's view that the road safety impacts identified will be mitigated.

3.2.4. ASSESSMENT OF TRAFFIC MANAGEMENT LOCATIONS

3.2.4.1. An assessment of the possible road safety implications at traffic management locations on the Onshore Cable Corridor was also completed in relation to the impacts of predicted queue lengths resulting from either shuttle working traffic signals or single lane closures.

This assessment showed that the following traffic management locations would result of queueing through upstream junctions:

- B2177 Portsdown Hill Road (Section 4); and
- A2030 Eastern Road (Section 8).

3.2.4.2. In these circumstances the road safety impacts of traffic queueing through upstream junctions will be mitigated through the installation of 'Keep Clear' or 'Do Not Block Junction' signs for the duration of construction works, which will be secured during the detailed traffic management strategies for each location. This is also considered to be normal practice for the mitigation of such impacts to be mitigated as far as possible given the design, implementation and operation of temporary traffic management is governed by Chapter 8 of the Traffic Signs Manual and the Streetworks Code of Conduct.

3.2.5. CONCLUSION

3.2.5.1. These additional assessments have demonstrated that while there will be temporary impact on various receptors as a result of the Proposed Development, these will be manageable through the measures identified within the FTMS (REP6-030) and Framework CTMP (REP6-032).

3.3. ADDITIONAL ASSESSMENT OF ROAD SAFETY IMPACTS ON HAMPSHIRE COUNTY COUNCILS HIGHWAY NETWORK

3.3.1.1. At Deadline 6 the Applicant submitted the HCC Road Safety Technical Note (REP6-075). This document has been produced in response to post-application discussions held with Hampshire County Council (HCC), Portsmouth City Council (PCC) and Highways England (HE) at a meeting dated 8/12/20 to discuss the Statement of Common Ground (SOCG). Comments were also provided by HCC in their Deadline 5 submission (REP6-080) related to the road safety implications of increased traffic flows as result of traffic reassignment away from construction works on the Onshore Cable Corridor.

3.3.1.2. In specific response to HCC's comments this Technical Note provided a further assessment of the impact of temporary increased traffic flows on links in the study area, which are anticipated to experience an increase in traffic flows as a result of vehicles redistributing away from the proposed construction works on the Onshore Cable Corridor.

3.3.1.3. Similarly to the Technical Note completed for the PCC highway network, these additional assessments have demonstrate that while there will be temporary impact on various receptors as a result of the Proposed Development, these will be manageable through the measures identified within the FTMS (REP6-030) and Framework CTMP (REP6-032).

3.3.1.4. This assessment considered all links which were forecast to experience a change in traffic flow by 10% or more or an increase in hourly flow of more than 60 vehicles per hour, which follows stages 1 and 2 of the process used for link assessments contained within the TA (APP448).

3.3.1.5. The assessment of road safety implications was based upon a quantitative and qualitative approach, using the forecast traffic flows changes between the SRTM Do-Minimum and Do-Something scenarios and the characteristics of each street, including link sensitivity derived in Chapter 22 of the ES, to determine potential safety impacts of increased traffic. The impacts reported can also therefore be considered as the environmental effect of the Proposed Development, taking into account the matrix for classifying the significance of effects shown in Table 22.6 of the Chapter 22 of the ES (APP-137).

3.3.1.6. In summary, this assessment concluded there would be moderate adverse effects on road safety on the following links within the HCC highway network before the consideration of appropriate mitigation:

- Milton Road, Waterlooville (Section 4): As a result of traffic flow increases in the vicinity of Hart Plain Junior School, Hart Plain Infant School and Cowplain Community School;
- Mill Road, Waterlooville (Section 4): As a result of traffic flow increases in the vicinity of Mill Hill Primary School and Growing Places Nursery;
- Park Avenue, Purbrook (Section 4) As a result of traffic flows increases in the vicinity of Purbrook Park School; and
- Wesbrook Grove, Purbrook: As a result of traffic flow increases in the vicinity of Purbrook Infant School.

Mitigation of Impacts

3.3.1.7. To mitigate these impacts, a number of specific measures are included within the FTMS (REP6-030) which are in addition to the holistic mitigations identified in paragraph 3.2.3.5.

Milton Road

3.3.1.8. The Framework Signage Strategy contained within Appendix 3 of the FTMS also contained the following measures to mitigate the potential for traffic flow increases along Milton Road:

- Advanced warning or VMS signs will be located at key locations around Denmead and Waterlooville to communicate upcoming or current construction works, thereby allowing drivers of use suitable alternative routes. Locations for such signage include at the northern and western Denmead, at the Milton Road / Lovedean Lane junction and A3 London Road / Dell Piece West / Cherrington Lane traffic signal junction; and
- During construction works along B2150 Hambledon Road, signage will be installed on Hart Plain Avenue to discourage reassignment along this route.

3.3.1.9. Should construction take place on B2150 Hambledon Road during the school term that results in traffic flow increases on Milton Road traffic marshalling will also be provided at the start and end of the school day to mitigate road safety impacts associated with increased traffic flows. These traffic marshals will help direct and manage traffic flow in the vicinity of the school at the start and end of the school day and will provide regular / responsive communication to the designated road safety officer to ensure that any issues that may arise can be identified and resolved.

Mill Road / Park Avenue / Westbrook Grove

3.3.1.10. Traffic reassignment along these routes will primarily occur during periods when shuttle working traffic signals is required on the A3 London Road to facilitate construction of the Onshore Cable Route. However the programme restrictions contained within the FTMS, which will permit the use of shuttle working traffic signals on A3 London Road in the school term only during June and the first half of July, will provide the main mitigation of the impacts on road safety.

3.3.1.11. Furthermore, the locations of signs shown in the Framework Signage Strategy will:

- Direct drivers away from the A3 London Road primarily onto the A3(M) rather than routing down other less suitable routes;
- Direct local traffic to use Stakes Hill Road / Frendstaple Road and College Road rather than other less suitable routes such as Mill Road, Park Avenue and Westbrook Grove; and
- Discourage use of routes which may be sensitive to traffic flow increases associated with reassigned traffic, including Mill Road, Park Avenue and Westbrook Grove

3.3.1.12. Should construction take place on A3 London Road during the school term traffic marshalling will also be provided at the start and end of the school day to mitigate road safety impacts associated with increased traffic flows on Mill Road, Park Avenue and Westbrook Grove. These traffic marshals will help direct and manage traffic flow in the vicinity of the school at the start and end of the school day and will provide regular / responsive communication to the designated road safety officer to ensure that any issues that may arise can be identified and resolved.

3.3.2. CONCLUSION

3.3.2.1. These additional assessments have demonstrated that while there will be temporary impact on various receptors as a result of the Proposed Development, these will be manageable through the measures identified within the FTMS (REP6-030) and Framework CTMP (REP6-032).

3.4. ASSESSMENT OF STRATEGIC ROAD NETWORK JUNCTIONS

3.4.1.1. Further to the analysis of Personal Injury Collision (PIC) records assessed within Chapter 4 of the STA, additional analysis has been completed to assess the potential impacts of the Proposed Development on road safety at junctions with the Strategic Road network. This was requested in Annex B of Highways England Deadline 4 submission (REP4-043). This additional analysis is included within the Technical Note entitled 'Collision Analysis on Highways England Roads', which is submitted into the examination at Deadline 7 as Appendix 1 of this STA Addendum. It includes an analysis of PIC records at the following junctions:

- Junction 2, A3 (M);
- Junction 3, A3 (M);
- A27 / A2030 Eastern Road junction; and
- Portsbridge Roundabout.

3.4.1.2. The conclusion of this Technical Note is that the Proposed Development is not considered to have any material impact on existing accident trends at the junctions assessed. This is because any changes in traffic flow do not see increases in traffic flows that are material without the Proposed Development in place, the analysis of which has been based on a worst case in any event.

4. TRAFFIC ASSESSMENT

4.1. A3(M) JUNCTION 2 AND 3 FURTHER JUNCTION CAPACITY ASSESSMENTS

4.1.1.1. As requested by Highways England Annex D of Highways England Deadline 1 submission (REP1-208) additional assessments of Junction 2, A3 (M) have been undertaken in Technical Note HE03, which is included in Appendix 2 of this STA Addendum. This Technical Note supersedes paragraphs 1.12.4.7 to 1.12.4.9 of the Transport Assessment (APP-448) and Section 5.3.4 of the STA (REP1-142).

4.1.1.2. For each junction, the following Do-Minimum and Do-Something scenarios have been assessed following on from comments included in (REP1-208) and discussions held between the Applicant and Highways England on the draft version of the TN03:

1. Sensitivity modelling using ARCADY lane simulation;
2. Sensitivity testing without traffic generated from nearby committed development sites and the committed highway mitigation schemes associated with them;
3. Sensitivity testing with the traffic generated from nearby committed development sites and the committed highway mitigation schemes associated with them; and
4. Sensitivity using 2019 traffic survey data with TEMRPO growth applied to estimate 2026 traffic flows in combination with scenarios 2 and 3.

4.1.1.3. The conclusions of these assessments is that the Proposed Development will not materially worsen the operation of A3(M) Junction 2 and 3.

5. SUMMARY AND CONCLUSIONS

5.1.1.1. This STA Addendum has been completed following technical submissions at Deadline 6 and 7 by the Applicant that require clarification of information or updates to assessments contained within the STA:

- Day Lane Technical Note (REP6-073), which has provided an updated strategy for the management of HGVs along Day Lane during the construction period of the Proposed Development;
- Joint Bay Technical Note (REP6-070), which has provided indicative Joint bay locations along the Onshore Cable Route and subsequently required updates to cable drum delivery assessments included within the STA for clarity;
- Technical Note 'Collision Analysis on Highways England Roads' which has provided an assessment of the anticipated road safety impacts at SRN junctions during construction of the Proposed Development; and
- Additional junction capacity assessments of A3(M) Junction 2 and 3 contained within Technical Note 'HE03 – Response to Highways England Technical Note TN03'.

5.1.1.2. For each of the above submissions, this STA Addendum has summarised the relevant content and provides an updated assessment where necessary. In conclusion, the assessments completed within this document do not alter the findings of the TA or the STA.

Appendix 1 – Collision Analysis of Highways England Roads

AQUIND Limited

AQUIND INTERCONNECTOR

Second Written Question Response - Appendix 1 - Technical Note providing a review of collision data at Strategic Road Network junctions (MG2.1.1)

The Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 Regulation 8(1)(c)

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AQUIND Limited

AQUIND INTERCONNECTOR

Second Written Question Response - Appendix 1 - Technical Note providing a review of collision data at Strategic Road Network junctions (MG2.1.1)

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WSP

WSP House

70 Chancery Lane

London

WC2A 1AF

+44 20 7314 5000

www.wsp.com

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CONTENTS

TABLES

1. INTRODUCTION

1.1.1.1. This Technical Note (HE04) has been prepared in response to representations made by Highways England (HE) and Portsmouth City Council (PCC) in relation to the submission documents for the AQUIND Interconnector DCO application ("the Proposed Development"). Comments were made in HE's Deadline 4 Submission – Annex B (REP4-043) entitled 'Aquind Interconnector – Review of Collision Analyses' and in paragraph 96 of PCC's Deadline 4 Submission – Comments on responses to deadline 3 (REP4-036) as well as at a meeting held with the Applicant, Hampshire County Council, PCC and HE on 8th December 2020. These comments refer to the need for a review of collision data to be completed at the following four junctions of the Strategic Road Network (SRN):

- A3(M) Junction 2;
- A3(M) Junction 3;
- Junction of A27 / A2030 Eastern Road; and
- Junction of A27 / A3 / M27 / A397 (Portsbridge Roundabout).

1.1.1.2. Therefore, using recorded collision data provided for this area by Hampshire Constabulary covering a five-year period between 01/10/2014 and 30/09/2019, this Technical Note assesses the following:

- Reported collisions at the above junctions including slip roads and a minimum of 200m on all other approaches;
- Causation factors of the collisions;
- Casualty Types (Pedestrian/Motorcycle/Car etc);
- Severity of collisions;
- Any common patterns of collisions, e.g. intoxication / manoeuvre error / weather / road condition / speeding etc.;
- Any common patterns of collision type, e.g. rear shunt; and
- Any common patterns of location e.g. slip roads.

1.1.1.3. The aim of this assessment is to identify existing accident cluster sites at the four Strategic Road Network (SRN) junctions and if construction of the Proposed Development will exacerbate existing trends as a result of the reassignment of traffic away from traffic management associated with construction of the Onshore Cable Route. All assessments of traffic flow impact at each SRN junction are based on outputs from the Sub-Regional Transport Model (SRTM), which has been used to assess the future year baseline and construction stage impacts of the Proposed Development. In the SRTM modelling, it has been assumed that six 100m sections along the Onshore Cable Corridor will be under construction at any one time. This is in line with the construction programme which assumes a maximum of six sections of the Onshore Cable Route being constructed at any one time, as secured by the draft Development Consent Order; the specific combination of locations was agreed with HCC and PCC as part of the TA scoping exercise.

1.1.1.4. Further details of the SRTM modelling are provided within the Supplementary Transport Assessment (REP1-142) but as a summary the impacts of the proposed traffic management has been modelled across the following scenarios:

- 2026 Do Minimum (DM) Scenario: the future baseline without the Proposed Development;
- 2026 Do Something 1 (DS1) Scenario: traffic management to facilitate the construction of the Onshore Cable Route is in place at the six specified locations but on the A2030 Eastern Road lane closures apply to the southbound carriageway only; and
- 2026 Do Something 2 (DS2) Scenario: traffic management is in place at the six specified locations but with lane closures on the northbound carriageway along the A2030 Eastern Road

1.1.1.5. The 2026 Do Minimum scenario outlines future year traffic conditions without the Proposed Development. In this sense its sole purpose is to provide the baseline for comparison. For the two Do Something Scenarios, 2026 was selected as the forecast year most aligned to the anticipated timescales of the Proposed Development and reflective of available future years of the SRTM.

1.1.2. ADDITIONAL JUNCTION CAPACITY ASSESSMENTS OF A3(M) JUNCTION 2 AND 3

1.1.2.1. Further to the junction capacity assessments included within the STA and as requested by Highways England in Annex D of thier Deadline 1 submission (REP1-208), additional assessments of Junction 2, A3 (M) have been undertaken in Technical Note HE03, which is included in Appendix 2 of the STA Addendum. This Technical Note supersedes paragraphs 1.12.4.7 to 1.12.4.9 of the Transport Assessment (APP-448) and Section 5.3.4 of the STA (REP1-142).

1.1.2.2. For each junction, the following Do-Minimum and Do-Something scenarios have been assessed following on from comments included in (REP1-208) and discussions held between the Applicant and Highways England on the draft version of the TN03:

1. Sensitivity modelling using ARCADY lane simulation;
2. Sensitivity testing without traffic generated from nearby committed development sites and the committed highway mitigation schemes associated with them;
3. Sensitivity testing with the traffic generated from nearby committed development sites and the committed highway mitigation schemes associated with them; and
4. Sensitivity using 2019 traffic survey data with TEMRPO growth applied to estimate 2026 traffic flows in combination with scenarios 2 and 3.

1.1.2.3. HE03 also included details of increased traffic flows at A3 (M) Junction 2 and 3 when comparing 2019 traffic surveys against the 2026 DM, DS1 and DS2 scenarios. This information on traffic flows and updated junction capacity assessments have been taken into account in the assessment of collision data and the potential for the proposed development to exacerbate existing accident trends at these junctions.

1.1.2.4. In consideration of the impacts reported in HE03 it is also noted that the assessments were considered to be very robust because the DS1 and DS2 scenarios used a worst-case scenario for the location of traffic management associated with the Proposed Development (three traffic management locations), the cumulative effect of which leads to a high level of modelled traffic re-assignment onto A3(M) junctions 2 and 3. However this will not occur due to the programme restrictions in the FTMS (REP1-068), which allow only one of the three modelled traffic management locations take place at any one time. These programme restrictions and FTMS are secured via protective provisions contained in the draft Development Consent Order.

1.1.2.5. The remainder of this Technical Note is set-out in the following sections:

- Section 2 reviews the collision data for A3(M) Junction 2;
- Section 3 reviews the collision data for A3(M) Junction 3;
- Section 4 reviews the collision data for the junction of A27 / A2030 Eastern Road;
- Section 5 reviews the collision data for the Portsbridge Roundabout; and
- Section 6 gives a summary and conclusions of the Technical Note.

2. A3(M) JUNCTION 2

2.1. INTRODUCTION

2.1.1.1. This Analysis covers A3(M) Junction 2 which includes A3(M) (North), Dell Piece East B2149, A3(M) (South) and Dell Piece West B2149. The analysis of the data also includes all the slip roads of the A3 (M) which form a part of the junction and a minimum of 200m on all other approaches. Where patterns are identified, these are highlighted for information.

2.2. COLLISION ANALYSIS

2.2.1.1. There has been a total of 25 recorded collisions in this location over a period of five years, of which one was serious, and all others involved only slight injuries. Of the 25 collisions, one involved a motorcycle, one involved an LGV and the remaining collisions all involved only cars. The causes of collisions were as follows (some collisions had more than one cause):

- 24 were due to human error – various factors related to human error that are not separately listed below (e.g. speeding is listed separately as a specific human error);
- Two were due to weather-related factors;
- Two were due to intoxication;
- One was due to speeding;
- One was due to distraction outside the vehicle; and
- One was due to an unspecified cause (which was not clear from collision description).

2.2.1.2. Figure 2 1 shows the location of collisions and Table 2-1 summarises the police collision reports for collisions that resulted in severe injuries. A full summary of accidents recorded is included in Appendix 1 for reference.

Figure 2-1 - Junction 2, A3(M) Collision Plot

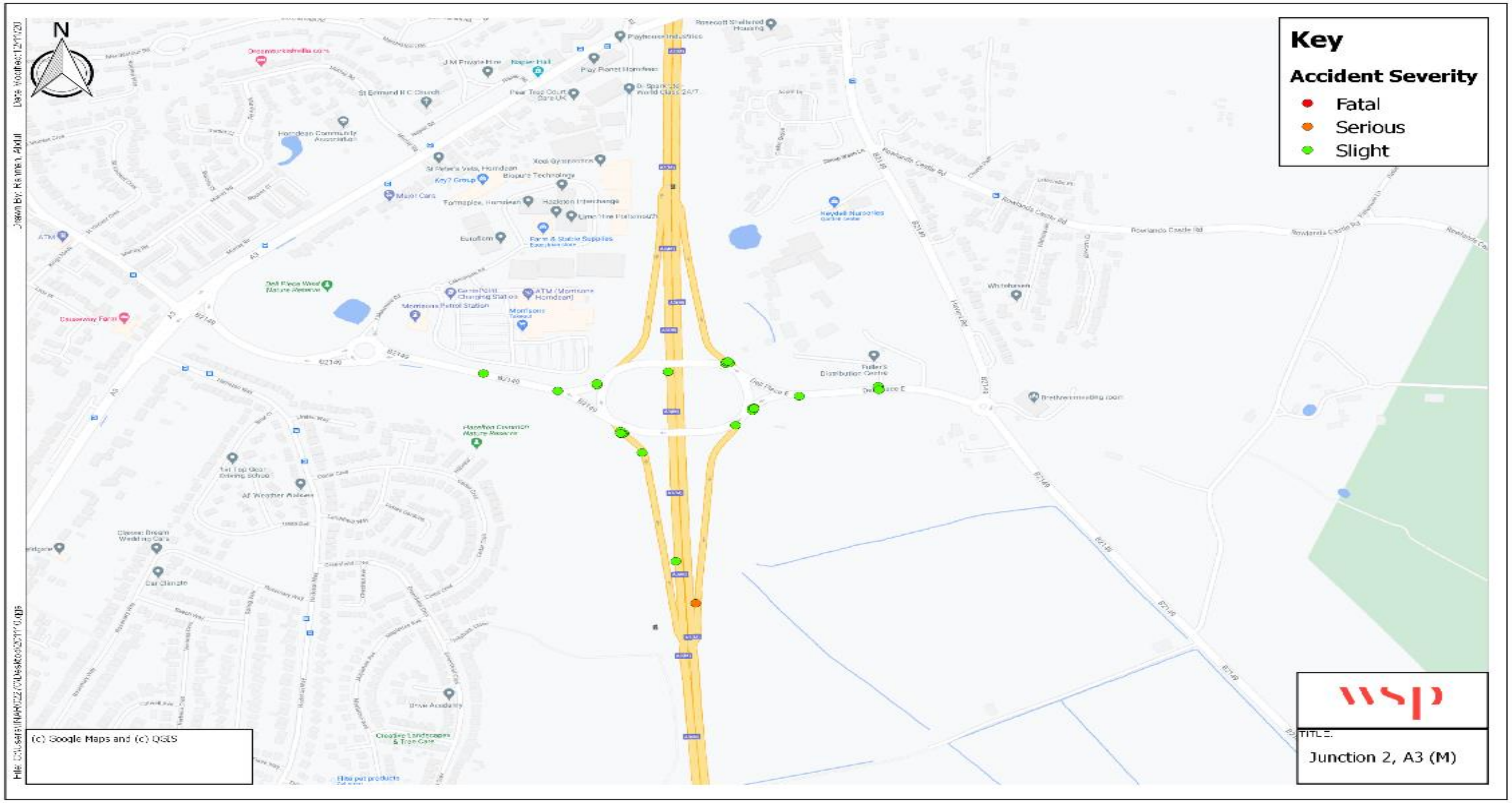

Table 2.1 - Junction 2, A3(M) Collision Reports Summary

Police Ref	Road User Types (other than car or van)	Severity	Description / Causation Factors
44190021102	Motorcycle	Serious	Veh1 M/Cycle) travelling S along A3(M) on-slip joined the main carriageway and collided with the nearside of veh2 (car) travelling S along A3(M) in lane one.

2.2.1.3. The collisions were mostly caused by human error. It is appropriate to consider further if these errors might have been in some way influenced by any location-specific factor such as the design of the junction; so as to determine if reassignment of traffic through this junction could exacerbate existing accident trends. To do this, the types and exact locations of collisions are considered in further detail below.

2.2.1.4. A total of 21 collisions were rear end collisions, of which:

- Nine occurred on the slip roads;
- Six occurred on the approaches to the roundabout from B2149;
- Four occurred elsewhere on B2149; and
- Two occurred on A3(M) mainline carriageway.

2.2.1.5. All nine of the rear-end collisions that occurred on the off-slips were at the location where the off-slips from the A3(M) merge with the roundabout.

2.3. IMPACT OF PROPOSED DEVELOPMENT

2.3.1.1. It can be expected that rear-end collisions would be in the majority at a grade-separated roundabout junction as most traffic does not interact with traffic moving in a different direction; and the wide carriageway space would reduce the likelihood of side-swipe collisions.

2.3.1.2. In terms of locations, the exact locations are fairly evenly distributed with no concentration on any particular part of the junction (such as the slip roads). This therefore corroborates the view that reassignment of traffic to this junction would not be intensifying use of a particularly hazardous junction as the data do not suggest any location-specific factor which might indicate a flaw in the design of part of the junction.

2.3.1.3. However, for completeness, an assessment has been undertaken of the possible impact of traffic flow increases and peak hour at this junction at this junction, with reference to the submitted technical note HE03. Specifically related to the Highways England SRN, a hazard that could potentially be caused by traffic flow increases at a grade-separated junction such at the A3(M) Junction 2 is increased queuing on the off-slip roads. This could cause fast-moving traffic to join the back of an off-slip road queue and brake too late.

2.3.1.4. While queuing occurs at most junctions during peak hours, there is potentially more of a concern where a slip road leaves a mainline carriageway because only the exiting traffic would be slowing, so such traffic would be less likely to start to decelerate before joining the off-slip.

2.3.1.5. In this case, all of the rear-end collisions that occurred on the off-slips were at the location where the off-slips from the A3(M) merge with the roundabout, so this is not an existing problem at A3M Junction 2. An assessment however has been undertaken to confirm if the Proposed Development may lead to such an issue occurring, using the junction modelling results from HE03.

2.3.1.6. The traffic flow changes at A3M Junction 2 are summarised in Table 4 of Section 2 of HE03; these are reproduced below in Table 2.2. This traffic flow comparison shows that the Proposed Development is anticipated to lead to an overall reduction in traffic using the junction in the AM peak and an slight increase in traffic during the PM peak

Table 2.2 - SRTM Traffic Flows, A3M Junction 2

	2026 Assessed DM Scenario	2026 Assessed DS1 Scenario	2026 Assessed DS2 Scenario
AM Peak	4,007	3,989 (-18 vehicles)	3,985 (-22 vehicles)
PM Peak	3,914	4,097 (+183 vehicles)	4,094 (+180 vehicles)

2.3.2. A3(M) JUNCTION 2 EXISTING LAYOUT

2.3.2.1. The above flows were used in the assessments in Section 3 of HE03 in which lane simulation was used in Arcady to assess the impacts of the Proposed Development on the existing layout of the junction. The results for the 2026 Scenarios are in Tables 8 to 10 of HE03 with predicted queue lengths summarised in Tables 2-3 and 2-4 below.

Table 2.3 - Junction 2, A3 (M) Existing Layout AM Peak Junction Modelling Queue Lengths

Arm	Lane	DM Scenario	DS1 Scenario	DS2 Scenario
		Queue (PCU)	Queue (PCU)	Queue (PCU)
Dell Piece East	1 (left / ahead)	5	5	5
	2 (right / U-turn)	21	12	13
A3 (M) (south)	1 (left)	1	1	1
	2 (ahead / right / U-turn)	1	2	1
B2149 Dell Piece West	1 (left / ahead)	3	2	2
	2 (right / U-turn)	1	1	1
A3 (M) (north)	1 (left)	1	1	1
	2 (ahead / right / U-turn)	8	9	9

Table 2.4 - Junction 2, A3 (M) Existing Layout PM Peak Junction Modelling Queue Lengths

Arm	Lane	DM Scenario	DS1 Scenario	DS2 Scenario
		Queue (PCU)	Queue (PCU)	Queue (PCU)
Dell Piece East	1 (left / ahead)	4	4	3
	2 (right / U-turn)	3	3	2
A3 (M) (south)	1 (left)	2	3	3
	2 (ahead / right / U-turn)	3	3	3
B2149 Dell Piece West	1 (left / ahead)	7	2	2
	2 (right / U-turn)	37	34	40
A3 (M) (north)	1 (left)	1	1	1
	2 (ahead / right / U-turn)	1	1	2

2.3.2.2. The data in the above tables shows that the Proposed Development is not forecast to have material impact on the operation of the junction and forecast queue lengths.

2.3.2.3. The A3M junction 2 off-slip roads have lengths of approximately 360 metres and 270 metres, south and north respectively, with the worst-case forecast queue length increase experienced on the A3(M) North approach where it increases from 8 PCUs (48m) to 9 vehicles (54m). As such, the impact of the Proposed Development is not expected to materially change the collision risk at A3M Junction 2 when considering the existing layout.

2.3.3. A3(M) JUNCTION 2 COMMITTED IMPROVEMENT SCHEME

2.3.3.1. Further to the assessment of the existing layout at A3(M) Junction 2, Technical Note HE03 has also assessed the full signalisation of the junction, which is a committed junction improvement scheme associated with the development at Land East of Horndean, Rowlands Castle Road, Horndean, which proposes 800 dwellings and other complimentary uses (55562/005).

2.3.3.2. The Linsig traffic modelling results for the 2026 SRTM Scenarios with this committed junction improvements are in Tables 21 to 23 of HE03 with predicted queue lengths summarised in Tables 2-5 and 2-6 below.

Table 2.5 - Junction 2, A3 (M) Full Signalisation AM Peak Junction Modelling Queue Lengths

Arm	DM Scenario	DS1 Scenario	DS2 Scenario
	Queue (PCU)	Queue (PCU)	Queue (PCU)
Dell Piece East	31	29	29
A3 (M) (south)	7	7	7
B2149 Dell Piece West	11	11	11
A3 (M) (north)	41	20	20
Circulatory (east)	33	29	29
Circulatory (south)	2	3	3
Circulatory (west)	9	10	10
Circulatory (north)	5	15	15

Table 2.6 - Junction 2, A3 (M) Full Signalisation PM Peak Junction Modelling Queue Lengths

Arm	DM Scenario	DS1 Scenario	DS2 Scenario
	Queue (PCU)	Queue (PCU)	Queue (PCU)
Dell Piece East	18	19	18
A3 (M) (south)	8	8	8
B2149 Dell Piece West	69	67	67
A3 (M) (north)	11	10	10
Circulatory (east)	11	14	10
Circulatory (south)	2	2	2
Circulatory (west)	47	46	47
Circulatory (north)	6	8	6

2.3.3.3. The data in the above tables shows that the Proposed Development is not forecast to have material impact on the operation of the junction and forecast queue lengths. As such, the impact of the Proposed Development is not expected to materially change the collision risk at A3M Junction 2 when considering the assessment of the committed junction improvement scheme at this junction with the SRTM traffic flows.

A3(M) Junction 2 committed improvement scheme Alternative Future Year Assessment

2.3.3.4. Further discussions held between the Applicant and HE, at a meeting date 18th November 2020, also led to a request for additional lane simulation assessments to be undertaken calculated on the basis of observed traffic flows for Junction 2 of the A3 (M). These are discussed further in Section 5 of HE03, with the junction modelling results shown in Table 40 and 41, with predicted queue lengths summarised in Tables 2-7 and 2-8 below.

Table 2.7 - Junction 2, A3 (M) Full Signalisation Alternative Scenario AM Peak Junction Modelling Queue Lengths

Arm	DM Scenario	Combined DS Scenario
	Queue (PCU)	Queue (PCU)
Dell Piece East	25	24
A3 (M) (south)	6	6
B2149 Dell Piece West	11	12
A3 (M) (north)	7	7
Circulatory (east)	13	13
Circulatory (south)	5	3
Circulatory (west)	8	10
Circulatory (north)	14	2

Table 2.8 - Junction 2, A3 (M) Full Signalisation Alternative Scenario PM Peak Junction Modelling Queue Lengths

Arm	DM Scenario	Combined DS Scenario
	Queue (PCU)	Queue (PCU)
Dell Piece East	29	19
A3 (M) (south)	10	17
B2149 Dell Piece West	9	7
A3 (M) (north)	12	15
Circulatory (east)	11	12
Circulatory (south)	10	12
Circulatory (west)	11	3

Arm	DM Scenario	Combined DS Scenario
	Queue (PCU)	Queue (PCU)
Circulatory (north)	**1**	**13**

2.3.3.5. The results set out demonstrate that predicted queue lengths are not anticipated to increase significantly except on the A3(M) North approach, which will increase from 10 PCUs (60m) to 17 vehicles (102m) in the PM peak. This queue length however can be easily accommodated within the existing slip-road which is approximately 270m long. As such, the impact of the Proposed Development is not expected to materially change the collision risk at A3M Junction 2.

3. A3(M) JUNCTION 3

3.1. INTRODUCTION

3.1.1.1. This collision analysis covers A3(M) Junction 3 which includes A3(M) (North), Hulbert Road (West), Hulbert Road (East) and A3(M) (South). The analysis of the data also includes all the slip roads of the A3 (M) which form a part of the junction and a minimum of 200m on all other approaches. Where patterns are identified, these are highlighted for information.

3.2. COLLISION ANALYSIS

3.2.1.1. There has been a total of 40 recorded collisions in this location over a period of five years of which five were serious and all others involved only slight injuries. Of the 40 collisions, one involved a pedestrian, one involved a pedal cyclist, four involved motorcycles and the remaining collisions all involved only cars. The causes of collisions were as follows (some collisions had more than one cause):

- 35 were due to human error – various factors related to human error that are not separately listed below (e.g. speeding is listed separately as a specific human error);
- Seven were due to speeding;
- Four were due to illness / disability, fatigue or intoxication;
- Two were due to weather-related factors;
- One was due to road layout;
- One was due to a tyre blowout; and
- One was due to an unspecified cause (which was not clear from collision description).

3.2.1.2. Error! Reference source not found. shows the location of collisions and Error! Reference source not found. summarises the police collision reports for collisions that resulted in severe injuries. A full summary of accidents recorded is included in Appendix 1 for reference.

Figure 3-1 - Junction 3, A3(M) Collision Plot

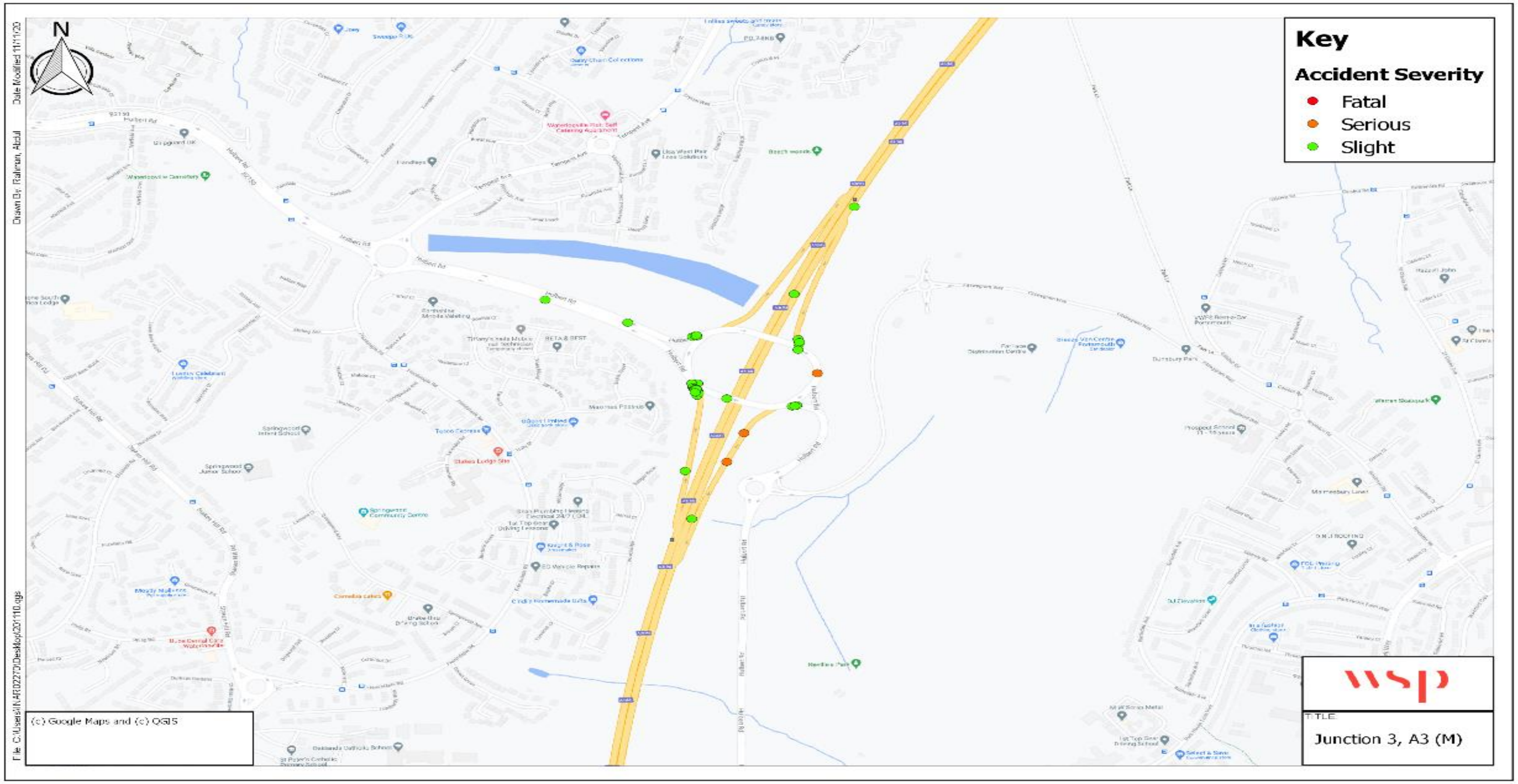

Table 3.1 - Junction 3, A3(M) Collision Reports Summary

Police Ref	Road User Types (other than car or van)	Severity	Description / Causation Factors
150280563	Motorcycle	Serious	Veh 1 (car) travelling SW along A3(M) on-slip when vehicle suffers a blow out causing vehicle to lose control and collide with veh 2 (M/Cycle) before colliding with the barrier. Rider of veh 2 fell off during collision.
140405989		Serious	Veh 1 (car) travelling S along A3(M) southbound junction 3 on-slip lost control and collided with the offside barrier.
140410784		Serious	Veh 2 (car) travelling N along A3(M) off-slip, begins to move onto roundabout but stops again causing following veh 1 (van) to move off and collide with rear of veh 2.
44180376198	Pedestrian	Serious	Veh1 (car) travelling around the roundabout from Hulbert Road to the A3(M) southbound collides with casualty 1 (pedestrian) who was standing in the middle of the carriageway in dark clothing.
150394425		Serious	Veh 1 (car) travelling NW along A3(M) off-slip, at the top of the slip road veh 1 leaves straight ahead at the junction and collides with the barrier and a sign on the roundabout and overturns.

3.2.1.3. The collisions had varied causes thereby not indicating any specific pattern that would indicate a need for mitigation. Furthermore, these causes do not suggest any location-specific factor such as the design of the junction. However, in assessing hazard, it is appropriate to give some consideration also to trends in terms of the types and exact locations of collisions.

3.2.1.4. A total of 31 collisions were rear end collisions, of which:

- 19 occurred on the slip roads;
- Eight occurred on the approaches to the roundabout from Hulbert Road;

- Three occurred on A3(M) mainline carriageway; and
- One occurred on the roundabout circulatory carriageway.

3.2.1.5. From the collision data it could be observed that 18 of the rear end collisions occurred where the off-slips from A3(M) merge with the roundabout and one occurred elsewhere on the off slip.

3.3. IMPACT OF PROPOSED DEVELOPMENT

3.3.1.1. It can be expected that rear-end collisions would be in the majority at a grade-separated roundabout junction as most traffic does not interact with traffic moving in a different direction; and the wide carriageway space would reduce the likelihood of side-swipe collisions.

3.3.1.2. In terms of locations, the exact locations of the rear-end collisions are predominantly at the intersection of the off-slip roads with the circulatory carriageway, which might potentially suggest an existing safety issue, probably due to drivers observing on-coming traffic to their right, then entering the roundabout at speed unaware of the closeness of a vehicle right in front.

3.3.1.3. AS with A3(M) Junction 2, an assessment has been undertaken of the possible impact of traffic flow increases and peak hour at this junction at this junction, with reference to the submitted technical note HE03.

3.3.1.4. The traffic flow changes at A3M Junction 3 are summarised in Table 4 of Section 2 of HE03; these are reproduced below in Table 3.2. This traffic flow comparison shows that the Proposed Development is anticipated to lead to an a slight increase in traffic during the AM peak but a reduction in traffic during the PM peak.

Table 3.2 - Traffic Flows, A3M Junction 3

	2026 Assessed DM Scenario	2026 Assessed DS1 Scenario	2026 Assessed DS2 Scenario
AM Peak	4,535	4,641 (+160 vehicles	4,693 (+158 vehicles)
PM Peak	4,783	4,741 (-42 vehicles	4,747 (-36 vehicles)

3.3.2. A3(M) JUNCTION 3 EXISTING LAYOUT

3.3.2.1. The above flows were used in the assessments in Section 3 of HE03 in which lane simulation was used in Arcady to assess the impacts of the Proposed Development on the existing layout of the junction. The results for the 2026 scenarios are in Tables 12 to 14 of HE03 and are reproduced below in Tables 3-3 to 3-4.

Table 3.3 - Junction 3, A3(M) Existing Layout AM Peak Lane simulation Queue Lengths

Arm	Lane	DM Scenario	DS1 Scenario	DS2 Scenario
		Queue (PCU)	Queue (PCU)	Queue (PCU)
Hulbert Road (east)	1 (left / ahead)	1	1	1
	2 (ahead / right / U-turn)	1	0	1
A3 (M) (south)	1 (left)	2	2	2
	2 (left / ahead / right / U-turn)	2	2	2
Hulbert Road (west)	1 (left /ahead)	96	117	119
	2 (right / U-turn)	1	1	1
A3 (M) (north)	1 (left /ahead)	5	6	5
	2 (right / U-turn)	1	1	1

Table 3.4 - Junction 3, A3 (M) Existing Layout PM Peak Lane simulation Queue Lengths

Arm	Lane	DM Scenario	DS1 Scenario	DS2 Scenario
		Queue (PCU)	Queue (PCU)	Queue (PCU)
Hulbert Road (east)	1 (left / ahead)	1	1	1
	2 (ahead / right / U-turn)	0	0	0
A3 (M) (south)	1 (left)	2	2	2
	2 (left / ahead / right / U-turn)	2	2	2
Hulbert Road (west)	1 (left /ahead)	2	2	2
	2 (right / U-turn)	2	2	2
	1 (left /ahead)	164	163	169

Arm	Lane	DM Scenario	DS1 Scenario	DS2 Scenario
		Queue (PCU)	Queue (PCU)	Queue (PCU)
A3 (M) (north)	2 (right / U-turn)	1	1	1

3.3.2.2. The data in the above tables shows that the maximum predicted queue on an off-slip is 169 PCUs on the A3M north, an increase of PCUs (30m) in comparison with the DM scenario. The north off-slip from the A3M at junction 3 has a length of approximately 270 metres. Therefore, the predicted maximum queue length, of 984m in the DM scenario and 1,014m in the DS2 scenario, would extend considerably into the mainline carriageway. Given that this this queue the Proposed Development is anticipated to increase this queue length by only 30m, it is however considered that the Proposed Development will not have a material impact on the collision risk on this approach.

3.3.3. A3(M) JUNCTION 3 COMMITTED IMPROVEMENT SCHEME

3.3.3.1. Further to the assessment of the existing layout at A3(M) Junction 3, Technical Note HE03 has also assessed the part signalisation of the junction, which is a committed junction improvement scheme associated with the development at Old Park Farm Development (05/0500)/OUT, Waterlooville. This junction improvement, which signalises the southern off-slip of the junction is expected to be implemented prior to construction of the Proposed Development

3.3.3.2. The Linsig traffic modelling results for the 2026 SRTM Scenarios with this committed junction improvements are in Tables 27 to 29 of HE03 with predicted queue lengths summarised in Tables 3-5 and 3-6 below.

Table 3.5 - Junction 3, A3 (M) Part Signalisation AM Peak Junction Modelling Queue Lengths

Arm	DM Scenario	DS1 Scenario	DS2 Scenario
	Queue (PCU)	Queue (PCU)	Queue (PCU)
Hulbert Road (east)	1	1	1
A3 (M) (south)	6	7	7
Hulbert Road (west)	106	103	104

Arm	DM Scenario	DS1 Scenario	DS2 Scenario
	Queue (PCU)	Queue (PCU)	Queue (PCU)
A3 (M) (north)	2	2	2
Circulatory (south)	10	10	11

Table 3.6 - Junction 3, A3 (M) Part Signalisation PM Peak Junction Modelling Queue Lengths

Arm	DM Scenario	DS1 Scenario	DS2 Scenario
	Queue (PCU)	Queue (PCU)	Queue (PCU)
Hulbert Road (east)	1	1	1
A3 (M) (south)	6	7	7
Hulbert Road (west)	5	6	6
A3 (M) (north)	138	148	150
Circulatory (south)	11	12	12

3.3.3.3. The data in the above tables shows that the Proposed Development is generally not forecast to have material impact on the operation of the junction and forecast queue lengths, with the exception A3(M) North (unsignalized) off-slip. The Proposed Development is anticipated to increase the forecast queue lengths on this approach from 138 PCU (828m) in the DM scenario to 148 PCU (888m) in DS1 and 150 (900m). In all cases this will extend onto the A3(M) mainline and the maximum queue length increase of 72m caused by the Proposed Development is not expected to materially change the collision risk at this location.

A3(M) Junction 3 committed improvement scheme Alternative Future Year Assessment

3.3.3.4. Further discussions held between the Applicant and HE, at a meeting date 18th November 2020, also led to a request for additional lane simulation assessments to be undertaken calculated on the basis of observed traffic flows of Junction 3 of the A3 (M). These are discussed further in Section 5 of HE03, with the junction modelling results shown in Table 48 and 49, with predicted queue lengths summarised in Tables 3-7 and 3-8 below.

Table 3.7 - Junction 3, A3 (M) Part Signalisation Alternative Scenario AM Peak Junction Modelling Queue Lengths

Arm	Lane	DM Scenario	Combined DS Scenario
		Queue (PCU)	Queue (PCU)
Hulbert Road (east)	1 (left / ahead)	1	1
	2 (ahead / right / U-turn)	0	0
A3 (M) (south)	1 (left)	1	1
	2 (left / ahead / right / U-turn)	1	2
Hulbert Road (west)	1 (left /ahead)	2	2
	2 (right / U-turn)	41	33
A3 (M) (north)	1 (left /ahead)	1	1
	2 (right / U-turn)	1	1

Table 3.8 - Junction 3, A3 (M) Part Signalisation Alternative Scenario PM Peak Junction Modelling Queue Lengths

Arm	Lane	DM Scenario	Combined DS Scenario
		Queue (PCU)	Queue (PCU)
Hulbert Road (east)	1 (left / ahead)	1	1
	2 (ahead / right / U-turn)	0	1
A3 (M) (south)	1 (left)	2	3
	2 (left / ahead / right / U-turn)	2	3
Hulbert Road (west)	1 (left /ahead)	1	1
	2 (right / U-turn)	2	2
A3 (M) (north)	1 (left /ahead)	1	1
	2 (right / U-turn)	2	2

3.3.3.5. The results set out demonstrate that the Proposed Development is not forecast to lead to significant queue length in either of the AM or PM peaks and that all queues can be easily accommodated within the A3(M) off-slips and other approaches without blocking upstream junctions. It can be concluded therefore that the Proposed Development will not have a material impact on the collision risk at this junction.

4. A27/A2030 EASTERN ROAD JUNCTION

4.1. INTRODUCTION

4.1.1.1. This analysis covers the roundabout junction of A27 and A2030 Eastern Road which includes A2030 Eastern Rd(N), A27 Havant Bypass(E), A2030 Eastern Road(S) and A27 Havant Bypass(W). The analysis of the data also includes all the slip roads of the A3 (M) which form a part of the junction and a minimum of 200m on all other approaches. Where patterns are identified, these are highlighted for information.

4.2. COLLISION ANALYSIS

4.2.1.1. There has been a total of 52 recorded collisions in this location over a period of five years of which nine were serious and all others involved only slight injuries. Of the 52 collisions, one involved a pedestrian, eight involved motorcycles, 10 involved cyclists and the remaining collisions all involved only cars. The causes of collisions were as follows:

- 47 were due to human error – various factors related to human error that are not separately listed below (e.g. speeding is listed separately as a specific human error);
- Three were due to weather-related factors;
- Two were due to speeding;
- Two were due to vehicle defects;
- One was due to intoxication;
- One was due to road layout;
- One was due to distraction outside vehicle;
- One was due to defective traffic signals;
- One was due to vision obstruction from vegetation; and
- One was due to an unspecified cause (which was not clear from collision description either).

4.2.1.2. Error! Reference source not found. shows the location of collisions and Error! Reference source not found. summarises the police collision reports for collisions that resulted in severe injuries. A full summary of accidents recorded is included in Appendix 1 for reference.

Figure 4-1 - A27/A2030 Eastern Road Junction Collision Plot

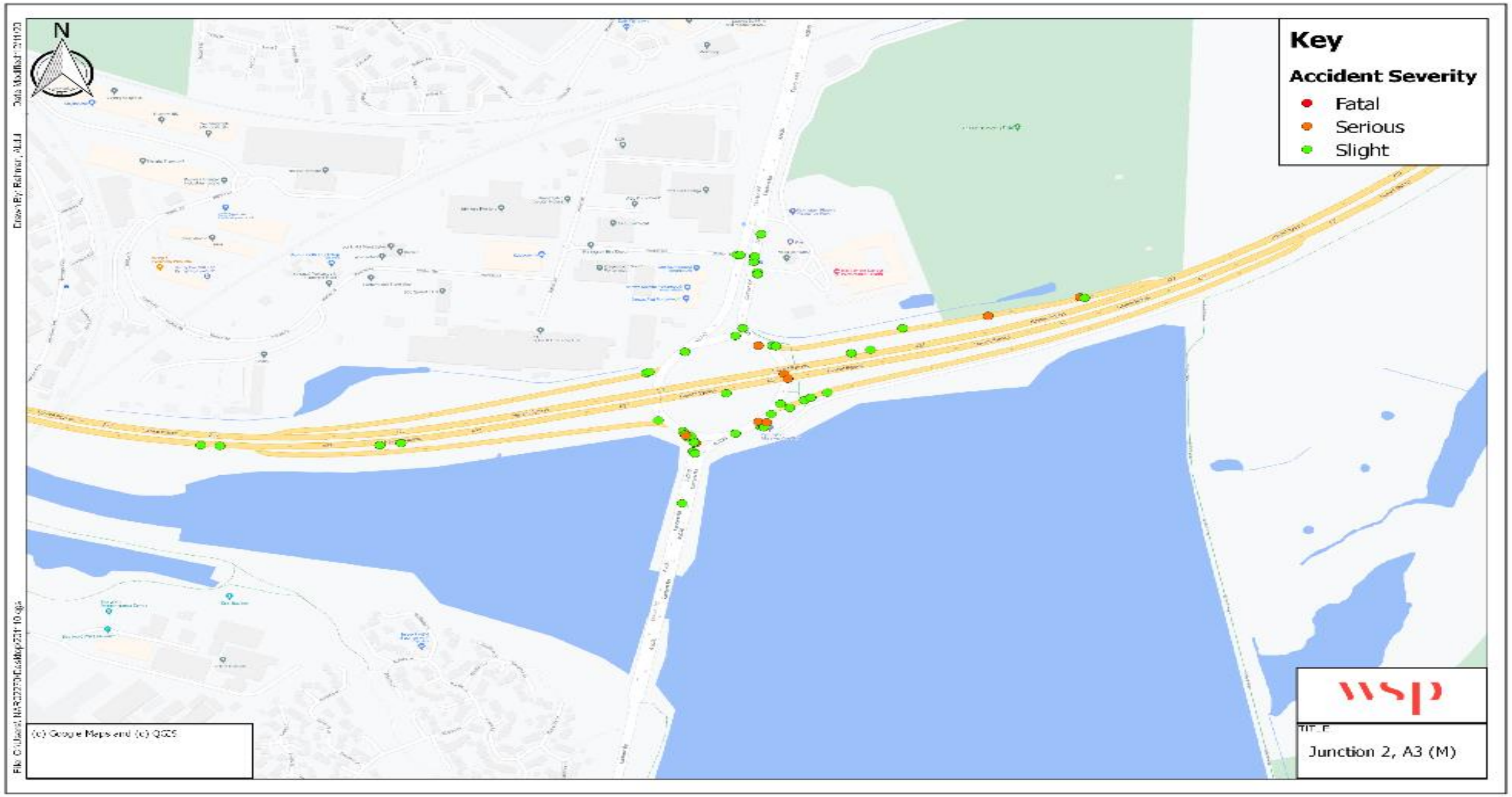

Table 4.1 - A27/A2030 Eastern Road Junction Collision Reports Summary

Police Ref	Road User Types (other than car or van)	Severity	Description / Causation Factors
160011278		Serious	Veh 1 (car) travelling S along A2030 Eastern road entered the roundabout intending to join A27 eastbound. Shortly after veh 1 entered the roundabout, veh 2 (car) collided with the offside of veh 1.
160016399	Motorcycle	Serious	Veh 1 (M/Cycle) travelling N along A2030 Eastern road attempted to beat traffic lights turning red, travelling between 50-60mph. Veh 1 hits offside kerb causing veh to collide with roundabout island.
160028173	Motorcycle	Serious	Veh 2 (M/Cycle) travelling S around A2030 Eastern road roundabout from green traffic lights overreacts to veh 1 (van) turning left out of Farlington Marsh car park onto A2030 Eastern road roundabout. Veh 1 had not entered the same lane as veh 2.
44170477965	Motorcycle	Serious	Veh 1 (M/Cycle) travelling S around A2030 Eastern road roundabout loses control due to ice.
44180240528		Serious	Veh1 (car) travelling NE along the A27 on-slip from the A2030 stops at the end of the on-slip road before the main carriageway. Veh2 (car) travelling NE along the A27 on-slip collides with the rear of veh1.
44180342530	Motorcycle	Serious	Veh1 (M/Cycle) travelling E along A27 on-slip in lane 2, travels too close to the offside and mounts the kerb. The rider is flung from the vehicle and bands on the armco barrier.
44180362828	Pedal Cycle	Serious	Veh1 (P/Cycle) travelling SW around roundabout in cycle lane. Veh2 (P/Cycle) travelling NE around roundabout in cycle lane. The two vehicles fail to see each other and collide head on.

Police Ref	Road User Types (other than car or van)	Severity	Description / Causation Factors
44180373796		Serious	Veh2 (car) travelling N along A2030 Eastern road. The ATS are not working. Veh2 edges out onto the roundabout, but drives too far and collides with veh1 (car) already on the roundabout.
44190179756	Pedal Cycle	Serious	Veh1 (P/Cycle) travelling S around the A2030 Eastern road roundabout in lane 2. Veh2 (van) travelling S in lane 1. As veh2 passed veh1 the racking on the side of the van caught the front wheel of veh1 causing rider to fall off.

4.2.1.3. The collisions were mostly caused by human error. It is appropriate to consider further if these errors might have been in some way influenced by any location-specific factor such as the design of the junction' to determine if reassignment of traffic through this junction could exacerbate existing accident trends. To do this, further consideration of the types and exact locations of collisions is provided below.

4.2.1.4. A total of 17 collisions were rear end collisions, of which:

- Six occurred on the slip roads;
- Five occurred on A27;
- Four occurred on the approaches to the roundabout from A2030
- One occurred elsewhere on A2030; and
- One occurred on the roundabout circulatory carriageway.

4.2.1.5. From the collision data it could be observed that four of the collisions occurred where the off-slips from the A27 merge with the roundabout and two occurred on the on-slip road approaching A27.

4.3. IMPACT OF PROPOSED DEVELOPMENT

4.3.1.1. As already noted, the majority of collisions were caused by human error. Also, the exact locations are fairly evenly distributed with no concentration on any particular part of the junction (such as the slip roads). These two points together suggest that reassignment of traffic to this junction would not be intensifying use of a particularly hazardous junction as the data do not suggest any location-specific factor which might indicate a flaw in the design of part of the junction.

4.3.1.2. Furthermore, while construction of the Proposed Development is taking place on the A2030 Eastern Road, there is a predicted decrease in traffic flows through this junction. SRTM flows in the DM, DS1 and DS2 scenarios on each arm of the junction are illustrated in Tables 4.2 and 4.3 below.

4.3.1.3. In the DS1 scenario, overall traffic flows across the junction decrease in both the AM and PM peaks compared to the DM scenario, although the A2030 South experiences very slight increases of 5 and 1 vehicles per hour, which are more than offset by the decreases on other arms.

4.3.1.4. In the DS2 scenario, overall traffic flows across the junction decrease in both the AM and PM peaks compared to the DM scenario, although the A27 East experiences a slight increase of 20 vehicles per hour in the PM peak, which is more than offset by the decreases on other arms.

Table 4.2 - A27/A2030 Eastern Road SRTM Flows: AM Peak

Arm	Direction	DM	DS1	Change: DS1 from DM	DS2	Change: DS2 from DM
A27 East	Westbound	1,767	1,745	- 22	1,754	-13
A2030 South	Northbound	2,091	2,096	5	2,045	-46
A27 West	Eastbound	1,185	1,168	-17	1,174	-11
A2030 North	Southbound	1,317	1,267	-50	1,303	-14

Table 4.3 - A27/A2030 Eastern Road SRTM Flows: PM Peak

Arm	Direction	DM	DS1	Change: DS1 from DM	DS2	Change: DS2 from DM
A27 East	Westbound	1,581	1,492	-89	1,601	20
A2030 South	Northbound	2,230	2,231	1	2,188	-42
A27 West	Eastbound	1,002	933	-69	965	-36
A2030 North	Southbound	1,682	1,567	-115	1,628	-54

4.3.1.5. Taking account of the analysis completed of existing accident data and reduction in traffic flow it is not anticipated that the Proposed Development will have a material impact on the collision risk at this junction.

5. PORTSBRIDGE ROUNDABOUT

5.1. INTRODUCTION

5.1.1.1. This analysis covers the roundabout junction of the A27, the A3, the M27 and the A397 (the Portsbridge Roundabout). The analysis of the data also includes all the slip roads of the M27/A27 which form a part of the junction and a minimum of 200m on all other approaches. Where patterns are identified, these are highlighted for information.

5.2. COLLISION ANALYSIS

5.2.1.1. There has been a total of 112 recorded collisions in this location over a period of five years of which two were fatal, 16 were serious and all others involved only slight injuries. Of the 112 collisions, five involved pedestrians, 31 involved motorcycles, 15 involved cyclists, five involved buses, eight involved goods vehicles/lorries and the remaining collisions all involved only cars. The causes of collisions were as follows (some collisions had more than one cause):

- 107 were due to human error – various factors related to human error that are not separately listed below (e.g. speeding is listed separately as a specific human error);
- Eight were due to speeding;
- Eight were due to weather factors (including dazzled by sun, other vision hindrances, slippery road surface, other weather-related factors);
- Four were due to illness / disability, fatigue or intoxication;
- Three were due to distraction outside vehicle;
- Two were due to pedestrian crossing road masked by stationary vehicle;
- Two were due to animal or object in carriageway;
- Two were due to deposit on road (e.g. oil, mud, chippings);
- Two were due to vehicle defects;
- Two were due to unclear causes: cause unspecified and no indication from collision description; and
- One was due to road layout.

5.2.1.2. **Figure 5-1** shows the location of collisions and **Table 5-1** summarises the police collision reports for collisions that resulted in severe and fatal injuries. A full summary of accidents recorded is included in Appendix 1 for reference.

Figure 5-1 - Portsbridge Roundabout Collision Plot

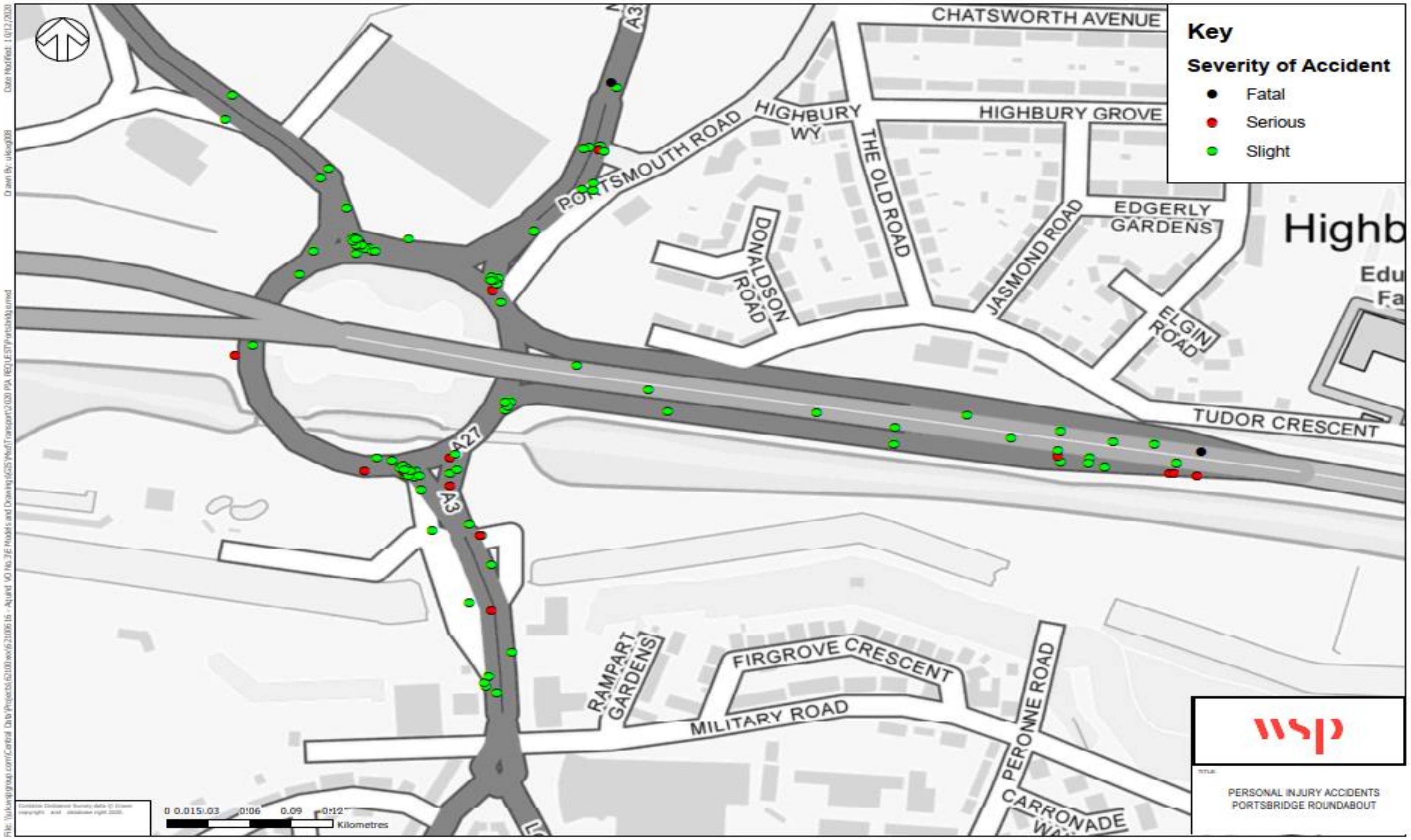

Table 5-5.1 – Portsbridge Roundabout Collision Reports Summary

Police Ref	Road User Types (other than car or van)	Severity	Description / Causation Factors
150179272	Motorcycle	Serious	Veh 1 (m/cycle) travelling N behind veh 2 (car) in outside lane of A3 London Road. Veh 2 indicated and began changing lanes to left. Veh 1 started overtaking. Veh 2 then moved back into outisde lane without indicating and collided with offside of veh 1. Occurred on A3 London Road 61 metres north of Shell petrol station, Portsmouth, Hampshire
150289979	Motorcycle	Serious	Veh 1 (m/cycle) travelling S along A3 London Road loses control after applying too much throttle whilst changing lanes to the right and collides with the central reservation. Occurred on A3 London Road 27 metres south of M27 westbound junction 12 offslip, Portsmouth, Hampshire
150365559	Lorry; Motorcycle	Serious	Veh 1 (lorry) travelling W along A27 indicated left whilst alongside veh 2 (m/cycle). Veh 2 then reacted and lost control on the slippery road surface, causing the rider to fall. Occurred on A27 westbound at junction with A3 London Road, Cosham, Hampshire
150406309	Motorcycle	Serious	Veh 1 (car) travelling NE along A397 Northern Road turns right onto Portsmouth Road across the path of veh 2 (m/cycle) travelling SW long A397 Northern Road and collides. Occurred on A397 Northern Road at junction with Portsmouth Road, Cosham, Hampshire
150419652	Motorcycle	Serious	Veh 1 (car) travelling S along A397 Northern Road entered A27 Western Road

Police Ref	Road User Types (other than car or van)	Severity	Description / Causation Factors
			Portsbridge Rbt and collided with veh 2 (m/cycle) travelling SE along A27 Western Road around Rbt. Occurred on A27 Western Road at junction with A397 Northern Road, Cosham, Hampshire
160042204		Serious	Veh 2 (car) travelling W along A27 exited onto A27 offslip and collided with rear of veh 1 (van) stationary in traffic facing W along A27 offslip. Occurred on A27 westbound offslip at junction with A27 westbound, Cosham, Hampshire
160175407	Bus; pedal cycle	Serious	Veh 1 (bus) travelling W around Portsbridge Rbt having entered from A397 Northern Road in bus lane and moves over into lane 1 failing to see veh 2 (p/cycle) travelling in the same direction and collides. Occurred on A3 London Road rbt 23 metres west of A397 Northern Road, Portsmouth, Hampshire
160250894	Motorcycle	Serious	Veh 1 (car) travelling S along A27 Western Road began moving off at the Portsbridge Rbt and collided with the rear of veh 2 (m/cycle) which was still stationary. Occurred on A27 Western Road at junction with A3 London Road, Cosham, Hampshire
160255242	Motorcycle	Serious	Veh 1 (car) travelling NW along A3 London Road moves off to enter rbt and collides with the rear of veh 2 (m/cycle) stationary waiting to enter rbt. Occurred on A3 London Road at junction with A27, Portsmouth, Hampshire
160267669	Motorcycle	Serious	Veh 1 (m/cycle) travelling S along A27 Western Road moved from lane 2 to lane 1

Police Ref	Road User Types (other than car or van)	Severity	Description / Causation Factors
			and collided with the offside of veh 2 (car) in lane 1. Occurred on A27 Western Road at junction with A397 Northern Road, Cosham, Hampshire
44170160985	Motorcycle	Fatal	Veh 1 (car) travelling E along A27 after joining from the A27 eastbound onslip, moved into lane 3 and into path of veh 2 (m/cycle) travelling in lane 3. This manoeuvre caused rider of veh 2 to fall off. Unknown if any contact between vehs. Occurred on A27 eastbound at junction with A27 eastbound onslip, Cosham, Hampshire
44170271124	Motorcycle	Serious	Veh 1 (m/cycle) travelling S around Rbt, exits onto A3 London Road in outside lane, loses control and collides with raised kerb and railings on the offside. Occurred on A3 London Road at junction with M27 westbound junction 12 offslip, Portsmouth, Hampshire
44170304499	Motorcycle	Serious	Veh 1 (m/cycle) travelling W along A27 offslip fails to stop in time and collides with rear of veh 2 (car) stopped in traffic. Occurred on A27 westbound at junction with A27 westbound offslip, Portsmouth, Hampshire
44170454388	Motorcycle	Serious	Veh 2 (m/cycle) travelling W along A27 in lane 2 moves into lane 1 and then onto the A27 westbound offslip and collides with rear of veh 1 (car) stationary on A27 westbound offslip facing W. Veh 2 view obscured by a HGV in lane 1. Occurred on A27 westbound offslip at junction with A27 westbound, Cosham, Hampshire
44180104677	Pedestrian	Serious	Veh1 (car) travelling N along Northern Road. Cas1 (pedestrian) has attempted to

Police Ref	Road User Types (other than car or van)	Severity	Description / Causation Factors
			cross the road from E to W between traffic. Cas1 is clipped by veh1's nearside wing mirror causing cas 1 to fall to the ground. Occurred on A397, Northern Road, outside bowling green, Cosham, Hampshire
44180234974	Bus; pedal cycle	Fatal	Veh1 (p/cycle) joins the A397 Northern Road at pedestrian crossing to travel N. The rider falls from veh and is struck by veh2 (bus) travelling N along A397 Northern Road. Occurred on A397 Northern Road, 50 meters N of junction with Portsmouth Road, Portsmouth, Hampshire.
44190190261	Motorcycle	Serious	Veh 1 (m/cycle) travelling S along A3 London Road and veh 2 (van) travelling in the same direction entering from the rbt. Unclear who collided with who. Occurred on A3 London Road 76 metres south of M27 westbound junction 12 offslip, Portsmouth, Hampshire
44190245354	Pedal cycle	Serious	Veh1 (p/cycle) travelling NB around A27 Portsbridge Roundabout on cycle path hits an object on the path causing veh1 to collide with a lamp post knocking the rider off. Occurred on A27 Portsbridge Roundabout under M27 underpass, Hilsea, Hampshire

5.2.1.3. The collisions were almost all caused by human error; and the road layout was only noted as a cause in one collision. Nevertheless, it is appropriate to consider further if these errors might have been influenced by any location-specific factor such as the design of the junction; so as to determine if reassignment of traffic through this junction could exacerbate existing accident trends. To do this, further analysis of the types and exact locations of collisions is provided below.

5.2.1.4. A total of 46 collisions were rear end collisions, of which:

- Seven occurred on the A27 Western Road approach to the roundabout;
- Eight occurred on the A3 approach to the roundabout;
- Nine occurred on the A397 approach to the roundabout;
- Two occurred on the A397 heading away from the roundabout;
- Eight occurred on the mainline carriageways;
- Five occurred on the off-slips, including one on the intersection between the off-slip and the mainline carriageway; and
- Seven occurred on the roundabout circulatory carriageway.

5.3. IMPACT OF PROPOSED DEVELOPMENT

5.3.1.1. As already noted, the vast majority of these collisions were caused by human error. Also, the exact locations are fairly evenly distributed with no concentration on any particular part of the junction (such as the slip roads). These two points together suggest that reassignment of traffic to this junction would not be intensifying use of a particularly hazardous junction as the data do not suggest any location-specific factor which might indicate a flaw in the design of part of the junction.

5.3.1.2. Notwithstanding the above, Figure 5.1 shows a small cluster of collisions at the intersection of the A27 off-slip with the roundabout's circulatory carriageway, which has previously been raised by PCC as a concern. From reviewing the descriptions of these collisions in Table 5.1, there does not appear to be a particular cause related to the road layout. However, as noted in the review of A3M junction 3 in Chapter 3, collisions at the intersection of an off-slip road with a circulatory carriageway might suggest a hazard of drivers observing on-coming traffic to their right, then entering the roundabout at speed unaware of the closeness of a vehicle right in front. It is therefore worth considering if there will be increases in traffic flow as a result of the Proposed Development.

5.3.1.3. The Applicant's Transcript of Oral Submissions from Issue-Specific Hearing 2 of 14 December 2020 (REP5-061) includes discussion of the predicted changes in flows through the Portsbridge Roundabout as a result of the Proposed Development.

5.3.1.4. In Paragraphs 3.30 to 3.32 of REP5-061, the Applicant accepted that when using the SRTM outputs the Do-Minimum scenario results for the junction capacity analysis do not reflect the existing situation where traffic queues are known to extend back from the westbound A27 off-slip onto the A27 mainline in the peak hours. The Applicant therefore completed further analysis of traffic flows comparing the outputs of the Do Something 1 and 2 Scenarios with the Do Minimum Scenarios.

5.3.1.5. This analysis showed – as summarised in REP5-061 paragraph 3.30 – that the Do-Something scenarios lead either to a decrease in traffic flow or an increase of 30 to 40 vehicles across the entire junction in the AM and PM peak hours. In addition, the A27 Westbound off-slip experiences a maximum increase of nine vehicles in the PM peak Do-Something 1 scenario and a decrease in traffic in all other scenarios. This is despite the junction operating in the SRTM with a lower level of delay than the existing baseline, with traffic instead using alternative routes such as the M275 to avoid construction works on the A2030 Eastern Road.

5.3.1.6. The comparative assessment results are summarised in Table 5.2 below, to show the changes arising from traffic reassignment by virtue of construction of the Proposed Development.

Table 5.2 - Portsbridge Roundabout Comparative Assessment

	AM Peak	PM Peak
Portsbridge Roundabout DS 1 Net Traffic Flow Changes compared to DM Scenario	+8	+34
A27 Westbound Off-Slip DS 1 Net Traffic Flow Changes compared to DM Scenario	-10	+9
Portsbridge Roundabout DS 2 Net Traffic Flow Changes compared to DM Scenario	-18	+36
A27 Westbound Off-Slip DS 2 Net Traffic Flow Changes compared to DM Scenario	-6	-8

5.3.1.7. As such, the traffic and collision risk impact of the Proposed Development on Portsbridge Roundabout will be negligible.

5.3.1.8. Furthermore, the impact will be temporary and only occur when works are taking place on A2030 Eastern Road. This will be limited to seven weeks per circuit, and only during school holidays, June and July (due to FTMS programme restrictions). Compared with this, the modelling assesses neutral months, when flows would typically be higher. Therefore, any impact would be expected to be lower than the modelled impacts, as public travel would also be lower for much of this period.

6. SUMMARY AND CONCLUSIONS

6.1. SUMMARY

6.1.1.1. Based on the collision data received from Hampshire Constabulary the collision risk was assessed at the following three junctions of the Strategic Road Network (SRN):

- Junction 2 of the A3(M);
- Junction 3 of the A3(M);
- Junction of A27 / A2030 Eastern Road;
- Junction of A27 / A3 / M27 / A397 (Portsbridge Roundabout).

6.1.1.2. These have been assessed against existing accident data and traffic modelling using the SRTM and observed traffic flows.

6.2. CONCLUSIONS

6.2.1.1. At the junction of the A27 / A2030, at the Portsbridge Roundabout and at Junction 2 of the A3(M), the collision data do not show that reassignment of traffic to these junctions would intensify use of particularly hazardous junctions, as the data do not suggest any location-specific factors which might indicate flaws in the designs of parts of the junctions.

6.2.1.2. At Junction 3 of the A3(M), the predominance of the rear-end collisions at the intersection of the off-slip roads with the circulatory carriageway might potentially suggest an existing safety issue, probably due to drivers observing on-coming traffic to their right, then entering the roundabout at speed unaware of the closeness of a vehicle right in front.

6.2.1.3. At Junction 3 of the A3M, the mitigation measures proposed to be implemented alongside the committed Old Park Farm development include signalisation of the northbound off-slip of the A3 (M) and the corresponding circulatory. Such a scheme will very likely address this type of collision by removing the need for approaching drivers to look to their right as they enter the roundabout. Furthermore, traffic modelling completed in HE03 shows that the Proposed Development is not predicted to have a material impact on queue lengths on this approach during the AM and PM peak periods.

6.2.1.4. Overall, the Proposed Development is not expected to materially worsen the collision risk on the SRN at either of these four junctions.

Appendix A

SUMMARY OF COLLISION DATA

Junction 2, A3(M) Collision Reports Summary

Police Ref	Road User Types (other than car or van)	Severity	Description / Causation Factors
140437106		Slight	Veh 1 (car) travelling NW along A3(M) northbound junction 2 off-slip was waiting at the roundabout at the top of the slip road. Veh 2 (car) approaching from behind assumed the road was clear but collided with the rear of veh 1, which was yet to move off.
150064096		Slight	Veh 2 (car) travelling SE along B2149 Dell Piece West saw braking traffic ahead too late, brakes but then lock causing veh 2 to skid and collides with the rear of veh 1 (car) who suddenly brakes due to braking traffic ahead.
150206935		Slight	Veh 2 (car) travelling SW along B2149 Dell Piece East began to pull onto roundabout but braked suddenly due to a vehicle coming round roundabout. Following veh 1 (car) failed to see veh 2 brake and collided with rear of veh 2.
150355267		Slight	Veh 1 (car) travelling E along B2149 Dell Piece West stopped to wait at the roundabout at A3(M). Veh 2 (car) failed to stop in time and collided with the rear of veh 1.
150407893		Slight	Veh 1 (car) travelling N along A3(M) northbound failed to react sufficiently to traffic slowing ahead and collided with the rear of veh 2 (car).
160087705		Slight	Veh 2 (car) travelling NE along Dell Piece West collided with rear of veh 1 (car) waiting at junction in front.
160113415	LGV	Slight	Veh 1 (van) travelling S along A3(M) southbound junction 2 off-slip was stopped at the roundabout at the end of the off-slip. Veh 2 (van) failed to stop in time and collided with the rear of veh 1.
160180031		Slight	Veh 1 (car) travelling S along A3(M) junction 2 off-slip was waiting at the roundabout. Veh 2 (car) failed to stop in time and collided with the rear of veh 1.

160218949		Slight	Cas 1 (passenger) is travelling on the bonnet of veh 1 (car) travelling NW along A3(M) off-slip, as veh 1 goes around a left hand bend cas 1 falls off the bonnet and skids across lane 2 and landed in the verge. Veh 1 failed to stop and left the area.
160221352		Slight	Veh 1 (car) travelling W along B2149 Dell Piece East stopped at the roundabout at A3(M). Veh 2 (car) failed to react in time and collided with the rear of veh 1.
160246022		Slight	Veh 2 (car) travelling W along B2149 Dell Piece East collides with the rear of veh 1 (car) which starts to enter the roundabout and then stops due to traffic came around the roundabout.
160317446		Slight	Veh 1 (car) travelling E along B2149 Dell Piece West slowed due to heavy traffic. Veh 2 (van) failed to react in time and collided with the rear of veh 1.
160324935		Slight	Veh 1 (car) travelling N along A3(M) off-slip failed to brake at end of slip road and collided with rear of veh 2 (car) stationary in front waiting to join roundabout.
160476971		Slight	Veh 1 (car) travelling W along B2149 Dell Piece East, turns right into fuller's after letting a goods vehicle out across the path of vehicle veh 2 (van) travelling E along B2149 Dell Piece East and collides. Veh 2 would have been masked by goods vehicle.
44170120346		Slight	Veh 1 (car) travelling N along A3(M) junction 2 off-slip checked to see if the roundabout was clear and moved forwards onto roundabout colliding with veh 2 (car) in front and still waiting to enter roundabout.
44170343711		Slight	Veh 2 travelling north on A3(M) is stationary in traffic when veh 1 drives into rear of veh2
44170401506		Slight	Veh 2 (car) travelling SW along B2149 Dell Piece East in lane 2 enters roundabout turning right onto A3(M) northbound, swerves to the left and collides with the rear offside of veh 1 (car) travelling in lane 1 intending to exit on A3(M) southbound
44170469829		Slight	Veh 1 (car) travelling W along B2149 Dell Piece East was distracted by looking at SAT NAV and collided with rear of veh 2 (car) which had stopped at the side of the road in order to sort out children in vehicle.

44170504551		Slight	Veh1 (car) travelling W on B2149 Dell Piece East collides with rear of veh2 (car) who was stationary in traffic. Veh2 drove off without leaving details and driver of veh1 suffered minor injury.
44180393328		Slight	Veh1 (van) travelling S along A3(M) off-slip fails to stop in time on approach to the roundabout and collides with the rear of veh2 (car) travelling along A3(M) in front, waiting to join roundabout.
44190021102	Motorcycle	Serious	Veh1 M/Cycle) travelling S along A3(M) on-slip joined the main carriageway and collided with the nearside of veh2 (car) travelling S along A3(M) in lane one.
44190141173		Slight	Veh1 (car) travelling N along A3(M) off-slip believed that veh2 (car) stationary in front is about to move off onto the roundabout. Veh2 does not move away and veh1 collides with the rear of veh2.
44190220416		Slight	Veh1 (car) travelling N along the A3(M) northbound off-slip failed to slow on approach to the roundabout and collided with the rear of veh2 (car) waiting to enter roundabout
44190314941		Slight	Veh1 (van) travelling S along the A3(M) off-slip failed to slow in time on approach to the roundabout and collided with the rear of veh2 (car) travelling S in front, waiting to enter the roundabout.
44190326046		Slight	Veh2 (van) travelling W along Dell Piece East fails to stop in time on approach to the roundabout and collides with the rear of veh1 (car) travelling W in front, stationary waiting to enter the roundabout.

Junction 3, A3(M) Collision Reports Summary

Police Ref	Road User Types (other than car or van)	Severity	Description / Causation Factors
44170018641		Slight	Veh 1 (car) travelling south on A3(M) was rear ended by veh 2 (car) in slow moving traffic.
160176416		Slight	Veh 1 (car) travelling SW along A3(M) southbound in lane 2 moved into lane 1. At this moment, traffic in lane 1 braked. Veh 1 was unable to react in time and collided with the rear of veh 2 (car).
140369828		Slight	Veh 1 (car) travelling W along B2150 Hulbert Road stopped to wait for traffic at the A3(M) junction 3 roundabout. Veh 2 (van) failed to stop in time and collided with the rear of veh 1.
44190148585		Slight	Veh1 (car) travelling NE along A3 off-slip slowed on approach to roundabout and was struck from behind by veh2 (car) travelling NE.
44170042205		Slight	Veh 3 (van) travelling N along A3(M) off-slip road collides with the rear of veh 2 (car) stationary, shunting veh 2 into the rear of veh 1 (car) stationary
150280563	Motorcycle	Serious	Veh 1 (car) travelling SW along A3(M) on-slip when vehicle suffers a blow out causing vehicle to lose control and collide with veh 2 (M/Cycle) before colliding with the barrier. Rider of veh 2 fell off during collision.
44170396122		Slight	V1 was travelling behind V2 leaving the A3(M) off-slip road. At the roundabout on Hulbert Road V1 was driven into the rear of v2 whilst it was stopped at the roundabout
44180320735		Slight	Veh2 (car) travelling E along B2150 Hulbert road comes to a stop at roundabout. Veh1 (car) travelling E along B2150 Hulbert Road behind veh 2 fails to slow in time and collides with rear of veh 2.
140405989		Serious	Veh 1 (car) travelling S along A3(M) southbound junction 3 on-slip lost control and collided with the offside barrier.

140410784		Serious	Veh 2 (car) travelling N along A3(M) off-slip, begins to move onto roundabout but stops again causing following veh 1 (van) to move off and collide with rear of veh 2.
150314502		Slight	Veh 2 (car) travelling NW along B2150 Hulbert Road around right hand bend [on the roundabout] was looking for gap in traffic on roundabout when it failed to see veh 1 (police car) stationary at the roundabout junction in front. Veh 2 collided with rear of veh 1.
44170444193		Slight	Driver of veh1 (car) travelling S on A3(M) junction 3 off-slip has medical episode and does not brake at roundabout and crashes into barrier and overturns. Minor injuries sustained.
44190192019		Slight	Veh 1 (car) travelling NE along A3(M) off-slip failed to slow on approach to the roundabout and collided with the rear of veh 2 (van) travelling NE in front, stationary at roundabout
44180349003	Motorcycle	Slight	Veh 1 (M/Cycle) travelling SE along B2150 Hulbert Road stops to give way at roundabout. Veh 2 (car) travelling SE along B2150 Hulbert Road fails to stop in time and collides with rear of veh1.
140449148		Slight	Veh 1 (car) travelling N along A3(M) northbound junction 3 offslip failed to brake for heavy traffic ahead and collided with the rear of veh 2 (car), pushing veh 2 into the rear of veh 3 (car).
44180359377		Slight	Veh 1 (car) travelling N along A3(M) off-slip road in lane 1, driver looking to the right to enter roundabout whilst still rolling forward and collides with the rear of veh 2 (car) stationary at roundabout
44170183953		Slight	V1 (car) slows at top of off-slip road of J3 of A3(M). V1 attempts to pull away and then stops. V2 collides with rear of v1.
44170476445	Motorcycle	Slight	Veh1 (M/Cycle) travelling SE on A3(M) southbound junction 3 off-slip loses control under braking and collides with veh 2 (car) and veh 3 (car), knocking off rider and causing minor injuries.
44180376198	Pedestrian	Serious	Veh1 (car) travelling around the roundabout from Hulbert Road to the A3(M) southbound collides with casualty 1 (pedestrian) who was standing in the middle of the carriageway in dark clothing.

150394425		Serious	Veh 1 (car) travelling NW along A3(M) off-slip, at the top of the slip road veh 1 leaves straight ahead at the junction and collides with the barrier and a sign on the roundabout and overturns.
44190268049		Slight	Veh 1 (car) travelling NW along Hulbert Road loses control crosses central reservation into opposing carriageway and collides with veh 2 (car) travelling SE along Hulbert Road
160364235		Slight	Veh 1 (car) travelling N along A3(M) northbound junction 3 off-slip failed to stop in time for traffic waiting to enter the roundabout and collided with the rear of veh 2 (van).
150053848		Slight	Veh 1 (car) travelling NW along A3(M) off-slip and collides with the rear of veh 2 (car) stationary at give way line waiting to enter roundabout.
44190273613		Slight	Veh 1 (car) travelling N along A3(M) off-slip failed to brake in time and collided with rear of veh 2 (car) waiting at junction in front.
150061480		Slight	Veh 1 (car) travelling SE along the B2150 Hulbert Road and collides with the rear of veh 2 (car) slowing as approaching roundabout. Veh 1 fails to stop.
44180041457		Slight	Veh 2 (car) travelling N along A3(M) off-slip failed to slow in time and collided with rear of veh 1 (car) waiting in front.
44180040516		Slight	Veh1 (car) travelling S on A3(M) junction 3 off-slip approaching the roundabout collides with the rear of veh2 (car) that was stationary waiting to join the roundabout. Front seat passenger of veh2 suffers minor injuries.
150419037		Slight	Veh 1 (car) travelling W along the roundabout at A3(M) and B2150 Hulbert Road failed to stop in time for traffic ahead and collided with the rear of veh 2 (car).
44190281335		Slight	Veh1 (car) travelling N on A3(M) N/B off-slip road in traffic moves off for unknown reasons and collides with the rear of veh2 (car) that is waiting to join the roundabout.
44190303147		Slight	Veh 1 (car) travelling NE along A3(M) off-slip failed to slow on approach to the roundabout and collides with the rear of veh 2 (car) stationary at the roundabout.
44170277230		Slight	Veh 1 (car) with learner driver travelling NW along B2150 Hulbert Road is stationary at roundabout due to obscured view to the right. Foreign veh 2 (goods veh) waiting behind moved forwards thinking veh 1 had moved off and hit rear of veh 1.

160012651		Slight	Veh 1 (car) travelling N along A3(M) northbound junction 3 offslip failed to negotiate the exit onto the roundabout and crossed the lanes of the roundabout, colliding with the barrier.
160015939	Pedal Cycle	Slight	Veh 1 (P/Cycle) was travelling NW along B2150 Hulbert road. Veh 2 (car) passed too close when overtaking and clipped veh 1, causing the rider to fall.
44190342812		Slight	Veh 1 (car) travelling N along A3 (M) northbound off-slip fails to slow in time and collides into rear of veh 2 (car) in front.
44180089321		Slight	Veh1 (car) travelling N along A3(M) exited at junction 3 and collides with rear of veh2 (car) which is stationary waiting to join roundabout. Veh1 drove off and could not be traced.
44180142768		Slight	Veh1 (car) travelling S along the A3, is hit in the rear by veh2 (car) travelling S along the A3. Veh2 fails to stop at the scene.
44180198981		Slight	Veh1 (car) travelling SE along B2150 Hulbert Road stops at junction waiting to pull out onto the roundabout. Veh2 (car) travelling SE along B2150 Hulbert Road behind veh1 drives into the rear of veh1.
150199214	Motorcycle	Slight	Veh 2 (car) travelling S along A3(M) southbound off-slip approached roundabout with B2150 Hulbert Road but failed to stop in time and collided into the rear of veh 1 (M/Cycle) which had stopped at roundabout.
44190244256		Slight	Veh 2 (car) travelling NE along A3(M) off-slip failed to slow on approach to the roundabout and collides with the rear of veh 1 (car) stationary at the roundabout.
150220774		Slight	Veh 2 (car) travelling W along B2150 Hulbert Road approaching roundabout had seen the roundabout was clear however had not seen veh 1 (car) stopped at roundabout junction in front. Veh 2 collided with rear of veh 1.

A27/A2030 Eastern Road Junction Collision Reports Summary

Police Ref	Road User Types (other than car or van)	Severity	Description / Causation Factors
140355651		Slight	Veh 1 (car) travelling SW along A2030 Eastern road around roundabout moves off from traffic lights and collides with veh 2 (car) stopped due to police veh on emergency call entering from A27 off-slip
140407485		Slight	Veh 1 (car) travelling W along A27 fails to slow in time and collides with the rear of veh 2 (car) slowing, shunting veh 2 into the rear of veh 3 (car) slowing for slow moving traffic in front due to horrible weather.
140415763		Slight	Veh 1 (car) travelling N along A2030 Eastern road was stopped at the traffic lights at the roundabout for A27. Veh 2 (car) failed to stop in time and collided with the rear of veh 1.
140449623		Slight	Veh 1 (goods veh) travelling W A27 lane 3 moved into lane 2 with intention of progressing into lane 1. Veh 1 collided with offside of veh 2 (car) which was already in lane 2, causing veh 2 to spin, hit side barrier and overturn.
150039552	Pedal Cycle	Slight	Veh 1 (P/Cycle) was travelling S along A2030 Eastern road when veh 2 (car) travelling W turned left from the shell petrol station into its path, causing veh 1 to collide with the offside of veh 2.
150140526		Slight	Veh 1 (car) travelling N along A2030 Eastern road was in lane 2 waiting to turn right on the roundabout onto A27 eastbound. Veh 2 (taxi) was weaving between traffic and collided with the nearside of veh 1.
150271950		Slight	Veh 2 (goods veh) travelling N along A2030 Eastern road entered the roundabout at A27. Veh 1 (car) travelling W on the roundabout then collided with the offside of veh 2 and spun, colliding with the barrier on the roundabout island.
150298890	Motorcycle	Slight	Veh 2 (car) and veh 3 (car) travelling SW along A27 off-slip side by side arguing about earlier incident. Veh 2 veers to centre line as veh 1 (M/Cycle) filtering through traffic and collides, causing the rider to be thrown off and collides with veh 3.

150410128	Pedal Cycle	Slight	Veh 2 (car) travelling NW pulled out from the Farlington marshes car park and collided with the nearside of veh 1 (P/Cycle) travelling SW on the roundabout.
160011278		Serious	Veh 1 (car) travelling S along A2030 Eastern road entered the roundabout intending to join A27 eastbound. Shortly after veh 1 entered the roundabout, veh 2 (car) collided with the offside of veh 1.
160016399	Motorcycle	Serious	Veh 1 (M/Cycle) travelling N along A2030 Eastern road attempted to beat traffic lights turning red, travelling between 50-60mph. Veh 1 hits offside kerb causing veh to collide with roundabout island.
160028173	Motorcycle	Serious	Veh 2 (M/Cycle) travelling S around A2030 Eastern road roundabout from green traffic lights overreacts to veh 1 (van) turning left out of Farlington Marsh car park onto A2030 Eastern road roundabout. Veh 1 had not entered the same lane as veh 2.
160068968	Pedal Cycle	Slight	Veh 2 (car) travelling N along A2030 Eastern road entered the roundabout and collided with veh 1 (P/Cycle) travelling W around the roundabout, causing the rider to fall.
160071241		Slight	Veh 1 (car) travelling E along A27 eastbound lost control and collided with the nearside barrier, before rebounding and coming to rest in lane 3.
160173733		Slight	Veh 1 (car) travelling SW along A27 off-slip, fails to stop in time and collides with the rear of veh 2 (pickup truck) stationary in queue of traffic at red traffic lights.
160220283		Slight	Veh 1 (car) travelling NE along A2030 Eastern road off-slip and collides with the rear of veh 2 (car) shunting veh 2 into the rear of veh 3 (car).
160327705		Slight	Veh 1 (car) having exited A27 and now on roundabout heading into Portsmouth stationary at traffic lights at junction with A2030 Eastern road when veh 2 (van) collides into rear of veh 1.
160473085	Pedal Cycle	Slight	Veh 1 (car) travelling N out of car park collides with veh 2 (P/Cycle) travelling W around A2030 Eastern road roundabout on pavement cycle/path. Neither vehicle saw each other due to bramble bushes obscuring the view.

44170010869		Slight	Veh 1 (car) travelling N along A2030 Eastern road approaches roundabout in lane 2 and collides with an unknown veh which does not stop at scene. Following veh 2 (goods veh) unable to stop in time and collides with rear of veh 1.
44170019775	Motorcycle	Slight	Veh 1 (van) travelling NE along A27 in lane 1 over the brow of slope and sees veh 2 (M/Cycle) travelling slowly in front with no rear lights, swerves to avoid but does not and collides with rear, causing the rider to fall off.
44170040116	Pedal Cycle	Slight	Veh 1 (car) travelling west on A27 Eastern road off-slip stops at the traffic lights. Veh 2 (P/Cycle) travelling north across pelican crossing. Veh 1 moves off and collides with rear of veh 2.
44170040245	Pedal Cycle	Slight	Veh 1 (P/Cycle) travelling south on A2030 Eastern road. Veh 2 (car) has pulled out of side road and collided with nearside of veh 1.
44170096176		Slight	Veh 1 (car) travelling W along A27 when driver lost concentration causing veh to collide with rear of veh 2 (car) travelling in front during rush hour traffic.
44170117641		Slight	Veh 2 (good veh) travelling W around roundabout fails to stop at red traffic light across the path of veh 1 (car) travelling N along A2030 Eastern road enters roundabout in lane 1 as has green traffic light and collides.
44170155355	Motorcycle	Slight	Veh 1 (M/Cycle) with learner rider travelling N along A2030 Eastern road in lane 1 entered roundabout and cut across lane 2 in order to continue around roundabout, colliding with veh 2 (car) travelling N along A2030 Eastern road in lane 2 to turn left onto A27.
44170232769		Slight	Veh 2 (van) travelling S along A2030 Eastern road in lane 2 abruptly cuts in front of veh 1 (car) travelling the same direction causing veh 1 to slam on their brakes to avoid impact.
44170273123		Slight	Veh 1 (car) travelling N along A2030 Eastern road in lane 2, fails to stop in time and collides with the rear of veh 2 (car) slowing, shunting veh 2 into the rear of veh 3 (car) slowing due to slowing traffic ahead.
44170277764		Slight	V1 (car) travelling E along A27 stops at roundabout intending to turn left onto eastern road. V2 (car) stops behind v1. V3 (van) fails to stop and collides with v2 pushing v2 into v1.

44170477965	Motorcycle	Serious	Veh 1 (M/Cycle) travelling S around A2030 Eastern road roundabout loses control due to ice.
44170501307		Slight	Veh 2 (car) travelling NE along A27 off-slip enters roundabout and changes lanes to the right and collides with veh 1 (car) travelling in the same direction intending to exit onto A2030 Eastern road.
44180030546		Slight	Veh 1 (car) travelling S along A2030 Eastern road turned right into Walton road and collided with veh 2 (car) travelling N along A2030 Eastern road. Allegation that one of the vehicle contravened a red light.
44180035306	Pedestrian	Slight	Cas1 (pedestrian) crossing A2030 Eastern road at pedestrian crossing on a green man when they are struck by veh1 (car) travelling S. No details were taken from driver before they drove off. Cas1 suffered minor injuries.
44180061222		Slight	Veh 1 (car) travelling S along A2030 Eastern road failed to notice stationary vehs in front and collided with rear of veh 2 (car) in front. Veh 2 was pushed into rear of veh 3 (car) stationary at red traffic lights in front.
44180070976		Slight	Veh 2 (car) travelling N along A2030 Eastern road in lane 1 enters roundabout and attempts to move into lane 2 colliding with veh 1 (car) travelling in lane 2.
44180165938		Slight	Veh1 (car) travelling NE along A27 eastbound off-slip goes round the roundabout and fails to stop at a red light, colliding with veh2 (car) travelling SW along the A27 westbound off-slip and joining the roundabout.
44180240528		Serious	Veh1 (car) travelling NE along the A27 on-slip from the A2030 stops at the end of the on-slip road before the main carriageway. Veh2 (car) travelling NE along the A27 on-slip collides with the rear of veh1.
44180342530	Motorcycle	Serious	Veh1 (M/Cycle) travelling E along A27 on-slip in lane 2, travels too close to the offside and mounts the kerb. The rider is flung from the vehicle and bands on the armco barrier.
44180362828	Pedal Cycle	Serious	Veh1 (P/Cycle) travelling SW around roundabout in cycle lane. Veh2 (P/Cycle) travelling NE around roundabout in cycle lane. The two vehicles fail to see each other and collide head on.

44180373796		Serious	Veh2 (car) travelling N along A2030 Eastern road. The ATS are not working. Veh2 edges out onto the roundabout, but drives too far and collides with veh1 (car) already on the roundabout.
44180399155	Pedal Cycle	Slight	Veh1 (car) travelling around the roundabout goes to take the exit onto the A27 eastbound but crosses across the path of veh2 (P/Cycle) travelling around the roundabout on the nearside. Veh2 was knocked to the ground.
44180435153		Slight	Veh3 (car) travelling SW along A27 Havant bypass fails to slow in time for traffic ahead and collides with the rear of veh2 (car) pushing it forward into the rear of veh1 (car) travelling SW along A27 Havant bypass in front.
44180442593		Slight	Veh2 (car) travelling S along A2030 Eastern road turned right onto Walton road and collided with veh1 (car) travelling N along A2030 Eastern road. Veh1 is believed to have driven through a red light.
44180470513		Slight	Veh1 (car) travelling S around the roundabout exiting onto A2030 Eastern road in lane 1. Veh2 (car) also travelling S in lane 2 attempts to move into lane 1 and collides with the offside of veh1.
44190020356	Pedal Cycle	Slight	Veh1 (car) travelling S along A2030 Eastern road contravened red ATS and collided with veh2 (P/Cycle) travelling E along Walton road and turning right on A2030 Eastern road.
44190060793		Slight	Veh1 (car) travelling W along A27 Havant bypass collided with the rear of veh2 (car) travelling W in front, stationary at the traffic lights.
44190073802		Slight	Veh 1 (car) travelling NE along A27 on-slip in lane 1 and collides with the rear of veh 2 (car) stationary, causing veh 2 to slip on the road to the nearside
44190103808	Motorcycle	Slight	Veh1 (M/Cycle) travelling W around roundabout exited onto A27 Havant bypass and collided with the offside of veh2 (M/Cycle) travelling W in the same lane. Rider of veh1 fell off.
44190137053		Slight	Veh1 (car) travelling N along A2030 Eastern road stopped at ATS waiting to enter roundabout and was hit in the rear by veh2 (car) travelling N behind.

44190179756	Pedal Cycle	Serious	Veh1 (P/Cycle) travelling S around the A2030 Eastern road roundabout in lane 2. Veh2 (van) travelling S in lane 1. As veh2 passed veh1 the racking on the side of the van caught the front wheel of veh1 causing rider to fall off.
44190221579		Slight	Veh 1 (car) travelling W along A27 on-slip has attempted to get onto A27 failing to look properly and collides with rear nearside of veh 2 (car) owing to this veh 2 has tried to swerve out the way and collides with the rear of veh 3 (car).
44190253818		Slight	Veh 1 (car) travelling NE around A2030 Eastern road roundabout in lane 1 enters A27 on-slip but realises their error and attempts to get back onto the roundabout, colliding with veh 2 (minibus) which was entering the A27 on-slip in lane 2.
44190288891		Slight	Veh1 (car) travelling E along A27 eastbound on-slip swerves to avoid veh2 (car) also travelling E that slows on the slip road, veh1 collides with the nearside of veh1 and then into veh3 (car) also travelling E in lane 1 of A27 E/B.

Portsbridge Roundabout Collision Reports Summary

Police Ref	Road User Types (other than car or van)	Severity	Description / Causation Factors
140369066	Motorcycle	Slight	Veh 2 (car) travelling W along M27 offslip enters the Portsbridge Rbt across the path of Veh 1 (m/cycle) travelling S along A397 Northern Road around the rbt and collides, causing the rider to fall off. Occurred on A397 Northern Road at junction with M27 westbound offslip, Cosham, Hampshire
140390256		Slight	Veh 1 (car) travelling N along A27 Western Road exited the Portsbridge Rbt and lost control on a left-hand bend, leaving the carriageway onto the central reservation and colliding with a road sign. Occurred on A27 Western Road 51 metres north of Portsbridge roundabout, Portsmouth, Hampshire
140435919		Slight	Veh 1 (car) travelling E along A27 in lane 3 moves into lane 2 causing veh 2 (car) in lane 2 to be forced into lane 1. Veh 1 lost control and collided with nearside barrier. Occurred on A27 eastbound at junction with A27 eastbound Portsbridge onslip, Portsmouth, Hampshire
140436890		Slight	Veh 1 (car) travelling N along A3 London Road in lane 1 indicated right and veered towards lane 2. Veh 2 (car) then swerved and collided with railings to the offside. Occurred on A3 London Road outside Shell petrol station, Portsmouth, Hampshire
140445157	Pedal cycle	Slight	Veh 1 (car) travelling S along A27 Western Road failed to slow in time and entered the Portsbridge rbt, colliding with the nearside of veh 2 (p/cycle) travelling E on the rbt. Occurred on A27 Western Road at junction with A397 Northern Road, Cosham, Hampshire
150000726	Motorcycle	Slight	Veh 1 (m/cycle) travelling N along A3 Northern Parade slipped on an empty gravel back [sic] approaching the Portsbridge Rbt, causing the rider to fall.

			Occurred on A3 Northern Parade at junction with A27 Western Road, Portsmouth, Hampshire
150015010		Slight	Veh 2 (car) travelling N along A3 London Road on approach to Rbt collides with veh 1 (car) slowing in front. Occurred on A3 London Road at junction with A27 westbound offslip, Portsmouth, Hampshire
150024879	Lorry	Slight	Veh 2 (lorry) travelling S along A397 Northern Road collided with rear of veh 1 (car) approaching rbt in front in middle lane. Occurred on A397 Northern Road at junction with A27 eastbound onslip, Portsmouth, Hampshire
140030712	Pedal cycle	Slight	Veh 2 (van) waiting to exit bus depot to turn left onto A3 London Road, pulls forwards and hits veh 1 (p/cycle) travelling S along west pavement of A3 London Road. Veh 1 entered bus lane against traffic to go around front of veh 2. Occurred on A3 London Road at junction with bus depot, Portsmouth, Hampshire
150092298		Slight	Veh 1 (car) travelling S along A397 Northern Road waiting behind veh 2 (car), believes Veh 2 is going to proceed but doesn’t and collides into rear of veh 2. Occurred on A397 Northern Road at junction with A3 Northern Parade, Portsmouth, Hampshire
150102362	Pedal cycle	Slight	Veh 1 (car) travelling W turned left from a petrol station into A3 London Road and collided with the offside of veh 2 (p/cycle) travelling S along the cycle lane. Occurred on A3 London Road at junction with Shell garage, Portsmouth, Hampshire
150115689		Slight	Veh 1 (car) travelling S along A27 Western Road slowed for the Portsbridge Rbt. Veh 2 (car) failed to react in time and collided with the rear of veh 1. Occurred on A27 Western Road at junction with A397 Northern Road, Portsmouth, Hampshire
150122265		Slight	Veh 1 (car) travelling W along M27 westbound in lane 2 swerved to the offside to avoid a vehicle changing lanes from lane 1 to lane 2, and collided with the nearside of veh 2 (car) in lane 3. Occurred on M27 westbound marker post 46.1, Portsmouth, Hampshire

150144192		Slight	Veh 1 (car) travelling W along A27 westbound lost control and collided with the nearside barrier, coming to rest in lane 1. Occurred on A27 westbound marker post 46.8, Cosham, Hampshire
150179272	Motorcycle	Serious	Veh 1 (m/cycle) travelling N behind veh 2 (car) in outside lane of A3 London Road. Veh 2 indicated and began changing lanes to left. Veh 1 started overtaking. Veh 2 then moved back into outisde lane without indicating and collided with offside of veh 1. Occurred on A3 London Road 61 metres north of Shell petrol station, Portsmouth, Hampshire
150248403		Slight	Veh 1 (car) travelling NE along A397 Northern Road turned right at the Portsmouth Road junction and entered the yellow boxes into the path of veh 2 (car) travelling SW, causing veh 2 to collide with the nearside of veh 1. Occurred on A397 Northern Road at junction with Portsmouth Road, Cosham, Hampshire
150286701	Bus	Slight	Veh 1 (van) travelling S along A3 London Road braked to avoid a dog which ran out into the carriageway from the nearside into its path. Veh 2 (bus) then collided with the rear of veh 1. Occurred on A3 London Road outside Portsmouth Hydropools, Portsmouth, Hampshire
150289413	Pedestrian	Slight	Cas 1 (pedestrian) travelling NE across A397 Northern Road ran into path of veh 1 (car) travelling SW along A397 Northern Road in lane 3 and passing queuing traffic in lane 2. Occurred on A397 Northern Road 46 metres southwest of Portsmouth Road, Portsmouth, Hampshire
150289979	Motorcycle	Serious	Veh 1 (m/cycle) travelling S along A3 London Road loses control after applying too much throttle whilst changing lanes to the right and collides with the central reservation. Occurred on A3 London Road 27 metres south of M27 westbound junction 12 offslip, Portsmouth, Hampshire
150310543	Motorcycle	Slight	Veh 1 (car) travelling S along A27 Western Road fails to give way and enters the Rbt across the path of veh 2 (m/cycle) travelling NE around the rbt intending to exit onto A397 Northern Road and collides.

			Occurred on A27 Western Road at junction with A397 Northern Road, Cosham, Hampshire
150365559	Lorry; Motorcycle	Serious	Veh 1 (lorry) travelling W along A27 indicated left whilst alongside veh 2 (m/cycle). Veh 2 then reacted and lost control on the slippery road surface, causing the rider to fall. Occurred on A27 westbound at junction with A3 London Road, Cosham, Hampshire
150392372	Goods vehicle	Slight	Veh 2 (goods veh) travelling E along M27 changes lane to the left and collides with veh 1 (van) also travelling E. Occurred on M27 westbound marker post 46.6, Portsmouth, Hampshire
150406309	Motorcycle	Serious	Veh 1 (car) travelling NE along A397 Northern Road turns right onto Portsmouth Road across the path of veh 2 (m/cycle) travelling SW long A397 Northern Road and collides. Occurred on A397 Northern Road at junction with Portsmouth Road, Cosham, Hampshire
150419652	Motorcycle	Serious	Veh 1 (car) travelling S along A397 Northern Road entered A27 Western Road Portsbridge Rbt and collided with veh 2 (m/cycle) travelling SE along A27 Western Road around Rbt. Occurred on A27 Western Road at junction with A397 Northern Road, Cosham, Hampshire
150440927		Slight	Veh 2 (car) travelling N along A3 London Road on approach to Rbt collides with the rear of veh 1 (car) stationary at rbt waiting to enter. Occurred on A3 London Road at junction with A397 Northern Road, Portsmouth, Hampshire
160042204		Serious	Veh 2 (car) travelling W along A27 exited onto A27 offslip and collided with rear of veh 1 (van) stationary in traffic facing W along A27 offslip. Occurred on A27 westbound offslip at junction with A27 westbound, Cosham, Hampshire
160056716		Slight	Veh 1 (car) travelling W along M27 westbound lost control, collided with the central reservation and then veered across the carriageway and collided with the nearside crash barrier. Occurred on M27 westbound marker post 46.5, Portsmouth, Hampshire

160074127		Slight	Veh 1 (car) travelling SW along A397 Northern Road entered the rbt at A27. Veh 2 (car) traveling E on the rbt intending to exit at A27 eastbound then collided with the rear of Veh 1. Occurred on A397 northern road at junction with A27 eastbound, Portsmouth, Hampshire
160092990	Goods vehicle	Slight	Veh 1 (goods veh) was travelling W around the rbt having entered from A27 Western Road. Veh 2 (car) travelling N from A3 London Road entered the rbt into veh 1's path, causing veh 1 to collide with the rear of veh 2. Occurred on A27 Western Road at junction with A3 London Road, Cosham, Hampshire
160113884		Slight	Veh 1 (car) travelling W along A27 westbound failed to notice traffic slowing ahead and collided with the rear of veh 2 (car). Occurred on A27 westbound marker post 46.8, Portsmouth, Hampshire
160116306		Slight	Veh 1 (car) travelling NE along A397 Northern Road was waiting to turn right into Portsmouth Road. Veh 2 (van) failed to stop in time and collided with the rear of veh 1. Occurred on A397 Northern Road at junction with Portsmouth Road, Cosham, Hampshire
160166733	Motorcycle	Slight	Veh 1 (car) travelling SE along A27 in lane 2 suddenly changes lanes causing veh 2 (m/cycle) travelling in the same direction filtering between lanes 2 and 3 to collide with the offside and the rider to be knocked off. Occurred on A27 eastbound at junction with A27 eastbound Portsbridge onslip, Portsmouth, Hampshire
160168227		Slight	Veh 1 (car) travelling NE along A397 Northern Road was held in traffic. Veh 2 (car) failed to stop in time and collided with the rear of veh 1. Occurred on A397 Northern Road at junction with Portsmouth Road, Cosham, Hampshire
160175407	Bus; pedal cycle	Serious	Veh 1 (bus) travelling W around Portsbridge Rbt having entered from A397 Northern Road in bus lane and moves over into lane 1 failing to see veh 2 (p/cycle) travelling in the same direction and collides.

			Occurred on A3 London Road rbt 23 metres west of A397 Northern Road, Portsmouth, Hampshire
160206994		Slight	Veh 1 (car) travelling S along A397 Northern Road starts to pull away to enter rbt but stalls causing veh 2 (car) travelling behind to collide with the rear of veh 1. Veh 2 fails to stop. Occurred on A397 Northern Road at junction with M27 eastbound junction 12 onslip, Portsmouth, Hampshire
160214276		Slight	Veh 1 (car) travelling S along A3 London Road in lane 2 whilst negotiating a left-hand bend when veh mounts offside kerb and collides with the central barriers. Occurred on A3 London Road at junction with A3 Portsbridge Road, Portsmouth, Hampshire
160217225		Slight	Veh 1 (car) travelling NW along A27, sees veh change lane and change back again so driver takes evasive action but over steers causing veh 1 to lose control, spins and collides with the nearside barrier. Occurred on A27 westbound marker post 46.9, Portsmouth, Hampshire
160228549		Slight	Veh 1 (car) travelling N along A3 London Road moved off at the Portsbridge Rbt and collided with the rear of veh 2 (car) which was still stationary. Occurred on A3 London Road at junction with A27, Portsmouth, Hampshire
160230812	Motorcycle	Slight	Veh 1 (car) travelling N along A3 London Road entered the Portsbridge Rbt and collided with the rear of veh 2 (m/cycle) on the rbt. Occurred on A3 London Road at junction with A27, Portsmouth, Hampshire
160243909	Motorcycle; Lorry	Slight	Veh 2 (m/cycle) travelling SE along A27 Western Road lost control due to veh 1 (lorry) changing lanes causing rider of veh 2 to fall off. No details known of veh 1. Occurred on A27 Western Road 34 metres southeast of Lynx House, Portsmouth, Hampshire
160250894	Motorcycle	Serious	Veh 1 (car) travelling S along A27 Western Road began moving off at the Portsbridge Rbt and collided with the rear of veh 2 (m/cycle) which was still stationary. Occurred on A27 Western Road at junction with A3 London Road, Cosham, Hampshire

160255242	Motorcycle	Serious	Veh 1 (car) travelling NW along A3 London Road moves off to enter rbt and collides with the rear of veh 2 (m/cycle) stationary waiting to enter rbt. Occurred on A3 London Road at junction with A27, Portsmouth, Hampshire
160267669	Motorcycle	Serious	Veh 1 (m/cycle) travelling S along A27 Western Road moved from lane 2 to lane 1 and collided with the offside of veh 2 (car) in lane 1. Occurred on A27 Western Road at junction with A397 Northern Road, Cosham, Hampshire
160350322		Slight	Veh 1 (car) travelling NW along A27 Western Road in lane 1 moves into lane 2 across the path of veh 2 (car) travelling in the same direction in lane 2 and collides, causing veh 1 to be pushed sideways into tree in central carriageway. Occurred on A27 Western Road outside of Porsche centre, Cosham, Hampshire
160368650	Motorcycle	Slight	Veh 2 (car) travelling N along A3 London Road moved forwards and collided with rear of veh 1 (m/cycle) stationary in front. Occurred on A3 London Road at junction with A27 Western Road, Portsmouth, Hampshire
160403655	Goods vehicle	Slight	Veh 2 (goods veh) travelling N along A3 London Road pulled out onto A3 London Road Portsbridge Rbt causing veh 1 (car) travelling SW around A3 London Portsbridge Rbt to brake suddenly. No contact between vehs. Occurred on A3 London Road at junction with A397 Northern Road, Portsmouth, Hampshire
160404337		Slight	Veh 1 (car) travelling S along A397 Northern Road fails to notice veh 2 (car) stationary at junction in front and collides with rear of veh 2. Occurred on A397 Northern Road at junction with A27 eastbound, Portsmouth, Hampshire
160425057	Motorcycle	Slight	Veh 1 (m/cycle) travelling W along A27 offslip motorbike turns left in the dedicated filter lane to go south onto A3 London Rd, rider loses control on bend and falls off. Occurred on A27 westbound offslip at junction with A3 London Road, Cosham, Hampshire

160427550		Slight	Veh 1 (car) travelling NW enters A27 Western Road from the Rbt, rear starts skidding, driver turns wheels into the turn but the rear wheel made contact with the kerb to the central reservation, spins and collides with a lamp post. Occurred on A27 Western Road at junction with A397 Northern Road, Portsmouth, Hampshire
160429190	Pedal cycle	Slight	Veh 1 (car) travelling W along A27 offslip, turns left onto Rbt across the path of veh 2 (p/cycle) travelling S around Portsbridge Rbt to exit onto A3 Northern Road and collides. Occurred on A3 Northern Road at junction with A27 westbound offslip, Cosham, Hampshire
160480530	Motorcycle	Slight	Vh1 travelling NW on A3 London Road approaching Hilsea roundabout failed to stop in time and collided with vh2 (m/cycle) who was also approaching the roundabout. Occurred on A3 London Road at junction with A27 westbound offslip, Cosham, Hampshire
44170011875		Slight	Veh 1 (car) travelling S along A397 Northern Road in lane 3 intending to enter rbt fails to notice veh 2 (van) has stopped at the rbt and collides with the rear of veh 2. Occurred on A397 Northern Road at junction with A27 eastbound onslip, Portsmouth, Hampshire
44170042425		Slight	Veh 1 (taxi) travelling N along A3 London Road collides with rear of veh 2 (car) travelling in front. Occurred on A3 London Road at junction with A27 Western Way, Portsmouth, Hampshire
44170119589	Pedestrian	Slight	Cas 1 (pedestrian) travelling NE across A27 Western Road between stationary vehs in Lane 2. Cas 1 walked straight out into lane 1 and was hit by veh 1 (car) travelling SE along A27 Western Road in lane 1. Occurred on A27 Western Road 43 metres northwest of Lynx House, Portsmouth, Hampshire

44170130915		Slight	Veh 1 (car) travelling W along M27 travelling in lane 2 collides with the rear of veh 2 (car) travelling in the same direction. Driver veh 1 stated his attention was distracted whilst sorting out heating. Occurred on M27 westbound marker post 46.4, Portsmouth, Hampshire
44170139959		Slight	Veh 1 (car) travelling SW along Portsmouth Road stopped at junction and was hit from behind by veh 2 (car). Veh 1 was pushed onto A397 Northern Road and veh 2 failed to stop at scene. Occurred on Portsmouth Road at junction with A397 Northern Road, Cosham, Hampshire
44170155749		Slight	Veh 2 (car) travelling S along A397 Northern Road failed to stop in time and collided with rear of veh 1 (car) waiting in traffic in front. Veh 2 failed to stop at scene. Occurred on A397 Northern Road at junction with A27 eastbound onslip, Portsmouth, Hampshire
44170160985	Motorcycle	Fatal	Veh 1 (car) travelling E along A27 after joining from the A27 eastbound onslip, moved into lane 3 and into path of veh 2 (m/cycle) travelling in lane 3. This manoeuvre caused rider of veh 2 to fall off. Unknown if any contact between vehs. Occurred on A27 eastbound at junction with A27 eastbound onslip, Cosham, Hampshire
44170184224		Slight	Veh 5 (car) travelling NW along A27 brakes due braking vehs in front and hit in rear by Veh 4 (car) braking and hit in rear by veh 3 (car) braking. Veh 2 (car) brakes and hit in rear by veh 1 (car). Occurred on A27 westbound marker post 46.8, Cosham, Hampshire
44170217549		Slight	V1 (car) travelling W on A27 lost control in poor weather conditions and crashed. Occurred on A27 Portsbridge 50m E of Portsbridge Roundabout, Portsmouth, Hampshire
44170237285	Motorcycle	Slight	Veh 1 (m/cycle) travelling N along A3 London Road begins to pull away onto rbt but stops due to a veh on the rbt changing lanes. Veh 2 (car) travelling behind veh 1 collides with Veh 1 knocking rider off. Occurred on A3 London Road at junction with A397 Northern Road, Portsmouth, Hampshire

44170267145		Slight	Veh 1 (car) travelling SW along A397 Northern Road fails to stop in time and collides with the rear of veh 2 (van) travelling in the same direction moves off and then stops on approach to rbt. Occurred on A397 Northern Road at junction with A27 eastbound onslip, Portsmouth, Hampshire
44170271124	Motorcycle	Serious	Veh 1 (m/cycle) travelling S around Rbt, exits onto A3 London Road in outside lane, loses control and collides with raised kerb and railings on the offside. Occurred on A3 London Road at junction with M27 westbound junction 12 offslip, Portsmouth, Hampshire
44170275408		Slight	V1 (car) lost control on rbt leaving road, hitting kerb and flipping the car. Occurred on A27 Portsbridge Rbt, Cosham, Hampshire
44170304499	Motorcycle	Serious	Veh 1 (m/cycle) travelling W along A27 offslip fails to stop in time and collides with rear of veh 2 (car) stopped in traffic. Occurred on A27 westbound at junction with A27 westbound offslip, Portsmouth, Hampshire
44170313286		Slight	Veh 1 (car) travelling N along A3 London Road fails to slow in time and collides with rear of veh 2 (car) slowing in front. Occurred on A3 London Road at junction with A27 Western Road, Portsmouth, Hampshire
44170346284	Pedal cycle	Slight	Veh 1 (car) travelling SE along A27 Western Road begins to pull out onto Portsbridge Rbt but brakes sharply due to veh 3 (p/cycle) travelling E around Rbt with no lights on Veh. Veh 2 (car) behind veh 1 then collides with rear of veh 1. Occurred on A27 Western Road at junction with A397 Northern Road, Cosham, Hampshire
44170357989		Slight	Veh 1 (van) travelling E along M27 moves from lane 2 to lane 3 hitting veh 2 (car). Veh 1 spun and hit rear of veh 3 (car). Following veh 4 (car) hit spinning veh 1 and veh 5 (car) then hit veh 4 pushing it again into veh 1. Occurred on M27 eastbound at junction with A27 eastbound onslip, Farlington, Hampshire

44170389153	Pedal cycle	Slight	Veh 2 (p/cycle) travelling SE along A27 Western Road fails to stop and collides with the rear of veh 1 (car) stationary at red traffic lights. Occurred on A27 Western Road at junction with A3 Northern Road, Portsmouth, Hampshire
44170395741		Slight	Veh 2 (car) travelling N along A3 London Road and collides with the rear of veh 1 (car) travelling in the same direction approaching the rbt. Veh 2 failed to stop. Occurred on A3 London Road at junction with A397 Northern Road, Portsmouth, Hampshire
44170400712		Slight	V1 slowing to allow ambulance to pass when v2 collides with the rear of v1. Occurred on A27 Western Road, Cosham, Hampshire
44170410163		Slight	Veh 1 (car) travelling S along A3 London Road in lane 1 and veh 2 (car) travelling in the same direction in lane 2 indicates and moves into lane 1 causing veh 1 to swerve as it was going faster than veh 2 into entrance of car park; collides with a barrier. Occurred on A3 London Road 75 metres south of M27 westbound junction 12 offslip, Portsmouth, Hampshire
44170437591	Motorcycle	Slight	Veh1 (van) entering Portsbridge Roundabout and collides with veh2 (m/cycle) travelling west on roundabout, knocking off rider. Occurred on A3 at junction with A27, Portsmouth, Hampshire.
44170454388	Motorcycle	Serious	Veh 2 (m/cycle) travelling W along A27 in lane 2 moves into lane 1 and then onto the A27 westbound offslip and collides with rear of veh 1 (car) stationary on A27 westbound offslip facing W. Veh 2 view obscured by a HGV in lane 1. Occurred on A27 westbound offslip at junction with A27 westbound, Cosham, Hampshire
44170482262		Slight	Veh 1 (car) travelling SE along M27 in lane 1, fails to brake in time for slow moving traffic and collides with the rear of veh 2 (car) slowing, shunting veh 2 into the rear of veh 3 (van) slowing. Occurred on m27 eastbound marker post 46.7, portsmouth, hampshire

44170496395	Motorcycle	Slight	Veh 2 (van) travelling SE along A27 Western Road pulled out onto A3 Portsbridge Rbt colliding with veh 1 (m/cycle) travelling E around A3 Portsbridge Rbt. Veh 2 failed to stop. Occurred on A3 Portsbridge Rbt at junction with A27 Western Road, Cosham, Hampshire
44180014065		Slight	Veh1 (car) travelling N on A3 London Road about to enter Portsbridge Rbt when a tyre blows out, causing the veh to lose control and collide with offside barrier of rbt. Driver suffers minor injuries. Occurred on A3 London Road at junction with A27 Western Road, Cosham, Hampshire.
44180017496	Pedal cycle	Slight	Veh1 (p/cycle) was travelling S on A3 Portsbridge Roundabout and collided with veh2 (car) that pulled out from A27 w/b off-slip into path of veh1. Rider of veh1 was knocked off and suffered minor injuries. Occurred on A3 Portsbridge Roundabout at junction with A27 westbound junction 12 off-slip, Highbury, Hampshire.
44180022336		Slight	Veh1 (car) travelling N on A3 London Road slows and stops for Portsbridge Rbt and is hit in rear by veh2 (car) that failed to slow in time. Veh2 failed to stop and drove off. Driver of veh1 suffered minor injuries. Occurred on A3 London Road at junction with A27 Western Road, Highbury, Hampshire.
44180024650	Pedestrian	Slight	Veh 1 (car) travelling SW along A397 Northern Road contravenes red light on pedestrian crossing and collides with cas 1 (pedestrian) travelling E across A397 Northern Road. Occurred on A397 Northern Road outside HMRC Lynx House, Portsmouth, Hampshire
44180045533		Slight	Veh1 (car) stationary in traffic travelling SW on A397 Northern Road is struck from behind by veh2 (car). Veh2 failed to stop and drove off. Driver of veh1 suffered minor injury. Occurred on A397 Northern Road at junction with Portsmouth Road, Cosham, Hampshire.
44180069119	Motorcycle	Slight	Veh 2 (car) travelling S around rbt in lane 2 to exit onto A3 London Road turns back onto the rbt causing veh 1 (m/cycle) travelling S around rbt exiting onto A3 London Road in lane 3 lose control and the rider to fall off.

			Occurred on A3 London Road at junction with M27 westbound junction 12 offslip, Portsmouth, Hampshire
44180104677	Pedestrian	Serious	Veh1 (car) travelling N along Northern Road. Cas1 (pedestrian) has attempted to cross the road from E to W between traffic. Cas1 is clipped by veh1's nearside wing mirror causing cas 1 to fall to the ground. Occurred on A397, Northern Road, outside bowling green, Cosham, Hampshire
44180112081	Motorcycle	Slight	Veh 2 (car) travelling NE along A397 Northern Road turned right into Portsmouth Road across path of veh 1 (m/cycle) travelling SW along A397 Northern Road causing collision. Occurred on A397 Northern Road at junction with Portsmouth Road, Cosham, Hampshire
44180120341	Motorcycle	Slight	Veh1 (m/cycle) travelling W along A27 off slip when veh slips on mud and rider loses control, causing both rider and pillion to fall off. Occurred on A27 offslip, 100 meters E from Portsbridge Roundabout, Portsmouth, Hampshire.
44180123089		Slight	Veh1 (car) travelling SE along A27 fails to notice veh2 (car) slowing to give way at roundabout and collides with rear. Occurred on A27, Western road, at junction with A397, Northern Road, Portsmouth, Hampshire.
44180143119	Pedal cycle	Slight	Veh 1 (p/cycle) travelling S along A3 London Road turned to enter car park too quickly causing rider to fall off. Rider not wearing a helmet or any clothing on upper body. Occurred on A3 London Road at junction with car park, Portsmouth, Hampshire
44180179587		Slight	Veh1 (car) travelling around the Portsbridge Roundabout approaches junction with Western Road and stops on rbt to give way to an ambulance joining rbt from Western Road. Veh2 (car) travelling behind veh1 fails to slow and collides with rear of veh1. Occurred on A27 Western Road, at junction with A397 Northern Road, Portsmouth, Hampshire.

44180186857	Motorcycle	Slight	Veh1 (m/cycle) travelling SE along A27 Western Road stops to give way at roundabout. Veh2 (car) travelling SE alongside veh1 collides with the offside of veh1 causing rider to fall off. Occurred on A27 Western Road, at junction with A397 Northern Road, Portsmouth, Hampshire.
44180227770	Pedestrian	Slight	Veh 1 (car) travelling S along A3 London Road moves into lane 1 after overtaking slower veh, for reasons unknown collides with the kerb tearing tyre open mounts the pavement and collides with cas 1 (pedestrian) travelling same way on pavement. Occurred on A3 London Road 100 metres south of M27 westbound junction 12 offslip, Portsmouth, Hampshire
44180234974	Bus; pedal cycle	Fatal	Veh1 (p/cycle) joins the A397 Northern Road at pedestrian crossing to travel N. The rider falls from veh and is struck by veh2 (bus) travelling N along A397 Northern Road. Occurred on A397 Northern Road, 50 meters N of junction with Portsmouth Road, Portsmouth, Hampshire.
44180238600	Pedal cycle	Slight	Veh1 (p/cycle) travelling SE along A3 from the roundabout. Veh2 (car) also travelling SE along the A3 gets too close to veh1, clipping them on the offside. Occurred on A3 at junction with A397 Portsmouth Road, Portsmouth, Hampshire.
44180239290		Slight	Veh 2 (car) travelling N along A3 London Road stopped at rbt and was hit from behind by Veh 1 (car). Veh 1 failed to stop at scene. Occurred on A3 London Road at junction with A397 Northern Road, Portsmouth, Hampshire
44180288240	Bus; goods vehicle	Slight	Veh1 (bus) travelling N along A3 London Road. Veh2 (goods veh) travelling NE along Hilsea Lido road pulls out onto A3 London Road without giving way to veh1. Veh1 brakes to avoid a collision but cas1 (passenger) hits head on seat in front. Occurred on A3 London Road at junction with Hilsea Lido Road, Portsmouth, Hampshire.
44180311740		Slight	Veh1 (car) travelling SE along A27 Western Road stops for the roundabout. Veh2 (car) travelling SE along A27 Western Road fails to slow in time and collides with the rear of veh1.

			Occurred on A27 Western Road at junction with A3 Northern Parade, Portsmouth, Hampshire.
44180318748	Motorcycle	Slight	Veh1 (m/cycle) travelling SW along Portsmouth Road stops at give way waiting to join A397. Veh3 (car) travelling SW along A397 in lane 1 flashes to let veh1 out. Veh1 pulls out all the way lane 2 and collides with veh2 (car) travelling SW along A397 in lane 2. Occurred on A397 Northern Road, at junction with Portsmouth Road, Portsmouth, Hampshire.
44180387451		Slight	Veh1 (car) travelling N along A3 London Road hits suspected diesel [sic] and the back end slides out. Driver over corrects, loses control and hits a nearside road traffic sign. Occurred on A3 London Road, 120 meters N of junction with Northern Road, Hilsea, Hampshire.
44180425792	Pedal cycle	Slight	Veh2 (car) travelling W along M27 enters roundabout without giving way to veh1 (p/cycle) travelling S around the roundabout. Veh2 strikes the back wheel of veh1. Occurred on A397 at junction with A3 London Road, Portsmouth, Hampshire
44180449499		Slight	Veh 1 (car) travelling S along A27 Western Road and collides with the rear of veh 2 (van) stationary at the rbt. Occurred on A27 Western Road at junction with A397 northern Road, Cosham, Hampshire
44190010513		Slight	Veh4 (car) travelling W along the A27 failed to slow for traffic ahead and collided with the rear of veh3 (car) in front, shunting it forward into the rear of veh2 (van), which in turn is pushed into the rear of veh1 (van). Occurred on A27 westbound at marker post 46.8, Portsmouth, Hampshire.
44190096562		Slight	Veh1 (car) travelling S along A27 Western Road braked suddenly, causing veh2 (car) travelling S behind to drive into the rear of veh1. Occurred on A27 Western Road at junction with A397 Northern Road, Portsmouth, Hampshire.
44190125356	Goods vehicle	Slight	Veh 1 (goods veh) travelling NW along M27 moves lanes to the right, fails to see veh 2 (car) travelling in the same direction as veh 2 was in veh 1 blind spot and collides, causing veh 2 to spin and collides into the central barrier.

			Occurred on A27 westbound marker post 46.8, Portsmouth, Hampshire
44190171090		Slight	Veh1 (car) travelling SW along A397 Northern Road in lane 3. On approach to the roundabout veh1 starts to move into lane 2 and is hit on the rear offside wheel arch by Veh2 (car) travelling SW along A397 behind, in lane 3. Occurred on A397 Northern Road at junction with M27 slip roads, Portsmouth, Hampshire.
44190189807		Slight	Veh1 (car) travelling W along the A27 failed to notice stationary traffic ahead and collided with the rear of veh2 (car), shunting it forward into the rear of veh3 (car) which is then pushed into the rear of veh4 (car). Occurred on A27 westbound at junction with junction 12 offslip, Portsmouth, Hampshire
44190190261	Motorcycle	Serious	Veh 1 (m/cycle) travelling S along A3 London Road and veh 2 (van) travelling in the same direction entering from the rbt. Unclear who collided with who. Occurred on A3 London Road 76 metres south of M27 westbound junction 12 offslip, Portsmouth, Hampshire
44190191791	Motorcycle	Slight	Veh2 (m/cycle) travelling N on A3 is stationary waiting to enter Portsbridge Rbt. Veh1 (car) also travelling N is behind veh2. Veh1 assumes veh2 has started to enter the rbt and moves off colliding with the rear of veh2 that is still stationary. Occurred on A3 Portsbridge Roundabout at junction with A27 Western Road, Portsmouth, Hampshire
44190197091	Pedal cycle; bus	Slight	Veh1 (p/cycle) travelling S the wrong way down the bus station lane collides with veh2 (bus) travelling N. Occurred on A3 London Road at Hilsea bus station, Portsmouth, Hampshire
44190231867		Slight	Veh1 (car) travelling SE along A27 Western Road pulls away from give way lines onto roundabout but fails to notice veh2 (car) already on roundabout in middle lane ahead. Veh1 collides with rear of veh2. Occurred on A27 Western Road at junction with A397 Northern Road, Portsmouth, Hampshire.

44190245354	Pedal cycle	Serious	Veh1 (p/cycle) travelling NB around A27 Portsbridge Roundabout on cycle path hits an object on the path causing veh1 to collide with a lamp post knocking the rider off. Occurred on A27 Portsbridge Roundabout under M27 underpass, Hilsea, Hampshire
44190268261		Slight	Veh 1 (car) travelling W along A27 westbound offslip fails to slow in time and collides into rear of veh 2 (car) in front. Occurred on A27 westbound offslip at M27 Portsmouth, Hampshire
44190304733	Pedal cycle	Slight	Veh 1 (car) travelling in lane 2 around A27 Portsbridge Rbt cut across lane 1 to exit onto A27 Western Road, hitting veh 2 (p/cycle) travelling in lane 1 and intending to move into lane 2 to continue around rbt. Veh 1 fts. Occurred on A27 Portsbridge Rbt at junction with A27 Western Road, Cosham, Hampshire
44190320049		Slight	Veh 1 (car) travelling S along A397 Northern Road collided with rear of veh 2 (car) stationary in front. Veh 2 is pushed into rear of veh 3 (car) waiting to enter rbt in front. Veh 3 driven by learner driver. Veh 1 fts. Occurred on A397 Northern Road at junction with A27 eastbound, Cosham, Hampshire.

Grosvenor House
2 Grosvenor Square
Southampton, Hampshire
SO15 2BE

wsp.com

Appendix 2 – Technical Note HE 03

AQUIND Limited

AQUIND INTERCONNECTOR

Technical Note HE03 – Response to Highways England Technical Note TN03

The Planning Act 2008

Document Ref: HE03

PINS Ref.: EN020022

AQUIND Limited

AQUIND INTERCONNECTOR

Technical Note HE03 – Response to Highways England Technical Note TN03

PINS REF.: EN020022

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WSP

WSP House

70 Chancery Lane

London

WC2A 1AF

+44 20 7314 5000

www.wsp.com

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CONTENTS

TABLES

APPENDICES

1. INTRODUCTION

1.1.1.1. This Technical Note (HE03) has been prepared in response to the representation made by AECOM on behalf of Highways England (HE) in relation to the submission documents for the AQUIND Interconnector DCO applications. Comments were made by HE in the document entitled 'Aquind Interconnector – Review WSP TN HE01 & HE02' (HETN03) dated 21st August 2020.

1.1.1.2. HETN03 sets out comments on ten topics, these are as follows:

Topics considered critical to the agreement in principle of the planning application:

- Item 1: Sensitivity test modelling of Junction 2 and 3, A3 (M) in ARCADY using Lane Simulation;
- Item 2: Further work to quantify the impact of Aquind Interconnector in the following scenarios:
  - Without the committed development and without its mitigation; and
  - With the committed development and with its mitigation scheme.

Topics regarded as important but not critical to the agreement in principle of the planning application

- Item 3 and Item 4: Traffic management at Farlington Playing Fields;
- Item 5: Timings of HGV movements;
- Item 6: Collaboration strategy with HE in respect to overlapping construction of schemes;
- Item 7: Further information regarding construction phasing and duration of works;
- Item 8: Further clarification regarding traffic flows;
- Item 9: AM peak modelling of A3 (M), Junction 3; and
- Item 10: Further information regarding traffic flows to / from Hulbert Road East A3 (M), Junction 3.

1.1.1.3. This Technical Note will respond to each of these points,

1.1.1.4. Since the receipt of HETN03, the Applicant has held regular discussions with Highways England and their advisors, AECOM in order to seek to progress outstanding matters. This included the submission of version 001 of this document, which was submitted on 12/11/2020. This further iteration of this document provides further detail as required by Highways England, particularly in relation to matters concerning Junctions 2 and 3 of the A3 (M).

1.1.1.5. Given the above, the structure of this response is as follows:

- Section 2 - Traffic Flows: addresses Item 8 and Item 10 of HETN03 regarding correctness of traffic flows;
- Section 3 - Lane Simulation Sensitivity Tests: addresses Item 1 of HETN03 and includes lane simulation sensitivity tests of both Junction 2 and 3 of A3 (M), accounting for traffic flow amendments set out in Section 2. This Section also includes clarification in response to Item 9;
- Section 4 - Committed Development Assessments: which addresses Item 2 of the HETN03 regarding the impact of committed developments at the junctions, again accounting for the traffic flow amendments set out in Section 2;
- Section 5 – Alternative Future Year Assessments: which, following discussions with HE contains additional assessments of both Junction 2 and Junction 3 of the A3 (M) undertaken on the basis of alternative future year traffic flows;
- Section 6 – Construction Methodology: addressing comments in Items 3, 4, 5, 6 and 7 pertaining to construction methodology, phasing and construction traffic movements; and
- Section 7 – Other Matters: which addresses all other pertinent matters.

1.1.2. HIGHWAYS ENGLAND MODELLING REVIEW

1.1.2.1. This Technical Note (HE03) also takes into account comments made by HE regarding undertaken traffic modelling of both Junction 2 and Junction 3 of A3 (M) in correspondence's correspondence dated 27 November 2020.

1.1.2.2. The recommendations set out by HE's consultants in the aforementioned review are set out below for reference:

Priority Junction Modelling

Junction 2, A3 (M)

"We have reviewed the lane movement and lane levels and suggest the following changes:

- *Arm 2 (A3(M) South) – Level 1 Lane 2 – Lane movement to Arm 3 (B2149 Dell Piece West) should be removed unless there is evidence that drivers actually use the offside lane to make the left turn here or signage is to be provided to encourage them to do so (none appears to be present as of now); and*
- *The storage (PCU) at each lane on arms 1 and 3 should be revised as currently all lanes are coded with a storage of 'infinity': AECOM measure the two-lane section of arm 1 as 35m long, and of arm 3 as 50m long. [This comment does not apply to the two Motorway slip roads which are two lanes throughout]."*

1.1.2.3. The Applicant accepts the comments made by HE at this junction and have updated all modelling to reflect these amendments.

Junction 3, A3 (M)

"We have reviewed the lane movement and lane levels and suggest the following changes:

- *Arm 2 (A3(M) South) – Level 1 Lane 2 – Lane movement to Arm 3 (Hulbert Road West) should be removed for the same reason as given above;*
- *Arm 3 (Hulbert Road West) – Level 1 Lane 1 – Arm 1 (Hulbert Road East) should be included as a destination, since this lane appears to feed traffic into the nearside lane on the bridge; and*
- *Arm 3 (Hulbert Road West) – Level 1 Lane 2 – Arm 1 (Hulbert Road East) and Arm 4 (A3(M) north) should be removed as destinations, since this lane feeds traffic into the offside lane on the bridge."*

1.1.2.4. The Applicant accepts the requested amendments for the Hulbert Road (west) approach of the junction, and the associated modelling has been updated to reflect these.

1.1.2.5. The Applicant does not accept HE's requested removal of the availability of the offside lane of the A3 (M) northbound off-slip for traffic wishing to turn left on to Hulbert Road (west). The use of the offside lane in question for left turners has been found to be commonplace when reviewing existing traffic behaviour at this junction. There are no lane markings advising left turners to remain within the nearside lane of the northbound slip road and Hulbert Road (west) has a dualled two lane exit which continues to the next downstream junction, meaning that left turning vehicles using the offside lane can do so unimpeded and without the need to merge with traffic using the nearside lane. As such, this movement has been retained in all modelling of Junction 3, A3 (M) included within this Technical Note.

Signalised Junction Modelling

Junction 2, A3 (M)

"The model should be revised so that the lane connectors used in the model match the road markings on the drawings provided in HE03 (Committed mitigation scheme). Consequently, the associated connectors should be amended accordingly. Specific examples follow:

- *"Arm 4 (A3(M) southbound off slip): there is a missing connector from lane 4/2 to lane 12/2;*
- *Arm 1 (Dell Piece East): the connector from lane 1/1 to lane 5/1 is incorrect and there should be an additional connector from lane 1/2 to lane 9/2;*
- *Arm 6 (Circulatory West): the connector from lane 6/2 to lane 11/2 is incorrect."*

1.1.2.6. The Applicant accepts the comments made by HE at this junction and have updated all modelling to reflect these amendments.

Junction 3, A3 (M)

> *"The model should be revised so that the lane connectors used in the model match the road markings on the drawings provided in HE03 (Committed mitigation scheme). Consequently, the associated connectors should be amended accordingly. There is only one specific example at A3(M) J3:*
>
> - *Arm 2 (A3(M) northbound off slip): the connector from lane 2/2 to lane 7/2 is incorrect."*

1.1.2.7. The Applicant notes HE's comments regarding the need for the future year traffic modelling to match the proposed scheme design which is set out in Keir drawing entitled 'A3 (M) J3 Northbound Slip S278 Signalisation Scheme' provided at Appendix 5. However, in order to gain a better understanding of how this junction may operate in the future, all assessments of a signalised Junction 3 included in this Technical Note have been undertaken for two different lane alignments on the A3 (M) South approach. These alignments are as follows:

- **Use of the offside lane to turn left prohibited:** In this model, as per the scheme design for this junction created by HE, left turning from the A3 (M) south approach is only permitted via the nearside lane. Use of the offside lane of this approach to turn left is prohibited; and
- **Use of the offside lane to turn left permitted:** In this model, left turning is permitted via both lanes of the A3 (M) south approach. This is in alignment with the current behaviour of traffic which has been observed at this junction, together with the arrangement of this junction.

1.1.2.8. Aside from this differentiation in lane alignment, the two signalised junction models for Junction 3, A3 (M) used for assessment purposes are identical.

2. TRAFFIC FLOWS

2.1. INTRODUCTION

2.1.1.1. Items 8 and 10 of the comments raised HETN03 pertained to the correctness of traffic flow data used within junction capacity assessments for Junction 2 and Junction 3 of the A3 (M).

2.2. ITEM 8 – JUNCTION 2, A3 (M)

2.2.1.1. The recommendation set out in Item 8 pertains both to discrepancies between the traffic flows presented in the modelling outputs and those in the traffic flow diagrams for Junction 2, A3 (M), which were provided in Appendix 3 of HETN02. Item 8 is detailed in paragraph 3.2 of HE03, which is replicated below for ease of reference:

> *"3.2. Based on the calculations undertaken by AECOM, there appear to be some minor discrepancies between the flows found in the flow diagrams and those included in the models. For example the left turn from arm 3 to arm 34 (link 1006 – 1004) is shown as 703 vehicles in the matrix of traffic flows but 727 in the ARCADY model. There are other examples of the same order of magnitude. It is recommended that either the flow diagrams or the models are corrected to ensure that these are consistent, and that clarification is provided. Furthermore, there appear to be no traffic flows from A3(M) south to Dell Piece East, AECOM recommend confirmation that this is correct."*

2.2.1.2. The slight discrepancy between the traffic flows included in the model and those which were presented in the traffic flow diagrams arose from the addition of construction traffic to the model, which had not been replicated in the traffic flow diagrams. Further details relating to the addition of construction traffic at Junction 2, A3 (M) can be found in Section 3 of Technical Note HE02, which was previously submitted to HE by the Applicant. This includes details of the traffic flows from A3(M) south to Dell Piece East.

2.2.1.3. Further investigation into the traffic flows at Junction 2, A3 (M) has found that the SRTM outputs received for this junction were incorrect. The correct turning counts for this junction have been obtained for all modelled scenarios and are provided in Appendix 1 for reference. Construction vehicles have been added to the SRTM data where appropriate, as is detailed in Section 3 of Aquind Technical Note HE02. The corrected traffic flows for Junction 2, A3 (M), with additional construction traffic where appropriate, have been used in for all assessments undertaken in this report.

2.3. ITEM 10 – JUNCTION 3, A3 (M)

2.3.1.1. Item 10 of HE03 concerns the absence of traffic movements between A3 (M) south and Hulbert Road east at Junction 3, A3 (M). Item 10 is replicated below for reference:

> *"With regard to A3(M) Junction 3, there appears to be no flows from A3(M) south to Hulbert Road East, and confirmation should be provided that this is correct"*

2.3.1.2. The absence of traffic flows on these movements were due to nature of the SRTM outputs only. As with Junction 3, A3 (M), the Applicant notes HE's comments regarding these specific SRTM outputs, and as such has included movements between these two arms in all assessments undertaken in this Technical Note. Traffic flows for the missing movements have been calculated using observed data collected from a survey of Junction 3, A3 (M) in September 2019 carried out by the Applicant and included in Appendix 2. The observed 2019 traffic flows are set out in Table 1.

Table 1: 2019 Traffic Survey Traffic Flows (Junction 3, A3 (M))

AM Peak		
From / To	Hulbert Road (east)	A3 (M) (south)
Hulbert Road (east)	-	14
A3 (M) (south)	38	-
PM Peak		
From / To	Hulbert Road (east)	A3 (M) (south)
Hulbert Road (east)	-	43
A3 (M) (south)	17	-

2.3.1.3. TEMPRO growth rates were applied to the recorded 2019 traffic flows set out in Table 1 in order to bring them into alignment with the 2026 assessment year used in the SRTM. The TEMPRO growth rates are set out in Table 2 for the Havant area.

Table 2: 2019 - 2026 TEMPRo Growth rates, Junction 3 A3 (M)

Locality	Growth Rates (2019 – 2026)	
	AM Peak	PM Peak
Havant 006 MSOA	1.102536	1.106028

2.3.1.4. The resultant 2026 forecast traffic flows for this movement are set out in Table 3.

Table 3: 2026 Traffic flows for movements between A3 (M) and Hulbert Road East

AM Peak		
From / To	Hulbert Road (east)	A3 (M) (south)
Hulbert Road (east)	-	15
A3 (M) (south)	42	-
PM Peak		
From / To	Hulbert Road (east)	A3 (M) (south)
Hulbert Road (east)	-	48
A3 (M) (south)	19	-

2.3.1.5. These revised traffic flows for the movement between Hulbert Road East and A3 (M) south which are set out in Table 3 have been used in the Do Minimum (DM) and Do Something (DS) scenarios 1 and 2 in all further assessments of Junction 3, A3 (M) undertaken in this Technical Note and are included in Appendix 3 for reference.

2.4. SUMMARY

2.4.1.1. This section has provided a response to Item 8 and Item 10 of HE03. In respect to Item 8, further investigation into the traffic flows at Junction 2, A3 (M) found them to be incorrect and thus corrected traffic flows for this junction have been provided. This Section has also addressed concerns raised by HE regarding the absence of traffic flow data for the movement between the A3 (M) (south) and Hulbert Road (east) arms of Junction 3, A3 (M). In order to address these concerns, the Applicant has collated observed traffic count data for the missing movements and applied appropriate growth factors as to match the assessment year. The observed traffic flows with growth factors applied have been included in the place of the absent movements in all further assessments of these junctions within this Technical Note.

2.4.1.2. In using these traffic flows the Applicant notes the robust nature of the assessments undertaken within this Technical Note with regards to the total volume of traffic flow assessed as using Junction 2 and 3 of the A3 (M). This is shown in Table 4 below which provides a comparison of traffic flows recorded during the 2019 surveys of each junction and adjusted DM, DS1 and DS2 scenarios.

Table 4: Comparison of Total Traffic Flow Assessed at Junction 2 / 3 of A3 (M)

			AM Peak	
Junction	2019 Traffic Surveys	2026 Assessed DM Scenario	2026 Assessed DS1 Scenario	2026 Assessed DS1 Scenario
A3 (M) Junction 2	2,697	4,007 (+48.6%)	3,989 (+47.9%)	3,985 (+47.8%)
A3 (M) Junction 3	4,095	4,535 (+10.8%)	4,641 (+13.3%)	4,693 (+14.6%)
			PM Peak	
Junction	2019 Traffic Surveys	2026 Assessed DM Scenario	2026 Assessed DS1 Scenario	2026 Assessed DS1 Scenario
A3 (M) Junction 2	3,099	3,914 (+26.3%)	4,097 (+32.2%)	4,094 (+32.1%)
A3 (M) Junction 3	3,892	4,783 (+22.9%)	4,741 (21.2%)	4,747 (+22.0%)

2.4.1.3. The traffic flows in Table 4 highlight the increases in traffic flow at A3 (M) Junction 2 and 3 when compared with the 2019 surveys against the 2026 DM, DS1 and DS2 scenarios. The traffic flows presented for A3 (M) Junction 2 represent significant growth in traffic flow compared to TEMPRO estimates for the period between 2019 and 2026. Whilst the traffic flows presented for A3 (M) Junction 3 do not increase by the same proportions as those identified at A3 (M) Junction 2, they are still beyond those forecast by TEMPRO. Therefore, all assessments contained within this Technical Note are very robust estimates of junction operation and impact of the Proposed Development.

3. LANE SIMULATION MODELLING

3.1. INTRODUCTION

3.1.1.1. This section addresses Item 1 of HE03, which requested additional sensitivity tests be undertaken at both Junction 2 and Junction 3 of the A3 (M), to include the use of lane simulation within ARCADY and incorporating the minor amendments to be included in the junction models as requested by AECOM's correspondence of 27 November 2020. This section provides an assessment of the junctions in their current form, noting the committed capacity improvement schemes for these locations discussed in Section 4 of this Note that may be completed prior to construction of the Onshore Cable Route. In addition, the assessments contained within this section are considered to be very robust on the basis of the following:

- All assessments have been undertaken using traffic flows shown in Table 4, which represent a significant increase when compared against the observed 2019 traffic surveys. This is a result of the traffic growth and committed development assumptions included within the SRTM for the local area;
- The traffic flows include for committed development at Land to the East of Horndean and Old Park Farm, which are required to deliver mitigation schemes at Junctions 2 and 3 of the A3 (M). These mitigation schemes were not included within the SRTM modelling; and
- The DS1 and DS2 scenarios have used a worst-case scenario for the location of traffic management associated with construction of the Onshore Cable Route with temporary traffic signals included on the B2150 Hambledon Road, B2150 Hambledon Road / A3 Maurepas Way / Houghton Avenue roundabout and A3 London Road / Ladybridge roundabout. The cumulative effect of this traffic management leads to a high level of traffic re-assignment away from the Onshore Cable Corridor and onto the wider highway network such as A3(M) junctions 2 and 3. However this will not occur due to the programme restrictions contained within the Framework Traffic Management Strategy (FTMS) (REP1-068), which prevents such a traffic management scenario from occurring. With these restrictions in place only one of the three traffic management locations included within the SRTM may take place at any one time.

3.1.1.2. These programme restrictions and FTMS are secured via protective provisions contained in the draft Development Consent Order.

3.2. ITEM 1

3.2.1.1. HE have requested further sensitivity tests are undertaken at both Junction 2 and Junction 3 of A3 (M). The request from HE is set out below:

> *"With regard to A3(M) Junctions 2 and 3, lane simulation should be used within ARCADY as a sensitivity test (paras 3.5 and 3.11) and these sensitivity tests should be undertaken before the results of the modelling are accepted (para 3.7 and 3.14)."*

3.2.1.2. Following this recommendation, as a sensitivity test, further junction modelling was undertaken within ARCADY using lane simulation. The geometric parameters used in these sensitivity tests have not altered from those used in the ARCADY modelling set out in Appendix 3 of Technical Note HE02, as these elements have been previously accepted by Highways England. The traffic flow inputs have been modified in order to provide those details that were absent in the SRTM outputs, as is further detailed in Section 2 of this report.

3.2.1.3. Full outputs of this ARCADY modelling is included within Appendix 4 of this Technical Note.

3.2.2. JUNCTION 2, A3 (M)

3.2.2.1. As is set out in Section 2.2 of this Technical Note, the SRTM outputs which had previously been received by the Applicant for Junction 2, A3 (M) were found to be incorrect. As such all previously submitted assessments for Junction 2, A3 (M) should be taken to be superseded. A revised set of traffic flow diagrams for this junction are provided as part of this response. Specifically, superseded assessments comprise of those included in:

- Table 105, 106 and 107 of the originally submitted Transport Assessment (APP-448);
- Table 32, 33 and 34 of the Supplementary Transport Assessment (REP1-142); and
- Table 4, 5 and 6 of Highways England Technical Note 2 (HE02).

3.2.2.2. For the purpose of completeness, ARCADY assessments have been undertaken using the corrected flows set out in Section 2.2, with the addition of construction traffic in the PM peak in the DS scenarios where appropriate. The revised assessment results are included in Table 5, Table 6, and Table 7, which provide details of the capacity assessment outputs, in terms of forecast vehicle queue lengths represented as Passenger Car Units (PCU), average vehicle delay expressed in seconds and capacity expressed as a Ratio of Flow to Capacity (RFC).

Table 5: 2026 DM AM Junction 2, A3 (M) results

Arm	AM Peak			PM Peak		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Dell Piece East	3	12	0.74	3	10	0.67
A3 (M) (south)	2	7	0.61	2	6	0.64
B2149 Dell Piece West	2	4	0.58	4	8	0.75
A3 (M) (north)	5	16	0.80	7	45	0.88

Table 6: 2026 DS1 Junction 2, A3 (M) results

Arm	AM Peak			PM Peak		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Dell Piece East	3	12	0.73	2	10	0.65
A3 (M) (south)	2	8	0.63	3	8	0.71
B2149 Dell Piece West	2	4	0.58	4	8	0.78
A3 (M) (north)	6	19	0.83	5	35	0.83

Table 7: 2026 DS2 Junction 2, A3 (M) results

Arm	AM Peak			PM Peak		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Dell Piece East	3	12	0.73	2	10	0.65
A3 (M) (south)	2	8	0.63	3	8	0.71
B2149 Dell Piece West	2	4	0.58	4	8	0.78
A3 (M) (north)	6	19	0.83	5	35	0.83

3.2.2.3. The results set out for the AM peak demonstrate that all arms of Junction 2, A3 (M) are able to operate within their theoretical capacities in the DM scenario, and both DS scenarios modelled. In the PM peak, the A3 (M) (north) arm is approaching capacity in the DM scenario, although queueing is limited to seven PCUs, which can be easily accommodated on the slip-road given its link length of 280 metres. This arm is anticipated to operate within capacity in both of the DS scenarios modelled. Furthermore, all other arms of this junction are forecast to operate within their theoretical capacity in all modelled scenarios.

Lane Simulation

3.2.2.4. As per the request of HE, further sensitivity tests have been conducted for Junction 2 using lane simulation in ARCADY. These sensitivity tests have been conducted using the corrected traffic flows, with the addition of construction traffic in the PM peak in the DS scenarios where appropriate. The results of the modelling undertaken for Junction 2, A3 (M) for the 2026 Do Minimum (DM) scenario when using lane simulation are set out in Table 8.

Table 8: 2026 DM Junction 2, A3 (M) Lane simulation results

Arm	Lane	AM peak (08:30 – 08:45)		PM peak (17:30 – 17:45)	
		Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
Dell Piece East	1 (left / ahead)	5	17	4	14
	2 (right / U-turn)	21	68	3	12
A3 (M) (south)	1 (left)	1	8	2	9
	2 (ahead / right / U-turn)	1	9	3	15
B2149 Dell Piece West	1 (left / ahead)	3	10	7	23
	2 (right / U-turn)	1	2	37	66
A3 (M) (north)	1 (left)	1	5	1	5
	2 (ahead / right / U-turn)	8	32	1	8

3.2.2.5. The results set out for the DM scenario in the AM peak forecast a queue of 21 PCU (126m) on the Dell Piece East arm. This queue will not block back to the next junction. In the PM peak, queueing of 37 PCU (222m) is forecast on B2149 Dell Piece West, this queue is also not anticipated to block back to the next junction. On both the northbound and southbound off-slips of the A3 (M) at this junction, queueing and delay is forecast to be minimal in the DM scenario in both the AM and PM peaks. Queue lengths on both off-slips can be accommodated without blocking back on to the A3 (M) mainline in either direction.

3.2.2.6. The results of the modelling undertaken for Junction 2, A3 (M) for the 2026 Do Something 1 (DS1) scenario when using lane simulation are set out in Table 9.

Table 9: 2026 DS1 Junction 2, A3(M) Lane simulation results

Arm	Lane	AM peak (08:30 – 08:45)		PM peak (17:30 – 17:45)	
		Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
Dell Piece East	1 (left / ahead)	5	16	4	14
	2 (right / U-turn)	12	38	3	11
A3 (M) (south)	1 (left)	1	8	3	15
	2 (ahead / right / U-turn)	2	9	3	13
B2149 Dell Piece West	1 (left / ahead)	2	9	2	9
	2 (right / U-turn)	1	2	34	58
A3 (M) (north)	1 (left)	1	5	1	5
	2 (ahead / right / U-turn)	9	35	1	8

3.2.2.7. The results set out for the DS1 scenario broadly align with those presented for the DM scenario. Some minor decreases in queuing are forecast in both the AM and PM peak as a result of an overall decrease in traffic flow through this junction in DS1 when compared with the DM scenario. Queueing is however forecast to increase on the A3 (M) (north) arm in the AM peak in DS1 when compared to the DM scenario by one PCU (6m). Overall the traffic reassignment associated with construction of the Onshore Cable Route is not predicted to have a detrimental impact on the operation of the junction in comparison with the DM scenario.

3.2.2.8. The results of the modelling undertaken for Junction 2, A3 (M) for the 2026 Do Something 1 (DS2) scenario when using lane simulation are set out in Table 10.

Table 10: 2026 DS2 Junction 2, A3 (M) Lane simulation results

Arm	Lane	AM peak (08:30 – 08:45)		PM peak (17:30 – 17:45)	
		Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
Dell Piece East	1 (left / ahead)	5	17	3	14
	2 (right / U-turn)	13	43	2	10
A3 (M) (south)	1 (left)	1	8	3	14
	2 (ahead / right / U-turn)	1	9	3	12
B2149 Dell Piece West	1 (left / ahead)	2	9	2	9
	2 (right / U-turn)	1	1	40	70
A3 (M) (north)	1 (left)	1	5	1	5
	2 (ahead / right / U-turn)	9	35	2	8

3.2.2.9. The junction modelling results for the DS2 scenario again align with those from the DM and the DS1 scenario. Whilst there are some minor variations in queue length and delays forecast, these are considered unlikely to materially impact upon the operation of the junction. Overall the traffic reassignment associated with construction of the Onshore Cable Route is not predicted to have a detrimental impact on the operation of the junction in comparison with the DM scenario.

3.2.3. JUNCTION 3, A3 (M)

3.2.3.1. The results of the modelling undertaken using lane simulation should be reviewed in the context of the assessments which have been previously undertaken for this junction. The results of the previous modelling at this junction, which does not use lane simulation, can be found in the following:

- 2026 DM AM and PM Peak: Table 11 of the originally submitted Transport Assessment (TA) (APP-448)

3.2.3.2. This table has been replicated below for ease of reference.

Table 11: 2026 DM junction modelling results, replicated from Table 111 of the originally submitted Transport Assessment (TA) (APP-448)

Arm	AM peak (08:00 – 09:00)			PM peak (17:00 – 18:00)		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Hulbert Road (east)	1	3	0.35	1	4	0.38
A3 (M) (south)	3	10	0.73	4	12	0.79
Hulbert Road (west)	3	5	0.71	2	3	0.54
A3 (M) (north)	8	28	0.89	30	66	1.00

3.2.3.3. Comparatively, the results of the modelling undertaken for Junction 3, A3 (M) for the 2026 DM scenario when using lane simulation are set out in Table 12.

Table 12: 2026 DM Junction 3, A3 (M) Lane simulation results

Arm	Lane	AM peak (08:30 – 08:45)		PM peak (17:30 – 17:45)	
		Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
Hulbert Road (east)	1 (left / ahead)	1	7	1	6
	2 (ahead / right / U-turn)	1	1	0	1
A3 (M) (south)	1 (left)	2	7	2	8
	2 (left / ahead / right / U-turn)	2	7	2	8
Hulbert Road (west)	1 (left /ahead)	96	196	2	7
	2 (right / U-turn)	1	5	2	6
A3 (M) (north)	1 (left /ahead)	5	22	164	484
	2 (right / U-turn)	1	6	1	7

3.2.3.4. The results set out for the DM scenario show limited queueing in the AM peak on all arms with the exception of the nearside lane of Hulbert Road (west) arm, which does not form part of the SRN. It is forecast that in the AM peak, in the DM scenario the Hulbert Road (west) arm of this junction will experience queueing of 96 PCU (576m). In the PM peak, a queue of 164 PCU (984m) is forecast for the A3 (M) (north) arm. This level of queueing extends beyond the limits of the off slip, blocking back on to the mainline of the A3 (M) southbound.

3.2.3.5. The results of the modelling undertaken for Junction 3, A3 (M) for the 2026 DS1 scenario when using lane simulation are set out in Table 12.

Table 13: 2026 DS1 Junction 3, A3 (M) Lane simulation results

Arm	Lane	AM peak (08:30 – 08:45)		PM peak (17:30 – 17:45)	
		Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
Hulbert Road (east)	1 (left / ahead)	1	7	1	6
	2 (ahead / right / U-turn)	0	1	0	1
A3 (M) (south)	1 (left)	2	8	2	8
	2 (left / ahead / right / U-turn)	2	9	2	9
Hulbert Road (west)	1 (left /ahead)	117	236	2	6
	2 (right / U-turn)	1	5	2	6
A3 (M) (north)	1 (left /ahead)	6	23	163	471
	2 (right / U-turn)	1	6	1	6

3.2.3.6. The modelling results for the DS1 scenario in the AM peak show an increase in queueing compared to the DM scenario on the Hulbert Road (west) arm. Minor increases in queue lengths are forecast on the A3 (M) (south) A3 (M) (north) arms, although these would be accommodated within the length of slip road.

3.2.3.7. In the PM peak, a decrease in the forecast queue length of 1 PCU (6m) is shown on the A3 (M) northern approach. As this arm is forecast to be have extensive queueing in the PM peak in the DM scenario, this decrease in queueing is considered unlikely to have a material impact on the operation of the junction. As shown on the traffic flow diagrams provided at Appendix 3 ('Junction 3, A3 (M) Adjusted Turning Counts), the implementation of traffic management in the DS1 scenario would increases the traffic flow on the A3 (M) northern approach to Hulbert Road east by only five vehicles during this peak hour. For context purposes, this is the nearside lane of A3 (M) (north) that experiences the highest forecast queue values, however it can be seen that the actual increase in traffic flow using this link is not at all significant.

3.2.3.8. The results of the modelling undertaken for Junction 3, A3 (M) for the 2026 DS2 scenario when using lane simulation are set out in Table 124.

Table 14: 2026 DS2 Junction 3, A3 (M) Lane simulation results

Arm	Lane	AM peak (08:30 – 08:45)		PM peak (17:30 – 17:45)	
		Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
Hulbert Road (east)	1 (left / ahead)	1	7	1	6
	2 (ahead / right / U-turn)	1	1	0	1
A3 (M) (south)	1 (left)	2	8	2	9
	2 (left / ahead / right / U-turn)	2	8	2	9
Hulbert Road (west)	1 (left /ahead)	119	240	2	6
	2 (right / U-turn)	1	5	2	6
A3 (M) (north)	1 (left /ahead)	5	21	169	491
	2 (right / U-turn)	1	6	1	7

3.2.3.9. The results for the DS2 scenario, as with the DS1 scenario, show an increase in forecast queueing on the Hulbert Road (west) arm in the AM peak, and a minor increase in queueing on the A3 (M) (south) and A3 (M) (north) arms, but which can be accommodated within the length of the slip roads. In the PM peak, an increase in the forecast queue length of 5 PCU (30m) is shown on the A3 (M) north approach despite the implementation of traffic management in this scenario only increasing the traffic flow between this arm and Hulbert Road east by nine vehicles. As with the DS1 scenario, it is considered that these changes will not have a material impact upon the operation of the junction when compared to the DM scenario.

3.3. SUMMARY

3.3.1.1. This Section has addressed Item 1 of HE03 which requested that additional sensitivity tests be run at both Junction 2, A3 (M) and Junction 3, A3 (M) using lane simulation in ARCADY. Queuing at Junction 2, A3 (M) is forecast to be minimal on A3(M) off-slips in all assessed scenarios. At Junction 3, it is forecast there that there will be queues on the offside lane of Hulbert Road west in the AM peak in all scenarios. Significant queue lengths are forecast on the A3 (M) north arm in the PM peak in all scenarios. In all DS scenarios, however, the implementation of traffic management associated with construction of the Onshore Cable Route is not forecast to have a material impact on the operation of either junction or peak hour queue lengths as it relates to the SRN.

3.3.1.2. In addition, the Land to the East of Horndean and Old Park Farm committed development schemes are required to introduce mitigation at the A3 (M) junctions and this is discussed in Section 4 of this document. Together with the points raised above in respect of the traffic management measures, given that this analysis includes for the development traffic associated with these committed schemes, but without the identified mitigation, the assessment undertaken is therefore a theoretical one which could not occur in reality.

4. COMMITTED DEVELOPMENT ASSESSMENTS

4.1. INTRODUCTION

4.1.1.1. This section addresses the comments raised in Item 2 of HE03, pertaining to the mitigation measures secured at both Junction 2, A3 (M) and Junction 3, A3 (M) in association with committed developments in the area.

4.2. ITEM 2

4.2.1.1. Item 2 of HE's Technical Note relates to the inclusion of traffic associated with committed development in the SRTM, without the inclusion of the mitigation measures which are associated with said developments. Specifically, HE stated that:

> *'3.16. The SRTM included the signalisation of the A3(M) northbound off-slip approach to the Junction 3 roundabout. HE02 states that improvements are also proposed for the A3(M) Junction 2 as part of a development at Land East of Horndean, Rowlands Castle Road, Horndean, which proposes 800 dwellings and other complimentary uses. Both the consented scheme (55562/001), approved in 2016, and a revised scheme awaiting decision following planning committee held on 11 June 2020 (55562/005), included proposals to signalise A3(M) Junction 2. WSP note that the SRTM assumptions did not include this mitigation scheme, however it did include the demand generated by the proposed development. WSP conclude that given that the junction has been modelled within the Aquind Transport Assessment in its existing form without this mitigation, and no capacity concerns have been reported under such assessment, it is considered that a robust approach has also been taken for the modelling of this junction.*
>
> *3.17. As stated above, AECOM do not yet agree that the junctions concerned necessarily operate within capacity once the impact of unequal lane usage is taken into account. Since the traffic flows used include the traffic generated by these committed developments, but the junction capacity models do not include their mitigation schemes, it is not possible to establish with any certainty what the net impact of the proposed Aquind Interconnector construction phase will be in either of the following scenarios:*
>
> - *Without the committed development and without its mitigation scheme;*
> - *With the committed development and with its mitigation scheme.*

3.18. It is possible that either of these scenarios would result in a more favourable outcome than that currently presented in the TA. However, as things stand, the analysis has not shown conclusively that there will not be a severe impact at either A3(M) Junction 2 or A3(M) Junction 3 during the construction phase of the Aquind interconnector.'

4.2.1.2. As such, following this request from HE further junction modelling has been undertaken for both Junction 2 and Junction 3 of the A3 (M).

4.2.2. COMMITTED DEVELOPMENT SCHEMES

4.2.2.1. The following documents have been reviewed in order to inform the assessments undertaken on this topic:

- Land to the east of Horndean (55562/005):
  - Environmental Statement – Chapter 2: Site description and development proposals (December 2018);
  - Environmental Statement – Technical Appendix J: Transport Assessment (December 2018);
- Old Park Farm, Waterlooville (05/00500/OUT):
  - Environmental Statement Volume 3A - Transport Assessment (November 2004); and
  - Drawing No. 3-004032-DR-100-003-P06: A3(M) J3 Northbound Slip S278 Signalisation Scheme (March 2017).

4.2.2.2. A brief overview of these committed developments and their anticipated impact upon Junction 2 and Junction 3 of the A3(M) is set out in Table 15 and drawings of the proposed junction improvement schemes are provided in Appendix 5 for reference.

Table 15: Overview of committed development

Committed Development	Proposals	Anticipated Traffic Impacts	Committed Mitigation
Land to the East of Horndean	800 Dwellings 2ha Employment Local Centre Primary School	454 Movements through Junction 2, A3 (M) in the AM peak, and 460 in the PM peak	Full signalisation of Junction 2, A3 (M)
Old Park Farm (Forming part of the West of Waterlooville MDA)	474 Mixed dwellings 7.7ha of employment 2.8ha of mixed-use land	189 Movements Junction 3, A3 (M) in the AM peak, and 153 in the PM peak	Partial signalisation of Junction 3, A3 (M) (northbound off-slip and southern circulatory only).

4.2.3. JUNCTION MODELLING WITH THE REMOVAL OF TRAFFIC ASSOCIATED WITH COMMITTED DEVELOPMENTS

Junction 2, A3 (M)

4.2.3.1. Junction 2 was found to be able to operate with minimal queueing in the sensitivity test at Section 3.2.2. The sensitivity test represented a scenario in which the traffic associated with the Land to the east of Horndean development is travelling through the junction in its current layout. This sensitivity test did not account for the proposed mitigation that is associated with the Land east of Horndean proposals. As A3 (M) Junction 2, was shown to operate well within capacity assuming the very robust sensitivity test, no further ARCADY assessments of this junction have been undertaken removing committed development traffic.

Junction 3, A3 (M)

4.2.3.2. This section includes details of the specific traffic flow movements which are anticipated to be generated from the Old Park Farm development. This identified committed development traffic was then removed from the traffic flows for Junction 3, A3 (M) which were obtained from the SRTM, and the ARCADY model re-run with these revised traffic flows. This assessment provides an understanding of the impact of the proposals associated with the AQUIND project in isolation, in a scenario in which the discussed committed development traffic is not put in place without the required mitigation scheme to be provided by the Old Park Farm development.

4.2.3.3. Full ARCADY outputs of this assessment are included in Appendix 6 of this Technical Note.

4.2.3.4. The traffic flows associated with the Old Park Farm have been taken from Appendix 10 of the Old Park Farm Transport Assessment. A summary of the development only traffic which is anticipated to travel through Junction 3 of the A3 (M) is set out in Table 16 and Table 17 below.

Table 16: Old Park Farm, West of Waterlooville MDA, Development Traffic (AM Peak) - Junction 3, A3 (M)

To / From		A	B	C	D
A	Hulbert Road	0	0	16	0
B	A3 (M) (south)	0	0	75	0
C	B2150 Hulbert Road	11	46	0	15
D	A3 (M) (north)	0	0	26	0

Table 17: Old Park Farm, West of Waterlooville MDA, Development Traffic (PM Peak) - Junction 3, A3 (M)

To / From		A	B	C	D
A	Hulbert Road	0	0	9	0
B	A3 (M) (south)	0	0	36	0
C	B2150 Hulbert Road	15	63	0	21
D	A3 (M) (north)	0	0	9	0

4.2.3.5. As per HE's request, the committed development traffic set out in Table 16 and Table 17 have been removed from the SRTM turning counts for this Junction 3, A3 (M). The resultant traffic flows were then assessed using an ARCADY model of Junction 3, A3 (M). The results of this assessment for the DM, DS1 and DS2 scenarios are included in Table 18, Table 19 and Table 20 respectively.

Table 18: 2026 DM with committed development traffic removed

Arm	Lane	AM peak (08:30 – 08:45)		PM peak (17:30 – 17:30)	
		Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
Hulbert Road (east)	1 (left / ahead)	2	7	1	6
	2 (ahead / right / U-turn)	1	1	0	1
A3 (M) (south)	1 (left)	2	7	2	8
	2 (left / ahead / right / U-turn)	2	7	2	8
B2150 Hulbert Road (west)	1 (left)	85	174	2	7
	2 (left / ahead / right / U-turn)	1	4	1	5
A3 (M) (north)	1 (left /ahead)	5	23	165	472
	2 (right / U-turn)	1	6	1	7

4.2.3.8. The results for the DM scenario when modelled using lane simulation demonstrate minimal queueing on all arms other than Hulbert Road west in the AM peak. Hulbert Road west is anticipated to have a queue of 85 PCU (5108m). In the PM peak, the longest queues are forecast for A3 (M) north where the queue is forecast to extend for 165 PCU (990m) and as such is anticipated to exceed the length of the southbound slip road, blocking back to the south bound mainline of the A3 (M). The results are similar to the position presented in Table 12 which includes committed development traffic associated with Old Park Farm, albeit that during the AM peak a lower queue length is forecast for B2150 Hulbert Road with the committed development traffic removed.

4.2.3.9. Table 19 now presents the capacity assessments for the DS1 scenario, without the Old Park Farm committed development traffic.

Table 19: 2026 DS1 with committed development traffic removed

Arm	Lane	AM peak (08:30 – 08:45)		PM peak (17:30 – 17:30)	
		Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
Hulbert Road (east)	1 (left / ahead)	1	7	1	6
	2 (ahead / right / U-turn)	1	1	0	1
A3 (M) (south)	1 (left)	2	8	2	8
	2 (left / ahead / right / U-turn)	2	8	2	8
B2150 Hulbert Road (west)	1 (left)	107	214	2	6
	2 (left / ahead / right / U-turn)	1	4	2	6
A3 (M) (north)	1 (left /ahead)	6	24	163	469
	2 (right / U-turn)	1	6	1	7

4.2.3.12. The results set out for the DS1 scenario show a worsening in the AM peak when compared to the DM scenario when modelled using lane simulation, with a 22 PCU (132m) increase in traffic flows being anticipated on the B2150 Hulbert Road (west).

4.2.3.13. In the PM peak, there is a slight decrease in queueing forecast for the A3 (M) north arm, with this decrease comprising of two PCU (12m). As this arm is already forecast to experience considerable queueing in the DM scenario, it is considered that this minor decrease would not have a material impact on the operation of the junction. Again, the results are similar to the position presented in Table 13 which includes committed development traffic associated with Old Park Farm.

4.2.3.14. Table 20 now presents the capacity assessments for the DS2 scenario, without the Old Park Farm committed development traffic.

Table 20: 2026 DS2 with committed development traffic removed

Arm	Lane	AM peak (08:30 – 08:45)		PM peak (17:30 – 17:30)	
		Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
Hulbert Road (east)	1 (left / ahead)	2	7	1	6
	2 (ahead / right / U-turn)	1	1	0	1
A3 (M) (south)	1 (left)	2	8	2	8
	2 (left / ahead / right / U-turn)	2	8	2	8
B2150 Hulbert Road (west)	1 (left)	105	214	2	6
	2 (left / ahead / right / U-turn)	1	4	2	5
A3 (M) (north)	1 (left /ahead)	6	24	165	467
	2 (right / U-turn)	1	6	1	6

4.2.3.16. The results of the DS2 assessment provides similar results to the DS1 scenario where there is forecast to be an increase in queue lengths on B2150 Hulbert Road in the AM peak when compared to the DM scenario. As it relates to the SRN, this temporary increase in queue lengths is unlikely to result in a material impact on the operation of the junction and would be unlikely to occur in reality due to the programme restrictions contained within the FTMS to mitigate the cumulative impacts of traffic management associated with construction of the Onshore Cable Route. Again, results are similar to the position presented in Table 14 which includes committed development traffic associated with Old Park Farm, albeit during the AM peak a lower queue length is forecast for B2150 Hulbert Road and a lower queue is shown on the A3 (M) (north) arm during the PM peak.

4.2.4. JUNCTION MODELLING WITH THE COMMITTED DEVELOPMENT AND WITH MITIGATION SCHEME

4.2.4.1. Further to the assessment undertaken in Section 4.2.3, this Section includes additional assessments of both Junction 2 and Junction 3 of the A3 (M). These additional assessments use the original traffic flows obtained from the SRTM, which included traffic to be generated from the committed developments at Old Park Farm and Land east of Horndean. The traffic flows that are inclusive of this committed development traffic were run in LinSig, accounting for the junction signalisation schemes which are to be delivered as mitigation measures alongside these committed developments. Full LinSig outputs are included in Appendix 7 of this Technical Note.

4.2.4.2. Details of the junction signalisation schemes to be delivered as mitigation alongside these committed developments were obtained from the following documents and are included in Appendix 5 of this Note:

- Junction 2, A3 (M) (Land East of Horndean): Environmental Statement – Technical Appendix J: Transport Assessment: Appendix L 'Junction 3 – A3 (M) Junction 2 – Arcady and LinSig Results' (December 2018); and
- Junction 3, A3 (M) (Old Park Farm): Drawing No. 3-004032-DR-100-003-P06: A3(M) J3 Northbound Slip S278 Signalisation Scheme (March 2017).

Junction 2, A3 (M)

4.2.4.3. The mitigation measures proposed to be implemented alongside the Land East of Horndean includes the full signalisation of Junction 2 of the A3 (M). This signalisation scheme has been modelled in LinSig with the SRTM traffic flows for the DM, DS1 and DS2 scenarios. Results are provided in terms of capacity, expressed as percentage Degree of Saturation (D.o.S), Mean Maximum Queue Values, expressed as Passenger Car Units (PCU's) and Delay per vehicle, expressed on the basis of average values in seconds, per vehicle, The results of these assessments can be seen in Table 21, Table 22 and Table 23.

Table 21: 2026 DM with committed development traffic and signalisation scheme - Junction 2, A3 (M)

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)
Dell Piece East	100.4	31	80	92.7	18	42
A3 (M) South (off-slip)	58.8	7	19	61.9	8	14
B2149 Dell Piece West	73.9	11	19	109.6	69	201
A3 (M) North (off-slip)	105.1	41	144	90.4	11	55
Circulatory (east)	103.0	33	105	91.3	11	33
Circulatory (south)	49.0	2	8	45.8	2	10
Circulatory (west)	80.5	9	22	110.7	47	222
Circulatory (north)	82.0	5	22	91.2	6	20
	Cycle Time: 60s PRC: -16.7%			Cycle Time: 60s PRC: -23.0%		

4.2.4.4. The results set out for the DM scenario show that the junction is anticipated to be overcapacity in both the AM and PM peaks. The longest anticipated queue length in the AM peak is forecast to occur of the A3 (M) (north) off slip. This queue is forecast to extend for 41 PCU (246m), which can be accommodated within the 280m off-slip and thus would not block back onto the southbound mainline of the A3 (M). In the DM scenario in the PM peak the most extensive queueing is forecast of the B2149 Dell Piece West approach, with this queue comprising 69 PCU (414m). In addition, queueing is forecast for the western circulatory of the junction of 47 PCU (282m). This level of queueing will block back beyond the storage capacity of the circulatory and thus will impact upon the operation of the junction. The matter of the forecast queue lengths is discussed in further detail in the summary of this section.

Table 22: 2026 DS1 with committed development traffic and signalisation scheme - Junction 2, A3 (M)

	AM Peak			PM Peak		
	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)
Dell Piece East	100.2	29	80	94.1	19	48
A3 (M) South (off-slip)	56.5	7	18	60.8	8	12
B2149 Dell Piece West	73.1	11	18	108.8	67	186
A3 (M) North (off-slip)	94.8	20	47	88.4	10	53
Circulatory (east)	100.5	29	74	83.6	14	33
Circulatory (south)	56.0	3	8	45.8	2	12
Circulatory (west)	84.8	10	29	111.1	46	231
Circulatory (north)	92.3	15	47	91.4	6	20
	Cycle Time: 60s PRC: -11.7%			Cycle Time: 60s PRC: -23.5%		

4.2.4.5. The results for this junction in the DS1 scenario show that the junction would operate no worse than the position shown by the DM scenario, with both slip roads seeing queueing either remaining as it is in the DM or decreasing.

Table 23: 2026 DS2 with committed development traffic and signalisation scheme - Junction 2, A3 (M)

	AM Peak			PM Peak		
	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)
Dell Piece East	100.0	29	79	94.0	18	47
A3 (M) South (off-slip)	56.4	7	18	60.5	8	12
B2149 Dell Piece West	73.0	11	18	108.8	67	187
A3 (M) North (off-slip)	94.8	20	47	88.9	10	54
Circulatory (east)	100.5	29	74	87.9	10	27
Circulatory (south)	55.2	3	9	46.0	2	12
Circulatory (west)	84.6	10	29	111.3	47	233
Circulatory (north)	92.3	15	47	91.4	6	20
	Cycle Time: 60s PRC: -11.7%			Cycle Time: 60s PRC: -23.7%		

4.2.4.6. The results for the DS2 scenario broadly align with those which were forecast for the DS1 scenario, with the junction anticipated to operate over capacity in both the AM and PM peaks, but no worse than the position shown by the DM scenario. Queue lengths on the slip roads in both periods can be accommodated without blocking back on to the mainline of the A3 (M).

4.2.4.7. This position is however unlikely to occur in reality due to the programme restrictions contained within the FTMS to mitigate the cumulative impacts of traffic management associated with construction of the Onshore Cable Route.

Junction 3, A3 (M)

4.2.4.8. The mitigation measures proposed to be implemented alongside the Old Park Farm development includes the partial signalisation of Junction 3 of the A3 (M). Signalisation is proposed for the northbound off-slip of the A3 (M) at this junction, and the corresponding circulatory. As has been discussed in Section 1 of this Technical Note, LinSig assessments of Junction 3, A3 (M) have been undertaken twice, for two different lane usage scenarios on the A3 (M) south approach. Aside from the differences in lane alignment of the A3 (M) south approach, the two models of Junction 2, A3 (M) are identical. The signalisation scheme has been modelled using both lane alignments, with the SRTM traffic flows for the DM, DS1 and DS2 scenarios.

A3 (M) South Approach: Left Turn Prohibited from Offside Lane

4.2.4.9. This Section contains the results of the junction modelling undertaken using the SRTM flows, when modelled preventing use of the offside lane of the A3 (M) approach to turn left on to B2150 Hulbert Road (west).

4.2.4.10. The results of these assessments are set out in Table 24, Table 25 and Table 26.

Table 24: 2026 DM with committed development traffic and signalisation scheme - Junction 3, A3 (M) (left turn prohibited from offside lane)

	AM Peak			PM Peak		
	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)
Hulbert Road (East)	53.7	1	5	49.7	1	6
A3 (M) South off-slip	86.3	18	20	92.7	23	28
B2150 Hulbert Road (West)	117.0	103	302	85.8	5	13
A3 (M) North off-slip	79.9	2	10	115.4	138	272
Circulatory (south)	89.0	11	50	89.8	12	51
	Cycle Time: 60s			Cycle Time: 60s		

	PRC: -30.0%	PRC: - 28.2%

4.2.4.11. The results set out in Table 24 demonstrate that the junction is over its theoretical capacity in the AM and PM peaks in the DM scenario. The longest queues in the AM peak are forecast on the B2150 Hulbert Road approach, which is anticipated to see queueing of 103 PCU (618m). In the PM peak the longest queues are seen on the A3 (M) North approach, which is anticipated to see queueing of 138 PCU (828m). This queue is anticipated to extend beyond the limits of the 260m slip, blocking back on to the mainline southbound carriageway of the A3 (M).

Table 25: 2026 DS1 with committed development traffic and signalisation scheme - Junction 3, A3 (M) (left turn prohibited from offside lane)

	AM Peak			PM Peak		
	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)
Hulbert Road (East)	53.8	1	5	57.0	1	7
A3 (M) South off-slip	94.2	25	32	99.6	37	59
B2150 Hulbert Road (West)	116.8	102	300	78.3	3	9
A3 (M) North off-slip	80.0	2	10	117.3	147	298
Circulatory (south)	90.5	12	53	93.7	14	63
	Cycle Time: 60s PRC: -29.8%			Cycle Time: 60s PRC: - 30.3%		

4.2.4.12. The results set out for the DS1 scenario demonstrate the junction is again anticipated to be exceeding its theoretical capacity in the AM and PM peak. In the AM peak the reassignment of vehicles away from traffic management included in the DS1 scenario does not materially impact the operation of the junction. In the PM peak the DS1 scenario is forecast to result in a slight increase in queue lengths on the A3 (M) North approach from 138 PCU to 147 PCU (882m). However, this increase is unlikely to represent a material difference to drivers travelling through this junction, given the forecast queues seen in the DM scenario, with only an additional 26 second delay per vehicle shown.

Table 26: 2026 DS2 with committed development traffic and signalisation scheme - Junction 3, A3 (M) (left turn prohibited from offside lane)

	AM Peak			PM Peak		
	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)
Hulbert Road (East)	54.2	1	5	56.4	1	7
A3 (M) South off-slip	93.7	24	31	100.1	39	64
B2150 Hulbert Road (West)	115.0	112	268	78.7	4	9
A3 (M) North off-slip	79.8	2	10	117.6	149	303
Circulatory (south)	90.6	12	55	92.6	13	59
	Cycle Time: 60s PRC: -29.8 %			Cycle Time: 60s PRC: -30.7%		

4.2.4.13. The results for the DS2 scenario broadly align with those which were forecast for the DS1 scenario, with the junction anticipated to operate over capacity in both the AM and PM peaks. This results in queue lengths on the A3 (M) North approach extending back onto the A3 (M) mainline in the PM peak periods. This temporary increase in queue lengths however is unlikely to occur in reality due to the programme restrictions contained within the FTMS to mitigate the cumulative impacts of traffic management associated with construction of the Onshore Cable Route.

A3 (M) South Approach: Left Turn Permitted from Offside Lane

4.2.4.14. This Section contains the results of the junction modelling undertaken using the SRTM flows, when modelled allowing the use of the offside lane of the A3 (M) south approach to turn left on to B2150 Hulbert Road (west), which as stated in Paragraph 1.1.2.5 is a manoeuvre which is commonplace at this junction

4.2.4.15. The results of these assessments are set out in Table 27, Table 28 and Table 29.

Table 27: 2026 DM with committed development traffic and signalisation scheme - Junction 3, A3 (M) (left turn permitted from offside lane)

	AM Peak			PM Peak		
	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)
Hulbert Road (East)	53.8	1	5	49.2	1	6
A3 (M) South off-slip	45.6	6	10	47.0	6	10
B2150 Hulbert Road (West)	117.9	106	314	85.8	5	13
A3 (M) North off-slip	79.9	2	10	115.4	138	272
Circulatory (south)	83.4	10	40	85.6	11	42
	Cycle Time: 60s PRC: - 31%			Cycle Time: 60s PRC: -28.2%		

4.2.4.16. The results set out for the DM scenario show that the junction is over capacity in both the AM and PM peak. The most extensive queueing in the AM peak is the 106 PCU (636m) queue anticipated on the B2150 Hulbert Road (west) arm. In the PM peak, the most extensive anticipated queue is for the A3 (M) (north) off-slip, which is forecast to extend for 138 PCU (828m). This queue is forecast to extend beyond the extents of the slip-road, blocking back on to the southbound mainline.

Table 28: 2026 DS1 with committed development traffic and signalisation scheme - Junction 3, A3 (M) (left turn permitted from offside lane)

	AM Peak			PM Peak		
	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)
Hulbert Road (East)	53.9	1	5	53.3	1	6
A3 (M) South off-slip	49.5	7	10	51.0	7	10
B2150 Hulbert Road (West)	117.3	103	306	77.1	6	10
A3 (M) North off-slip	79.9	2	10	117.6	148	302
Circulatory (south)	84.7	10	41	88.6	12	47
	Cycle Time: 60s PRC: -30.3%			Cycle Time: 60s PRC: -30.7%		

4.2.4.17. The results of the DS1 scenario broadly align with those set out for the DM scenario. In the PM scenario, the queueing on the A3 (M) north off-slip is anticipated to experience a slight increase in queueing of 10 PCU (60m). Given the already considerable queueing anticipated in the DM scenario, it is unlikely that this addition to the queue length will have a material impact upon the operation of the junction.

Table 29: 2026 DS2 with committed development traffic and signalisation scheme - Junction 3, A3 (M) (left turn permitted from offside lane)

	AM Peak			PM Peak		
	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)
Hulbert Road (East)	54.2	1	5	52.8	1	6
A3 (M) South off-slip	49.3	7	10	51.3	7	10
B2150 Hulbert Road (West)	117.5	104	309	77.4	6	10
A3 (M) North off-slip	79.8	2	10	118.0	150	307
Circulatory (south)	84.9	11	41	87.7	12	45
	Cycle Time: 60s PRC: -30.5%			Cycle Time: 60s PRC: -31.1%		

4.2.4.18. The results set out for the DS2 scenario broadly align with those for the DM scenario. In the PM scenario, the queueing on the A3 (M) north off-slip is anticipated to experience a slight increase in queueing of 12 PCU (66m). Given the already considerable queueing anticipated in the DM scenario, it is unlikely that this addition to the queue length will have a material impact upon the operation of the junction.

4.3. SUMMARY

4.3.1.1. This Section has addressed Item 2 of HE03 pertaining to the impact the implementation of committed developments would have in on Junction 2 and Junction 3 of the A3 (M) in relation to the AQUIND proposals. Whilst generally it is noted that the DS1 and DS2 scenarios do not predict a material worsening of junction operation, at Junction 3 it is forecast that queue lengths extend back onto the A3 (M) mainline as per the existing junction layout. In viewing these results however, the following should be noted:

- Stated queue lengths for signalised arms at Junctions are mean maximum queue lengths; this is a robust measurement of queue lengths and is likely to far exceed the average static queue at the junction. In addition, it should be noted that the Mean Maximum Queue values obtained consist of traffic joining the back of the queues formed at the end of the red phase.

- As stated in Section 3.1 the DS1 and DS2 scenarios have used a worst-case scenario for the location of traffic management associated with construction of the Onshore Cable Route with temporary traffic signals included on the B2150 Hambledon Road, B2150 Hambledon Road / A3 Maurepas Way / Houghton Avenue roundabout and A3 London Road / Ladybridge roundabout. The cumulative effect of this traffic management leads to a high level of traffic re-assignment away from the Onshore Cable Corridor and onto the wider highway network such as A3 (M) junctions 2 and 3. However this level of traffic re-assignment is unlikely to occur due to the programme restrictions contained within the Framework Traffic Management Strategy (FTMS) (REP1-068), which prevents such a cumulative traffic management scenario from occurring.
- All assessments have been undertaken using traffic flows shown in Table 4, which represent a significant increase when compared against the observed 2019 traffic surveys and predicted TEMPRO traffic growth rates for the same 2019-2026 period. For example, in the PM peak where queuing is forecast to reach the A3(M) mainline at Junction 3, the SRTM traffic flows represent a doubling of the growth rate predicted by TEMPRO between 2019 and 2026.This therefore provides a very robust forecast of likely junction operation in the DM, DS1 and DS2 scenarios. By definition, this would lead to a position where traffic queues shown by the additional modelling would not arise.
- In relation to the robust nature of the traffic flows, the high volume of traffic has led to all tested DM scenarios operating at or over capacity. As a consequence, any impacts associated with reassignment is heightened due to the junction not having available capacity to cater for increased traffic demand.
- The junction improvement scheme for A3 (M) Junction 2 forms part of the committed transport strategy for the outline planning permission 55562/005 that was approved at planning committee in June 2020. At the time of writing however a S106 Agreement has not been finalised and the Applicant understands that the trigger point for a planning condition relating to these works is yet to be confirmed. This is highlighted from the extract taken from the Planning Committee report for planning application 55562/005:

  "Highways England has considered the application and the alterations to the junctions to accommodate the application and is satisfied that any changes can be safely made. They raise no objection subject to a condition requiring pedestrian and cycle routes linking the east and west sides of the A3 (M) to be carried out before first occupation. Although these works are requested to be carried out prior to first occupation of the development, the applicant has been in discussion with HCC LHA and it has been accepted by HCC LHA that the junction

works can be carried out later in the development, for example, prior to first occupation of the 230th dwelling. This is subject to the developer providing a bus service to and from the site to Horndean Technical College as soon as the first secondary school aged child occupies the development. This is to be secured through a S106 legal agreement and the bus service would commence from that point and for a full school term following completion of the Junction 2 works."

(https://easthants.moderngov.co.uk/documents/s12748/EHDC%20Part%201%20Section%201%20Item%201%20Land%20East%20of%20Horndean%20SH.pdf, (6. Access, movement and highway safety)

- On this basis and assuming a reasonable build out of the site at a rate of 80 dwellings per year (as per the submitted Transport Assessment) starting in 2021, completion of the junction improvement works at Junction 2 would not be required until the end of 2023 which is when construction of the Onshore Cable Route is anticipated to be complete (Table 3.9 – Indicative Onshore Construction Programme, ES Chapter 3 Description of the Proposed Development (APP-118).

4.3.1.2. It is therefore concluded by the Applicant the scenarios tested within this Technical Note and very unlikely to occur in reality but represent a very robust prediction of junction operation and the impact of the Proposed Development.

5. ALTERNATIVE FUTURE YEAR ASSESSMENT

5.1. INTRODUCTION

5.1.1.1. Further discussions held between the Applicant and HE, at a meeting date 18th November 2020, led to a request for additional lane simulation assessments to be undertaken. The additional assessments are set out in this Section and are based on an alternative future year assessment calculated on the basis of observed traffic flows for both Junction 2 and Junction 3 of the A3 (M).

5.1.1.2. The full results of the alternative assessments undertaken are included in Appendix 8 for reference.

5.2. JUNCTION 2, A3 (M)

5.2.1. OBSERVED TRAFFIC FLOWS

5.2.1.1. The Applicant undertook Manual Classified Turning Count (MCTC) traffic surveys at Junction 2 of the A3 (M) in September 2019. The full results of these traffic surveys can be seen in Appendix 2 and are replicated in Table 30 for reference.

Table 30: Junction 2, A3 (M) - 2019 Observed turning counts

		AM Peak (08:00 – 09:00)				PM Peak (17:00 – 18:00)			
From / To		A	B	C	D	A	B	C	D
A	Dell Piece East	0	414	189	317	0	317	311	205
B	A3 (M) (south)	163	2	242	1	372	0	523	0
C	B2149 Dell Piece West	306	561	2	228	234	377	5	166
D	A3 (M) (north)	159	1	112	0	355	3	231	0

5.2.2. TEMPRO GROWTH FACTORS

5.2.2.1. As is stated in paragraph 1.10.3.9. of the Transport Assessment (APP-448), peak construction on the Onshore Cable Corridor is anticipated to be in 2022. As such, the additional future year assessments undertaken in this Section are based in 2022. TEMPRO growth factors have been used to growth the observed 2019 traffic flows to anticipated 2022 traffic levels. The locally adjusted growth factors used are set out in Table 31.

Table 31: Junction 2, A3 (M) - Locally adjusted TEMPRO growth rates (2019 - 2022)

Level	Area	Local Growth Figure (2019 – 2022)	
		AM Peak	PM Peak
E02006829	East Hampshire 016	1.046692	1.04548

5.2.2.2. The resultant 2022 turning counts for Junction 2, A3 (M) are set out in Table 32.

Table 32: Junction 2, A3 (M) - 2022 Turning counts

		AM Peak (08:00 – 09:00)				PM Peak (17:00 – 18:00)			
From / To		A	B	C	D	A	B	C	D
A	Dell Piece East	0	433	198	332	0	331	325	214
B	A3 (M) (south)	171	2	253	1	389	0	547	0
C	B2149 Dell Piece West	320	587	2	239	245	394	5	174
D	A3 (M) (north)	166	1	117	0	371	3	242	0

5.2.3. COMMITTED DEVELOPMENT TRAFFIC

5.2.3.1. As is discussed in Section 4.2.2 of this Technical Note, the 'Land east of Horndean' committed development is scheduled to be being implemented during the same time period as the AQUIND Interconnector proposals. In 2022, the peak year for construction for AQUIND, the construction phasing set out in paragraph 2.50 of Chapter 2 of the Land east of Horndean Environmental Statement indicates that development will be 26% completed.

5.2.3.2. As such, 26% of the total development traffic set out in in "Environmental Statement – Technical Appendix J: Transport Assessment (December 2018)" has been calculated for inclusion in this assessment. In addition to this, the committed development traffic which was included in the Land east of Horndean Transport Assessment, associated with a nearby care home and sports pitches was also included. The resultant calculated development traffic, including the 2022 Land east of Horndean, care home and sports pitches traffic are set out in Table 33

Table 33: Junction 2, A3 (M) - 2022 Development traffic (Land East of Horndean and additional committed development)

		AM Peak (08:00 – 09:00)				PM Peak (17:00 – 18:00)			
From / To		A	B	C	D	A	B	C	D
A	Dell Piece East	0	55	16	21	0	39	10	13
B	A3 (M) (south)	28	0	1	0	60	0	9	0
C	B2149 Dell Piece West	3	10	0	18	4	2	0	10
D	A3 (M) (north)	9	0	1	0	21	0	4	0

5.2.4. ALTERNATIVE DM SCENARIO

5.2.4.1. The 2022 committed development traffic set out in Table 33 have been added to the 2022 turning counts set out in Table 32 create the alternative DM scenario turning counts used in this additional assessment. The turning counts for the alternative DM are set out in Table 34.

Table 34: Junction 2, A3 (M) - Alternative DM scenario (2022)

		AM Peak (08:00 – 09:00)				PM Peak (17:00 – 18:00)			
From / To		A	B	C	D	A	B	C	D
A	Dell Piece East	0	489	214	353	0	370	335	227
B	A3 (M) (south)	199	2	254	1	449	0	556	0
C	B2149 Dell Piece West	323	597	2	256	249	396	5	183
D	A3 (M) (north)	175	1	118	0	392	3	246	0

5.2.5. TRAFFIC REDISTRIBUTION

5.2.5.1. In order to in take into account the anticipated impacts of the construction of the Onshore Cable Corridor, adjustments have been made to the alternative DM scenario presented in Table 34 on the basis of the traffic redistribution set out in the DS scenarios of the SRTM outputs.

5.2.5.2. In order to calculate these adjustments, the difference in traffic flows (in PCU) between the DM scenario, and both DS scenarios was first calculated. These differences are set out in Table 35.

Table 35: SRTM flows: difference between DM scenario and DS1 / DS2

		DS1							
		AM Peak (08:00 – 09:00)				PM Peak (17:00 – 18:00)			
From / To		A	B	C	D	A	B	C	D
A	Dell Piece East	0	-34	-5	0	0	-1	-17	0
B	A3 (M) (south)	-1	0	25	0	-31	0	190	0
C	B2149 Dell Piece West	6	45	0	-46	6	0	0	16
D	A3 (M) (north)	-16	0	8	0	8	0	-36	0
		DS2							
		AM Peak (08:00 – 09:00)				PM Peak (17:00 – 18:00)			
From / To		A	B	C	D	A	B	C	D
A	Dell Piece East	0	-35	-5	0	0	-2	-17	0
B	A3 (M) (south)	-2	0	24	0	-31	0	185	0
C	B2149 Dell Piece West	7	46	0	-48	5	1	0	17
D	A3 (M) (north)	-17	0	8	0	8	0	-34	0

As can be seen in

5.2.5.3. Table 35, the differences between DS1/DS2 and the DM scenario are broadly aligned. As such, an average of these has been take forward for use in the calculation of the alternative DS scenario. The average DS flow difference when compared to the DM is set out in Table 36.

Table 36: Average difference between DM and DS scenarios

		AM Peak (08:00 – 09:00)				PM Peak (17:00 – 18:00)			
From / To		A	B	C	D	A	B	C	D
A	Dell Piece East	0	-34	-5	0	0	-1	-17	0
B	A3 (M) (south)	-2	0	24	0	-31	0	187	0
C	B2149 Dell Piece West	7	45	0	-47	6	1	0	16
D	A3 (M) (north)	-17	0	8	0	8	0	-35	0

5.2.5.4. In order to calculate the alternative DS scenario, the average difference between DM and DS scenarios has been applied to the alternative DM traffic flows which are set out in Table 34. The resultant traffic flows for the alternative DS scenario are set out in Table 37.

Table 37: Alternative DS scenario traffic flows

		AM Peak (08:00 – 09:00)				PM Peak (17:00 – 18:00)			
From / To		A	B	C	D	A	B	C	D
A	Dell Piece East	0	455	209	352	0	369	318	227
B	A3 (M) (south)	197	2	279	1	418	0	743	0
C	B2149 Dell Piece West	330	642	2	209	254	421	5	224
D	A3 (M) (north)	159	1	126	0	400	3	211	0

5.2.5.5. The traffic flows for the alternative DM and DS scenarios have been used in additional assessments undertaken in this section.

5.2.6. LANE SIMULATION RESULTS

5.2.6.1. This section sets out the lane simulation modelling results for Junction 2, A3 (M) when assessed using the alternative DM and DS scenarios detailed above.

5.2.6.2. The results for the DM scenario are included in Table 38, and the DS scenario in Table 39.

Table 38: Junction 2, A3 (M) Alternative DM Lane Simulation

Arm	Lane	AM peak (08:30 – 08:45)		PM peak (17:30 – 17:45)	
		Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
Dell Piece East	1 (left / ahead)	3	12	3	12
	2 (right / U-turn)	4	8	3	6
A3 (M) (south)	1 (left)	1	6	2	11
	2 (ahead / right / U-turn)	1	6	2	8
B2149 Dell Piece West	1 (left / ahead)	2	8	1	7
	2 (right / U-turn)	1	1	0	1
A3 (M) (north)	1 (left)	1	5	1	8
	2 (ahead / right / U-turn)	1	5	1	6

5.2.6.3. The results set out for the alternative DM scenario show the junction is able to operate with limited queueing and delay on all arms, in both the AM and PM peak periods.

Table 39: Junction 2, A3 (M) Alternative DS Lane Simulation

Arm	Lane	AM peak (08:30 – 08:45)		PM peak (17:30 – 17:45)	
		Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
Dell Piece East	1 (left / ahead)	3	11	3	12
	2 (right / U-turn)	2	4	2	5
A3 (M) (south)	1 (left)	1	6	6	22
	2 (ahead / right / U-turn)	1	6	1	8
B2149 Dell Piece West	1 (left / ahead)	2	7	1	7
	2 (right / U-turn)	1	1	0	1
A3 (M) (north)	1 (left)	1	5	1	8
	2 (ahead / right / U-turn)	1	5	1	6

5.2.6.4. As with the alternative DM scenario, the results for the alternative DS scenario also show minimal queueing and delays on all arms, with the redistribution of traffic associated with the construction of the Onshore Cable Corridor

5.2.7. LINSIG RESULTS

5.2.7.1. The alternative DM and DS scenarios have also been assessed in a LINSIG model which reflects the proposals to signalised this junction, which are detailed in Section 4 of this report. The assessment of the signalised junction using the alternative DM and DS scenarios are set out in Table 40 and Table 41 respectively.

Table 40: Junction 2, A3 (M) Alternative DM signalised assessment

	AM Peak			PM Peak		
	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)
Dell Piece East	73.4	10	16	75.1	12	20
A3 (M) South (off-slip)	48.8	6	34	75.1	14	33
B2149 Dell Piece West	56.3	10	16	50.5	8	22
A3 (M) North (off-slip)	35.0	4	36	55.3	8	33
Circulatory (east)	68.2	6	29	64.2	7	21
Circulatory (south)	54.9	4	7	75.5	8	17

Circulatory (west)	65.4	5	32	57.6	1	7
Circulatory (north)	59.0	4	8	62.5	8	13
	Cycle Time: 90s PRC: 22.6%			Cycle Time: 90s PRC: 19.3%		

5.2.7.2. The results set out demonstrate that the junction is within capacity in the AM and PM scenario when modelled using the alternative DM traffic flows. In both peaks queueing on both the A3 (M) slip roads can be contained without blocking back onto the mainline.

Table 41: Junction 2, A3 (M) Alternative DS signalised assessment

	AM Peak			PM Peak		
	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)
Dell Piece East	88.6	19	33	88.2	18	36
A3 (M) South (off-slip)	53.7	7	35	88.5	21	40
B2149 Dell Piece West	86.8	18	42	59.2	10	26
A3 (M) North (off-slip)	42.1	4	42	52.9	7	32
Circulatory (east)	49.6	5	12	46.7	6	12
Circulatory (south)	54.7	2	5	81.1	69	18
Circulatory (west)	40.9	7	33	49.8	2	8
Circulatory (north)	58.7	4	4	64.6	7	13
	Cycle Time: 90s PRC: 1.5%			Cycle Time: 90s PRC: 1.7%		

5.2.7.3. As with the results set out for the alternative DM scenario, the junction is again forecast to be operating within capacity in the DS scenario. AS with in the DM and queueing on slip roads can be accommodated for without blocking the mainline of the A3 (M).

5.2.8. SUMMARY

5.2.8.1. In summary, when modelled using the existing junction layout, both the alternative DM and DS scenarios are able to operate within capacity with minimal queueing and delay anticipated. When modelled using the signalisation scheme proposed for this junction, the junction is also able to operate within capacity with minimal queueing on slip roads and circulatory carriageways.

5.3. JUNCTION 3, A3 (M)

5.3.1.1. This section sets out the alternative scenario assessments undertaken for Junction 3, A3 (M).

5.3.2. OBSERVED TRAFFIC FLOWS

5.3.2.1. The Applicant undertook Manual Classified Turning Count (MCTC) traffic surveys at Junction 2 of the A3 (M) in September 2019. The full results of these traffic surveys can be seen in Appendix 2 and are replicated in Table 42 below for reference.

Table 42: Junction 3, A3 (M) - 2019 observed turning counts

		AM Peak (08:00 – 09:00)				PM Peak (17:00 – 18:00)			
From / To		A	B	C	D	A	B	C	D
A	Hulbert Road (east)	0	14	439	186	0	43	467	156
B	A3 (M) (south) off-slip	38	3	877	2	17	0	1134	0
C	B2150 Hulbert Road (west)	311	1348	6	370	279	705	25	252
D	A3 (M) (north) off-slip	203	3	295	0	312	0	502	0

5.3.2.2. As was undertaken for Junction 2, a growth factor was applied to growth the observed 2019 traffic flows to anticipated 2022 traffic levels. The locally adjusted growth factors used are set out in Table 43.

Table 43: Locally adjusted growth factor for Havant 006 (2019 – 2022)

Level	Area	Local Growth Figure (2019 – 2022)	
		AM Peak	PM Peak
E02004767	Havant 006	1.045934	1.043459

5.3.2.3. The resultant calculated 2022 traffic flows for Junction 3, A3 (M) are set out in Table 44. As there is data available regarding the committed development to be implemented by 2022 in the vicinity of this junction, no amendments have been made. As such, the 2022 turning counts set out in Table 44 has been used as the alternative DM scenario for the purpose of this assessment.

Table 44: 2022 Junction 3, A3 (M) turning counts (Alternative DM)

		AM Peak (08:00 – 09:00)				PM Peak (17:00 – 18:00)			
From / To		A	B	C	D	A	B	C	D
A	Hulbert Road (east)	0	15	459	195	0	45	487	163
B	A3 (M) (south) off-slip	40	3	917	2	18	0	1183	0
C	B2150 Hulbert Road (west)	325	1410	6	387	291	736	26	263
D	A3 (M) (north) off-slip	212	3	309	0	326	0	524	0

5.3.2.4. Using the same methodology which was applied when calculating the alternative DS scenario for Junction 2, in order to in take into account the anticipated impacts of the construction of the Onshore Cable Corridor, adjustments have been made to the alternative DM scenario presented in Table 44 on the basis of the traffic redistribution set out in the DS scenarios of the SRTM outputs.

5.3.2.5. In order to calculate these adjustments, the difference in traffic flows (in PCU) between the DM scenario, and both DS scenarios was first calculated. These differences are set out in Table 45.

Table 45: SRTM flows: difference between DM scenario and DS1 / DS2

		DS1							
		AM Peak (08:00 – 09:00)				PM Peak (17:00 – 18:00)			
From / To		A	B	C	D	A	B	C	D
A	Hulbert Road (east)	0	0	33	10	0	0	-8	70
B	A3 (M) (south) off-slip	0	0	97	0	0	0	85	0
C	B2150 Hulbert Road (west)	-2	-41	0	28	4	0	0	-177
D	A3 (M) (north) off-slip	7	0	-29	0	6	0	-22	0
		DS2							
		AM Peak (08:00 – 09:00)				PM Peak (17:00 – 18:00)			
From / To		A	B	C	D	A	B	C	D
A	Hulbert Road (east)	0	0	31	11	0	0	-14	70
B	A3 (M) (south) off-slip	0	0	91	0	0	0	92	0
C	B2150 Hulbert Road (west)	-4	-39	0	29	6	0	0	-175
D	A3 (M) (north) off-slip	7	0	-27	0	9	0	-24	0

5.3.2.6. As can be seen, the differences between DS1/DS2 and the DM scenario are broadly aligned. As such, an average of these has been take forward for use in the calculation of the alternative DS scenario. The average DS flow difference when compared to the DM is set out in Table 46.

Table 46: Average difference between DM and DS scenarios

		AM Peak (08:00 – 09:00)				PM Peak (17:00 – 18:00)			
From / To		A	B	C	D	A	B	C	D
A	Hulbert Road (east)	0	0	32	11	0	0	-11	70
B	A3 (M) (south) off-slip	0	0	94	0	0	0	89	0
C	B2150 Hulbert Road (west)	-3	-40	0	29	5	0	0	-176
D	A3 (M) (north) off-slip	7	0	-28	0	8	0	-23	0

5.3.2.7. In order to calculate the alternative DS scenario, the average difference between DM and DS scenarios has been applied to the alternative DM traffic flows which are set out in Table 44. The resultant traffic flows for the alternative DS scenario are set out in Table 47.

Table 47: Junction 3, A3 (M) alternative DS scenario turning counts

		AM Peak (08:00 – 09:00)				PM Peak (17:00 – 18:00)			
From / To		A	B	C	D	A	B	C	D
A	Hulbert Road (east)	0	15	491	205	0	45	476	233
B	A3 (M) (south) off-slip	40	3	1011	2	18	0	1272	0
C	B2150 Hulbert Road (west)	322	1370	6	416	296	736	26	87
D	A3 (M) (north) off-slip	219	3	280	0	333	0	501	0

5.3.2.8. The traffic flows for the alternative DM and DS scenarios have been used in additional assessments undertaken in this section.

5.3.3. LANE SIMULATION RESULTS

5.3.3.1. The results of the lane simulation tests undertaken for Junction 3, A3 (M) in the alternative DM and DS scenarios detailed above are set out in Table 48 and Table 49 respectively.

Table 48: Junction 3, A3 (M) Alternative DM results - Lane simulation

Arm	Lane	AM peak (08:30 – 08:45)		PM peak (17:30 – 17:30)	
		Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
Hulbert Road (east)	1 (left / ahead)	1	6	1	6
	2 (ahead / right / U-turn)	0	1	0	1
A3 (M) (south)	1 (left)	1	7	2	8
	2 (left / ahead / right / U-turn)	1	7	2	8
B2150 Hulbert Road (west)	1 (left)	2	6	1	5
	2 (left / ahead / right / U-turn)	41	84	2	6
A3 (M) (north)	1 (left /ahead)	1	6	1	7
	2 (right / U-turn)	1	7	2	10

5.3.3.4. The results set out for the alternative DM scenario demonstrate that all arms in the PM peak are able to operate with minimal queueing and delay. In the AM peak, all approaches other than the offside lane of the B2150 Hulbert Road (west) arm have minimal queueing and delay. The offside lane of the B2150 Hulbert Road (west) approach is forecast to have a queue of 41 PCU (246m) in the AM peak, this is not anticipated to block back to the junction of B2150 Hulbert Road / Frendstaple Road / Tempest Avenue.

Table 49: Junction 3, A3 (M) Alternative DS results - Lane simulation

Arm	Lane	AM peak (08:30 – 08:45)		PM peak (17:30 – 17:30)	
		Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
Hulbert Road (east)	1 (left / ahead)	1	6	1	6
	2 (ahead / right / U-turn)	0	1	1	1
A3 (M) (south)	1 (left)	1	7	3	10
	2 (left / ahead / right / U-turn)	2	7	3	10
B2150 Hulbert Road (west)	1 (left)	2	6	1	4
	2 (left / ahead / right / U-turn)	33	69	2	6
A3 (M) (north)	1 (left /ahead)	1	6	1	7
	2 (right / U-turn)	1	7	2	9

5.3.3.7. The results set out for the alternative DS scenario broadly align with the alternative DM. No one approach sees an increase of more than 1 PCU (6m).

5.3.4. SIGNALISED JUNCTION MODEL RESULTS

5.3.4.1. This section sets out the junction modelling results for the alternative DM and DS scenarios when modelled using linsig. As is discussed in Section 1, these models have been run for two different lane alignments of the A3 (M) south approach, one with prohibits use of the offside lane for left turners, and one which prohibits this movement.

A3 (M) south approach: left turn prohibited from offside lane

5.3.4.2. The results for the alternative DM and DS scenarios when modelled in linsig with use of the off side lane for left turners being prohibited are set out in Table 50 and Table 51 respectively.

Table 50: Junction 3, A3(M) – Alternative DM scenario (left turn prohibited)

	AM Peak			PM Peak		
	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)
Hulbert Road (East)	58.0	1	8	63.9	1	9
A3 (M) South off-slip	65.6	10	9	101.6	43	83
B2150 Hulbert Road (West)	150.0	307	654	78.3	2	9
A3 (M) North off-slip	54.8	1	7	80.0	2	14
Circulatory (south)	141.1	86	594	100.9	24	104
	Cycle Time: 60s PRC: -56.8%			Cycle Time: 60s PRC: -12.8%		

5.3.4.3. The results set out for the alternative DM scenario forecast the junction to be operating over its theoretical capacity in both the AM and PM peak. In the AM peak, the most extensive queueing is predicted for the B2150 Hulbert Road (west) approach, for which a queue of 307 PCU (1.9km) is forecast, this will block back through the next junction. Queueing on both slip roads in the AM peak is minimal.

5.3.4.4. In the PM peak, the longest anticipated queue is for the A3 (M) south off-slip, for which a queue of 43 PCU (258m) is forecast. This queue is not forecast to block back onto the northbound mainline of the A3 (M).

Table 51: Junction 3, A3(M) – Alternative DS scenario (left turn prohibited)

	AM Peak			PM Peak		
	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)
Hulbert Road (East)	60.8	1	8	70.5	2	11
A3 (M) South off-slip	72.3	12	11	109.2	83	191
B2150 Hulbert Road (West)	146.0	286	619	80.0	2	10
A3 (M) North off-slip	49.6	1	7	76.7	2	12
Circulatory (south)	142.8	89	609	103.8	31	138
	Cycle Time: 60s PRC: -62.2%			Cycle Time: 60s PRC: -21.3%		

5.3.4.5. The results for the alternative DS scenario demonstrate a slight decrease in queueing on the B2150 Hulbert Road (west) when compared to the DM scenario. In the PM peak, queueing on the A3 (M) south off slip is forecast to increase by 40 PCU (240m) to a total of 83 PCU (498m). This queue is forecast to block back on to the northbound mainline of the A3 (M).

A3 (M) south approach: left turn permitted from offside lane

5.3.4.6. The results for the alternative DM and DS scenarios when modelled in linsig with use of the off side lane for left turners being permitted are set out in Table 52and Table 53 respectively.

Table 52: Junction 3, A3(M) – Alternative DM scenario (left turn permitted)

	AM Peak			PM Peak		
	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)
Hulbert Road (East)	56.5	1	7	59.6	1	8
A3 (M) South off-slip	87.5	11	45	68.1	10	20
B2150 Hulbert Road (West)	153.0	317	670	78.3	2	9
A3 (M) North off-slip	54.2	1	7	80.0	2	14
Circulatory (south)	40.1	5	9	66.6	9	20
	Cycle Time: 60s PRC: 2.8%			Cycle Time: 60s PRC: 32.2%		

5.3.4.7. The results for the alternative DM scenario demonstrate minimal levels of queueing and delay on all approaches in the PM peak. In the AM peak, queueing is minimal on all approaches with the exception of B2150 Hulbert Road (west), which sees queueing of 317 PCU (1.9km) in the alternative DM. This level of queueing is anticipated to block back to the next junction.

Table 53: Junction 3, A3(M) – Alternative DS scenario (left turn permitted)

	AM Peak			PM Peak		
	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)	D.o.S (%)	MMQ (pcu)	Delay (s/pcu)
Hulbert Road (East)	64.1	1	9	63.7	1	9
A3 (M) South off-slip	98.1	19	83	70.3	11	20
B2150 Hulbert Road (West)	149.2	296	648	80.3	2	10
A3 (M) North off-slip	49.0	1	7	76.7	2	12
Circulatory (south)	39.5	5	9	71.3	10	22
	Cycle Time: 60s PRC: -9.0%			Cycle Time: 60s PRC: 26.3%		

5.3.4.8. In the alternative DS scenario, as with the alternative DM scenario for this lane allocation, the junction is able to operate within its theoretical capacity in the PM peak. In the AM peak, the extensive queueing which is forecast for the B2150 Hulbert Road (west) approach decreases by 21 PCU (126m). As with the DM scenario, both of the slip roads of the A3 (M) experience minimal queueing that can be accommodated without blocking back on to the mainline of the A3 (M).

5.3.5. SUMMARY

5.3.5.1. The results set out for Junction 3, A3 (M) demonstrate that the junction is able to operate relatively well when modelled in both the alternative DM and the alternative DS scenarios using the existing layout. When modelled with the proposed signalisation scheme, considerable queueing is forecast on the A3 (M) south slip road in the PM peak in both the alternative DM and alternative DS scenarios. However, when modelled permitting the use of both lanes of this approach to turn left on to B2150 Hulbert Road (west), as the junction currently operates, queueing on this arm decreases to minimal levels and can easily be accommodated on the off-slip without blocking back onto the mainline in both the alternative DM and alternative DS scenarios.

6. CONSTRUCTION METHODOLOGY

6.1. INTRODUCTION

6.1.1.1. This Section addresses Items 3, 4, 5, 6 and 7 of HE03, all of which relate to matters pertaining to the construction methodology and movement of construction traffic.

6.2. ITEM 3

6.2.1.1. Item 3 of HE03 is as follows:

> *"For both access and egress at the Farlington playing fields with regard to oversized vehicles, traffic management should be used"*

6.2.1.2. As is stated in paragraph 2.8.7.3. of the Framework Construction Traffic Management Plan (FCTMP) (REP1-070), management of Abnormal Loads will be the responsibility of the contractor appointed to undertake the works and they will be required to comply with the statutory regulations in terms of consulting with the highway authority, police and other stakeholders. In addition, Table 6 of the FCTMP notes that at the A2030 Eastern Road access to Farlington playing fields right turns out of the car park to Eastern Road should be prohibited and that construction traffic marshalling will be required. These measures are secured via Requirement 17 as set out within the draft Development Consent Order (dDCO) (REP1-021).

6.3. ITEM 4

6.3.1.1. Item 4 of HE03 is as follows:

> *"Access by a 20t tipper/11.7m rigid vehicle at the Farlington playing fields should also take place under traffic management control"*

6.3.1.2. As with Item 3, the Applicant has addressed this issue in the FCTMP (REP1-070) and therefore it is secured by the dDCO.

6.4. ITEM 5

6.4.1.1. Item 5 of HE03 is as follows:

> *"Proposed restrictions on the movement of HGV's during peak periods will still need to be more robust and should be formalised as protective provisions in the DCO"*

6.4.1.2. Proposed restrictions on the movements of HGV's are set out in Section 3.3.2. of the FCTMP (REP1-070). The FCTMP is secured via Requirement 17 of the dDCO.

6.5. ITEM 6

6.5.1.1. Item 6 of HE03 is as follows:

“The promoter of the Aquind Interconnector should work collaboratively with Highways England to co-ordinate matters such as temporary traffic signage in the event that the construction phases of the M27 J4 – J11 Smart Motorway Project and Aquind Interconnector scheme overlap.”

6.5.1.2. Permitted construction traffic routes are set out in Section 3.4 and Section 3.5 of the FCTMP (REP1-070). All of the FCTMP restrictions are secured via Requirement 17 of the dDCO.

6.6. ITEM 7

6.6.1.1. Item 7 of HE03 is as follows:

“*Once a construction contractor is appointed, the exact details of the construction phasing and duration of works should be provided*”

6.6.1.2. Highways England are included as an identified stakeholder within the Onshore Cable Route Construction Impacts on Access to Properties and Car Parking and Communication Strategy, included in Appendix 1 of the Framework Traffic Management Strategy (REP1-068). This means that Highways England will be kept informed of the programme throughout the construction phase of the development.

6.7. SUMMARY

6.7.1.1. This Section has addressed Items 4, 5, 6 and 7 of HE03 pertaining to construction methodology, and noted where each of HE’s concerns are addressed within the FCTMP (REP1-070) and / or dDCO (REP1-021).

7. OTHER MATTERS - ITEM 9

7.1.1.1. Item 9 of HE03 is as follows:

> *"With regard to A3(M) Junction 2, the AM peak ARCADY analysis for this junction should be provided"*

7.1.1.2. The Applicant provided revised ARCADY analysis of Junction 2, A3 (M) in both the AM and PM peak in 2.2 of this Technical Note.

REFERENCES

There are no sources in the current document.

Appendix 1 – A3 (M) Junction 2 Traffic Flow Diagrams with Construction Worker Traffic

Junction 2, A3 (M) - Traffic Flow Diagram

Note:
All data is Actual Flow in PCUs, Data presented is SRTM outputs with additional flows added where discussed in the the Technical Note
Construction traffic has been added to the PM peak in the DS1 and DS2 scenarios for the appropriate movements

ELM - Do Minimum

AM	1001	1002	1003	1004	1005	1006
1001	0	0	0	0	0	0
1002	0	0	162	0	0	788
1003	2	0	0	880	0	21
1004	0	0	0	0	0	0
1005	0	0	459	0	0	393
1006	597	0	145	560	0	0

IP	1001	1002	1003	1004	1005	1006
1001	0	0	0	0	0	0
1002	0	0	45	0	0	230
1003	47	0	0	931	0	126
1004	0	0	0	0	0	0
1005	0	0	383	0	0	305
1006	230	0	126	724	0	0

PM	1001	1002	1003	1004	1005	1006
1001	0	0	0	0	0	0
1002	0	0	72	0	0	434
1003	0	0	0	740	0	23
1004	0	0	0	0	0	0
1005	0	0	631	0	0	468
1006	405	0	121	1019	0	0

EMM - DS1 - Southbound Closure

AM	1001	1002	1003	1004	1005	1006
1001	0	0	0	0	0	0
1002	0	0	146	0	0	796
1003	2	0	0	847	0	16
1004	0	0	0	0	0	0
1005	0	0	458	0	0	418
1006	551	0	151	605	0	0

IP	1001	1002	1003	1004	1005	1006
1001	0	0	0	0	0	0
1002	0	0	36	0	0	232
1003	33	0	0	915	0	115
1004	0	0	0	0	0	0
1005	0	0	354	0	0	339
1006	246	0	141	742	0	0

PM	1001	1002	1003	1004	1005	1006
1001	0	0	0	0	0	0
1002	0	0	80	0	0	398
1003	0	0	0	739	0	6
1004	0	0	0	0	0	0
1005	0	0	600	0	0	657
1006	445	0	127	1044	0	0

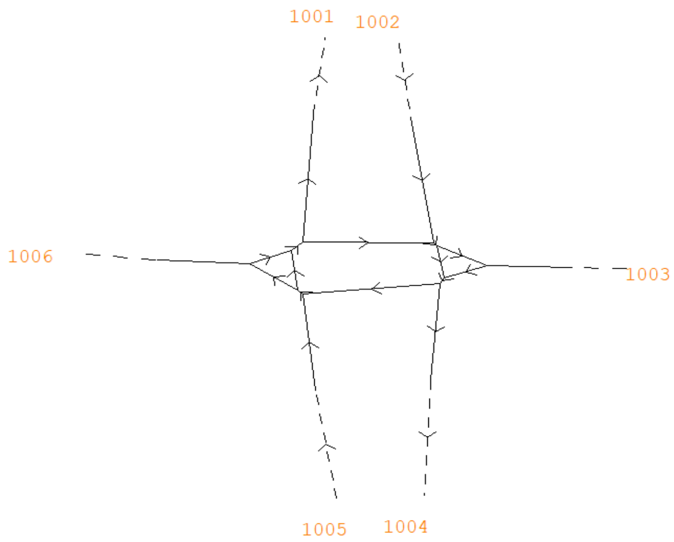
EML - DS2 - Northbound Closure

AM	1001	1002	1003	1004	1005	1006
1001	0	0	0	0	0	0
1002	0	0	145	0	0	796
1003	2	0	0	846	0	16
1004	0	0	0	0	0	0
1005	0	0	457	0	0	417
1006	549	0	152	606	0	0

IP	1001	1002	1003	1004	1005	1006
1001	0	0	0	0	0	0
1002	0	0	35	0	0	232
1003	33	0	0	914	0	114
1004	0	0	0	0	0	0
1005	0	0	353	0	0	339
1006	248	0	141	743	0	0

PM	1001	1002	1003	1004	1005	1006
1001	0	0	0	0	0	0
1002	0	0	80	0	0	400
1003	0	0	0	738	0	6
1004	0	0	0	0	0	0
1005	0	0	601	0	0	653
1006	446	0	126	1044	0	0

Ref	Arm
1001	A3(M) Northbound On-slip
1002	A3(M) Southbound Off-slip
1003	Dell Piece E
1004	A3(M) Southbound On-slip
1005	A3(M) Northbound Off-slip
1006	Dell Piece W

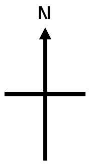


Appendix 2 – 2019 Traffic Surveys

CLASSIFIED TURNING COUNT

Project Reference		**Site ID**	Site 1			**Survey Date**	18/07/2019
Client		**Site Location**	Junction 2, A3 (M) - A3(M)/Dell Piece			**Survey Day**	Thursday
Survey Company Name	A-T-R	**Easting**		**Latitude**		**Survey Times**	0700-1000, 1200-1400, 1600-1900
Prepared by	GB	**Northing**		**Longitude**		**Weather conditions**	Sunny, Dry
Checked by	NT	**Link to location on Google Maps**	Click for location			**Incidents**	None
Comments						**Units**	

Site plan



Arm name	
A	A3 (M) North
B	Dell Piece East
C	A3 (M) South
D	Dell Piece West
E	
F	
G	

Matrices 8-9

CLASSIFIED TURNING COUNT	Time period	from	08:00	Average?	N	Arm order?	A
		to	09:00				E

Class: **Units:**

	Jct Node Number	Arm name	TO ARM A	B	C	D	E	F	G	Total
FROM ARM	A	A3 (M) North		159	1	112				272
	B	Dell Piece East	317		414	189				920
	C	A3 (M) South	1	163	2	242				408
	D	Dell Piece West	228	306	561	2				1097
	E									
	F									
	G									
Total			546	628	978	545				2697

Matrices 17-18

CLASSIFIED TURNING COUNT	Time period	from	17:00	Average?	N	Arm order?
		to	18:00			

Class: **Units:**

Jct Node Number		Arm name	A	B	C	D	E	F	G	Total
			TO ARM							
FROM ARM	A	A3 (M) North		355	3	231				589
	B	Dell Piece East	205		317	311				833
	C	A3 (M) South		372		523				895
	D	Dell Piece West	166	234	377	5				782
	E									
	F									
	G									
Total			371	961	697	1070				3099

Class: **Units:**

Site information

	Cells which require **no** user input
	Cells which require user input

CLASSIFIED TURNING COUNT

Project Reference		**Site ID**	Site 2			**Survey Date**	18/07/2019
Client		**Site Location**	Junction 3, A3 (M) - A3(M)/Hulbert Road			**Survey Day**	Thursday
Survey Company Name	A-T-R	**Easting**		**Latitude**		**Survey Times**	0700-1000, 1200-1400, 1600-1900
Prepared by	GB	**Northing**		**Longitude**		**Weather conditions**	Sunny, Dry
Checked by	NT	**Link to location on Google Maps**	[Click for location]			**Incidents**	None
Comments						**Units**	

Site plan

N

	Arm name
A	A3 (M) North
B	Hulbert Road East
C	A3 (M) South
D	Hulbert Road West
E	
F	
G	

Matrices 8-9

CLASSIFIED TURNING COUNT	Time period	from	08:00	Average?	N	Arm order?
		to	09:00			

Class: Units:

Jct Node Number		Arm name	A	B	C	D	E	F	G	Total
			TO ARM							
FROM ARM	A	A3 (M) North		203	3	295				501
	B	Hulbert Road East	186		14	439				639
	C	A3 (M) South	2	38	3	877				920
	D	Hulbert Road West	370	311	1348	6				2035
	E									
	F									
	G									
Total			558	552	1368	1617				4095

Matrices 17-18

CLASSIFIED TURNING COUNT	Time period	from	17:00	Average?	N	Arm order?
		to	18:00			

Class: **Units:**

	Jct Node Number	Arm name	A	B	C	TO ARM D	E	F	G	Total
FROM ARM	A	A3 (M) North		312		502				814
	B	Hulbert Road East	156		43	467				666
	C	A3 (M) South		17		1134				1151
	D	Hulbert Road West	252	279	705	25				1261
	E									
	F									
	G									
		Total	408	608	748	2128				3892

Appendix 3 – Adjusted Traffic Flows for A3 (M) Junction 3

Junction 3, A3 (M) Adjusted Turning Counts

Note:
All data is Actual Flow in PCUs, data presented is SRTM outputs with additional flows added where discussed within the Technical Note

ELM - Do Minimum

AM	1001	1002	1003	1004	1005	1006
1001	0	0	574	853	399	0
1002	252	0	0	733	0	0
1003	0	0	0	0	0	0
1004	257	0	404	0	15	0
1005	0	0	0	0	0	0
1006	1063	0	0	42	0	0

IP	1001	1002	1003	1004	1005	1006
1001	0	0	440	652	456	0
1002	263	0	0	837	0	0
1003	0	0	0	0	0	0
1004	259	0	149	0	0	0
1005	0	0	0	0	0	0
1006	845	0	0	0	0	0

PM	1001	1002	1003	1004	1005	1006
1001	0	0	818	52	703	0
1002	314	0	0	1150	0	0
1003	0	0	0	0	0	0
1004	464	0	141	0	48	0
1005	0	0	0	0	0	0
1006	1141	0	0	19	0	0

EMM - DS1 - Southbound Closure

AM	1001	1002	1003	1004	1005	1006
1001	0	0	603	851	358	0
1002	223	0	0	741	0	0
1003	0	0	0	0	0	0
1004	290	0	415	0	15	0
1005	0	0	0	0	0	0
1006	1160	0	0	42	0	0

IP	1001	1002	1003	1004	1005	1006
1001	0	0	320	605	329	0
1002	239	0	0	884	0	0
1003	0	0	0	0	0	0
1004	269	0	208	0	0	0
1005	0	0	0	0	0	0
1006	859	0	0	0	0	0

PM	1001	1002	1003	1004	1005	1006
1001	0	0	641	56	703	0
1002	292	0	0	1155	0	0
1003	0	0	0	0	0	0
1004	457	0	211	0	48	0
1005	0	0	0	0	0	0
1006	1226	0	0	19	0	0

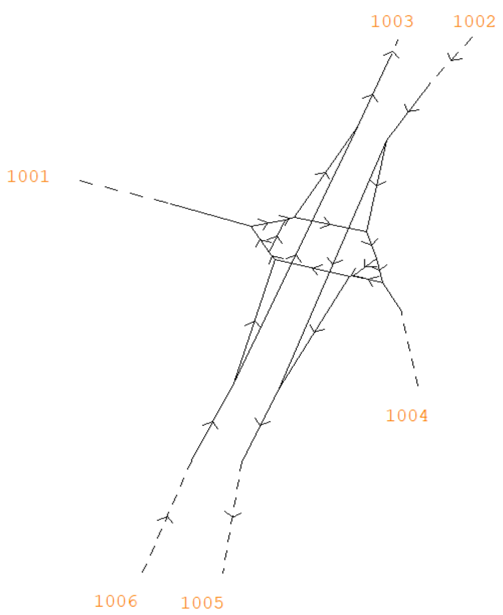
EML - DS2 - Northbound Closure

AM	1001	1002	1003	1004	1005	1006
1001	0	0	604	849	360	0
1002	224	0	0	740	0	0
1003	0	0	0	0	0	0
1004	289	0	416	0	15	0
1005	0	0	0	0	0	0
1006	1154	0	0	42	0	0

IP	1001	1002	1003	1004	1005	1006
1001	0	0	319	605	324	0
1002	239	0	0	884	0	0
1003	0	0	0	0	0	0
1004	272	0	208	0	0	0
1005	0	0	0	0	0	0
1006	858	0	0	0	0	0

PM	1001	1002	1003	1004	1005	1006
1001	0	0	643	58	703	0
1002	290	0	0	1159	0	0
1003	0	0	0	0	0	0
1004	450	0	211	0	48	0
1005	0	0	0	0	0	0
1006	1233	0	0	19	0	0

Ref	Arm
1001	B2150 Hulbert Road (west)
1002	A3(M) Southbound Off-slip
1003	A3(M) Northbound On-slip
1004	Hulbert Road (east)
1005	A3(M) Southbound On-slip
1006	A3(M) Northbound Off-slip



Appendix 4 – ARCADY Outputs for Lane Simulation Assessments

Junctions 9

ARCADY 9 - Roundabout Module

Filename: J2.j9
Path: \\uk.wspgroup.com\central data\Projects\62100xxx\62100616 - Aquind VO No.3\A DCO\POST SUBMISSION\D. EIA POST SUBMISSION\Transport\WIP\Reports\Highways England Response\20-08-21 HE Note TN03\HE Review 301120\App 4 - Lane Sim
Report generation date: 01/12/2020 11:38:08

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
[Lane Simulation] - ELM - DM										
Arm 1	D3	25.5	84.26		F	D4	5.9	25.30		D
Arm 2		2.1	8.10		A		4.4	11.77		B
Arm 3		3.9	9.38		A		44.3	83.09		F
Arm 4		7.8	26.69		D		1.1	7.32		A
[Lane Simulation] - EMM - DS1										
Arm 1	D5	15.6	53.37		F	D6	5.6	24.09		C
Arm 2		2.3	8.11		A		5.6	13.27		B
Arm 3		3.7	9.13		A		42.1	74.02		F
Arm 4		8.4	29.52		D		1.0	6.94		A
[Lane Simulation] - EML - DS2										
Arm 1	D7	16.6	58.38		F	D8	4.6	22.00		C
Arm 2		2.3	8.00		A		5.3	13.43		B
Arm 3		4.0	8.89		A		48.2	87.29		F
Arm 4		8.9	29.68		D		1.2	6.82		A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

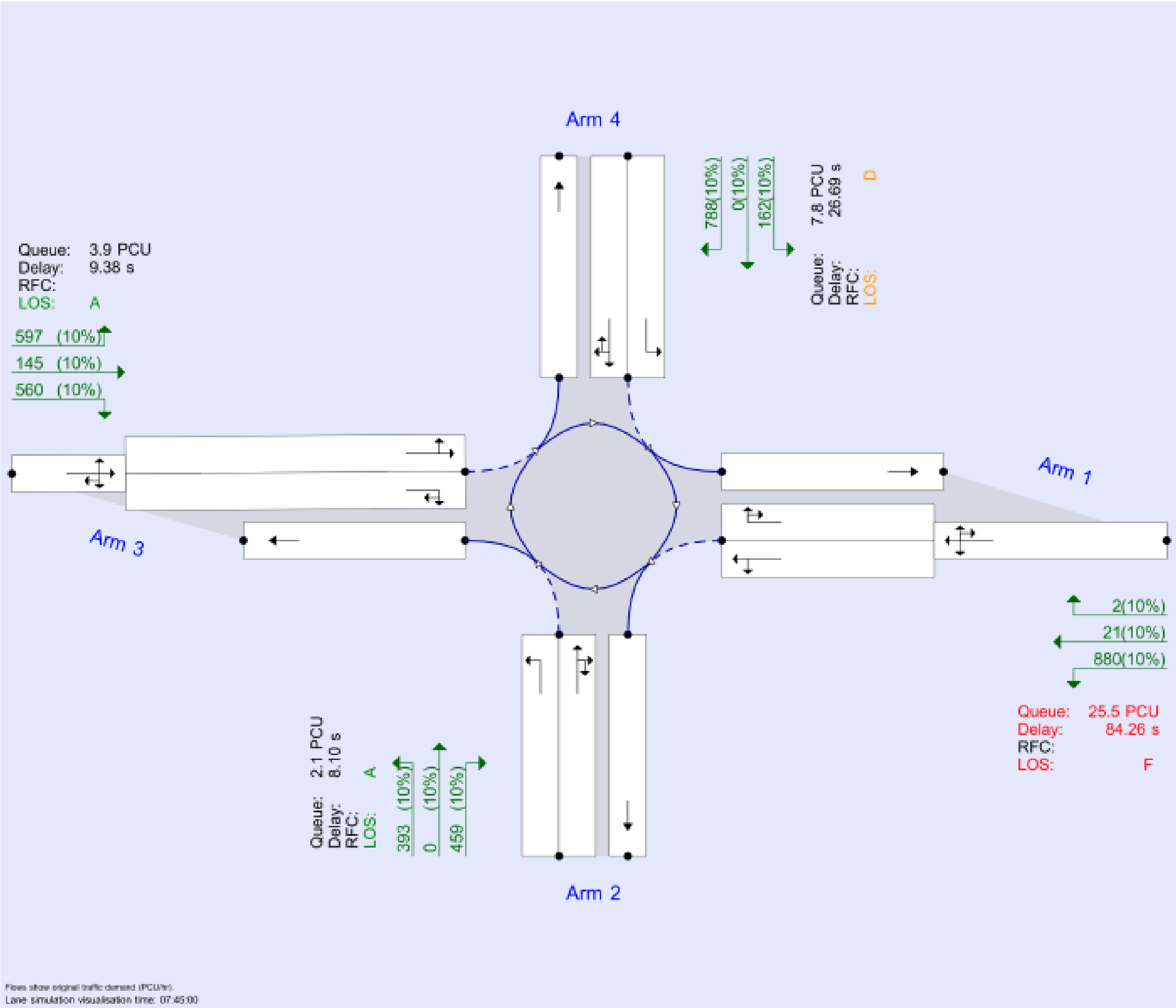
File summary

File Description

Title	Junction 2, A3(M)
Location	
Site number	
Date	26/09/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	62100616
Enumerator	CORP\UKAJT009
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓			188931048	183	37.27

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	ELM - DM	AM	ONE HOUR	07:45	09:15	15	✓
D4	ELM - DM	PM	ONE HOUR	16:45	18:15	15	✓
D5	EMM - DS1	AM	ONE HOUR	07:45	09:15	15	✓
D6	EMM - DS1	PM	ONE HOUR	16:45	18:15	15	✓
D7	EML - DS2	AM	ONE HOUR	07:45	09:15	15	✓
D8	EML - DS2	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	100.000	100.000

ELM - DM, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	30.09	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Dell Piece East	
2	A3(M) south	
3	B2149 Dell Piece West	
4	A3(M) north	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.50	7.60	23.4	45.0	125.0	7.0	
2	6.00	6.20	0.1	999.0	125.0	5.0	
3	3.50	8.50	26.4	50.0	125.0	10.0	
4	6.00	6.50	22.0	999.0	125.0	5.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1093	0.00
2	1048	165.00
3	233	0.00
4	839	150.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.891	2671
2	0.914	2342
3	1.100	3017
4	0.994	2574

The slope and intercept shown above include any corrections and adjustments.

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
1	Evenly split	10.00
2	Evenly split	10.00
3	Evenly split	10.00
4	Evenly split	10.00

Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised
1	Entry	1	1	2, 3	✓	5.00		1000	99999	
			2	1, 4	✓	5.00		1000	99999	
		2	1	(1, 2, 3, 4)		Infinity				
	Exit	1	1			Infinity				
2	Entry	1	1	3		Infinity		1000	99999	
			2	1, 2, 4		Infinity		1000	99999	
	Exit	1	1			Infinity				
3	Entry	1	1	1, 4	✓	8.00		1000	99999	
			2	2, 3	✓	8.00		1000	99999	
		2	1	(1, 2, 3, 4)		Infinity				
	Exit	1	1			Infinity				
4	Entry	1	1	1		Infinity		1000	99999	
			2	2, 3, 4		Infinity		1000	99999	
	Exit	1	1			Infinity				

Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
1	Entry	1	1	0.445	1335
			2	0.445	1335
2	Entry	1	1	0.457	1171
			2	0.457	1171
3	Entry	1	1	0.550	1509
			2	0.550	1509
4	Entry	1	1	0.497	1287
			2	0.497	1287

Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm			
			1	2	3	4
1	1	1		✓	✓	
		2	✓			✓
	2	1	✓	✓	✓	✓
2	1	1			✓	
		2	✓	✓		✓
3	1	1	✓			✓
		2		✓	✓	
	2	1	✓	✓	✓	✓
4	1	1	✓			
		2		✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	ELM - DM	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	903	100.000
2		ONE HOUR	✓	852	100.000
3		ONE HOUR	✓	1302	100.000
4		ONE HOUR	✓	950	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	880	21	2
	2	459	0	393	0
	3	145	560	0	597
	4	162	0	788	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	84.26	25.5	F	828	1243
2	8.10	2.1	A	785	1177
3	9.38	3.9	A	1192	1788
4	26.69	7.8	D	865	1298

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	686	171	1009	685	672	574	0.0	2.4	12.441	B
2	644	161	608	645	643	1086	0.0	1.2	5.988	A
3	973	243	348	971	975	905	0.0	1.6	4.997	A
4	704	176	876	707	704	443	0.0	1.9	9.176	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	803	201	1213	800	798	692	2.4	4.8	19.885	C
2	770	193	730	766	758	1283	1.2	1.6	6.577	A
3	1167	292	420	1168	1161	1077	1.6	2.2	6.070	A
4	848	212	1052	854	848	534	1.9	3.1	12.691	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1000	250	1485	956	938	848	4.8	19.0	52.014	F
2	941	235	901	947	933	1541	1.6	2.1	8.102	A
3	1425	356	510	1425	1417	1338	2.2	3.9	8.423	A
4	1047	262	1283	1050	1030	652	3.1	7.8	24.598	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1004	251	1467	977	976	849	19.0	25.5	84.259	F
2	941	235	878	949	937	1565	2.1	1.7	7.955	A
3	1434	358	516	1441	1432	1311	3.9	3.7	9.379	A
4	1033	258	1289	1028	1040	668	7.8	7.5	26.695	D

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	807	202	1225	845	883	683	25.5	7.5	54.901	F
2	765	191	735	764	762	1335	1.7	1.4	6.739	A
3	1179	295	407	1176	1177	1092	3.7	2.2	6.351	A
4	849	212	1048	860	874	535	7.5	2.8	15.181	C

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	671	168	997	673	700	582	7.5	2.2	16.337	C
2	647	162	594	643	637	1076	1.4	1.3	5.947	A
3	974	244	349	976	981	889	2.2	1.4	5.048	A
4	711	178	874	705	715	451	2.8	2.1	9.430	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	685	1000	0.685	683	670	0.0	2.0	10.246	B
			2	1, 4	1	1000	0.001	1	2	0.0	0.0	4.909	A
		2	1	(1, 2, 3, 4)	686			686	679	0.0	0.4	2.188	A
	Exit	1	1		574			574	575	0.0	0.0	0.000	A
2	Entry	1	1	3	298	1000	0.298	298	296	0.0	0.6	5.593	A
			2	1, 2, 4	345	1000	0.345	347	347	0.0	0.7	6.327	A
	Exit	1	1		1086			1086	1075	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	553	1317	0.420	552	555	0.0	1.0	5.315	A
			2	2, 3	420	1317	0.319	420	420	0.0	0.6	4.461	A
		2	1	(1, 2, 3, 4)	973			973	981	0.0	0.0	0.050	A
	Exit	1	1		905			905	896	0.0	0.0	0.000	A
4	Entry	1	1	1	118	1000	0.118	117	120	0.0	0.2	4.431	A
			2	2, 3, 4	587	1000	0.587	590	585	0.0	1.7	10.145	B
	Exit	1	1		443			443	448	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	794	1000	0.794	799	797	2.0	2.7	12.514	B
			2	1, 4	1	1000	0.001	1	1	0.0	0.0	3.404	A
		2	1	(1, 2, 3, 4)	803			796	801	0.4	2.2	7.342	A
	Exit	1	1		692			692	685	0.0	0.0	0.000	A
2	Entry	1	1	3	350	1000	0.350	348	347	0.6	0.7	6.286	A
			2	1, 2, 4	420	1000	0.420	419	412	0.7	0.9	6.820	A
	Exit	1	1		1283			1283	1275	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	664	1278	0.519	662	663	1.0	1.4	6.584	A
			2	2, 3	504	1278	0.394	504	499	0.6	0.8	5.148	A
		2	1	(1, 2, 3, 4)	1167			1167	1163	0.0	0.0	0.103	A
	Exit	1	1		1077			1077	1070	0.0	0.0	0.000	A
4	Entry	1	1	1	145	1000	0.145	145	145	0.2	0.2	4.756	A
			2	2, 3, 4	703	1000	0.703	709	703	1.7	2.9	14.316	B
	Exit	1	1		534			534	536	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	959	1000	0.959	954	935	2.7	4.7	16.108	C
			2	1, 4	2	1000	0.002	2	2	0.0	0.0	3.889	A
		2	1	(1, 2, 3, 4)	1000			960	946	2.2	14.3	35.867	E
	Exit	1	1		848			848	831	0.0	0.0	0.000	A
2	Entry	1	1	3	436	1000	0.436	439	431	0.7	1.0	7.363	A
			2	1, 2, 4	505	1000	0.505	508	502	0.9	1.2	8.737	A
	Exit	1	1		1541			1541	1522	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	818	1228	0.666	816	807	1.4	2.2	8.739	A
			2	2, 3	609	1228	0.496	609	609	0.8	1.4	6.449	A
		2	1	(1, 2, 3, 4)	1425			1427	1422	0.0	0.3	0.666	A
	Exit	1	1		1338			1338	1309	0.0	0.0	0.000	A
4	Entry	1	1	1	174	1000	0.174	174	173	0.2	0.3	4.677	A
			2	2, 3, 4	873	1000	0.873	876	856	2.9	7.6	28.570	D
	Exit	1	1		652			652	654	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	975	1000	0.975	975	973	4.7	4.6	16.952	C
			2	1, 4	2	1000	0.002	2	2	0.0	0.0	4.257	A
		2	1	(1, 2, 3, 4)	1004			977	975	14.3	20.9	67.235	F
	Exit	1	1		849			849	844	0.0	0.0	0.000	A
2	Entry	1	1	3	432	1000	0.432	435	430	1.0	0.6	7.251	A
			2	1, 2, 4	509	1000	0.509	514	507	1.2	1.0	8.555	A
	Exit	1	1		1565			1565	1566	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	822	1225	0.671	825	817	2.2	2.1	9.526	A
			2	2, 3	619	1225	0.505	615	615	1.4	1.4	6.797	A
		2	1	(1, 2, 3, 4)	1434			1440	1431	0.3	0.3	1.024	A
	Exit	1	1		1311			1311	1316	0.0	0.0	0.000	A
4	Entry	1	1	1	176	1000	0.176	176	176	0.3	0.3	4.794	A
			2	2, 3, 4	858	1000	0.858	851	864	7.6	7.3	31.140	D
	Exit	1	1		668			668	658	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	839	1000	0.839	843	881	4.6	3.2	14.804	B
			2	1, 4	2	1000	0.002	2	2	0.0	0.0	3.361	A
		2	1	(1, 2, 3, 4)	807			841	877	20.9	4.3	40.446	E
	Exit	1	1		683			683	686	0.0	0.0	0.000	A
2	Entry	1	1	3	360	1000	0.360	359	355	0.6	0.6	6.373	A
			2	1, 2, 4	406	1000	0.406	405	407	1.0	0.9	7.058	A
	Exit	1	1		1335			1335	1370	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	666	1285	0.518	664	667	2.1	1.2	6.847	A
			2	2, 3	512	1285	0.399	512	509	1.4	1.0	5.404	A
		2	1	(1, 2, 3, 4)	1179			1178	1172	0.3	0.1	0.136	A
	Exit	1	1		1092			1092	1102	0.0	0.0	0.000	A
4	Entry	1	1	1	147	1000	0.147	147	148	0.3	0.2	4.514	A
			2	2, 3, 4	702	1000	0.702	713	726	7.3	2.6	17.396	C
	Exit	1	1		535			535	538	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	673	1000	0.672	671	699	3.2	2.0	10.904	B
			2	1, 4	2	1000	0.002	2	2	0.0	0.0	3.833	A
		2	1	(1, 2, 3, 4)	671			674	695	4.3	0.2	5.599	A
	Exit	1	1		582			582	578	0.0	0.0	0.000	A
2	Entry	1	1	3	299	1000	0.299	297	296	0.6	0.7	5.603	A
			2	1, 2, 4	348	1000	0.348	347	341	0.9	0.6	6.245	A
	Exit	1	1		1076			1076	1103	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	559	1317	0.425	560	561	1.2	0.9	5.303	A
			2	2, 3	416	1317	0.316	417	420	1.0	0.6	4.560	A
		2	1	(1, 2, 3, 4)	974			975	978	0.1	0.0	0.063	A
	Exit	1	1		889			889	902	0.0	0.0	0.000	A
4	Entry	1	1	1	126	1000	0.126	125	124	0.2	0.2	4.596	A
			2	2, 3, 4	585	1000	0.585	580	591	2.6	1.9	10.454	B
	Exit	1	1		451			451	451	0.0	0.0	0.000	A

ELM - DM, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	41.96	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1093	0.00
2	1048	165.00
3	233	0.00
4	839	150.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	ELM - DM	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	763	100.000
2		ONE HOUR	✓	1099	100.000
3		ONE HOUR	✓	1545	100.000
4		ONE HOUR	✓	506	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	740	23	0
	2	631	0	468	0
	3	121	1019	0	405
	4	72	0	434	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	25.30	5.9	D	696	1044
2	11.77	4.4	B	1016	1523
3	83.09	44.3	F	1419	2128
4	7.32	1.1	A	464	697

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	576	144	1084	576	570	624	0.0	1.5	9.603	A
2	835	209	338	832	824	1322	0.0	1.8	6.884	A
3	1158	290	480	1161	1155	691	0.0	2.4	7.552	A
4	374	93	1334	375	383	307	0.0	0.6	5.834	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	674	169	1305	673	677	742	1.5	2.4	12.407	B
2	989	247	412	991	986	1565	1.8	2.4	8.388	A
3	1391	348	569	1387	1370	834	2.4	5.4	12.157	B
4	457	114	1591	456	457	366	0.6	0.8	6.375	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	840	210	1555	848	823	907	2.4	5.3	22.966	C
2	1217	304	508	1214	1210	1894	2.4	4.4	11.656	B
3	1696	424	699	1620	1605	1023	5.4	29.2	42.779	E
4	564	141	1898	564	556	421	0.8	1.1	7.148	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	842	210	1570	838	839	906	5.3	5.9	25.304	D
2	1221	305	501	1226	1220	1907	4.4	3.8	11.771	B
3	1703	426	699	1647	1643	1028	29.2	44.3	83.088	F
4	554	138	1920	555	554	426	1.1	1.0	7.315	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	677	169	1370	676	698	747	5.9	2.5	14.521	B
2	1000	250	419	998	1001	1627	3.8	2.5	8.575	A
3	1398	349	567	1468	1533	851	44.3	9.6	50.090	F
4	462	115	1656	461	458	379	1.0	0.9	6.357	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	567	142	1088	564	572	623	2.5	1.8	9.906	A
2	831	208	340	833	830	1312	2.5	1.5	6.853	A
3	1166	292	480	1158	1190	693	9.6	3.0	9.636	A
4	377	94	1336	375	381	302	0.9	0.6	5.682	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	576	1000	0.576	576	570	0.0	1.4	8.627	A
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	576			576	575	0.0	0.1	0.968	A
	Exit	1	1		624			624	618	0.0	0.0	0.000	A
2	Entry	1	1	3	353	1022	0.345	353	351	0.0	0.6	5.936	A
			2	1, 2, 4	482	1022	0.472	480	472	0.0	1.1	7.589	A
	Exit	1	1		1322			1322	1315	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	398	1245	0.319	397	392	0.0	0.6	4.757	A
			2	2, 3	762	1245	0.612	764	763	0.0	1.7	8.245	A
		2	1	(1, 2, 3, 4)	1158			1160	1164	0.0	0.1	0.486	A
	Exit	1	1		691			691	697	0.0	0.0	0.000	A
4	Entry	1	1	1	55	1000	0.055	55	55	0.0	0.1	4.247	A
			2	2, 3, 4	319	1000	0.319	320	328	0.0	0.5	6.098	A
	Exit	1	1		307			307	301	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	673	1000	0.673	673	677	1.4	1.9	10.163	B
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	674			673	679	0.1	0.5	2.230	A
	Exit	1	1		742			742	739	0.0	0.0	0.000	A
2	Entry	1	1	3	422	1006	0.419	422	420	0.6	0.9	6.800	A
			2	1, 2, 4	567	1006	0.564	569	566	1.1	1.5	9.565	A
	Exit	1	1		1565			1565	1557	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	474	1196	0.397	474	470	0.6	0.8	5.785	A
			2	2, 3	915	1196	0.765	912	900	1.7	3.4	11.767	B
		2	1	(1, 2, 3, 4)	1391			1389	1378	0.1	1.2	2.405	A
	Exit	1	1		834			834	832	0.0	0.0	0.000	A
4	Entry	1	1	1	65	1000	0.065	64	65	0.1	0.1	4.216	A
			2	2, 3, 4	392	1000	0.392	392	392	0.5	0.6	6.732	A
	Exit	1	1		366			366	362	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	845	1000	0.845	848	823	1.9	3.1	13.224	B
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	840			845	828	0.5	2.2	9.692	A
	Exit	1	1		907			907	900	0.0	0.0	0.000	A
2	Entry	1	1	3	514	1000	0.514	515	515	0.9	1.1	8.474	A
			2	1, 2, 4	703	1000	0.702	699	694	1.5	3.2	13.993	B
	Exit	1	1		1894			1894	1858	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	548	1124	0.487	547	545	0.8	1.2	7.530	A
			2	2, 3	1075	1124	0.957	1073	1060	3.4	6.6	19.781	C
		2	1	(1, 2, 3, 4)	1696			1623	1620	1.2	21.3	26.986	D
	Exit	1	1		1023			1023	1016	0.0	0.0	0.000	A
4	Entry	1	1	1	82	1000	0.082	82	81	0.1	0.1	4.144	A
			2	2, 3, 4	483	1000	0.483	482	475	0.6	1.1	7.658	A
	Exit	1	1		421			421	420	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	841	1000	0.841	838	839	3.1	3.3	13.585	B
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	842			841	840	2.2	2.7	11.725	B
	Exit	1	1		906			906	907	0.0	0.0	0.000	A
2	Entry	1	1	3	523	1001	0.522	527	517	1.1	1.1	8.220	A
			2	1, 2, 4	699	1001	0.698	699	703	3.2	2.7	14.386	B
	Exit	1	1		1907			1907	1901	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	554	1125	0.493	554	556	1.2	1.3	8.307	A
			2	2, 3	1092	1125	0.971	1094	1087	6.6	6.8	22.411	C
		2	1	(1, 2, 3, 4)	1703			1647	1644	21.3	36.1	65.397	F
	Exit	1	1		1028			1028	1018	0.0	0.0	0.000	A
4	Entry	1	1	1	79	1000	0.079	79	78	0.1	0.1	4.459	A
			2	2, 3, 4	475	1000	0.475	476	475	1.1	0.9	7.783	A
	Exit	1	1		426			426	430	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	677	1000	0.677	676	698	3.3	2.0	10.750	B
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	677			677	693	2.7	0.5	3.861	A
	Exit	1	1		747			747	759	0.0	0.0	0.000	A
2	Entry	1	1	3	433	1006	0.430	431	425	1.1	1.0	7.226	A
			2	1, 2, 4	566	1006	0.563	567	576	2.7	1.5	9.580	A
	Exit	1	1		1627			1627	1692	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	494	1197	0.413	495	517	1.3	0.8	7.000	A
			2	2, 3	968	1197	0.809	973	1016	6.8	3.8	17.646	C
		2	1	(1, 2, 3, 4)	1398			1463	1519	36.1	5.0	36.531	E
	Exit	1	1		851			851	841	0.0	0.0	0.000	A
4	Entry	1	1	1	65	1000	0.065	65	63	0.1	0.1	4.299	A
			2	2, 3, 4	397	1000	0.397	397	395	0.9	0.9	6.687	A
	Exit	1	1		379			379	397	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	566	1000	0.566	564	572	2.0	1.5	8.758	A
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	567			566	570	0.5	0.3	1.181	A
	Exit	1	1		623			623	621	0.0	0.0	0.000	A
2	Entry	1	1	3	354	1023	0.346	353	353	1.0	0.6	6.057	A
			2	1, 2, 4	478	1023	0.467	480	477	1.5	0.9	7.442	A
	Exit	1	1		1312			1312	1346	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	395	1245	0.317	394	399	0.8	0.6	4.873	A
			2	2, 3	769	1245	0.618	765	791	3.8	2.1	9.294	A
		2	1	(1, 2, 3, 4)	1166			1164	1182	5.0	0.3	1.991	A
	Exit	1	1		693			693	698	0.0	0.0	0.000	A
4	Entry	1	1	1	53	1000	0.053	52	53	0.1	0.1	4.344	A
			2	2, 3, 4	324	1000	0.324	323	328	0.9	0.5	5.898	A
	Exit	1	1		302			302	307	0.0	0.0	0.000	A

EMM - DS1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	23.35	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1093	0.00
2	1048	165.00
3	233	0.00
4	839	150.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	EMM - DS1	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	865	100.000
2		ONE HOUR	✓	876	100.000
3		ONE HOUR	✓	1307	100.000
4		ONE HOUR	✓	942	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	847	16	2
	2	458	0	418	0
	3	151	605	0	551
	4	146	0	796	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	53.37	15.6	F	793	1190
2	8.11	2.3	A	801	1202
3	9.13	3.7	A	1193	1789
4	29.52	8.4	D	865	1298

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	649	162	1052	652	645	550	0.0	1.8	11.131	B
2	646	162	611	649	655	1093	0.0	1.0	5.910	A
3	984	246	336	982	979	924	0.0	1.5	4.883	A
4	713	178	897	704	705	420	0.0	2.2	9.601	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	764	191	1261	766	770	675	1.8	3.7	17.035	C
2	791	198	730	791	783	1297	1.0	1.6	6.667	A
3	1173	293	416	1174	1177	1104	1.5	2.0	6.011	A
4	838	209	1092	844	839	498	2.2	2.8	12.877	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	962	240	1535	932	921	833	3.7	12.6	35.924	E
2	978	245	894	977	960	1572	1.6	2.0	7.610	A
3	1429	357	508	1427	1433	1363	2.0	3.5	8.429	A
4	1044	261	1333	1035	1019	603	2.8	8.2	23.496	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	960	240	1545	946	947	849	12.6	15.6	53.373	F
2	977	244	905	977	987	1586	2.0	2.3	8.113	A
3	1423	356	521	1424	1442	1362	3.5	3.7	9.134	A
4	1039	260	1351	1044	1028	594	8.2	8.4	29.517	D

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	769	192	1262	788	814	676	15.6	4.8	32.721	D
2	773	193	727	777	785	1322	2.3	1.2	6.834	A
3	1181	295	409	1186	1186	1095	3.7	2.0	6.281	A
4	845	211	1093	845	873	502	8.4	3.4	15.630	C

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	655	164	1054	656	669	551	4.8	2.3	13.414	B
2	644	161	613	642	652	1096	1.2	1.3	6.129	A
3	966	242	330	968	982	925	2.0	1.3	4.931	A
4	713	178	894	711	720	404	3.4	2.1	9.578	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	647	1000	0.646	650	643	0.0	1.8	9.512	A
			2	1, 4	2	1000	0.002	2	2	0.0	0.0	3.853	A
		2	1	(1, 2, 3, 4)	649			649	651	0.0	0.2	1.624	A
	Exit	1	1		550			550	557	0.0	0.0	0.000	A
2	Entry	1	1	3	312	1000	0.312	315	317	0.0	0.5	5.919	A
			2	1, 2, 4	334	1000	0.334	334	338	0.0	0.5	5.902	A
	Exit	1	1		1093			1093	1084	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	529	1324	0.400	528	527	0.0	0.8	5.006	A
			2	2, 3	454	1324	0.343	454	452	0.0	0.7	4.706	A
		2	1	(1, 2, 3, 4)	984			984	985	0.0	0.0	0.016	A
	Exit	1	1		924			924	927	0.0	0.0	0.000	A
4	Entry	1	1	1	107	1000	0.107	107	106	0.0	0.1	4.423	A
			2	2, 3, 4	606	1000	0.606	598	599	0.0	2.0	10.509	B
	Exit	1	1		420			420	416	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	768	1000	0.768	765	769	1.6	2.7	11.796	B
			2	1, 4	0.96	1000	0.001	1	1	0.0	0.0	3.051	A
		2	1	(1, 2, 3, 4)	764			769	775	0.2	1.0	5.228	A
	Exit	1	1		675			675	670	0.0	0.0	0.000	A
2	Entry	1	1	3	375	1000	0.375	376	375	0.5	0.8	6.357	A
			2	1, 2, 4	416	1000	0.416	415	408	0.5	0.9	6.950	A
	Exit	1	1		1297			1297	1302	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	629	1280	0.492	629	629	0.8	1.2	6.064	A
			2	2, 3	545	1280	0.426	547	547	0.7	0.8	5.639	A
		2	1	(1, 2, 3, 4)	1173			1175	1179	0.0	0.0	0.144	A
	Exit	1	1		1104			1104	1099	0.0	0.0	0.000	A
4	Entry	1	1	1	128	1000	0.128	129	130	0.1	0.2	4.690	A
			2	2, 3, 4	710	1000	0.710	716	710	2.0	2.6	14.358	B
	Exit	1	1		498			498	498	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	932	1000	0.932	930	919	2.7	4.2	14.669	B
			2	1, 4	2	1000	0.002	2	3	0.0	0.0	4.197	A
		2	1	(1, 2, 3, 4)	962			934	928	1.0	8.4	21.238	C
	Exit	1	1		833			833	831	0.0	0.0	0.000	A
2	Entry	1	1	3	472	1000	0.472	471	458	0.8	1.1	7.222	A
			2	1, 2, 4	507	1000	0.507	506	502	0.9	0.9	7.963	A
	Exit	1	1		1572			1572	1563	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	769	1229	0.626	765	770	1.2	2.0	8.489	A
			2	2, 3	657	1229	0.534	662	663	0.8	1.0	7.136	A
		2	1	(1, 2, 3, 4)	1429			1426	1437	0.0	0.5	0.557	A
	Exit	1	1		1363			1363	1332	0.0	0.0	0.000	A
4	Entry	1	1	1	161	1000	0.161	162	163	0.2	0.2	4.856	A
			2	2, 3, 4	883	1000	0.883	872	856	2.6	8.0	26.968	D
	Exit	1	1		603			603	607	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	946	1000	0.946	945	945	4.2	4.3	15.954	C
			2	1, 4	1	1000	0.001	1	2	0.0	0.0	3.632	A
		2	1	(1, 2, 3, 4)	960			947	947	8.4	11.2	37.347	E
	Exit	1	1		849			849	837	0.0	0.0	0.000	A
2	Entry	1	1	3	454	1000	0.454	458	458	1.1	0.8	7.702	A
			2	1, 2, 4	523	1000	0.523	520	509	0.9	1.5	8.480	A
	Exit	1	1		1586			1586	1597	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	765	1222	0.626	764	772	2.0	1.9	8.781	A
			2	2, 3	662	1222	0.542	660	669	1.0	1.5	7.341	A
		2	1	(1, 2, 3, 4)	1423			1427	1443	0.5	0.3	1.027	A
	Exit	1	1		1362			1362	1345	0.0	0.0	0.000	A
4	Entry	1	1	1	160	1000	0.160	159	158	0.2	0.3	4.592	A
			2	2, 3, 4	879	1000	0.879	885	869	8.0	8.1	34.092	D
	Exit	1	1		594			594	605	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	783	1000	0.783	786	812	4.3	2.6	13.766	B
			2	1, 4	2	1000	0.002	2	2	0.0	0.0	4.530	A
		2	1	(1, 2, 3, 4)	769			785	807	11.2	2.2	19.219	C
	Exit	1	1		676			676	683	0.0	0.0	0.000	A
2	Entry	1	1	3	366	1000	0.366	369	373	0.8	0.5	6.513	A
			2	1, 2, 4	407	1000	0.407	407	413	1.5	0.7	7.127	A
	Exit	1	1		1322			1322	1348	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	630	1284	0.491	636	635	1.9	1.0	6.530	A
			2	2, 3	552	1284	0.430	550	551	1.5	0.9	5.678	A
		2	1	(1, 2, 3, 4)	1181			1182	1180	0.3	0.0	0.154	A
	Exit	1	1		1095			1095	1128	0.0	0.0	0.000	A
4	Entry	1	1	1	133	1000	0.133	133	132	0.3	0.2	4.587	A
			2	2, 3, 4	712	1000	0.712	712	741	8.1	3.2	17.632	C
	Exit	1	1		502			502	499	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	654	1000	0.654	654	667	2.6	1.9	10.452	B
			2	1, 4	2	1000	0.002	2	2	0.0	0.0	4.141	A
		2	1	(1, 2, 3, 4)	655			655	666	2.2	0.4	3.049	A
	Exit	1	1		551			551	564	0.0	0.0	0.000	A
2	Entry	1	1	3	312	1000	0.312	313	313	0.5	0.5	5.965	A
			2	1, 2, 4	332	1000	0.332	328	338	0.7	0.8	6.281	A
	Exit	1	1		1096			1096	1108	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	514	1327	0.387	516	530	1.0	0.7	5.208	A
			2	2, 3	453	1327	0.341	453	452	0.9	0.6	4.537	A
		2	1	(1, 2, 3, 4)	966			967	979	0.0	0.0	0.032	A
	Exit	1	1		925			925	933	0.0	0.0	0.000	A
4	Entry	1	1	1	109	1000	0.109	110	111	0.2	0.1	4.426	A
			2	2, 3, 4	604	1000	0.604	601	609	3.2	2.0	10.520	B
	Exit	1	1		404			404	417	0.0	0.0	0.000	A

EMM - DS1, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	38.37	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1093	0.00
2	1048	165.00
3	233	0.00
4	839	150.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	EMM - DS1	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	745	100.000
2		ONE HOUR	✓	1257	100.000
3		ONE HOUR	✓	1616	100.000
4		ONE HOUR	✓	478	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	739	6	0
	2	600	0	657	0
	3	127	1044	0	445
	4	80	0	398	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	24.09	5.6	C	688	1033
2	13.27	5.6	B	1158	1737
3	74.02	42.1	F	1482	2224
4	6.94	1.0	A	443	665

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	578	145	1087	578	556	613	0.0	1.4	9.456	A
2	980	245	300	977	943	1363	0.0	2.5	7.343	A
3	1225	306	459	1226	1218	818	0.0	2.6	7.337	A
4	358	89	1341	360	357	345	0.0	0.5	5.557	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	674	168	1301	676	664	730	1.4	2.2	12.370	B
2	1129	282	366	1131	1121	1611	2.5	3.1	8.959	A
3	1443	361	543	1456	1438	954	2.6	5.0	12.855	B
4	434	109	1598	433	431	400	0.5	0.8	6.008	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	835	209	1536	827	805	882	2.2	5.2	19.969	C
2	1391	348	442	1381	1366	1922	3.1	5.5	12.441	B
3	1765	441	655	1708	1686	1168	5.0	26.6	38.285	E
4	524	131	1890	528	528	473	0.8	0.8	6.910	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	828	207	1562	825	827	872	5.2	5.6	24.087	C
2	1364	341	459	1359	1385	1928	5.5	5.6	13.271	B
3	1779	445	643	1724	1715	1175	26.6	42.1	74.015	F
4	542	136	1894	540	527	474	0.8	1.0	6.936	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	655	164	1347	661	680	732	5.6	2.5	14.922	B
2	1143	286	370	1137	1149	1638	5.6	3.4	9.699	A
3	1469	367	538	1519	1586	969	42.1	8.8	44.848	E
4	436	109	1645	434	432	412	1.0	0.7	6.119	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	561	140	1087	558	569	600	2.5	1.6	9.451	A
2	942	236	311	943	943	1335	3.4	2.0	7.229	A
3	1214	304	447	1213	1243	807	8.8	2.8	9.085	A
4	366	91	1324	364	360	336	0.7	0.7	5.444	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	579	1001	0.579	578	556	0.0	1.3	8.471	A
			2	1, 4	0	1001	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	578			579	561	0.0	0.1	0.978	A
	Exit	1	1		613			613	601	0.0	0.0	0.000	A
2	Entry	1	1	3	522	1036	0.504	517	498	0.0	1.4	7.548	A
			2	1, 2, 4	458	1036	0.442	459	446	0.0	1.0	7.114	A
	Exit	1	1		1363			1363	1343	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	438	1256	0.349	436	427	0.0	0.7	4.827	A
			2	2, 3	787	1256	0.626	790	791	0.0	1.8	8.133	A
		2	1	(1, 2, 3, 4)	1225			1225	1228	0.0	0.1	0.358	A
	Exit	1	1		818			818	797	0.0	0.0	0.000	A
4	Entry	1	1	1	63	1000	0.063	63	62	0.0	0.0	4.343	A
			2	2, 3, 4	295	1000	0.295	296	295	0.0	0.5	5.812	A
	Exit	1	1		345			345	333	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	673	1000	0.673	676	664	1.3	1.8	10.020	B
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	674			673	666	0.1	0.4	2.339	A
	Exit	1	1		730			730	719	0.0	0.0	0.000	A
2	Entry	1	1	3	587	1015	0.578	588	585	1.4	1.7	9.272	A
			2	1, 2, 4	542	1015	0.534	543	536	1.0	1.4	8.618	A
	Exit	1	1		1611			1611	1591	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	514	1210	0.425	514	505	0.7	0.9	5.862	A
			2	2, 3	938	1210	0.775	942	933	1.8	3.2	12.147	B
		2	1	(1, 2, 3, 4)	1443			1452	1444	0.1	0.8	2.891	A
	Exit	1	1		954			954	949	0.0	0.0	0.000	A
4	Entry	1	1	1	73	1000	0.073	74	73	0.0	0.1	4.380	A
			2	2, 3, 4	361	1000	0.361	359	358	0.5	0.7	6.336	A
	Exit	1	1		400			400	394	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	826	1000	0.826	827	805	1.8	2.9	12.585	B
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	835			826	810	0.4	2.3	7.319	A
	Exit	1	1		882			882	871	0.0	0.0	0.000	A
2	Entry	1	1	3	726	1004	0.723	726	717	1.7	2.8	13.490	B
			2	1, 2, 4	665	1004	0.662	655	648	1.4	2.6	11.284	B
	Exit	1	1		1922			1922	1886	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	604	1149	0.525	607	600	0.9	1.4	8.242	A
			2	2, 3	1105	1149	0.962	1101	1086	3.2	6.6	19.003	C
		2	1	(1, 2, 3, 4)	1765			1708	1702	0.8	18.5	22.937	C
	Exit	1	1		1168			1168	1161	0.0	0.0	0.000	A
4	Entry	1	1	1	91	1000	0.091	92	90	0.1	0.1	4.431	A
			2	2, 3, 4	432	1000	0.432	435	439	0.7	0.7	7.410	A
	Exit	1	1		473			473	467	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	829	1000	0.829	825	827	2.9	3.3	13.264	B
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	828			829	829	2.3	2.3	10.833	B
	Exit	1	1		872			872	882	0.0	0.0	0.000	A
2	Entry	1	1	3	716	1003	0.714	716	725	2.8	3.0	14.389	B
			2	1, 2, 4	648	1003	0.646	643	660	2.6	2.5	12.042	B
	Exit	1	1		1928			1928	1926	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	611	1155	0.529	614	610	1.4	1.4	8.935	A
			2	2, 3	1114	1155	0.964	1110	1105	6.6	7.0	21.300	C
		2	1	(1, 2, 3, 4)	1779			1724	1716	18.5	33.8	57.094	F
	Exit	1	1		1175			1175	1172	0.0	0.0	0.000	A
4	Entry	1	1	1	87	1000	0.087	88	87	0.1	0.1	4.371	A
			2	2, 3, 4	455	1000	0.455	452	440	0.7	0.9	7.451	A
	Exit	1	1		474			474	475	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	659	1000	0.659	661	680	3.3	2.1	11.014	B
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	665			659	675	2.3	0.5	3.994	A
	Exit	1	1		732			732	744	0.0	0.0	0.000	A
2	Entry	1	1	3	602	1013	0.594	598	598	3.0	1.9	10.078	B
			2	1, 2, 4	541	1013	0.534	538	551	2.5	1.5	9.287	A
	Exit	1	1		1638			1638	1704	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	536	1212	0.442	538	557	1.4	1.0	6.995	A
			2	2, 3	980	1212	0.808	981	1029	7.0	4.0	17.129	C
		2	1	(1, 2, 3, 4)	1469			1516	1572	33.8	3.9	31.693	D
	Exit	1	1		969			969	967	0.0	0.0	0.000	A
4	Entry	1	1	1	69	1000	0.069	68	68	0.1	0.1	4.313	A
			2	2, 3, 4	367	1000	0.367	367	364	0.9	0.6	6.453	A
	Exit	1	1		412			412	431	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	562	1000	0.562	558	569	2.1	1.5	8.446	A
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	561			562	567	0.5	0.1	1.027	A
	Exit	1	1		600			600	610	0.0	0.0	0.000	A
2	Entry	1	1	3	498	1032	0.483	496	494	1.9	1.2	7.550	A
			2	1, 2, 4	444	1032	0.430	447	450	1.5	0.8	6.878	A
	Exit	1	1		1335			1335	1367	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	431	1263	0.341	431	440	1.0	0.5	5.059	A
			2	2, 3	783	1263	0.620	782	803	4.0	2.2	9.228	A
		2	1	(1, 2, 3, 4)	1214			1213	1233	3.9	0.2	1.463	A
	Exit	1	1		807			807	797	0.0	0.0	0.000	A
4	Entry	1	1	1	59	1000	0.059	59	61	0.1	0.1	4.117	A
			2	2, 3, 4	307	1000	0.307	305	298	0.6	0.6	5.716	A
	Exit	1	1		336			336	341	0.0	0.0	0.000	A

EML - DS2, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	24.40	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1093	0.00
2	1048	165.00
3	233	0.00
4	839	150.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	EML - DS2	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	864	100.000
2		ONE HOUR	✓	874	100.000
3		ONE HOUR	✓	1307	100.000
4		ONE HOUR	✓	941	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	846	16	2
	2	457	0	417	0
	3	152	606	0	549
	4	145	0	796	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	58.38	16.6	F	799	1199
2	8.00	2.3	A	799	1199
3	8.89	4.0	A	1198	1797
4	29.68	8.9	D	863	1295

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	656	164	1065	655	645	560	0.0	2.5	11.647	B
2	659	165	620	661	656	1100	0.0	1.0	5.965	A
3	981	245	348	980	981	934	0.0	1.4	4.976	A
4	713	178	911	714	708	417	0.0	2.0	9.031	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	787	197	1264	783	768	664	2.5	4.1	17.011	C
2	775	194	737	773	783	1310	1.0	1.5	6.682	A
3	1167	292	403	1164	1169	1107	1.4	2.0	5.901	A
4	849	212	1081	847	839	486	2.0	3.1	12.609	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	960	240	1538	928	910	830	4.1	13.3	38.664	E
2	971	243	879	970	964	1587	1.5	2.3	7.997	A
3	1453	363	507	1445	1428	1342	2.0	4.0	8.099	A
4	1037	259	1350	1019	1015	602	3.1	8.9	25.157	D

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	955	239	1547	949	941	832	13.3	16.6	58.375	F
2	954	238	895	956	957	1600	2.3	2.0	7.953	A
3	1447	362	505	1450	1440	1346	4.0	3.5	8.888	A
4	1027	257	1345	1034	1031	610	8.9	8.3	29.683	D

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	782	196	1256	797	827	678	16.6	5.1	35.160	E
2	789	197	734	787	786	1319	2.0	1.6	6.677	A
3	1165	291	418	1165	1180	1102	3.5	2.1	6.141	A
4	843	211	1090	845	872	493	8.3	3.0	16.395	C

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	655	164	1052	653	665	555	5.1	2.2	13.190	B
2	650	163	614	649	656	1090	1.6	1.2	5.998	A
3	976	244	338	976	978	925	2.1	1.5	5.002	A
4	712	178	899	708	713	416	3.0	2.1	9.842	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	654	1000	0.654	654	644	0.0	2.0	9.692	A
			2	1, 4	2	1000	0.002	2	1	0.0	0.0	3.572	A
		2	1	(1, 2, 3, 4)	656			656	653	0.0	0.5	1.940	A
	Exit	1	1		560			560	563	0.0	0.0	0.000	A
2	Entry	1	1	3	315	1000	0.315	315	315	0.0	0.5	5.789	A
			2	1, 2, 4	344	1000	0.344	346	341	0.0	0.5	6.127	A
	Exit	1	1		1100			1100	1087	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	521	1317	0.395	520	526	0.0	0.8	5.101	A
			2	2, 3	461	1317	0.350	460	456	0.0	0.6	4.776	A
		2	1	(1, 2, 3, 4)	981			981	987	0.0	0.0	0.026	A
	Exit	1	1		934			934	925	0.0	0.0	0.000	A
4	Entry	1	1	1	109	1000	0.109	109	110	0.0	0.2	4.461	A
			2	2, 3, 4	604	1000	0.604	605	598	0.0	1.8	9.869	A
	Exit	1	1		417			417	415	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	782	1000	0.782	781	766	2.0	2.6	11.701	B
			2	1, 4	2	1000	0.002	2	2	0.0	0.0	4.147	A
		2	1	(1, 2, 3, 4)	787			783	770	0.5	1.5	5.313	A
	Exit	1	1		664			664	674	0.0	0.0	0.000	A
2	Entry	1	1	3	374	1000	0.374	372	371	0.5	0.7	6.565	A
			2	1, 2, 4	401	1000	0.401	401	412	0.5	0.8	6.787	A
	Exit	1	1		1310			1310	1297	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	622	1287	0.483	620	624	0.8	1.1	6.048	A
			2	2, 3	546	1287	0.424	544	545	0.6	0.9	5.493	A
		2	1	(1, 2, 3, 4)	1167			1168	1171	0.0	0.0	0.112	A
	Exit	1	1		1107			1107	1097	0.0	0.0	0.000	A
4	Entry	1	1	1	126	1000	0.126	127	127	0.2	0.1	4.531	A
			2	2, 3, 4	722	1000	0.722	720	712	1.8	3.0	14.046	B
	Exit	1	1		486			486	490	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	930	1000	0.930	926	908	2.6	4.4	15.225	C
			2	1, 4	2	1000	0.002	2	2	0.0	0.0	4.493	A
		2	1	(1, 2, 3, 4)	960			932	917	1.5	9.0	23.344	C
	Exit	1	1		830			830	827	0.0	0.0	0.000	A
2	Entry	1	1	3	465	1000	0.465	465	463	0.7	0.9	7.757	A
			2	1, 2, 4	506	1000	0.506	505	501	0.8	1.3	8.217	A
	Exit	1	1		1587			1587	1555	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	769	1230	0.625	768	765	1.1	1.9	8.017	A
			2	2, 3	681	1230	0.554	677	663	0.9	1.5	7.013	A
		2	1	(1, 2, 3, 4)	1453			1450	1434	0.0	0.5	0.538	A
	Exit	1	1		1342			1342	1335	0.0	0.0	0.000	A
4	Entry	1	1	1	158	1000	0.158	158	159	0.1	0.2	4.842	A
			2	2, 3, 4	879	1000	0.879	861	856	3.0	8.7	28.846	D
	Exit	1	1		602			602	601	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	945	1000	0.945	947	939	4.4	4.2	16.173	C
			2	1, 4	2	1000	0.002	2	2	0.0	0.0	3.540	A
		2	1	(1, 2, 3, 4)	955			947	941	9.0	12.3	42.217	E
	Exit	1	1		832			832	833	0.0	0.0	0.000	A
2	Entry	1	1	3	453	1000	0.453	453	454	0.9	1.0	7.469	A
			2	1, 2, 4	500	1000	0.500	503	503	1.3	1.0	8.391	A
	Exit	1	1		1600			1600	1584	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	776	1231	0.631	778	776	1.9	1.8	8.785	A
			2	2, 3	671	1231	0.545	672	664	1.5	1.3	7.253	A
		2	1	(1, 2, 3, 4)	1447			1447	1439	0.5	0.4	0.809	A
	Exit	1	1		1346			1346	1344	0.0	0.0	0.000	A
4	Entry	1	1	1	159	1000	0.159	159	160	0.2	0.2	4.762	A
			2	2, 3, 4	868	1000	0.868	875	872	8.7	8.1	34.265	D
	Exit	1	1		610			610	608	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	793	1000	0.793	794	825	4.2	2.8	13.622	B
			2	1, 4	2	1000	0.002	2	2	0.0	0.0	3.512	A
		2	1	(1, 2, 3, 4)	782			795	822	12.3	2.3	21.800	C
	Exit	1	1		678			678	679	0.0	0.0	0.000	A
2	Entry	1	1	3	373	1000	0.373	371	374	1.0	0.8	6.442	A
			2	1, 2, 4	416	1000	0.416	416	413	1.0	0.8	6.891	A
	Exit	1	1		1319			1319	1355	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	627	1279	0.490	625	635	1.8	1.2	6.388	A
			2	2, 3	538	1279	0.420	540	545	1.3	0.8	5.668	A
		2	1	(1, 2, 3, 4)	1165			1165	1176	0.4	0.0	0.099	A
	Exit	1	1		1102			1102	1131	0.0	0.0	0.000	A
4	Entry	1	1	1	129	1000	0.129	128	130	0.2	0.2	4.551	A
			2	2, 3, 4	714	1000	0.714	717	742	8.1	2.8	18.522	C
	Exit	1	1		493			493	500	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	654	1000	0.654	651	664	2.8	1.8	10.234	B
			2	1, 4	2	1000	0.002	2	1	0.0	0.0	3.897	A
		2	1	(1, 2, 3, 4)	655			655	661	2.3	0.4	3.079	A
	Exit	1	1		555			555	565	0.0	0.0	0.000	A
2	Entry	1	1	3	312	1000	0.312	313	313	0.8	0.6	5.783	A
			2	1, 2, 4	338	1000	0.338	337	343	0.8	0.6	6.194	A
	Exit	1	1		1090			1090	1106	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	526	1323	0.397	525	524	1.2	0.8	5.204	A
			2	2, 3	451	1323	0.341	451	454	0.8	0.7	4.705	A
		2	1	(1, 2, 3, 4)	976			977	976	0.0	0.0	0.030	A
	Exit	1	1		925			925	928	0.0	0.0	0.000	A
4	Entry	1	1	1	108	1000	0.108	108	109	0.2	0.1	4.558	A
			2	2, 3, 4	605	1000	0.605	601	604	2.8	1.9	10.802	B
	Exit	1	1		416			416	413	0.0	0.0	0.000	A

EML - DS2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	43.36	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1093	0.00
2	1048	165.00
3	233	0.00
4	839	150.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	EML - DS2	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	744	100.000
2		ONE HOUR	✓	1254	100.000
3		ONE HOUR	✓	1616	100.000
4		ONE HOUR	✓	480	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	738	6	0
	2	601	0	653	0
	3	126	1044	0	446
	4	80	0	400	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	22.00	4.6	C	681	1021
2	13.43	5.3	B	1146	1719
3	87.29	48.2	F	1477	2216
4	6.82	1.2	A	439	658

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	557	139	1084	556	556	600	0.0	1.6	9.286	A
2	928	232	314	931	923	1327	0.0	2.1	7.380	A
3	1215	304	444	1221	1212	801	0.0	2.3	7.405	A
4	367	92	1321	364	363	345	0.0	0.7	5.541	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	668	167	1300	671	663	708	1.6	2.5	11.903	B
2	1113	278	358	1113	1120	1613	2.1	3.2	8.941	A
3	1456	364	524	1466	1446	946	2.3	5.5	12.799	B
4	423	106	1586	422	425	405	0.7	0.8	6.078	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	818	204	1516	820	816	883	2.5	4.6	20.336	C
2	1386	347	449	1391	1380	1887	3.2	5.3	13.426	B
3	1781	445	661	1670	1660	1179	5.5	31.8	42.522	E
4	537	134	1865	535	525	466	0.8	1.0	6.581	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	810	203	1530	821	819	880	4.6	4.5	22.004	C
2	1376	344	439	1381	1380	1912	5.3	5.1	12.927	B
3	1777	444	660	1707	1717	1159	31.8	48.2	87.286	F
4	521	130	1888	521	530	479	1.0	1.2	6.816	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	669	167	1347	669	676	728	4.5	2.4	13.275	B
2	1123	281	363	1123	1141	1654	5.1	2.8	9.369	A
3	1432	358	542	1534	1599	944	48.2	8.9	50.318	F
4	427	107	1648	427	428	428	1.2	0.8	5.991	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	563	141	1066	561	565	608	2.4	1.7	9.452	A
2	951	238	306	949	943	1321	2.8	2.0	7.220	A
3	1202	301	456	1199	1235	798	8.9	2.7	8.877	A
4	357	89	1317	358	360	338	0.8	0.5	5.411	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	558	1000	0.558	556	556	0.0	1.6	8.435	A
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	557			558	563	0.0	0.1	0.845	A
	Exit	1	1		600			600	597	0.0	0.0	0.000	A
2	Entry	1	1	3	486	1031	0.471	487	481	0.0	1.2	7.858	A
			2	1, 2, 4	442	1031	0.429	444	442	0.0	0.9	6.857	A
	Exit	1	1		1327			1327	1331	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	443	1265	0.350	445	433	0.0	0.4	4.758	A
			2	2, 3	775	1265	0.613	777	780	0.0	1.8	8.127	A
		2	1	(1, 2, 3, 4)	1215			1218	1221	0.0	0.1	0.469	A
	Exit	1	1		801			801	791	0.0	0.0	0.000	A
4	Entry	1	1	1	56	1000	0.056	57	58	0.0	0.0	4.341	A
			2	2, 3, 4	311	1000	0.311	308	304	0.0	0.7	5.768	A
	Exit	1	1		345			345	336	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	669	1000	0.669	671	663	1.6	2.0	9.878	A
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	668			669	665	0.1	0.5	2.008	A
	Exit	1	1		708			708	719	0.0	0.0	0.000	A
2	Entry	1	1	3	587	1016	0.577	589	584	1.2	1.6	9.368	A
			2	1, 2, 4	526	1016	0.518	524	536	0.9	1.5	8.477	A
	Exit	1	1		1613			1613	1585	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	517	1220	0.424	518	518	0.4	1.0	5.930	A
			2	2, 3	943	1220	0.772	949	928	1.8	3.3	12.047	B
		2	1	(1, 2, 3, 4)	1456			1460	1454	0.1	1.2	2.917	A
	Exit	1	1		946			946	945	0.0	0.0	0.000	A
4	Entry	1	1	1	71	1000	0.071	71	70	0.0	0.1	4.170	A
			2	2, 3, 4	351	1000	0.351	351	356	0.7	0.7	6.454	A
	Exit	1	1		405			405	406	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	819	1000	0.819	820	816	2.0	2.9	12.634	B
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	818			819	819	0.5	1.7	7.664	A
	Exit	1	1		883			883	883	0.0	0.0	0.000	A
2	Entry	1	1	3	726	1003	0.723	730	718	1.6	2.9	14.908	B
			2	1, 2, 4	660	1003	0.658	661	662	1.5	2.4	11.818	B
	Exit	1	1		1887			1887	1871	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	595	1145	0.519	596	598	1.0	1.5	8.020	A
			2	2, 3	1079	1145	0.942	1074	1062	3.3	6.6	19.486	C
		2	1	(1, 2, 3, 4)	1781			1674	1675	1.2	23.7	26.984	D
	Exit	1	1		1179			1179	1160	0.0	0.0	0.000	A
4	Entry	1	1	1	93	1000	0.093	93	89	0.1	0.0	4.165	A
			2	2, 3, 4	444	1000	0.444	442	435	0.7	1.0	7.076	A
	Exit	1	1		466			466	466	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	819	1000	0.819	821	819	2.9	2.9	13.012	B
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	810			819	819	1.7	1.7	9.012	A
	Exit	1	1		880			880	879	0.0	0.0	0.000	A
2	Entry	1	1	3	719	1005	0.715	721	724	2.9	2.6	13.823	B
			2	1, 2, 4	657	1005	0.654	660	656	2.4	2.5	11.941	B
	Exit	1	1		1912			1912	1920	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	613	1146	0.535	609	610	1.5	1.9	8.650	A
			2	2, 3	1096	1146	0.957	1098	1107	6.6	6.8	22.083	C
		2	1	(1, 2, 3, 4)	1777			1709	1719	23.7	39.5	69.911	F
	Exit	1	1		1159			1159	1170	0.0	0.0	0.000	A
4	Entry	1	1	1	89	1000	0.089	89	91	0.0	0.1	4.428	A
			2	2, 3, 4	433	1000	0.433	432	440	1.0	1.1	7.315	A
	Exit	1	1		479			479	477	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	668	1000	0.668	669	676	2.9	1.8	10.488	B
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	669			668	672	1.7	0.5	2.827	A
	Exit	1	1		728			728	744	0.0	0.0	0.000	A
2	Entry	1	1	3	581	1016	0.572	582	591	2.6	1.5	9.885	A
			2	1, 2, 4	542	1016	0.533	542	550	2.5	1.3	8.815	A
	Exit	1	1		1654			1654	1703	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	540	1211	0.446	543	567	1.9	1.0	7.651	A
			2	2, 3	978	1211	0.807	991	1033	6.8	3.7	17.049	C
		2	1	(1, 2, 3, 4)	1432			1517	1583	39.5	4.3	37.089	E
	Exit	1	1		944			944	952	0.0	0.0	0.000	A
4	Entry	1	1	1	71	1000	0.071	71	72	0.1	0.1	4.236	A
			2	2, 3, 4	357	1000	0.357	356	356	1.1	0.6	6.348	A
	Exit	1	1		428			428	445	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	561	1000	0.561	561	565	1.8	1.5	8.598	A
			2	1, 4	0	1000	0.000	0	0	0.0	0.0	0.000	A
		2	1	(1, 2, 3, 4)	563			561	563	0.5	0.3	0.890	A
	Exit	1	1		608			608	609	0.0	0.0	0.000	A
2	Entry	1	1	3	492	1034	0.475	492	490	1.5	1.0	7.564	A
			2	1, 2, 4	460	1034	0.445	456	452	1.3	0.9	6.848	A
	Exit	1	1		1321			1321	1355	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	434	1258	0.345	434	440	1.0	0.6	4.987	A
			2	2, 3	768	1258	0.611	765	795	3.7	1.9	8.661	A
		2	1	(1, 2, 3, 4)	1202			1203	1227	4.3	0.1	1.671	A
	Exit	1	1		798			798	797	0.0	0.0	0.000	A
4	Entry	1	1	1	56	1000	0.056	56	58	0.1	0.1	4.168	A
			2	2, 3, 4	301	1000	0.301	301	302	0.6	0.4	5.650	A
	Exit	1	1		338			338	341	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896

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+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

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Report generation date: 02/12/2020 13:33:42

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	[Lane Simulation] - ELM - DM							
Arm 1	1.4	6.65		A	1.2	5.06		A
Arm 2	2.4	7.04		A	3.2	7.45		A
Arm 3	95.9	158.61		F	3.2	6.01		A
Arm 4	5.8	17.61		C	178.3	490.08		F
	[Lane Simulation] - EMM - DS1							
Arm 1	1.6	6.42		A	1.3	5.50		A
Arm 2	3.1	7.99		A	3.2	8.38		A
Arm 3	117.5	206.25		F	2.8	5.40		A
Arm 4	5.9	18.86		C	172.3	484.37		F
	[Lane Simulation] - EML - DS2							
Arm 1	1.2	6.51		A	1.3	5.60		A
Arm 2	3.3	8.02		A	3.2	8.60		A
Arm 3	119.2	212.86		F	2.5	5.49		A
Arm 4	5.9	17.94		C	183.5	513.92		F

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

File summary

File Description

Title	Junction 3, A3(M)
Location	
Site number	
Date	26/09/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	62100616
Enumerator	CORP\UKAJT009
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓			1928773701	118	23.26

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	ELM - DM	AM	ONE HOUR	07:45	09:15	15	✓
D4	ELM - DM	PM	ONE HOUR	16:45	18:15	15	✓
D5	EMM - DS1	AM	ONE HOUR	07:45	09:15	15	✓
D6	EMM - DS1	PM	ONE HOUR	16:45	18:15	15	✓
D7	EML - DS2	AM	ONE HOUR	07:45	09:15	15	✓
D8	EML - DS2	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	100.000	100.000

ELM - DM, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	69.82	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Hulbert Road east	
2	A3(M) south	
3	Hulbert Road west	
4	A3(M) north	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	4.10	7.50	24.9	40.0	145.0	9.0	
2	6.00	6.90	5.7	50.0	145.0	5.0	
3	7.60	7.60	0.0	45.0	145.0	4.0	
4	6.50	6.50	0.0	50.0	145.0	26.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.762	2597
2	0.951	2551
3	1.208	3386
4	0.716	2207

The slope and intercept shown above include any corrections and adjustments.

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
1	Evenly split	10.00
2	Evenly split	10.00
3	Evenly split	10.00
4	Evenly split	10.00

Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised
1	Entry	1	1	2, 3	✓	4.00		1000	99999	
			2	1, 3, 4	✓	4.00		1000	99999	
		2	1	(1, 2, 3, 4)		Infinity				
	Exit	1	1			Infinity				
2	Entry	1	1	3		Infinity		1000	99999	
			2	1, 2, 3, 4		Infinity		1000	99999	
	Exit	1	1			Infinity				
3	Entry	1	1	1, 4		Infinity		1000	99999	
			2	2, 3		Infinity		1000	99999	
	Exit	1	1			Infinity				
4	Entry	1	1	1		Infinity		1000	99999	
			2	2, 3, 4		Infinity		1000	99999	
	Exit	1	1			Infinity				

Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
1	Entry	1	1	0.381	1298
			2	0.381	1298
2	Entry	1	1	0.476	1276
			2	0.476	1276
3	Entry	1	1	0.604	1693
			2	0.604	1693
4	Entry	1	1	0.358	1104
			2	0.358	1104

Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm			
			1	2	3	4
1	1	1		✓	✓	
		2	✓		✓	✓
	2	1	✓	✓	✓	✓
2	1	1			✓	
		2	✓	✓	✓	✓
3	1	1	✓			✓
		2		✓	✓	
4	1	1	✓			
		2		✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	ELM - DM	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	676	100.000
2		ONE HOUR	✓	1105	100.000
3		ONE HOUR	✓	1826	100.000
4		ONE HOUR	✓	985	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	15	257	404
	2	42	0	1063	0
	3	853	399	0	574
	4	733	0	252	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	6.65	1.4	A	619	928
2	7.04	2.4	A	1016	1524
3	158.61	95.9	F	1690	2534
4	17.61	5.8	C	903	1355

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	509	127	496	508	508	1253	0.0	0.8	4.772	A
2	836	209	692	834	833	312	0.0	1.3	5.131	A
3	1401	350	328	1405	1377	1197	0.0	3.4	9.162	A
4	752	188	997	751	736	736	0.0	1.6	7.925	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	603	151	588	605	613	1447	0.8	1.0	5.226	A
2	991	248	821	993	984	371	1.3	1.5	5.712	A
3	1641	410	395	1636	1621	1419	3.4	8.2	15.850	C
4	877	219	1153	882	877	878	1.6	2.6	10.760	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	748	187	733	755	746	1671	1.0	1.4	6.649	A
2	1230	307	1018	1228	1224	470	1.5	2.4	7.039	A
3	2027	507	497	1846	1819	1748	8.2	56.1	68.237	F
4	1079	270	1337	1067	1066	1007	2.6	5.8	15.244	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	737	184	709	742	743	1699	1.4	1.2	6.415	A
2	1206	302	1003	1205	1209	449	2.4	2.3	6.903	A
3	2006	501	490	1825	1835	1718	56.1	95.9	153.653	F
4	1084	271	1318	1089	1084	996	5.8	4.9	17.615	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	609	152	594	607	606	1543	1.2	1.1	5.387	A
2	992	248	821	991	997	381	2.3	1.9	5.969	A
3	1659	415	397	1804	1780	1415	95.9	61.6	158.607	F
4	878	219	1264	874	891	938	4.9	3.0	11.501	B

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	507	127	502	506	509	1295	1.1	0.7	4.801	A
2	841	210	689	838	835	320	1.9	1.3	5.127	A
3	1404	351	333	1507	1592	1193	61.6	8.7	57.398	F
4	750	188	1052	745	744	788	3.0	1.9	8.321	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	135	1110	0.122	135	130	0.0	0.2	3.824	A
			2	1, 3, 4	373	1110	0.336	374	378	0.0	0.6	4.979	A
		2	1	(1, 2, 3, 4)	509			508	511	0.0	0.1	0.086	A
	Exit	1	1		1253			1253	1225	0.0	0.0	0.000	A
2	Entry	1	1	3	409	1002	0.408	407	410	0.0	0.6	5.086	A
			2	1, 2, 3, 4	427	1002	0.426	426	423	0.0	0.7	5.174	A
	Exit	1	1		312			312	309	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1098	1495	0.735	1102	1078	0.0	3.1	10.712	B
			2	2, 3	303	1495	0.203	302	298	0.0	0.4	3.530	A
	Exit	1	1		1197			1197	1184	0.0	0.0	0.000	A
4	Entry	1	1	1	559	1000	0.559	557	548	0.0	1.3	8.909	A
			2	2, 3, 4	193	1000	0.193	194	188	0.0	0.2	5.038	A
	Exit	1	1		736			736	735	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	162	1074	0.151	162	161	0.2	0.2	4.081	A
			2	1, 3, 4	441	1074	0.410	442	452	0.6	0.7	5.366	A
		2	1	(1, 2, 3, 4)	603			602	613	0.1	0.1	0.197	A
	Exit	1	1		1447			1447	1437	0.0	0.0	0.000	A
2	Entry	1	1	3	485	1000	0.485	487	480	0.6	0.8	5.726	A
			2	1, 2, 3, 4	505	1000	0.505	506	504	0.7	0.7	5.697	A
	Exit	1	1		371			371	372	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1283	1454	0.882	1278	1262	3.1	7.8	19.279	C
			2	2, 3	357	1454	0.246	358	359	0.4	0.4	3.611	A
	Exit	1	1		1419			1419	1408	0.0	0.0	0.000	A
4	Entry	1	1	1	649	1000	0.649	652	651	1.3	2.3	12.782	B
			2	2, 3, 4	228	1000	0.228	230	227	0.2	0.3	4.964	A
	Exit	1	1		878			878	877	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	210	1028	0.204	209	208	0.2	0.3	4.411	A
			2	1, 3, 4	542	1028	0.527	545	539	0.7	1.0	6.549	A
		2	1	(1, 2, 3, 4)	748			752	748	0.1	0.2	0.691	A
	Exit	1	1		1671			1671	1657	0.0	0.0	0.000	A
2	Entry	1	1	3	605	1000	0.605	606	606	0.8	1.2	6.979	A
			2	1, 2, 3, 4	625	1000	0.625	622	617	0.7	1.2	7.097	A
	Exit	1	1		470			470	459	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1576	1392	1.132	1395	1377	7.8	55.8	86.276	F
			2	2, 3	451	1392	0.324	451	442	0.4	0.5	4.169	A
	Exit	1	1		1748			1748	1740	0.0	0.0	0.000	A
4	Entry	1	1	1	798	1000	0.798	786	788	2.3	5.2	18.617	C
			2	2, 3, 4	281	1000	0.281	281	277	0.3	0.6	5.577	A
	Exit	1	1		1007			1007	1000	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	207	1035	0.200	209	207	0.3	0.2	4.485	A
			2	1, 3, 4	531	1035	0.513	534	535	1.0	0.9	6.506	A
		2	1	(1, 2, 3, 4)	737			738	742	0.2	0.1	0.477	A
	Exit	1	1		1699			1699	1692	0.0	0.0	0.000	A
2	Entry	1	1	3	595	1000	0.595	596	597	1.2	1.1	6.863	A
			2	1, 2, 3, 4	611	1000	0.611	609	612	1.2	1.2	6.943	A
	Exit	1	1		449			449	452	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1570	1397	1.124	1391	1398	55.6	95.2	195.230	F
			2	2, 3	436	1397	0.312	433	436	0.5	0.7	4.293	A
	Exit	1	1		1718			1718	1723	0.0	0.0	0.000	A
4	Entry	1	1	1	809	1000	0.809	814	810	5.2	4.5	21.727	C
			2	2, 3, 4	275	1000	0.275	276	275	0.6	0.4	5.488	A
	Exit	1	1		996			996	1004	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	160	1072	0.150	162	160	0.2	0.2	4.101	A
			2	1, 3, 4	448	1072	0.418	446	446	0.9	0.9	5.570	A
		2	1	(1, 2, 3, 4)	609			609	606	0.1	0.0	0.205	A
	Exit	1	1		1543			1543	1552	0.0	0.0	0.000	A
2	Entry	1	1	3	492	1001	0.492	492	491	1.1	0.9	5.881	A
			2	1, 2, 3, 4	500	1001	0.500	499	506	1.2	0.9	6.055	A
	Exit	1	1		381			381	374	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1289	1453	0.888	1435	1420	95.2	61.2	201.767	F
			2	2, 3	369	1453	0.254	369	361	0.7	0.4	3.734	A
	Exit	1	1		1415			1415	1418	0.0	0.0	0.000	A
4	Entry	1	1	1	653	1000	0.653	649	662	4.5	2.7	13.717	B
			2	2, 3, 4	225	1000	0.225	226	228	0.4	0.3	5.148	A
	Exit	1	1		938			938	931	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	132	1107	0.119	131	132	0.2	0.2	3.727	A
			2	1, 3, 4	375	1107	0.339	375	377	0.9	0.5	5.054	A
		2	1	(1, 2, 3, 4)	507			507	508	0.0	0.0	0.095	A
	Exit	1	1		1295			1295	1357	0.0	0.0	0.000	A
2	Entry	1	1	3	409	1002	0.408	408	410	0.9	0.6	5.044	A
			2	1, 2, 3, 4	432	1002	0.431	430	424	0.9	0.7	5.207	A
	Exit	1	1		320			320	313	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1095	1491	0.734	1197	1289	61.2	8.5	72.869	F
			2	2, 3	309	1491	0.207	310	303	0.4	0.2	3.412	A
	Exit	1	1		1193			1193	1188	0.0	0.0	0.000	A
4	Entry	1	1	1	559	1000	0.559	553	554	2.7	1.6	9.520	A
			2	2, 3, 4	192	1000	0.192	192	189	0.3	0.3	4.872	A
	Exit	1	1		788			788	822	0.0	0.0	0.000	A

ELM - DM, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm 4 - Lane Simulation	Arm 4: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	151.84	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	ELM - DM	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	653	100.000
2		ONE HOUR	✓	1160	100.000
3		ONE HOUR	✓	1573	100.000
4		ONE HOUR	✓	1464	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	48	464	141
	2	19	0	1141	0
	3	52	703	0	818
	4	1150	0	314	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	5.06	1.2	A	600	901
2	7.45	3.2	A	1070	1605
3	6.01	3.2	A	1444	2165
4	490.08	178.3	F	1340	2010

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	504	126	777	502	503	892	0.0	0.9	4.488	A
2	895	224	708	896	886	571	0.0	1.2	5.262	A
3	1204	301	118	1206	1181	1486	0.0	1.1	4.056	A
4	1082	270	586	1083	1069	740	0.0	7.2	20.902	C

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	585	146	901	588	575	1021	0.9	0.7	4.685	A
2	1064	266	824	1070	1048	664	1.2	1.8	5.964	A
3	1374	344	151	1379	1408	1743	1.1	1.9	4.767	A
4	1295	324	686	1236	1233	844	7.2	27.7	55.963	F

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	709	177	1118	708	708	1062	0.7	1.2	5.006	A
2	1283	321	1005	1288	1277	822	1.8	2.7	7.291	A
3	1718	430	171	1725	1733	2121	1.9	2.6	6.010	A
4	1639	410	851	1329	1347	1044	27.7	98.6	179.658	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	718	180	1143	720	727	1083	1.2	0.8	5.056	A
2	1282	320	1019	1278	1286	844	2.7	3.2	7.453	A
3	1747	437	176	1745	1745	2121	2.6	3.2	5.959	A
4	1590	398	874	1352	1338	1046	98.6	164.7	380.413	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	588	147	917	584	584	1076	0.8	1.0	4.776	A
2	1009	252	826	1012	1032	676	3.2	1.9	6.006	A
3	1420	355	141	1420	1411	1697	3.2	1.9	4.609	A
4	1337	334	706	1288	1282	856	164.7	178.3	490.084	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	497	124	773	496	499	1037	1.0	0.8	4.558	A
2	887	222	692	888	868	577	1.9	1.2	5.059	A
3	1198	299	123	1199	1196	1457	1.9	1.1	3.990	A
4	1095	274	598	1212	1221	724	178.3	148.5	367.555	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	223	1016	0.220	222	225	0.0	0.3	4.248	A
			2	1, 3, 4	281	1016	0.277	280	277	0.0	0.6	4.672	A
		2	1	(1, 2, 3, 4)	504			504	506	0.0	0.0	0.007	A
	Exit	1	1		892			892	880	0.0	0.0	0.000	A
2	Entry	1	1	3	443	1003	0.442	444	436	0.0	0.5	5.232	A
			2	1, 2, 3, 4	452	1003	0.451	452	449	0.0	0.7	5.290	A
	Exit	1	1		571			571	565	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	668	1621	0.412	670	653	0.0	0.6	4.234	A
			2	2, 3	536	1621	0.331	537	529	0.0	0.5	3.836	A
	Exit	1	1		1486			1486	1470	0.0	0.0	0.000	A
4	Entry	1	1	1	842	1000	0.842	844	830	0.0	7.0	25.308	D
			2	2, 3, 4	240	1000	0.240	240	239	0.0	0.2	5.222	A
	Exit	1	1		740			740	724	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	265	1003	0.265	266	258	0.3	0.3	4.435	A
			2	1, 3, 4	320	1003	0.319	322	316	0.6	0.4	4.847	A
		2	1	(1, 2, 3, 4)	585			585	574	0.0	0.0	0.024	A
	Exit	1	1		1021			1021	1017	0.0	0.0	0.000	A
2	Entry	1	1	3	521	1000	0.521	524	517	0.5	0.8	5.937	A
			2	1, 2, 3, 4	543	1000	0.543	546	530	0.7	0.9	5.991	A
	Exit	1	1		664			664	667	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	757	1602	0.472	758	780	0.6	1.2	5.165	A
			2	2, 3	617	1602	0.385	622	628	0.5	0.7	4.270	A
	Exit	1	1		1743			1743	1722	0.0	0.0	0.000	A
4	Entry	1	1	1	1017	1000	1.017	956	949	7.0	27.2	69.862	F
			2	2, 3, 4	278	1000	0.278	279	284	0.2	0.5	5.484	A
	Exit	1	1		844			844	859	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	327	1000	0.327	328	322	0.3	0.4	4.672	A
			2	1, 3, 4	382	1000	0.382	381	387	0.4	0.8	5.201	A
		2	1	(1, 2, 3, 4)	709			709	710	0.0	0.0	0.043	A
	Exit	1	1		1062			1062	1086	0.0	0.0	0.000	A
2	Entry	1	1	3	640	1000	0.640	641	639	0.8	1.3	7.256	A
			2	1, 2, 3, 4	643	1000	0.643	647	638	0.9	1.3	7.326	A
	Exit	1	1		822			822	826	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	952	1590	0.599	953	961	1.2	1.8	6.685	A
			2	2, 3	766	1590	0.482	772	772	0.7	0.7	5.166	A
	Exit	1	1		2121			2121	2097	0.0	0.0	0.000	A
4	Entry	1	1	1	1291	1000	1.291	983	1004	27.2	97.9	226.078	F
			2	2, 3, 4	349	1000	0.349	347	343	0.5	0.7	6.156	A
	Exit	1	1		1044			1044	1058	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	326	1000	0.326	326	330	0.4	0.3	4.824	A
			2	1, 3, 4	392	1000	0.392	394	396	0.8	0.5	5.136	A
		2	1	(1, 2, 3, 4)	718			718	725	0.0	0.0	0.064	A
	Exit	1	1		1083			1083	1074	0.0	0.0	0.000	A
2	Entry	1	1	3	637	1000	0.637	634	644	1.3	1.7	7.352	A
			2	1, 2, 3, 4	645	1000	0.645	644	643	1.3	1.5	7.554	A
	Exit	1	1		844			844	830	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	955	1587	0.602	954	971	1.8	2.0	6.665	A
			2	2, 3	792	1587	0.499	790	774	0.7	1.2	5.072	A
	Exit	1	1		2121			2121	2124	0.0	0.0	0.000	A
4	Entry	1	1	1	1236	1000	1.236	999	995	97.9	163.9	483.055	F
			2	2, 3, 4	354	1000	0.354	354	343	0.7	0.7	6.239	A
	Exit	1	1		1046			1046	1067	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	269	1002	0.268	266	265	0.3	0.4	4.577	A
			2	1, 3, 4	319	1002	0.319	318	319	0.5	0.6	4.864	A
		2	1	(1, 2, 3, 4)	588			588	585	0.0	0.0	0.041	A
	Exit	1	1		1076			1076	1059	0.0	0.0	0.000	A
2	Entry	1	1	3	508	1000	0.508	508	514	1.7	1.0	5.938	A
			2	1, 2, 3, 4	501	1000	0.501	503	517	1.5	0.9	6.074	A
	Exit	1	1		676			676	676	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	785	1608	0.488	786	777	2.0	1.1	4.863	A
			2	2, 3	635	1608	0.395	634	634	1.2	0.8	4.296	A
	Exit	1	1		1697			1697	1712	0.0	0.0	0.000	A
4	Entry	1	1	1	1054	1000	1.054	1005	996	163.9	177.8	619.987	F
			2	2, 3, 4	284	1000	0.284	283	286	0.7	0.4	5.550	A
	Exit	1	1		856			856	860	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	218	1016	0.215	219	222	0.4	0.2	4.414	A
			2	1, 3, 4	280	1016	0.275	277	277	0.6	0.6	4.614	A
		2	1	(1, 2, 3, 4)	497			497	499	0.0	0.0	0.033	A
	Exit	1	1		1037			1037	1039	0.0	0.0	0.000	A
2	Entry	1	1	3	445	1004	0.444	445	434	1.0	0.5	4.935	A
			2	1, 2, 3, 4	442	1004	0.440	443	435	0.9	0.6	5.181	A
	Exit	1	1		577			577	571	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	659	1619	0.407	657	659	1.1	0.8	4.208	A
			2	2, 3	538	1619	0.332	542	537	0.8	0.4	3.723	A
	Exit	1	1		1457			1457	1446	0.0	0.0	0.000	A
4	Entry	1	1	1	863	1000	0.863	981	988	177.8	148.0	557.884	F
			2	2, 3, 4	232	1000	0.232	231	235	0.4	0.5	5.225	A
	Exit	1	1		724			724	729	0.0	0.0	0.000	A

EMM - DS1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm 3 - Lane Simulation	Arm 3: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	86.59	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	EMM - DS1	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	720	100.000
2		ONE HOUR	✓	1202	100.000
3		ONE HOUR	✓	1812	100.000
4		ONE HOUR	✓	964	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	15	290	415
	2	42	0	1160	0
	3	851	358	0	603
	4	741	0	223	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	6.42	1.6	A	662	993
2	7.99	3.1	A	1104	1656
3	206.25	117.5	F	1667	2501
4	18.86	5.9	C	881	1321

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	548	137	431	547	545	1232	0.0	0.9	4.579	A
2	904	226	698	905	905	280	0.0	1.3	5.330	A
3	1359	340	351	1368	1352	1252	0.0	3.4	9.157	A
4	714	179	945	719	718	773	0.0	1.3	8.013	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	643	161	528	645	644	1460	0.9	1.0	5.372	A
2	1076	269	830	1074	1082	343	1.3	2.0	6.187	A
3	1642	411	404	1636	1606	1499	3.4	10.7	20.046	C
4	862	215	1123	865	856	918	1.3	2.4	10.429	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	796	199	635	795	791	1666	1.0	1.6	6.361	A
2	1330	332	1018	1332	1320	412	2.0	3.0	7.864	A
3	2007	502	503	1779	1776	1847	10.7	64.5	78.603	F
4	1051	263	1252	1048	1044	1030	2.4	5.7	16.927	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	796	199	637	801	792	1666	1.6	1.3	6.424	A
2	1320	330	1025	1322	1320	413	3.0	3.1	7.994	A
3	2007	502	507	1786	1780	1841	64.5	117.5	189.817	F
4	1054	263	1251	1053	1054	1042	5.7	5.9	18.863	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	644	161	526	643	650	1551	1.3	1.0	5.430	A
2	1083	271	830	1081	1086	340	3.1	1.9	6.176	A
3	1632	408	406	1765	1752	1505	117.5	85.0	206.255	F
4	869	217	1211	867	879	960	5.9	3.2	12.423	B

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	545	136	442	545	543	1330	1.0	0.7	4.753	A
2	911	228	707	913	903	279	1.9	1.3	5.383	A
3	1355	339	354	1527	1619	1267	85.0	20.4	93.178	F
4	735	184	1036	736	734	844	3.2	1.6	8.316	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	148	1134	0.131	149	151	0.0	0.1	3.731	A
			2	1, 3, 4	400	1134	0.353	398	394	0.0	0.7	4.775	A
		2	1	(1, 2, 3, 4)	548			548	548	0.0	0.0	0.090	A
	Exit	1	1		1232			1232	1221	0.0	0.0	0.000	A
2	Entry	1	1	3	443	1002	0.442	443	442	0.0	0.8	5.332	A
			2	1, 2, 3, 4	461	1002	0.461	461	463	0.0	0.7	5.327	A
	Exit	1	1		280			280	278	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1092	1481	0.737	1100	1086	0.0	3.2	10.579	B
			2	2, 3	267	1481	0.180	268	266	0.0	0.3	3.305	A
	Exit	1	1		1252			1252	1262	0.0	0.0	0.000	A
4	Entry	1	1	1	550	1000	0.550	556	552	0.0	1.0	8.943	A
			2	2, 3, 4	164	1000	0.164	164	166	0.0	0.3	4.900	A
	Exit	1	1		773			773	760	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	177	1097	0.162	178	178	0.1	0.2	3.981	A
			2	1, 3, 4	466	1097	0.424	467	466	0.7	0.7	5.536	A
		2	1	(1, 2, 3, 4)	643			643	644	0.0	0.1	0.266	A
	Exit	1	1		1460			1460	1444	0.0	0.0	0.000	A
2	Entry	1	1	3	534	1000	0.534	532	532	0.8	0.9	6.154	A
			2	1, 2, 3, 4	543	1000	0.543	542	549	0.7	1.0	6.219	A
	Exit	1	1		343			343	338	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1314	1449	0.907	1308	1283	3.2	10.4	24.126	C
			2	2, 3	328	1449	0.227	328	323	0.3	0.3	3.507	A
	Exit	1	1		1499			1499	1502	0.0	0.0	0.000	A
4	Entry	1	1	1	662	1000	0.662	665	659	1.0	2.1	12.059	B
			2	2, 3, 4	200	1000	0.200	199	197	0.3	0.3	4.927	A
	Exit	1	1		918			918	904	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	232	1057	0.220	233	230	0.2	0.3	4.325	A
			2	1, 3, 4	564	1057	0.533	562	560	0.7	1.1	6.354	A
		2	1	(1, 2, 3, 4)	796			796	793	0.1	0.2	0.594	A
	Exit	1	1		1666			1666	1654	0.0	0.0	0.000	A
2	Entry	1	1	3	658	1000	0.658	659	652	0.9	1.5	7.827	A
			2	1, 2, 3, 4	671	1000	0.671	673	668	1.0	1.5	7.901	A
	Exit	1	1		412			412	411	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1611	1389	1.160	1385	1381	10.4	64.0	97.039	F
			2	2, 3	396	1389	0.285	394	395	0.3	0.5	4.051	A
	Exit	1	1		1847			1847	1837	0.0	0.0	0.000	A
4	Entry	1	1	1	809	1000	0.809	807	801	2.1	5.4	20.431	C
			2	2, 3, 4	242	1000	0.242	241	243	0.3	0.4	5.246	A
	Exit	1	1		1030			1030	1028	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	232	1056	0.220	233	230	0.3	0.3	4.434	A
			2	1, 3, 4	565	1056	0.534	568	562	1.1	1.0	6.515	A
		2	1	(1, 2, 3, 4)	796			797	791	0.2	0.0	0.517	A
	Exit	1	1		1666			1666	1668	0.0	0.0	0.000	A
2	Entry	1	1	3	659	1000	0.659	661	655	1.5	1.5	7.866	A
			2	1, 2, 3, 4	661	1000	0.661	662	664	1.5	1.5	8.121	A
	Exit	1	1		413			413	411	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1612	1387	1.162	1390	1385	64.0	117.0	235.610	F
			2	2, 3	395	1387	0.285	396	395	0.5	0.5	4.067	A
	Exit	1	1		1841			1841	1835	0.0	0.0	0.000	A
4	Entry	1	1	1	813	1000	0.813	811	811	5.4	5.6	22.918	C
			2	2, 3, 4	240	1000	0.240	242	242	0.4	0.3	5.321	A
	Exit	1	1		1042			1042	1032	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	181	1098	0.164	181	182	0.3	0.2	3.962	A
			2	1, 3, 4	464	1098	0.423	463	468	1.0	0.8	5.596	A
		2	1	(1, 2, 3, 4)	644			645	649	0.0	0.0	0.294	A
	Exit	1	1		1551			1551	1552	0.0	0.0	0.000	A
2	Entry	1	1	3	540	1000	0.539	538	537	1.5	1.0	6.080	A
			2	1, 2, 3, 4	544	1000	0.544	543	549	1.5	1.0	6.270	A
	Exit	1	1		340			340	340	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1306	1448	0.902	1438	1425	117.0	84.7	256.968	F
			2	2, 3	326	1448	0.225	327	327	0.5	0.3	3.616	A
	Exit	1	1		1505			1505	1513	0.0	0.0	0.000	A
4	Entry	1	1	1	668	1000	0.668	667	680	5.6	2.8	14.657	B
			2	2, 3, 4	201	1000	0.201	199	199	0.3	0.4	4.919	A
	Exit	1	1		960			960	962	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	143	1130	0.126	142	144	0.2	0.1	3.734	A
			2	1, 3, 4	402	1130	0.356	402	398	0.8	0.5	4.977	A
		2	1	(1, 2, 3, 4)	545			545	541	0.0	0.0	0.107	A
	Exit	1	1		1330			1330	1381	0.0	0.0	0.000	A
2	Entry	1	1	3	445	1003	0.443	445	442	1.0	0.6	5.345	A
			2	1, 2, 3, 4	466	1003	0.465	468	461	1.0	0.7	5.419	A
	Exit	1	1		279			279	278	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1087	1479	0.735	1259	1352	84.7	20.1	115.934	F
			2	2, 3	268	1479	0.181	268	267	0.3	0.2	3.273	A
	Exit	1	1		1267			1267	1254	0.0	0.0	0.000	A
4	Entry	1	1	1	563	1000	0.563	562	563	2.8	1.4	9.425	A
			2	2, 3, 4	172	1000	0.172	173	170	0.4	0.2	4.675	A
	Exit	1	1		844			844	884	0.0	0.0	0.000	A

EMM - DS1, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm 4 - Lane Simulation	Arm 4: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	150.42	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	EMM - DS1	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	716	100.000
2		ONE HOUR	✓	1245	100.000
3		ONE HOUR	✓	1400	100.000
4		ONE HOUR	✓	1447	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	48	457	211
	2	19	0	1226	0
	3	56	703	0	641
	4	1155	0	292	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	5.50	1.3	A	649	973
2	8.38	3.2	A	1143	1715
3	5.40	2.8	A	1288	1932
4	484.37	172.3	F	1327	1991

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	530	132	735	529	539	921	0.0	0.8	4.600	A
2	947	237	711	941	940	552	0.0	1.9	5.394	A
3	1052	263	165	1055	1050	1487	0.0	1.1	3.811	A
4	1073	268	575	1081	1062	645	0.0	7.2	21.266	C

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	623	156	917	624	636	1046	0.8	0.9	5.082	A
2	1142	286	847	1145	1125	695	1.9	2.2	6.340	A
3	1269	317	203	1269	1259	1789	1.1	1.7	4.296	A
4	1286	322	722	1240	1222	750	7.2	26.9	58.526	F

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	791	198	1095	796	788	1068	0.9	1.2	5.498	A
2	1367	342	1062	1372	1371	829	2.2	2.5	8.378	A
3	1523	381	258	1527	1541	2177	1.7	1.9	5.396	A
4	1608	402	852	1312	1325	932	26.9	95.1	176.544	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	782	196	1109	782	778	1081	1.2	1.3	5.486	A
2	1359	340	1066	1362	1363	825	2.5	3.2	8.127	A
3	1566	391	245	1556	1558	2184	1.9	2.8	5.402	A
4	1586	396	852	1339	1324	950	95.1	162.9	375.288	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	627	157	896	624	633	1069	1.3	1.1	4.981	A
2	1120	280	849	1124	1126	670	3.2	2.1	6.291	A
3	1255	314	192	1254	1262	1782	2.8	1.5	4.376	A
4	1291	323	698	1266	1266	747	162.9	172.3	484.371	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	539	135	755	540	542	1082	1.1	0.7	4.691	A
2	924	231	726	932	930	569	2.1	1.2	5.514	A
3	1063	266	176	1062	1057	1481	1.5	1.1	3.750	A
4	1117	279	591	1246	1239	648	172.3	137.0	351.245	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	223	1028	0.217	222	226	0.0	0.3	4.373	A
			2	1, 3, 4	306	1028	0.298	306	313	0.0	0.4	4.677	A
		2	1	(1, 2, 3, 4)	530			529	542	0.0	0.0	0.050	A
	Exit	1	1		921			921	896	0.0	0.0	0.000	A
2	Entry	1	1	3	467	1002	0.466	465	468	0.0	0.9	5.473	A
			2	1, 2, 3, 4	480	1002	0.479	477	472	0.0	0.9	5.316	A
	Exit	1	1		552			552	564	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	534	1593	0.335	536	523	0.0	0.6	3.807	A
			2	2, 3	518	1593	0.325	519	526	0.0	0.5	3.815	A
	Exit	1	1		1487			1487	1492	0.0	0.0	0.000	A
4	Entry	1	1	1	856	1000	0.856	866	843	0.0	6.8	25.337	D
			2	2, 3, 4	217	1000	0.217	216	220	0.0	0.4	5.179	A
	Exit	1	1		645			645	639	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	255	1004	0.254	256	267	0.3	0.3	4.630	A
			2	1, 3, 4	368	1004	0.367	368	368	0.4	0.6	5.299	A
		2	1	(1, 2, 3, 4)	623			623	636	0.0	0.0	0.063	A
	Exit	1	1		1046			1046	1023	0.0	0.0	0.000	A
2	Entry	1	1	3	562	1000	0.562	563	560	0.9	1.1	6.285	A
			2	1, 2, 3, 4	581	1000	0.581	582	565	0.9	1.1	6.396	A
	Exit	1	1		695			695	679	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	611	1570	0.389	612	622	0.6	0.8	4.221	A
			2	2, 3	658	1570	0.419	658	637	0.5	0.9	4.369	A
	Exit	1	1		1789			1789	1774	0.0	0.0	0.000	A
4	Entry	1	1	1	1024	1000	1.024	981	957	6.8	26.3	72.120	F
			2	2, 3, 4	262	1000	0.262	259	264	0.4	0.6	5.457	A
	Exit	1	1		750			750	766	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	341	1000	0.341	343	339	0.3	0.5	4.737	A
			2	1, 3, 4	450	1000	0.450	453	449	0.6	0.7	5.791	A
		2	1	(1, 2, 3, 4)	791			792	789	0.0	0.0	0.161	A
	Exit	1	1		1068			1068	1078	0.0	0.0	0.000	A
2	Entry	1	1	3	674	1000	0.674	678	682	1.1	1.1	8.385	A
			2	1, 2, 3, 4	693	1000	0.693	695	688	1.1	1.3	8.372	A
	Exit	1	1		829			829	830	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	750	1537	0.488	752	764	0.8	1.0	5.419	A
			2	2, 3	773	1537	0.503	775	776	0.9	0.9	5.373	A
	Exit	1	1		2177			2177	2178	0.0	0.0	0.000	A
4	Entry	1	1	1	1288	1000	1.288	991	999	26.3	94.5	220.211	F
			2	2, 3, 4	320	1000	0.320	321	326	0.6	0.5	6.074	A
	Exit	1	1		932			932	938	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	334	1000	0.334	333	330	0.5	0.5	4.992	A
			2	1, 3, 4	450	1000	0.450	449	448	0.7	0.8	5.650	A
		2	1	(1, 2, 3, 4)	782			784	779	0.0	0.0	0.116	A
	Exit	1	1		1081			1081	1078	0.0	0.0	0.000	A
2	Entry	1	1	3	683	1000	0.683	685	688	1.1	1.6	7.919	A
			2	1, 2, 3, 4	676	1000	0.676	677	675	1.3	1.7	8.339	A
	Exit	1	1		825			825	834	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	790	1545	0.511	781	776	1.0	1.7	5.609	A
			2	2, 3	776	1545	0.502	775	782	0.9	1.1	5.196	A
	Exit	1	1		2184			2184	2161	0.0	0.0	0.000	A
4	Entry	1	1	1	1254	1000	1.254	1005	999	94.5	162.4	470.115	F
			2	2, 3, 4	332	1000	0.332	334	326	0.5	0.5	5.728	A
	Exit	1	1		950			950	950	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	267	1003	0.266	265	268	0.5	0.5	4.636	A
			2	1, 3, 4	360	1003	0.359	358	366	0.8	0.6	5.178	A
		2	1	(1, 2, 3, 4)	627			627	632	0.0	0.0	0.030	A
	Exit	1	1		1069			1069	1075	0.0	0.0	0.000	A
2	Entry	1	1	3	556	1000	0.556	561	559	1.6	1.0	6.305	A
			2	1, 2, 3, 4	564	1000	0.564	564	566	1.7	1.1	6.277	A
	Exit	1	1		670			670	668	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	626	1577	0.397	624	634	1.7	0.8	4.357	A
			2	2, 3	630	1577	0.399	629	628	1.1	0.7	4.396	A
	Exit	1	1		1782			1782	1779	0.0	0.0	0.000	A
4	Entry	1	1	1	1023	1000	1.023	1000	1005	162.4	171.9	603.934	F
			2	2, 3, 4	268	1000	0.268	267	261	0.5	0.4	5.474	A
	Exit	1	1		747			747	765	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	225	1022	0.220	224	228	0.5	0.3	4.370	A
			2	1, 3, 4	315	1022	0.308	316	314	0.6	0.4	4.859	A
		2	1	(1, 2, 3, 4)	539			540	541	0.0	0.0	0.039	A
	Exit	1	1		1082			1082	1081	0.0	0.0	0.000	A
2	Entry	1	1	3	451	1001	0.451	456	462	1.0	0.5	5.492	A
			2	1, 2, 3, 4	473	1001	0.473	476	469	1.1	0.7	5.535	A
	Exit	1	1		569			569	560	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	535	1586	0.337	532	534	0.8	0.6	3.728	A
			2	2, 3	528	1586	0.333	530	523	0.7	0.5	3.773	A
	Exit	1	1		1481			1481	1481	0.0	0.0	0.000	A
4	Entry	1	1	1	888	1000	0.888	1022	1021	171.9	136.5	496.256	F
			2	2, 3, 4	228	1000	0.228	226	218	0.4	0.5	5.385	A
	Exit	1	1		648			648	647	0.0	0.0	0.000	A

EML - DS2, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm 3 - Lane Simulation	Arm 3: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	89.31	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms
[same as above]

Roundabout Geometry
[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	EML - DS2	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	720	100.000
2		ONE HOUR	✓	1196	100.000
3		ONE HOUR	✓	1813	100.000
4		ONE HOUR	✓	964	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	15	289	416
	2	42	0	1154	0
	3	849	360	0	604
	4	740	0	224	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	6.51	1.2	A	656	984
2	8.02	3.3	A	1095	1643
3	212.86	119.2	F	1669	2503
4	17.94	5.9	C	880	1320

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	540	135	439	539	542	1227	0.0	0.7	4.646	A
2	912	228	696	911	903	281	0.0	1.5	5.450	A
3	1368	342	344	1369	1358	1264	0.0	3.3	9.083	A
4	719	180	950	716	719	762	0.0	1.8	7.985	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	642	161	537	638	649	1472	0.7	1.2	5.328	A
2	1062	266	829	1065	1067	346	1.5	1.8	5.958	A
3	1642	411	404	1664	1620	1491	3.3	9.7	19.620	C
4	854	214	1147	862	850	922	1.8	2.7	11.215	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	795	199	636	797	795	1674	1.2	1.2	6.506	A
2	1323	331	1026	1323	1322	407	1.8	2.9	8.023	A
3	1998	499	506	1774	1771	1843	9.7	65.7	80.460	F
4	1058	265	1249	1061	1054	1030	2.7	5.9	17.936	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	785	196	645	789	793	1690	1.2	1.2	6.358	A
2	1306	326	1017	1299	1310	418	2.9	3.3	7.737	A
3	2014	503	503	1796	1795	1813	65.7	119.2	193.057	F
4	1062	266	1269	1066	1060	1030	5.9	4.7	16.659	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	643	161	531	644	648	1525	1.2	1.0	5.423	A
2	1071	268	834	1066	1088	341	3.3	2.3	6.205	A
3	1636	409	405	1766	1753	1494	119.2	87.5	212.858	F
4	856	214	1202	855	873	970	4.7	2.5	10.528	B

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	531	133	437	530	542	1347	1.0	0.8	4.724	A
2	898	225	687	900	903	279	2.3	1.3	5.290	A
3	1356	339	348	1568	1629	1241	87.5	20.6	98.007	F
4	731	183	1058	725	734	857	2.5	1.8	8.112	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	145	1131	0.128	145	146	0.0	0.2	3.675	A
			2	1, 3, 4	395	1131	0.349	394	396	0.0	0.6	4.855	A
		2	1	(1, 2, 3, 4)	540			540	545	0.0	0.0	0.107	A
	Exit	1	1		1227			1227	1221	0.0	0.0	0.000	A
2	Entry	1	1	3	452	1002	0.451	449	445	0.0	0.8	5.372	A
			2	1, 2, 3, 4	460	1002	0.459	462	457	0.0	0.6	5.526	A
	Exit	1	1		281			281	280	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1096	1485	0.738	1097	1089	0.0	3.1	10.499	B
			2	2, 3	271	1485	0.183	271	270	0.0	0.2	3.364	A
	Exit	1	1		1264			1264	1257	0.0	0.0	0.000	A
4	Entry	1	1	1	550	1000	0.550	549	551	0.0	1.5	8.992	A
			2	2, 3, 4	169	1000	0.169	168	168	0.0	0.3	4.681	A
	Exit	1	1		762			762	764	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	177	1094	0.162	176	182	0.2	0.2	3.979	A
			2	1, 3, 4	463	1094	0.423	462	467	0.6	0.8	5.460	A
		2	1	(1, 2, 3, 4)	642			640	650	0.0	0.2	0.271	A
	Exit	1	1		1472			1472	1447	0.0	0.0	0.000	A
2	Entry	1	1	3	526	1000	0.526	528	527	0.8	0.8	5.914	A
			2	1, 2, 3, 4	536	1000	0.536	537	540	0.6	0.9	6.001	A
	Exit	1	1		346			346	338	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1313	1449	0.906	1332	1296	3.1	9.4	23.568	C
			2	2, 3	329	1449	0.227	332	324	0.2	0.3	3.545	A
	Exit	1	1		1491			1491	1491	0.0	0.0	0.000	A
4	Entry	1	1	1	652	1000	0.652	658	650	1.5	2.4	13.037	B
			2	2, 3, 4	203	1000	0.203	205	200	0.3	0.2	5.285	A
	Exit	1	1		922			922	911	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	234	1058	0.221	234	231	0.2	0.2	4.347	A
			2	1, 3, 4	561	1058	0.530	563	564	0.8	0.9	6.526	A
		2	1	(1, 2, 3, 4)	795			795	796	0.2	0.1	0.623	A
	Exit	1	1		1674			1674	1666	0.0	0.0	0.000	A
2	Entry	1	1	3	660	1000	0.660	662	656	0.8	1.4	7.921	A
			2	1, 2, 3, 4	663	1000	0.663	661	666	0.9	1.6	8.124	A
	Exit	1	1		407			407	409	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1605	1387	1.157	1382	1378	9.4	65.3	99.197	F
			2	2, 3	393	1387	0.283	392	393	0.3	0.4	4.196	A
	Exit	1	1		1843			1843	1844	0.0	0.0	0.000	A
4	Entry	1	1	1	817	1000	0.817	818	807	2.4	5.7	21.688	C
			2	2, 3, 4	241	1000	0.241	244	247	0.2	0.3	5.497	A
	Exit	1	1		1030			1030	1025	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	230	1054	0.218	232	228	0.2	0.2	4.396	A
			2	1, 3, 4	556	1054	0.528	557	564	0.9	0.9	6.341	A
		2	1	(1, 2, 3, 4)	785			786	793	0.1	0.1	0.573	A
	Exit	1	1		1690			1690	1682	0.0	0.0	0.000	A
2	Entry	1	1	3	645	1000	0.645	642	650	1.4	1.5	7.623	A
			2	1, 2, 3, 4	661	1000	0.661	657	660	1.6	1.8	7.848	A
	Exit	1	1		418			418	414	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1615	1389	1.162	1396	1398	65.3	118.7	239.495	F
			2	2, 3	399	1389	0.288	400	397	0.4	0.5	4.098	A
	Exit	1	1		1813			1813	1822	0.0	0.0	0.000	A
4	Entry	1	1	1	818	1000	0.818	821	816	5.7	4.4	20.086	C
			2	2, 3, 4	244	1000	0.244	245	245	0.3	0.3	5.340	A
	Exit	1	1		1030			1030	1041	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	179	1096	0.164	181	182	0.2	0.2	4.119	A
			2	1, 3, 4	464	1096	0.423	463	466	0.9	0.8	5.633	A
		2	1	(1, 2, 3, 4)	643			643	647	0.1	0.0	0.220	A
	Exit	1	1		1525			1525	1538	0.0	0.0	0.000	A
2	Entry	1	1	3	525	1000	0.525	524	532	1.5	1.0	6.188	A
			2	1, 2, 3, 4	547	1000	0.547	543	556	1.8	1.2	6.221	A
	Exit	1	1		341			341	338	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1307	1448	0.902	1437	1427	118.7	87.1	265.157	F
			2	2, 3	329	1448	0.227	328	325	0.5	0.3	3.588	A
	Exit	1	1		1494			1494	1515	0.0	0.0	0.000	A
4	Entry	1	1	1	652	1000	0.652	652	672	4.4	2.1	12.201	B
			2	2, 3, 4	204	1000	0.204	202	201	0.3	0.4	5.084	A
	Exit	1	1		970			970	971	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	140	1132	0.123	140	145	0.2	0.2	3.748	A
			2	1, 3, 4	391	1132	0.345	390	397	0.8	0.6	4.946	A
		2	1	(1, 2, 3, 4)	531			531	541	0.0	0.0	0.100	A
	Exit	1	1		1347			1347	1389	0.0	0.0	0.000	A
2	Entry	1	1	3	436	1002	0.435	438	445	1.0	0.6	5.174	A
			2	1, 2, 3, 4	462	1002	0.461	463	458	1.2	0.7	5.402	A
	Exit	1	1		279			279	283	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1090	1483	0.735	1300	1358	87.1	20.4	122.456	F
			2	2, 3	267	1483	0.180	268	271	0.3	0.3	3.358	A
	Exit	1	1		1241			1241	1258	0.0	0.0	0.000	A
4	Entry	1	1	1	563	1000	0.563	557	560	2.1	1.6	9.121	A
			2	2, 3, 4	168	1000	0.168	169	174	0.4	0.2	4.898	A
	Exit	1	1		857			857	878	0.0	0.0	0.000	A

EML - DS2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm 4 - Lane Simulation	Arm 4: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	159.26	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	EML - DS2	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	709	100.000
2		ONE HOUR	✓	1252	100.000
3		ONE HOUR	✓	1404	100.000
4		ONE HOUR	✓	1449	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	48	450	211
	2	19	0	1233	0
	3	58	703	0	643
	4	1159	0	290	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	5.60	1.3	A	651	977
2	8.60	3.2	A	1151	1726
3	5.49	2.5	A	1281	1922
4	513.92	183.5	F	1327	1990

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	547	137	741	542	536	938	0.0	1.0	4.725	A
2	950	237	725	947	939	558	0.0	1.6	5.463	A
3	1042	261	169	1043	1055	1502	0.0	1.1	3.857	A
4	1109	277	582	1096	1064	631	0.0	8.1	21.341	C

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	646	161	888	644	644	1036	1.0	1.1	5.054	A
2	1141	285	855	1145	1133	678	1.6	2.0	6.540	A
3	1255	314	211	1255	1257	1789	1.1	1.5	4.330	A
4	1293	323	698	1226	1218	767	8.1	28.6	59.110	F

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	791	198	1072	792	778	1087	1.1	1.3	5.597	A
2	1380	345	1050	1386	1373	815	2.0	3.2	8.460	A
3	1526	381	260	1528	1532	2175	1.5	2.1	5.175	A
4	1595	399	846	1313	1310	942	28.6	98.5	186.315	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	767	192	1082	772	786	1074	1.3	1.0	5.516	A
2	1387	347	1027	1392	1388	828	3.2	3.2	8.601	A
3	1551	388	250	1549	1555	2168	2.1	2.5	5.493	A
4	1577	394	854	1302	1312	945	98.5	169.2	393.847	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	612	153	900	615	634	1065	1.0	0.9	4.992	A
2	1124	281	834	1123	1116	682	3.2	2.2	6.281	A
3	1267	317	206	1266	1270	1752	2.5	1.6	4.426	A
4	1305	326	708	1258	1247	764	169.2	183.5	513.917	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	546	136	729	543	541	1063	0.9	0.9	4.577	A
2	923	231	718	925	940	554	2.2	1.5	5.548	A
3	1047	262	177	1048	1053	1466	1.6	1.1	3.858	A
4	1082	270	576	1216	1224	650	183.5	148.9	376.356	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	232	1027	0.226	230	223	0.0	0.4	4.474	A
			2	1, 3, 4	315	1027	0.307	312	313	0.0	0.6	4.870	A
		2	1	(1, 2, 3, 4)	547			547	540	0.0	0.0	0.020	A
	Exit	1	1		938			938	903	0.0	0.0	0.000	A
2	Entry	1	1	3	474	1002	0.474	472	468	0.0	0.8	5.414	A
			2	1, 2, 3, 4	475	1002	0.474	475	471	0.0	0.7	5.512	A
	Exit	1	1		558			558	567	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	516	1591	0.325	518	522	0.0	0.4	3.830	A
			2	2, 3	526	1591	0.331	525	532	0.0	0.6	3.884	A
	Exit	1	1		1502			1502	1488	0.0	0.0	0.000	A
4	Entry	1	1	1	892	1000	0.892	881	846	0.0	7.7	25.411	D
			2	2, 3, 4	217	1000	0.217	216	218	0.0	0.4	5.064	A
	Exit	1	1		631			631	635	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	271	1004	0.270	271	272	0.4	0.4	4.591	A
			2	1, 3, 4	374	1004	0.372	373	372	0.6	0.6	5.232	A
		2	1	(1, 2, 3, 4)	646			646	644	0.0	0.0	0.090	A
	Exit	1	1		1036			1036	1027	0.0	0.0	0.000	A
2	Entry	1	1	3	569	1000	0.569	571	565	0.8	0.9	6.512	A
			2	1, 2, 3, 4	573	1000	0.573	574	568	0.7	1.1	6.569	A
	Exit	1	1		678			678	674	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	620	1566	0.396	622	627	0.4	0.7	4.357	A
			2	2, 3	635	1566	0.406	633	630	0.6	0.9	4.304	A
	Exit	1	1		1789			1789	1784	0.0	0.0	0.000	A
4	Entry	1	1	1	1037	1000	1.037	970	958	7.7	28.2	72.472	F
			2	2, 3, 4	256	1000	0.256	256	260	0.4	0.4	5.481	A
	Exit	1	1		767			767	766	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	335	1000	0.335	336	334	0.4	0.5	4.944	A
			2	1, 3, 4	455	1000	0.455	456	443	0.6	0.7	5.771	A
		2	1	(1, 2, 3, 4)	791			791	779	0.0	0.0	0.184	A
	Exit	1	1		1087			1087	1080	0.0	0.0	0.000	A
2	Entry	1	1	3	687	1000	0.687	690	681	0.9	1.6	8.437	A
			2	1, 2, 3, 4	693	1000	0.693	696	692	1.1	1.6	8.482	A
	Exit	1	1		815			815	824	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	764	1536	0.498	767	761	0.7	0.8	5.142	A
			2	2, 3	761	1536	0.496	761	770	0.9	1.3	5.207	A
	Exit	1	1		2175			2175	2162	0.0	0.0	0.000	A
4	Entry	1	1	1	1282	1000	1.282	1002	995	28.2	97.9	231.149	F
			2	2, 3, 4	313	1000	0.313	311	315	0.4	0.6	5.651	A
	Exit	1	1		942			942	926	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	328	1000	0.328	330	337	0.5	0.3	4.926	A
			2	1, 3, 4	439	1000	0.439	442	448	0.7	0.7	5.712	A
		2	1	(1, 2, 3, 4)	767			768	785	0.0	0.0	0.140	A
	Exit	1	1		1074			1074	1079	0.0	0.0	0.000	A
2	Entry	1	1	3	690	1000	0.690	692	693	1.6	1.5	8.566	A
			2	1, 2, 3, 4	697	1000	0.697	699	695	1.6	1.6	8.636	A
	Exit	1	1		828			828	830	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	780	1542	0.506	779	780	0.8	1.1	5.532	A
			2	2, 3	771	1542	0.500	770	775	1.3	1.4	5.453	A
	Exit	1	1		2168			2168	2185	0.0	0.0	0.000	A
4	Entry	1	1	1	1265	1000	1.265	991	994	97.9	168.7	490.135	F
			2	2, 3, 4	311	1000	0.311	312	318	0.6	0.5	6.050	A
	Exit	1	1		945			945	946	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	256	1003	0.256	258	263	0.3	0.4	4.631	A
			2	1, 3, 4	356	1003	0.355	358	372	0.7	0.5	5.141	A
		2	1	(1, 2, 3, 4)	612			612	634	0.0	0.0	0.063	A
	Exit	1	1		1065			1065	1059	0.0	0.0	0.000	A
2	Entry	1	1	3	555	1000	0.555	556	552	1.5	1.0	6.285	A
			2	1, 2, 3, 4	569	1000	0.569	568	563	1.6	1.1	6.276	A
	Exit	1	1		682			682	679	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	627	1569	0.400	628	634	1.1	0.8	4.503	A
			2	2, 3	639	1569	0.408	639	637	1.4	0.8	4.349	A
	Exit	1	1		1752			1752	1757	0.0	0.0	0.000	A
4	Entry	1	1	1	1043	1000	1.043	996	989	168.7	183.0	638.500	F
			2	2, 3, 4	262	1000	0.262	261	257	0.5	0.4	5.319	A
	Exit	1	1		764			764	772	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	225	1028	0.218	225	223	0.4	0.3	4.288	A
			2	1, 3, 4	321	1028	0.312	319	318	0.5	0.6	4.757	A
		2	1	(1, 2, 3, 4)	546			546	541	0.0	0.0	0.013	A
	Exit	1	1		1063			1063	1068	0.0	0.0	0.000	A
2	Entry	1	1	3	459	1001	0.458	459	467	1.0	0.8	5.550	A
			2	1, 2, 3, 4	464	1001	0.464	465	473	1.1	0.7	5.546	A
	Exit	1	1		554			554	557	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	530	1586	0.334	531	530	0.8	0.6	3.933	A
			2	2, 3	517	1586	0.326	518	522	0.8	0.5	3.783	A
	Exit	1	1		1466			1466	1482	0.0	0.0	0.000	A
4	Entry	1	1	1	872	1000	0.872	1005	1009	183.0	148.7	547.744	F
			2	2, 3, 4	210	1000	0.210	211	214	0.4	0.2	5.235	A
	Exit	1	1		650			650	650	0.0	0.0	0.000	A

Appendix 5 – Committed Junction Improvement Schemes

REV.	DETAILS	DRAWN	CHECKED	DATE	REV.	DETAILS	DRAWN	CHECKED	DATE
A	VARIOUS AMENDMENTS	AH	SR	08.10.17					
B	VARIOUS AMENDMENTS	JD	SR	23.10.18					
C	ROAD HATCHING ADDED	JD	SR	29.11.18					
D	KEY AMENDED	JD	SR	04.12.18					
E	AMENDED TO RSA 1 COMMENTS	JD	SR	19.06.19					
F	AMENDED TO RSA 1 COMMENTS	JD	SR	03.07.19					
G	AMENDED TO RSA 1 COMMENTS	JD	SR	09.08.19					
H	MINOR AMENDMENTS	JD	SR	10.06.20					

Notes:

KEY

HIGHWAY WORKS BOUNDARY

NOTE

VEGETATION WITHIN VISIBILITY SPLAYS TO BE REMOVED

0 12.5 25 m

1:500 @ A1; 1:1000 @ A3

PROJECT:
HORNDEAN

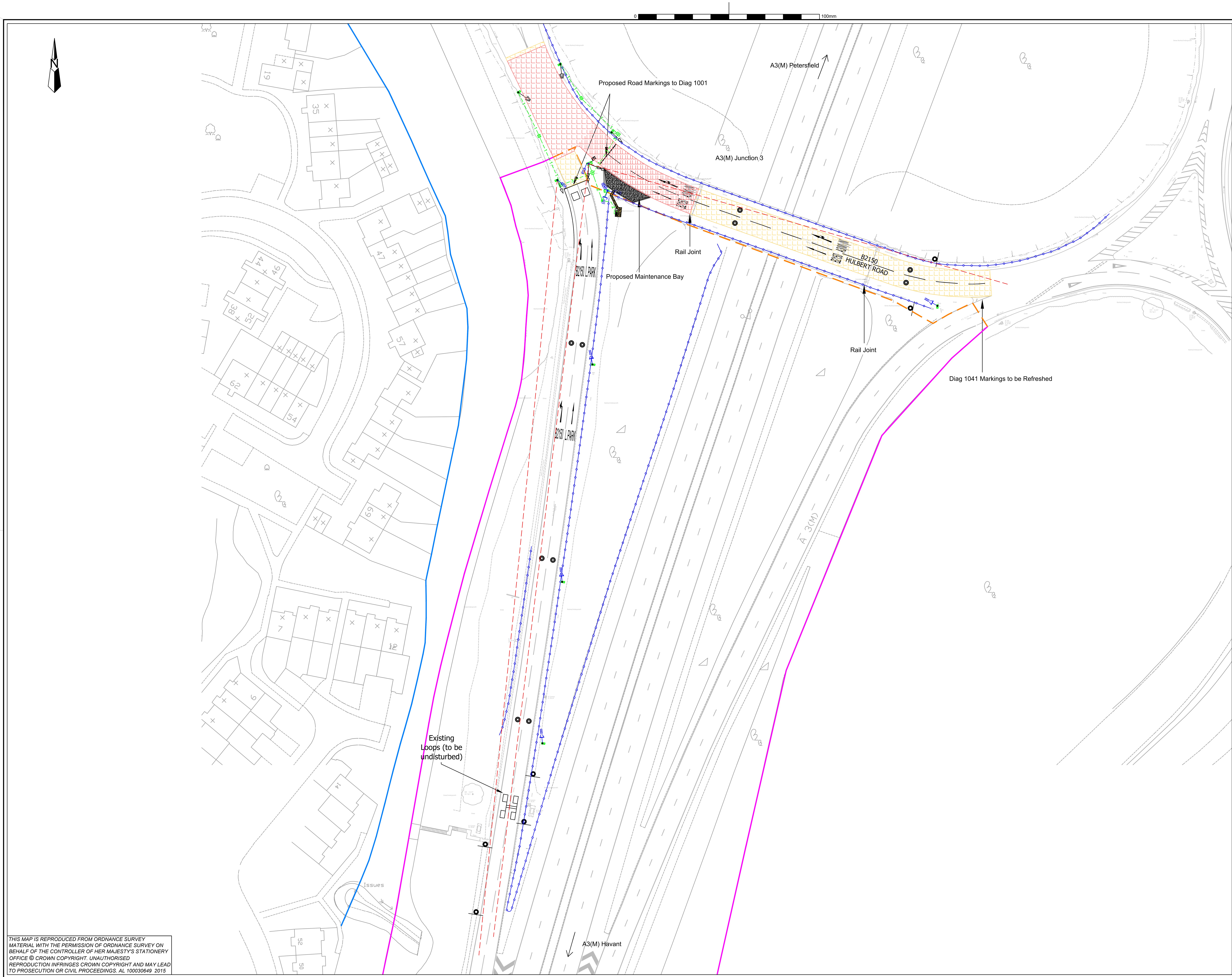
CLIENT:
BLOOR HOMES SOUTHERN

DRAWING TITLE:
GENERAL ARRANGEMENT - SHEET 2 OF 7

vectos
highway infrastructure specialists
Oxford Place, 61 Oxford Street, Manchester, M1 6EQ
t: 0161 228 1008 e: manchester@vectos.co.uk

DRAWN:	CHECKED:	DATE:	SCALES:	DRAWING NUMBER:	REVISION:
AH	SR	20.05.18	1:500 @ A1	VD18678/100-02	H

I:\JOBS\2018\VD18678 Horndean - Bridge Review\2. DESIGN\CAD\ VD18678-100 General Arrangement.dwg



RESIDUAL DESIGN HAZARDS

THE FOLLOWING HAS BEEN COLLECTED FROM THE PRE-CONSTRUCTION INFORMATION AND HIGHLIGHTS KNOWN RESIDUAL HAZARDS.

KEY Risk ref.
HS-# = HEALTH AND SAFETY RISK REFERENCE NUMBER
E-# = ENVIRONMENT RISK REFERENCE NUMBER

HEATH & SAFETY RISKS ARE AS FOLLOWS:
HS-01-GAS LINE
HS-02 - WORKING AT HEIGHT
HS-03 - BRIDGE JOINTS
HS-04 - SURFACE DRAINAGE

TRAFFIC SIGNAL EQUIPMENT KEY (DESIGN WORKING IN PROGRESS)

- Telent OPTIMA ELV traffic signal controller, with NAL controller cabinet base
- F-P Electrical feeder pillar
- 4m low access slotless passively-safe signal pole
- 6m low access slotless passively-safe signal pole
- RAG primary signal head
- RAG secondary signal head
- Double RAG primary signal head
- AGD 316 stopline detector
- Magnetometer access point
- Magnetometer repeater unit
- CCTV CCTV camera
- PE Photoelectric cell
- 0.5m extension bracket
- NAL STAKKAbox square chamber 600mm x 600mm
- NAL STAKKAbox medium chamber 450mm x 450mm
- NAL pole retention socket RS115
- Large NAL pole retention socket RS168
- 100mm orange traffic signals duct (No. as indicated)
- 50mm black duct for electrical feed
- Hardstanding maintenance area
- Overhead stopline detection zone
- Magnetometer detector
- Existing vehicle restraint system
- A Phase identifier
- 1 Signal pole number

PAVEMENT

- HRA surface course inlay 40mm over 60mm binder course
- High friction surfacing (charcoal grey)
- HRA surface course inlay 45mm

MISCELLANEOUS

- Proposed white lining
- Proposed new traffic sign
- Existing detector loops
- Indicative HE maintenance liability boundary
- HE maintenance liability boundary as per Area 3 commission highway boundary plans route A3(M) sheet 4 Drawing No. 200661/A3(M)/04 Rev P1
- HE land boundary as shown on HM Land Registry information
- SSD visibility envelopes for signal heads
  - 215m SSD at A3(M) northbound offslip
  - 120m SSD at A3(M) junction 3 southern circulatory

REV	DETAILS	CHKD	APPD	DATE
P06	VISIBILITY ENVELOPE & SIGNAL POLE PAVED AREAS ADDED	TC	-	10/12/2019
C05	BOUNDARIES ADDED	TC	KP	22/02/2019
C04	UPDATED SIGNALS DESIGN	NK	-	23/01/2019
C03	NOTES AND DRAWING AMENDED	YB	DL	04/07/2018
C02	DUCTING ROUTE ALTERED	YB	RJW	06-03-17
C01	INITIAL ISSUE	MR	RJW	06/03/2017

CLIENT: highways england

AGENT: KIER

SCHEME NAME: A3(M) J3 Northbound Slip S278 Signalisation Scheme

DRAWING TITLE: General Arrangement Plan

DRAWN : DH	SCALE : 1:500	DRAWING STATUS:	02
DESIGN : KB	DIMENSIONS : m	WORKING DRAWING	
CHKD : MR	ORIG DWG SIZE: A1	PRELIMINARY DRAWING	✓
APPD : RW	COPYRIGHT© KIER	EXTERNAL ISSUE	
DATE : 06/03/17		AS-BUILT	

SUITABILITY: S2 FOR INFORMATION

DRAWING NUMBER

PROJECT	ORIGINATOR	VOLUME	
517770	KIER	HSN	
A3(M) J3	DR	D	100-003
LOCATION	TYPE	ROLE	NUMBER

SCHEME REFERENCE No. SCH

REVISION P 06

File ref - \\uk.wspgroup.com\central data\projects\62240xxx\62240268 - ksh 1076141 - asc-ha0401\62240268 - ksh a3 (m) junc 3 nb off slip\02 wip\hw highways\02 drawing\drawings\3-004032-dr-100-003-p06.dwg Plotted 10.12.2019 by UKRMM601

Appendix 6 – ARCADY Outputs for Assessments Excluding Committed Development Flows

Junctions 9

ARCADY 9 - Roundabout Module

Filename: Junction 3_A3(M).j9
Path: \\uk.wspgroup.com\central data\Projects\62100xxx\62100616 - Aquind VO No.3\A DCO\POST SUBMISSION\D. EIA POST SUBMISSION\Transport\WIP\Reports\Highways England Response\20-08-21 HE Note TN03\HE Review 301120\App 6 - ARCADY
Report generation date: 02/12/2020 15:37:22

»ELM - DM, AM
»ELM - DM, PM
»EMM - DS1, AM
»EMM - DS1, PM
»EML - DS2, AM
»EML - DS2, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	[Lane Simulation] - ELM - DM							
Arm 1	1.5	6.45		A	1.3	5.16		A
Arm 2	2.2	6.62		A	2.7	7.25		A
Arm 3	84.6	139.07		F	2.7	5.50		A
Arm 4	5.7	18.23		C	173.3	483.50		F
	[Lane Simulation] - EMM - DS1							
Arm 1	1.5	6.27		A	1.2	5.64		A
Arm 2	2.7	7.28		A	3.0	7.70		A
Arm 3	106.8	193.72		F	2.6	5.10		A
Arm 4	5.8	19.29		C	172.7	491.11		F
	[Lane Simulation] - EML - DS2							
Arm 1	1.5	6.29		A	1.2	5.45		A
Arm 2	2.7	7.15		A	3.1	8.08		A
Arm 3	104.9	181.64		F	2.3	4.98		A
Arm 4	6.0	19.40		C	173.6	489.59		F

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

File summary

File Description

Title	Junction 3, A3(M)
Location	
Site number	
Date	26/09/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	62100616
Enumerator	CORP\UKAJT009
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓			1014955662	311	58.99

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	ELM - DM	AM	ONE HOUR	07:45	09:15	15	✓
D4	ELM - DM	PM	ONE HOUR	16:45	18:15	15	✓
D5	EMM - DS1	AM	ONE HOUR	07:45	09:15	15	✓
D6	EMM - DS1	PM	ONE HOUR	16:45	18:15	15	✓
D7	EML - DS2	AM	ONE HOUR	07:45	09:15	15	✓
D8	EML - DS2	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	100.000	100.000

ELM - DM, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	61.84	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Hulbert Road east	
2	A3(M) south	
3	Hulbert Road west	
4	A3(M) north	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	4.10	7.50	24.9	40.0	145.0	9.0	
2	6.00	6.90	5.7	50.0	145.0	5.0	
3	7.60	7.60	0.0	45.0	145.0	4.0	
4	6.50	6.50	0.0	50.0	145.0	26.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.762	2597
2	0.951	2551
3	1.208	3386
4	0.716	2207

The slope and intercept shown above include any corrections and adjustments.

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
1	Evenly split	10.00
2	Evenly split	10.00
3	Evenly split	10.00
4	Evenly split	10.00

Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised
1	Entry	1	1	2, 3	✓	4.00		1000	99999	
			2	1, 3, 4	✓	4.00		1000	99999	
		2	1	(1, 2, 3, 4)		Infinity				
	Exit	1	1			Infinity				
2	Entry	1	1	3		Infinity		1000	99999	
			2	1, 2, 3, 4		Infinity		1000	99999	
	Exit	1	1			Infinity				
3	Entry	1	1	1, 4		Infinity		1000	99999	
			2	2, 3		Infinity		1000	99999	
	Exit	1	1			Infinity				
4	Entry	1	1	1		Infinity		1000	99999	
			2	2, 3, 4		Infinity		1000	99999	
	Exit	1	1			Infinity				

Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
1	Entry	1	1	0.381	1298
			2	0.381	1298
2	Entry	1	1	0.476	1276
			2	0.476	1276
3	Entry	1	1	0.604	1693
			2	0.604	1693
4	Entry	1	1	0.358	1104
			2	0.358	1104

Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm			
			1	2	3	4
1	1	1		✓	✓	
		2	✓		✓	✓
	2	1	✓	✓	✓	✓
2	1	1			✓	
		2	✓	✓	✓	✓
3	1	1	✓			✓
		2		✓	✓	
4	1	1	✓			
		2		✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	ELM - DM	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	660	100.000
2		ONE HOUR	✓	1030	100.000
3		ONE HOUR	✓	1754	100.000
4		ONE HOUR	✓	959	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	15	241	404
	2	42	0	988	0
	3	842	353	0	559
	4	733	0	226	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	6.45	1.5	A	609	913
2	6.62	2.2	A	946	1419
3	139.07	84.6	F	1609	2413
4	18.23	5.7	C	878	1317

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	506	126	433	507	498	1225	0.0	0.7	4.614	A
2	772	193	666	772	775	274	0.0	1.2	4.902	A
3	1315	329	343	1317	1306	1095	0.0	2.9	8.219	A
4	730	182	932	726	724	729	0.0	2.0	8.399	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	596	149	520	597	591	1458	0.7	1.0	5.176	A
2	930	233	783	930	930	334	1.2	1.4	5.439	A
3	1584	396	403	1573	1555	1310	2.9	7.8	15.152	C
4	860	215	1111	867	858	865	2.0	2.4	10.706	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	729	182	642	728	724	1691	1.0	1.4	6.293	A
2	1136	284	959	1134	1129	411	1.4	2.2	6.412	A
3	1927	482	492	1787	1773	1601	7.8	49.3	63.700	F
4	1046	262	1288	1044	1039	991	2.4	5.7	16.504	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	733	183	644	730	724	1685	1.4	1.5	6.450	A
2	1142	285	960	1141	1135	414	2.2	2.2	6.624	A
3	1934	483	491	1794	1787	1610	49.3	84.6	139.070	F
4	1048	262	1280	1049	1056	1005	5.7	5.4	18.228	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	591	148	515	589	598	1538	1.5	1.0	5.223	A
2	928	232	773	927	928	331	2.2	1.5	5.502	A
3	1574	394	398	1718	1732	1302	84.6	45.2	131.052	F
4	858	215	1198	855	873	918	5.4	2.9	11.854	B

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	496	124	439	495	500	1256	1.0	0.7	4.772	A
2	769	192	656	771	779	278	1.5	1.0	4.981	A
3	1320	330	335	1375	1478	1093	45.2	6.3	40.027	E
4	725	181	972	723	725	738	2.9	1.9	8.331	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	128	1133	0.113	128	124	0.0	0.2	3.698	A
			2	1, 3, 4	378	1133	0.334	379	374	0.0	0.5	4.791	A
		2	1	(1, 2, 3, 4)	506			506	500	0.0	0.0	0.095	A
	Exit	1	1		1225			1225	1216	0.0	0.0	0.000	A
2	Entry	1	1	3	377	1005	0.375	376	377	0.0	0.6	4.887	A
			2	1, 2, 3, 4	395	1005	0.393	396	398	0.0	0.5	4.916	A
	Exit	1	1		274			274	273	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1053	1486	0.709	1055	1045	0.0	2.6	9.455	A
			2	2, 3	262	1486	0.176	262	261	0.0	0.3	3.261	A
	Exit	1	1		1095			1095	1094	0.0	0.0	0.000	A
4	Entry	1	1	1	558	1000	0.558	555	554	0.0	1.7	9.471	A
			2	2, 3, 4	172	1000	0.172	171	169	0.0	0.3	4.876	A
	Exit	1	1		729			729	720	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	154	1100	0.140	154	153	0.2	0.2	3.936	A
			2	1, 3, 4	443	1100	0.402	442	437	0.5	0.7	5.379	A
		2	1	(1, 2, 3, 4)	596			596	592	0.0	0.0	0.171	A
	Exit	1	1		1458			1458	1436	0.0	0.0	0.000	A
2	Entry	1	1	3	456	1001	0.456	457	457	0.6	0.7	5.375	A
			2	1, 2, 3, 4	474	1001	0.473	473	473	0.5	0.7	5.501	A
	Exit	1	1		334			334	334	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1265	1449	0.873	1254	1235	2.6	7.5	18.102	C
			2	2, 3	319	1449	0.220	319	320	0.3	0.3	3.553	A
	Exit	1	1		1310			1310	1310	0.0	0.0	0.000	A
4	Entry	1	1	1	660	1000	0.660	666	656	1.7	2.1	12.496	B
			2	2, 3, 4	201	1000	0.201	201	202	0.3	0.3	4.878	A
	Exit	1	1		865			865	853	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	197	1055	0.187	197	196	0.2	0.2	4.242	A
			2	1, 3, 4	532	1055	0.504	531	529	0.7	1.0	6.358	A
		2	1	(1, 2, 3, 4)	729			728	726	0.0	0.2	0.505	A
	Exit	1	1		1691			1691	1670	0.0	0.0	0.000	A
2	Entry	1	1	3	560	1000	0.560	558	556	0.7	1.1	6.344	A
			2	1, 2, 3, 4	576	1000	0.576	576	573	0.7	1.1	6.478	A
	Exit	1	1		411			411	409	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1533	1396	1.099	1394	1381	7.5	48.9	78.850	F
			2	2, 3	393	1396	0.282	393	392	0.3	0.4	3.948	A
	Exit	1	1		1601			1601	1597	0.0	0.0	0.000	A
4	Entry	1	1	1	799	1000	0.799	796	791	2.1	5.4	19.932	C
			2	2, 3, 4	248	1000	0.248	248	248	0.3	0.4	5.436	A
	Exit	1	1		991			991	989	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	198	1054	0.188	198	195	0.2	0.2	4.302	A
			2	1, 3, 4	535	1054	0.507	532	529	1.0	1.1	6.453	A
		2	1	(1, 2, 3, 4)	733			733	724	0.2	0.2	0.577	A
	Exit	1	1		1685			1685	1693	0.0	0.0	0.000	A
2	Entry	1	1	3	563	1000	0.563	562	560	1.1	1.1	6.563	A
			2	1, 2, 3, 4	579	1000	0.579	579	576	1.1	1.1	6.684	A
	Exit	1	1		414			414	407	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1537	1396	1.101	1397	1397	48.9	84.2	173.256	F
			2	2, 3	397	1396	0.284	397	390	0.4	0.4	3.941	A
	Exit	1	1		1610			1610	1602	0.0	0.0	0.000	A
4	Entry	1	1	1	801	1000	0.801	802	808	5.4	5.0	22.225	C
			2	2, 3, 4	247	1000	0.247	247	248	0.4	0.4	5.304	A
	Exit	1	1		1005			1005	999	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	152	1102	0.138	152	154	0.2	0.2	3.990	A
			2	1, 3, 4	439	1102	0.398	438	444	1.1	0.7	5.386	A
		2	1	(1, 2, 3, 4)	591			591	596	0.2	0.1	0.197	A
	Exit	1	1		1538			1538	1550	0.0	0.0	0.000	A
2	Entry	1	1	3	453	1000	0.453	452	455	1.1	0.8	5.442	A
			2	1, 2, 3, 4	475	1000	0.475	475	474	1.1	0.8	5.560	A
	Exit	1	1		331			331	332	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1256	1453	0.865	1400	1414	84.2	44.9	163.189	F
			2	2, 3	318	1453	0.219	318	318	0.4	0.3	3.656	A
	Exit	1	1		1302			1302	1313	0.0	0.0	0.000	A
4	Entry	1	1	1	661	1000	0.661	658	668	5.0	2.6	13.963	B
			2	2, 3, 4	197	1000	0.197	197	205	0.4	0.4	5.076	A
	Exit	1	1		918			918	936	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	122	1131	0.108	122	125	0.2	0.1	3.786	A
			2	1, 3, 4	374	1131	0.330	373	374	0.7	0.6	4.981	A
		2	1	(1, 2, 3, 4)	496			496	499	0.1	0.0	0.096	A
	Exit	1	1		1256			1256	1313	0.0	0.0	0.000	A
2	Entry	1	1	3	375	1005	0.373	377	381	0.8	0.5	4.910	A
			2	1, 2, 3, 4	394	1005	0.392	395	398	0.8	0.6	5.048	A
	Exit	1	1		278			278	280	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1053	1491	0.707	1110	1210	44.9	6.0	49.494	E
			2	2, 3	266	1491	0.179	265	268	0.3	0.3	3.231	A
	Exit	1	1		1093			1093	1102	0.0	0.0	0.000	A
4	Entry	1	1	1	551	1000	0.551	550	554	2.6	1.6	9.433	A
			2	2, 3, 4	174	1000	0.174	173	171	0.4	0.3	4.790	A
	Exit	1	1		738			738	787	0.0	0.0	0.000	A

ELM - DM, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm 4 - Lane Simulation	Arm 4: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	154.46	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	ELM - DM	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	644	100.000
2		ONE HOUR	✓	1124	100.000
3		ONE HOUR	✓	1474	100.000
4		ONE HOUR	✓	1455	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	48	455	141
	2	19	0	1105	0
	3	37	640	0	797
	4	1150	0	305	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	5.16	1.3	A	588	881
2	7.25	2.7	A	1031	1546
3	5.50	2.7	A	1355	2032
4	483.50	173.3	F	1341	2011

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	477	119	722	478	485	895	0.0	0.6	4.398	A
2	843	211	678	843	838	522	0.0	1.3	4.992	A
3	1112	278	117	1110	1098	1405	0.0	1.5	3.809	A
4	1087	272	526	1091	1066	700	0.0	6.5	19.191	C

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	577	144	844	579	581	1038	0.6	0.8	4.761	A
2	1009	252	808	1004	1005	616	1.3	1.9	5.712	A
3	1320	330	137	1322	1328	1674	1.5	1.6	4.424	A
4	1314	328	621	1261	1232	838	6.5	27.5	57.580	F

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	716	179	1051	716	705	1055	0.8	1.3	5.157	A
2	1234	308	1013	1232	1235	754	1.9	2.5	7.172	A
3	1623	406	177	1623	1623	2067	1.6	2.7	5.505	A
4	1608	402	759	1347	1323	1041	27.5	96.0	180.736	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	711	178	1041	709	723	1059	1.3	1.2	5.121	A
2	1243	311	996	1241	1238	754	2.5	2.7	7.250	A
3	1607	402	179	1609	1611	2058	2.7	2.5	5.426	A
4	1621	405	761	1340	1332	1027	96.0	164.7	374.375	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	571	143	859	576	579	1052	1.2	0.5	4.758	A
2	1016	254	810	1016	1018	625	2.7	1.5	5.755	A
3	1345	336	143	1344	1334	1683	2.5	1.9	4.433	A
4	1320	330	633	1278	1279	854	164.7	173.3	483.497	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	472	118	728	473	474	1053	0.5	0.6	4.421	A
2	838	210	675	837	840	526	1.5	1.2	5.069	A
3	1119	280	116	1122	1116	1397	1.9	1.1	3.831	A
4	1096	274	528	1254	1239	710	173.3	140.1	352.072	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	220	1031	0.213	219	220	0.0	0.3	4.228	A
			2	1, 3, 4	258	1031	0.250	259	266	0.0	0.3	4.520	A
		2	1	(1, 2, 3, 4)	477			477	488	0.0	0.0	0.009	A
	Exit	1	1		895			895	876	0.0	0.0	0.000	A
2	Entry	1	1	3	416	1003	0.415	415	418	0.0	0.7	4.906	A
			2	1, 2, 3, 4	428	1003	0.426	428	421	0.0	0.6	5.079	A
	Exit	1	1		522			522	512	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	629	1623	0.387	627	626	0.0	0.8	4.032	A
			2	2, 3	484	1623	0.298	483	473	0.0	0.6	3.513	A
	Exit	1	1		1405			1405	1397	0.0	0.0	0.000	A
4	Entry	1	1	1	849	1000	0.849	852	834	0.0	6.3	22.967	C
			2	2, 3, 4	238	1000	0.238	238	232	0.0	0.3	5.190	A
	Exit	1	1		700			700	704	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	267	1008	0.265	267	266	0.3	0.4	4.482	A
			2	1, 3, 4	310	1008	0.308	312	315	0.3	0.4	4.958	A
		2	1	(1, 2, 3, 4)	577			577	582	0.0	0.0	0.022	A
	Exit	1	1		1038			1038	1013	0.0	0.0	0.000	A
2	Entry	1	1	3	497	1000	0.497	494	495	0.7	0.9	5.758	A
			2	1, 2, 3, 4	512	1000	0.512	510	511	0.6	0.9	5.667	A
	Exit	1	1		616			616	618	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	750	1610	0.466	752	753	0.8	1.1	4.841	A
			2	2, 3	569	1610	0.354	570	575	0.6	0.5	3.876	A
	Exit	1	1		1674			1674	1669	0.0	0.0	0.000	A
4	Entry	1	1	1	1041	1000	1.041	988	962	6.3	27.1	71.122	F
			2	2, 3, 4	273	1000	0.273	273	270	0.3	0.5	5.381	A
	Exit	1	1		838			838	846	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	327	1000	0.327	327	319	0.4	0.5	4.817	A
			2	1, 3, 4	389	1000	0.389	388	386	0.4	0.7	5.323	A
		2	1	(1, 2, 3, 4)	716			716	707	0.0	0.0	0.064	A
	Exit	1	1		1055			1055	1052	0.0	0.0	0.000	A
2	Entry	1	1	3	616	1000	0.616	614	615	0.9	1.3	7.093	A
			2	1, 2, 3, 4	618	1000	0.618	618	620	0.9	1.2	7.250	A
	Exit	1	1		754			754	754	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	924	1586	0.583	922	923	1.1	1.8	6.212	A
			2	2, 3	699	1586	0.441	701	700	0.5	0.9	4.575	A
	Exit	1	1		2067			2067	2046	0.0	0.0	0.000	A
4	Entry	1	1	1	1260	1000	1.260	997	989	27.1	95.4	227.110	F
			2	2, 3, 4	348	1000	0.348	350	334	0.5	0.5	5.852	A
	Exit	1	1		1041			1041	1035	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	323	1000	0.323	322	325	0.5	0.5	4.789	A
			2	1, 3, 4	388	1000	0.388	386	398	0.7	0.7	5.270	A
		2	1	(1, 2, 3, 4)	711			711	723	0.0	0.0	0.068	A
	Exit	1	1		1059			1059	1058	0.0	0.0	0.000	A
2	Entry	1	1	3	621	1000	0.621	621	618	1.3	1.3	7.178	A
			2	1, 2, 3, 4	622	1000	0.622	620	620	1.2	1.4	7.323	A
	Exit	1	1		754			754	747	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	907	1585	0.572	907	916	1.8	1.6	6.036	A
			2	2, 3	700	1585	0.442	703	695	0.9	0.9	4.621	A
	Exit	1	1		2058			2058	2061	0.0	0.0	0.000	A
4	Entry	1	1	1	1285	1000	1.285	1002	999	95.4	164.2	471.307	F
			2	2, 3, 4	336	1000	0.336	339	333	0.5	0.6	6.017	A
	Exit	1	1		1027			1027	1037	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	258	1005	0.256	260	262	0.5	0.2	4.543	A
			2	1, 3, 4	313	1005	0.311	315	318	0.7	0.3	4.870	A
		2	1	(1, 2, 3, 4)	571			571	577	0.0	0.0	0.036	A
	Exit	1	1		1052			1052	1052	0.0	0.0	0.000	A
2	Entry	1	1	3	499	1000	0.499	498	505	1.3	0.8	5.696	A
			2	1, 2, 3, 4	518	1000	0.518	518	513	1.4	0.7	5.813	A
	Exit	1	1		625			625	629	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	763	1607	0.475	763	749	1.6	1.1	4.711	A
			2	2, 3	582	1607	0.363	581	585	0.9	0.8	4.076	A
	Exit	1	1		1683			1683	1686	0.0	0.0	0.000	A
4	Entry	1	1	1	1041	1000	1.041	999	1002	164.2	172.8	611.519	F
			2	2, 3, 4	279	1000	0.279	279	277	0.6	0.5	5.570	A
	Exit	1	1		854			854	843	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	209	1028	0.203	209	209	0.2	0.2	4.352	A
			2	1, 3, 4	263	1028	0.256	264	266	0.3	0.4	4.468	A
		2	1	(1, 2, 3, 4)	472			472	474	0.0	0.0	0.004	A
	Exit	1	1		1053			1053	1042	0.0	0.0	0.000	A
2	Entry	1	1	3	415	1004	0.413	413	417	0.8	0.6	5.046	A
			2	1, 2, 3, 4	423	1004	0.421	424	423	0.7	0.6	5.091	A
	Exit	1	1		526			526	521	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	631	1623	0.389	634	630	1.1	0.5	4.052	A
			2	2, 3	489	1623	0.301	488	485	0.8	0.5	3.543	A
	Exit	1	1		1397			1397	1398	0.0	0.0	0.000	A
4	Entry	1	1	1	855	1000	0.855	1014	1001	172.8	139.8	517.461	F
			2	2, 3, 4	241	1000	0.241	240	238	0.5	0.3	5.409	A
	Exit	1	1		710			710	708	0.0	0.0	0.000	A

EMM - DS1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm 3 - Lane Simulation	Arm 3: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	81.37	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	EMM - DS1	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	704	100.000
2		ONE HOUR	✓	1127	100.000
3		ONE HOUR	✓	1740	100.000
4		ONE HOUR	✓	938	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	15	274	415
	2	42	0	1085	0
	3	840	312	0	588
	4	741	0	197	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	6.27	1.5	A	644	967
2	7.28	2.7	A	1037	1556
3	193.72	106.8	F	1590	2385
4	19.29	5.8	C	860	1290

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	526	132	378	526	525	1233	0.0	0.7	4.718	A
2	856	214	659	858	836	245	0.0	1.0	5.032	A
3	1316	329	343	1325	1305	1173	0.0	3.3	9.006	A
4	696	174	912	700	703	756	0.0	1.5	8.243	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	631	158	460	630	629	1445	0.7	0.9	4.930	A
2	1018	254	795	1017	1006	295	1.0	1.7	5.705	A
3	1543	386	416	1539	1527	1395	3.3	8.3	17.080	C
4	845	211	1062	844	843	893	1.5	2.5	10.685	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	769	192	549	769	768	1680	0.9	1.5	6.102	A
2	1236	309	967	1233	1232	351	1.7	2.7	7.282	A
3	1903	476	506	1729	1716	1695	8.3	57.6	75.859	F
4	1029	257	1205	1024	1017	1030	2.5	5.8	17.551	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	775	194	565	774	773	1682	1.5	1.3	6.269	A
2	1247	312	979	1242	1240	360	2.7	2.5	7.182	A
3	1917	479	508	1718	1724	1712	57.6	106.8	176.694	F
4	1041	260	1200	1047	1045	1026	5.8	5.5	19.289	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	635	159	460	632	639	1538	1.3	1.1	5.343	A
2	1011	253	791	1013	1012	301	2.5	1.4	5.796	A
3	1559	390	407	1712	1690	1397	106.8	75.9	193.722	F
4	836	209	1165	833	851	954	5.5	2.9	12.277	B

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	531	133	371	533	529	1324	1.1	0.7	4.609	A
2	856	214	661	855	853	242	1.4	1.4	5.189	A
3	1301	325	347	1459	1561	1169	75.9	13.2	79.884	F
4	713	178	978	716	714	828	2.9	1.5	8.073	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	139	1154	0.120	139	137	0.0	0.1	3.646	A
			2	1, 3, 4	387	1154	0.335	386	388	0.0	0.6	4.926	A
		2	1	(1, 2, 3, 4)	526			526	528	0.0	0.0	0.126	A
	Exit	1	1		1233			1233	1219	0.0	0.0	0.000	A
2	Entry	1	1	3	415	1005	0.413	416	409	0.0	0.5	4.948	A
			2	1, 2, 3, 4	441	1005	0.438	441	428	0.0	0.6	5.111	A
	Exit	1	1		245			245	245	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1083	1486	0.729	1092	1072	0.0	3.0	10.291	B
			2	2, 3	233	1486	0.157	233	234	0.0	0.3	3.096	A
	Exit	1	1		1173			1173	1152	0.0	0.0	0.000	A
4	Entry	1	1	1	551	1000	0.551	554	556	0.0	1.3	9.146	A
			2	2, 3, 4	146	1000	0.146	146	148	0.0	0.2	4.818	A
	Exit	1	1		756			756	753	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	166	1123	0.148	166	168	0.1	0.2	3.939	A
			2	1, 3, 4	464	1123	0.413	464	461	0.6	0.6	5.098	A
		2	1	(1, 2, 3, 4)	631			630	630	0.0	0.1	0.141	A
	Exit	1	1		1445			1445	1438	0.0	0.0	0.000	A
2	Entry	1	1	3	502	1000	0.502	502	493	0.5	0.8	5.679	A
			2	1, 2, 3, 4	516	1000	0.516	514	513	0.6	0.9	5.731	A
	Exit	1	1		295			295	291	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1260	1441	0.874	1257	1248	3.0	8.0	20.093	C
			2	2, 3	283	1441	0.196	282	279	0.3	0.3	3.343	A
	Exit	1	1		1395			1395	1390	0.0	0.0	0.000	A
4	Entry	1	1	1	665	1000	0.665	666	667	1.3	2.3	12.235	B
			2	2, 3, 4	179	1000	0.179	178	176	0.2	0.2	4.802	A
	Exit	1	1		893			893	886	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	217	1089	0.199	217	218	0.2	0.2	4.259	A
			2	1, 3, 4	553	1089	0.508	552	551	0.6	1.2	6.221	A
		2	1	(1, 2, 3, 4)	769			770	771	0.1	0.1	0.435	A
	Exit	1	1		1680			1680	1651	0.0	0.0	0.000	A
2	Entry	1	1	3	612	1000	0.612	611	613	0.8	1.2	7.153	A
			2	1, 2, 3, 4	625	1000	0.625	622	619	0.9	1.5	7.410	A
	Exit	1	1		351			351	356	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1571	1387	1.132	1396	1377	8.0	57.3	91.458	F
			2	2, 3	332	1387	0.239	333	339	0.3	0.3	3.789	A
	Exit	1	1		1695			1695	1698	0.0	0.0	0.000	A
4	Entry	1	1	1	814	1000	0.814	808	801	2.3	5.6	20.905	C
			2	2, 3, 4	215	1000	0.215	216	216	0.2	0.2	4.926	A
	Exit	1	1		1030			1030	1028	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	218	1083	0.202	218	216	0.2	0.3	4.349	A
			2	1, 3, 4	558	1083	0.515	556	557	1.2	1.0	6.310	A
		2	1	(1, 2, 3, 4)	775			776	772	0.1	0.1	0.504	A
	Exit	1	1		1682			1682	1683	0.0	0.0	0.000	A
2	Entry	1	1	3	617	1000	0.617	616	613	1.2	1.2	7.120	A
			2	1, 2, 3, 4	629	1000	0.629	626	626	1.5	1.3	7.242	A
	Exit	1	1		360			360	358	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1575	1386	1.137	1374	1383	57.3	106.5	213.893	F
			2	2, 3	342	1386	0.247	343	341	0.3	0.3	3.793	A
	Exit	1	1		1712			1712	1713	0.0	0.0	0.000	A
4	Entry	1	1	1	819	1000	0.819	825	822	5.6	5.1	23.115	C
			2	2, 3, 4	223	1000	0.223	222	223	0.2	0.5	5.149	A
	Exit	1	1		1026			1026	1027	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	176	1123	0.156	174	177	0.3	0.3	3.977	A
			2	1, 3, 4	459	1123	0.409	458	462	1.0	0.8	5.526	A
		2	1	(1, 2, 3, 4)	635			635	638	0.1	0.0	0.251	A
	Exit	1	1		1538			1538	1543	0.0	0.0	0.000	A
2	Entry	1	1	3	494	1001	0.494	495	496	1.2	0.8	5.746	A
			2	1, 2, 3, 4	516	1001	0.516	518	516	1.3	0.7	5.844	A
	Exit	1	1		301			301	294	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1274	1447	0.880	1427	1410	106.5	75.6	234.905	F
			2	2, 3	288	1447	0.197	285	279	0.3	0.3	3.421	A
	Exit	1	1		1397			1397	1401	0.0	0.0	0.000	A
4	Entry	1	1	1	661	1000	0.661	658	674	5.1	2.7	14.237	B
			2	2, 3, 4	175	1000	0.175	175	178	0.5	0.2	4.880	A
	Exit	1	1		954			954	955	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	137	1157	0.118	137	136	0.3	0.2	3.697	A
			2	1, 3, 4	395	1157	0.341	396	393	0.8	0.5	4.742	A
		2	1	(1, 2, 3, 4)	531			531	528	0.0	0.0	0.135	A
	Exit	1	1		1324			1324	1374	0.0	0.0	0.000	A
2	Entry	1	1	3	424	1006	0.421	423	422	0.8	0.7	5.121	A
			2	1, 2, 3, 4	433	1006	0.430	432	431	0.7	0.7	5.256	A
	Exit	1	1		242			242	247	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1071	1483	0.722	1229	1325	75.6	13.0	97.184	F
			2	2, 3	230	1483	0.155	230	236	0.3	0.2	3.117	A
	Exit	1	1		1169			1169	1173	0.0	0.0	0.000	A
4	Entry	1	1	1	572	1000	0.572	575	567	2.7	1.2	9.025	A
			2	2, 3, 4	141	1000	0.141	141	148	0.2	0.2	4.490	A
	Exit	1	1		828			828	863	0.0	0.0	0.000	A

EMM - DS1, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm 4 - Lane Simulation	Arm 4: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	155.87	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	EMM - DS1	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	707	100.000
2		ONE HOUR	✓	1209	100.000
3		ONE HOUR	✓	1301	100.000
4		ONE HOUR	✓	1438	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	48	448	211
	2	19	0	1190	0
	3	41	640	0	620
	4	1155	0	283	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	5.64	1.2	A	651	976
2	7.70	3.0	A	1106	1659
3	5.10	2.6	A	1201	1802
4	491.11	172.7	F	1321	1981

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	534	133	683	531	523	909	0.0	0.9	4.610	A
2	911	228	705	913	907	509	0.0	1.3	5.210	A
3	969	242	175	965	968	1443	0.0	1.4	3.711	A
4	1063	266	518	1073	1057	622	0.0	7.1	21.415	C

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	624	156	823	627	630	1033	0.9	0.8	4.975	A
2	1058	265	835	1057	1081	614	1.3	2.2	6.128	A
3	1175	294	198	1174	1181	1694	1.4	1.4	4.131	A
4	1285	321	626	1230	1214	745	7.1	26.4	57.644	F

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	778	194	1019	777	780	1078	0.8	1.2	5.638	A
2	1349	337	1039	1345	1332	758	2.2	3.0	7.696	A
3	1435	359	261	1429	1425	2123	1.4	2.6	4.863	A
4	1597	399	774	1324	1305	917	26.4	94.8	178.173	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	780	195	1015	783	776	1056	1.2	1.2	5.505	A
2	1352	338	1045	1353	1330	753	3.0	2.7	7.677	A
3	1440	360	256	1442	1443	2142	2.6	2.2	5.102	A
4	1577	394	767	1304	1304	932	94.8	163.4	377.414	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	651	163	833	651	642	1071	1.2	0.9	5.121	A
2	1057	264	857	1061	1080	627	2.7	1.5	6.131	A
3	1177	294	213	1177	1173	1705	2.2	1.5	4.172	A
4	1305	326	634	1270	1258	757	163.4	172.7	491.113	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	536	134	713	535	533	1058	0.9	0.7	4.598	A
2	907	227	715	900	915	533	1.5	1.8	5.439	A
3	1013	253	173	1015	992	1442	1.5	1.0	3.760	A
4	1096	274	545	1226	1220	643	172.7	138.8	358.326	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	223	1043	0.214	222	217	0.0	0.4	4.247	A
			2	1, 3, 4	311	1043	0.298	309	306	0.0	0.5	4.789	A
		2	1	(1, 2, 3, 4)	534			534	526	0.0	0.0	0.047	A
	Exit	1	1		909			909	892	0.0	0.0	0.000	A
2	Entry	1	1	3	449	1002	0.448	450	448	0.0	0.7	5.250	A
			2	1, 2, 3, 4	462	1002	0.461	463	459	0.0	0.6	5.171	A
	Exit	1	1		509			509	505	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	495	1587	0.312	493	497	0.0	0.7	3.818	A
			2	2, 3	475	1587	0.299	472	471	0.0	0.7	3.599	A
	Exit	1	1		1443			1443	1436	0.0	0.0	0.000	A
4	Entry	1	1	1	854	1000	0.854	863	847	0.0	6.9	25.381	D
			2	2, 3, 4	210	1000	0.210	211	210	0.0	0.2	4.943	A
	Exit	1	1		622			622	622	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	268	1010	0.265	269	267	0.4	0.3	4.635	A
			2	1, 3, 4	357	1010	0.353	359	363	0.5	0.4	5.136	A
		2	1	(1, 2, 3, 4)	624			625	630	0.0	0.0	0.052	A
	Exit	1	1		1033			1033	1017	0.0	0.0	0.000	A
2	Entry	1	1	3	527	1000	0.526	528	542	0.7	1.0	6.053	A
			2	1, 2, 3, 4	532	1000	0.532	529	539	0.6	1.2	6.202	A
	Exit	1	1		614			614	625	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	602	1573	0.383	601	599	0.7	0.7	4.128	A
			2	2, 3	572	1573	0.364	572	582	0.7	0.7	4.134	A
	Exit	1	1		1694			1694	1720	0.0	0.0	0.000	A
4	Entry	1	1	1	1036	1000	1.036	979	961	6.9	26.1	70.307	F
			2	2, 3, 4	249	1000	0.249	251	253	0.2	0.3	5.503	A
	Exit	1	1		745			745	744	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	338	1000	0.338	337	335	0.3	0.6	4.985	A
			2	1, 3, 4	440	1000	0.440	441	445	0.4	0.7	5.864	A
		2	1	(1, 2, 3, 4)	778			778	782	0.0	0.0	0.154	A
	Exit	1	1		1078			1078	1061	0.0	0.0	0.000	A
2	Entry	1	1	3	670	1000	0.670	667	661	1.0	1.6	7.676	A
			2	1, 2, 3, 4	679	1000	0.679	679	671	1.2	1.4	7.716	A
	Exit	1	1		758			758	761	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	729	1535	0.475	724	716	0.7	1.3	4.917	A
			2	2, 3	706	1535	0.460	705	709	0.7	1.4	4.807	A
	Exit	1	1		2123			2123	2112	0.0	0.0	0.000	A
4	Entry	1	1	1	1285	1000	1.285	1009	995	26.1	94.5	220.620	F
			2	2, 3, 4	312	1000	0.312	315	310	0.3	0.4	5.704	A
	Exit	1	1		917			917	908	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	338	1001	0.338	338	334	0.6	0.4	4.881	A
			2	1, 3, 4	444	1001	0.444	445	442	0.7	0.7	5.664	A
		2	1	(1, 2, 3, 4)	780			782	778	0.0	0.0	0.176	A
	Exit	1	1		1056			1056	1057	0.0	0.0	0.000	A
2	Entry	1	1	3	668	1000	0.668	669	660	1.6	1.4	7.649	A
			2	1, 2, 3, 4	684	1000	0.684	684	670	1.4	1.3	7.704	A
	Exit	1	1		753			753	764	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	739	1538	0.481	741	732	1.3	1.1	5.107	A
			2	2, 3	701	1538	0.456	701	711	1.4	1.1	5.097	A
	Exit	1	1		2142			2142	2113	0.0	0.0	0.000	A
4	Entry	1	1	1	1264	1000	1.264	991	993	94.5	163.0	468.450	F
			2	2, 3, 4	313	1000	0.313	314	311	0.4	0.5	6.083	A
	Exit	1	1		932			932	919	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	274	1007	0.272	275	269	0.4	0.3	4.642	A
			2	1, 3, 4	376	1007	0.374	376	373	0.7	0.6	5.335	A
		2	1	(1, 2, 3, 4)	651			650	641	0.0	0.0	0.079	A
	Exit	1	1		1071			1071	1059	0.0	0.0	0.000	A
2	Entry	1	1	3	520	1000	0.520	522	535	1.4	0.8	6.094	A
			2	1, 2, 3, 4	537	1000	0.537	540	545	1.3	0.8	6.168	A
	Exit	1	1		627			627	619	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	594	1564	0.380	597	595	1.1	0.8	4.133	A
			2	2, 3	582	1564	0.372	581	578	1.1	0.7	4.212	A
	Exit	1	1		1705			1705	1723	0.0	0.0	0.000	A
4	Entry	1	1	1	1053	1000	1.053	1018	1004	163.0	172.3	608.270	F
			2	2, 3, 4	252	1000	0.252	253	254	0.5	0.3	5.376	A
	Exit	1	1		757			757	751	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	220	1032	0.213	220	219	0.3	0.3	4.256	A
			2	1, 3, 4	316	1032	0.306	315	313	0.6	0.4	4.792	A
		2	1	(1, 2, 3, 4)	536			536	532	0.0	0.0	0.027	A
	Exit	1	1		1058			1058	1051	0.0	0.0	0.000	A
2	Entry	1	1	3	446	1001	0.445	443	450	0.8	0.9	5.474	A
			2	1, 2, 3, 4	460	1001	0.460	458	465	0.8	0.9	5.405	A
	Exit	1	1		533			533	523	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	517	1588	0.326	519	506	0.8	0.4	3.884	A
			2	2, 3	496	1588	0.312	495	487	0.7	0.6	3.632	A
	Exit	1	1		1442			1442	1451	0.0	0.0	0.000	A
4	Entry	1	1	1	878	1000	0.878	1008	1005	172.3	138.4	512.672	F
			2	2, 3, 4	218	1000	0.218	218	215	0.3	0.4	4.900	A
	Exit	1	1		643			643	635	0.0	0.0	0.000	A

EML - DS2, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm 3 - Lane Simulation	Arm 3: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	77.08	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	EML - DS2	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	704	100.000
2		ONE HOUR	✓	1121	100.000
3		ONE HOUR	✓	1741	100.000
4		ONE HOUR	✓	938	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	15	273	416
	2	42	0	1079	0
	3	838	314	0	589
	4	740	0	198	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	6.29	1.5	A	647	970
2	7.15	2.7	A	1027	1540
3	181.64	104.9	F	1599	2398
4	19.40	6.0	C	860	1290

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	540	135	394	541	534	1215	0.0	0.7	4.649	A
2	849	212	681	852	842	254	0.0	1.3	5.118	A
3	1335	334	356	1332	1299	1177	0.0	3.5	8.752	A
4	703	176	903	706	704	784	0.0	1.6	8.339	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	633	158	460	632	628	1459	0.7	0.9	5.007	A
2	1002	251	799	1004	1004	293	1.3	1.7	5.709	A
3	1552	388	404	1565	1541	1398	3.5	9.0	18.516	C
4	843	211	1072	846	842	896	1.6	2.7	10.499	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	769	192	563	772	766	1661	0.9	1.3	5.975	A
2	1234	308	970	1235	1225	365	1.7	2.4	7.146	A
3	1909	477	502	1736	1719	1703	9.0	58.0	75.615	F
4	1026	256	1204	1020	1014	1034	2.7	5.2	16.958	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	774	193	568	772	779	1686	1.3	1.5	6.287	A
2	1225	306	972	1222	1236	368	2.4	2.7	7.144	A
3	1922	480	501	1749	1730	1693	58.0	104.9	175.846	F
4	1045	261	1216	1037	1031	1034	5.2	6.0	19.400	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	635	159	457	635	638	1547	1.5	0.9	5.234	A
2	1006	251	792	1006	1004	300	2.7	1.7	5.657	A
3	1570	393	407	1708	1706	1391	104.9	70.1	181.638	F
4	843	211	1159	845	856	955	6.0	2.5	12.333	B

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	531	133	371	533	530	1303	0.9	0.7	4.595	A
2	843	211	666	848	845	237	1.7	1.1	5.137	A
3	1305	326	348	1453	1538	1166	70.1	13.3	75.706	F
4	698	175	977	696	706	824	2.5	1.6	8.061	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	137	1148	0.120	137	137	0.0	0.2	3.603	A
			2	1, 3, 4	403	1148	0.351	404	398	0.0	0.5	4.846	A
		2	1	(1, 2, 3, 4)	540			540	537	0.0	0.0	0.121	A
	Exit	1	1		1215			1215	1206	0.0	0.0	0.000	A
2	Entry	1	1	3	420	1003	0.419	421	415	0.0	0.6	5.028	A
			2	1, 2, 3, 4	429	1003	0.428	431	426	0.0	0.6	5.205	A
	Exit	1	1		254			254	248	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1092	1478	0.739	1090	1062	0.0	3.2	9.974	A
			2	2, 3	244	1478	0.165	242	237	0.0	0.3	3.228	A
	Exit	1	1		1177			1177	1167	0.0	0.0	0.000	A
4	Entry	1	1	1	552	1000	0.552	554	553	0.0	1.4	9.304	A
			2	2, 3, 4	151	1000	0.151	152	151	0.0	0.2	4.771	A
	Exit	1	1		784			784	757	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	175	1123	0.156	174	170	0.2	0.2	3.868	A
			2	1, 3, 4	458	1123	0.408	458	458	0.5	0.7	5.147	A
		2	1	(1, 2, 3, 4)	633			633	629	0.0	0.0	0.204	A
	Exit	1	1		1459			1459	1445	0.0	0.0	0.000	A
2	Entry	1	1	3	492	1000	0.492	493	493	0.6	0.8	5.670	A
			2	1, 2, 3, 4	510	1000	0.510	510	511	0.6	0.9	5.746	A
	Exit	1	1		293			293	296	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1272	1449	0.878	1284	1258	3.2	8.7	21.834	C
			2	2, 3	280	1449	0.193	280	282	0.3	0.3	3.486	A
	Exit	1	1		1398			1398	1390	0.0	0.0	0.000	A
4	Entry	1	1	1	664	1000	0.664	667	664	1.4	2.4	11.978	B
			2	2, 3, 4	179	1000	0.179	179	178	0.2	0.2	4.918	A
	Exit	1	1		896			896	885	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	219	1084	0.202	220	217	0.2	0.2	4.115	A
			2	1, 3, 4	551	1084	0.508	552	549	0.7	0.9	6.002	A
		2	1	(1, 2, 3, 4)	769			770	767	0.0	0.1	0.507	A
	Exit	1	1		1661			1661	1654	0.0	0.0	0.000	A
2	Entry	1	1	3	608	1000	0.608	609	602	0.8	1.2	7.134	A
			2	1, 2, 3, 4	626	1000	0.626	627	623	0.9	1.2	7.158	A
	Exit	1	1		365			365	360	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1561	1390	1.124	1388	1375	8.7	57.6	91.381	F
			2	2, 3	347	1390	0.250	348	344	0.3	0.4	3.845	A
	Exit	1	1		1703			1703	1689	0.0	0.0	0.000	A
4	Entry	1	1	1	812	1000	0.812	805	803	2.4	4.9	20.042	C
			2	2, 3, 4	214	1000	0.214	215	211	0.2	0.3	5.150	A
	Exit	1	1		1034			1034	1021	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	221	1082	0.204	221	220	0.2	0.3	4.257	A
			2	1, 3, 4	553	1082	0.511	551	559	0.9	1.1	6.308	A
		2	1	(1, 2, 3, 4)	774			773	780	0.1	0.1	0.557	A
	Exit	1	1		1686			1686	1676	0.0	0.0	0.000	A
2	Entry	1	1	3	606	1000	0.606	604	608	1.2	1.3	7.141	A
			2	1, 2, 3, 4	620	1000	0.620	618	629	1.2	1.4	7.147	A
	Exit	1	1		368			368	364	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1570	1390	1.129	1398	1383	57.6	104.4	213.925	F
			2	2, 3	352	1390	0.253	350	347	0.4	0.5	3.824	A
	Exit	1	1		1693			1693	1705	0.0	0.0	0.000	A
4	Entry	1	1	1	827	1000	0.827	820	816	4.9	5.7	23.192	C
			2	2, 3, 4	218	1000	0.218	217	215	0.3	0.3	5.026	A
	Exit	1	1		1034			1034	1032	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	174	1124	0.154	173	174	0.3	0.2	3.995	A
			2	1, 3, 4	461	1124	0.410	461	464	1.1	0.7	5.412	A
		2	1	(1, 2, 3, 4)	635			635	636	0.1	0.0	0.215	A
	Exit	1	1		1547			1547	1553	0.0	0.0	0.000	A
2	Entry	1	1	3	493	1000	0.493	492	495	1.3	0.8	5.567	A
			2	1, 2, 3, 4	513	1000	0.513	514	509	1.4	0.9	5.745	A
	Exit	1	1		300			300	299	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1283	1447	0.887	1421	1420	104.4	69.8	221.272	F
			2	2, 3	287	1447	0.198	287	286	0.5	0.3	3.493	A
	Exit	1	1		1391			1391	1389	0.0	0.0	0.000	A
4	Entry	1	1	1	673	1000	0.673	674	683	5.7	2.3	14.272	B
			2	2, 3, 4	170	1000	0.170	170	173	0.3	0.2	4.816	A
	Exit	1	1		955			955	962	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	134	1157	0.116	134	137	0.2	0.2	3.703	A
			2	1, 3, 4	396	1157	0.342	398	394	0.7	0.4	4.776	A
		2	1	(1, 2, 3, 4)	531			530	529	0.0	0.0	0.097	A
	Exit	1	1		1303			1303	1355	0.0	0.0	0.000	A
2	Entry	1	1	3	411	1005	0.409	415	413	0.8	0.5	5.155	A
			2	1, 2, 3, 4	432	1005	0.430	433	433	0.9	0.7	5.120	A
	Exit	1	1		237			237	242	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	1079	1483	0.728	1227	1306	69.8	13.1	91.662	F
			2	2, 3	225	1483	0.152	226	231	0.3	0.2	3.217	A
	Exit	1	1		1166			1166	1168	0.0	0.0	0.000	A
4	Entry	1	1	1	553	1000	0.553	551	557	2.3	1.4	8.995	A
			2	2, 3, 4	145	1000	0.145	145	149	0.2	0.2	4.601	A
	Exit	1	1		824			824	853	0.0	0.0	0.000	A

EML - DS2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm 4 - Lane Simulation	Arm 4: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	155.54	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	EML - DS2	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	700	100.000
2		ONE HOUR	✓	1216	100.000
3		ONE HOUR	✓	1305	100.000
4		ONE HOUR	✓	1440	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	48	441	211
	2	19	0	1197	0
	3	43	640	0	622
	4	1159	0	281	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	5.45	1.2	A	647	970
2	8.08	3.1	A	1111	1666
3	4.98	2.3	A	1201	1801
4	489.59	173.6	F	1322	1983

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	530	132	711	529	523	909	0.0	0.7	4.546	A
2	920	230	707	919	920	533	0.0	1.5	5.418	A
3	995	249	169	993	981	1457	0.0	1.3	3.728	A
4	1096	274	538	1081	1052	624	0.0	8.8	21.354	C

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	627	157	832	627	629	1030	0.7	1.0	4.903	A
2	1084	271	838	1086	1098	621	1.5	1.9	6.256	A
3	1183	296	208	1184	1177	1716	1.3	1.4	4.077	A
4	1279	320	638	1224	1217	755	8.8	24.1	52.740	F

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	780	195	1019	779	774	1072	1.0	1.2	5.417	A
2	1339	335	1038	1334	1341	761	1.9	3.1	8.083	A
3	1443	361	256	1444	1434	2116	1.4	2.1	4.973	A
4	1578	395	779	1312	1310	921	24.1	95.2	174.963	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	778	195	998	778	774	1061	1.2	1.2	5.448	A
2	1326	331	1030	1330	1326	746	3.1	3.1	7.721	A
3	1419	355	257	1415	1434	2102	2.1	2.3	4.978	A
4	1598	400	759	1301	1307	913	95.2	165.2	377.569	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	632	158	840	630	630	1065	1.2	1.1	4.915	A
2	1084	271	845	1083	1094	626	3.1	2.0	6.065	A
3	1181	295	207	1180	1182	1721	2.3	1.3	4.083	A
4	1307	327	639	1267	1261	749	165.2	173.6	489.588	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	535	134	694	535	537	1057	1.1	0.7	4.582	A
2	912	228	711	912	919	517	2.0	1.5	5.365	A
3	985	246	175	986	984	1448	1.3	0.8	3.674	A
4	1075	269	531	1220	1217	630	173.6	139.2	370.137	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	225	1034	0.218	225	218	0.0	0.3	4.182	A
			2	1, 3, 4	304	1034	0.294	304	305	0.0	0.5	4.751	A
		2	1	(1, 2, 3, 4)	530			530	526	0.0	0.0	0.032	A
	Exit	1	1		909			909	881	0.0	0.0	0.000	A
2	Entry	1	1	3	458	1001	0.457	459	460	0.0	0.7	5.369	A
			2	1, 2, 3, 4	462	1001	0.461	460	459	0.0	0.8	5.467	A
	Exit	1	1		533			533	516	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	497	1590	0.313	499	500	0.0	0.6	3.797	A
			2	2, 3	498	1590	0.313	494	481	0.0	0.8	3.656	A
	Exit	1	1		1457			1457	1454	0.0	0.0	0.000	A
4	Entry	1	1	1	880	1000	0.880	865	836	0.0	8.5	25.348	D
			2	2, 3, 4	216	1000	0.216	216	217	0.0	0.3	5.366	A
	Exit	1	1		624			624	624	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	253	1008	0.251	254	262	0.3	0.4	4.595	A
			2	1, 3, 4	374	1008	0.371	373	367	0.5	0.6	5.049	A
		2	1	(1, 2, 3, 4)	627			628	630	0.0	0.0	0.043	A
	Exit	1	1		1030			1030	1022	0.0	0.0	0.000	A
2	Entry	1	1	3	546	1000	0.546	547	546	0.7	0.8	6.249	A
			2	1, 2, 3, 4	539	1000	0.539	539	551	0.8	1.0	6.264	A
	Exit	1	1		621			621	619	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	603	1567	0.385	604	600	0.6	0.7	4.091	A
			2	2, 3	580	1567	0.370	580	578	0.8	0.7	4.061	A
	Exit	1	1		1716			1716	1731	0.0	0.0	0.000	A
4	Entry	1	1	1	1026	1000	1.026	972	966	8.5	23.7	64.295	F
			2	2, 3, 4	252	1000	0.252	253	251	0.3	0.4	5.468	A
	Exit	1	1		755			755	749	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	335	1000	0.335	334	331	0.4	0.4	4.900	A
			2	1, 3, 4	445	1000	0.445	445	443	0.6	0.8	5.622	A
		2	1	(1, 2, 3, 4)	780			780	775	0.0	0.0	0.103	A
	Exit	1	1		1072			1072	1068	0.0	0.0	0.000	A
2	Entry	1	1	3	672	1000	0.672	670	672	0.8	1.5	7.952	A
			2	1, 2, 3, 4	666	1000	0.666	664	669	1.0	1.5	8.216	A
	Exit	1	1		761			761	761	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	730	1538	0.475	733	725	0.7	0.9	5.075	A
			2	2, 3	713	1538	0.464	711	709	0.7	1.2	4.869	A
	Exit	1	1		2116			2116	2119	0.0	0.0	0.000	A
4	Entry	1	1	1	1268	1000	1.268	1004	1002	23.7	94.6	215.508	F
			2	2, 3, 4	310	1000	0.310	308	308	0.4	0.6	6.035	A
	Exit	1	1		921			921	911	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	330	1000	0.330	330	327	0.4	0.4	4.973	A
			2	1, 3, 4	448	1000	0.448	448	447	0.8	0.7	5.578	A
		2	1	(1, 2, 3, 4)	778			778	774	0.0	0.0	0.126	A
	Exit	1	1		1061			1061	1064	0.0	0.0	0.000	A
2	Entry	1	1	3	655	1000	0.655	657	657	1.5	1.5	7.773	A
			2	1, 2, 3, 4	671	1000	0.671	672	669	1.5	1.6	7.670	A
	Exit	1	1		746			746	763	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	721	1537	0.469	720	724	0.9	1.1	5.148	A
			2	2, 3	697	1537	0.454	695	709	1.2	1.1	4.803	A
	Exit	1	1		2102			2102	2097	0.0	0.0	0.000	A
4	Entry	1	1	1	1295	1000	1.295	997	999	94.6	164.8	466.720	F
			2	2, 3, 4	303	1000	0.303	303	307	0.6	0.5	5.761	A
	Exit	1	1		913			913	916	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	262	1009	0.259	261	266	0.4	0.4	4.509	A
			2	1, 3, 4	370	1009	0.367	369	365	0.7	0.7	5.167	A
		2	1	(1, 2, 3, 4)	632			632	630	0.0	0.0	0.025	A
	Exit	1	1		1065			1065	1061	0.0	0.0	0.000	A
2	Entry	1	1	3	536	1000	0.536	535	543	1.5	1.1	6.102	A
			2	1, 2, 3, 4	548	1000	0.548	548	551	1.6	0.9	6.029	A
	Exit	1	1		626			626	627	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	598	1568	0.382	597	599	1.1	0.7	4.056	A
			2	2, 3	582	1568	0.371	583	583	1.1	0.6	4.112	A
	Exit	1	1		1721			1721	1731	0.0	0.0	0.000	A
4	Entry	1	1	1	1048	1000	1.048	1009	1006	164.8	173.0	608.443	F
			2	2, 3, 4	260	1000	0.260	257	255	0.5	0.6	5.224	A
	Exit	1	1		749			749	748	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	218	1038	0.210	218	221	0.4	0.3	4.319	A
			2	1, 3, 4	317	1038	0.306	317	316	0.7	0.4	4.728	A
		2	1	(1, 2, 3, 4)	535			535	536	0.0	0.0	0.024	A
	Exit	1	1		1057			1057	1050	0.0	0.0	0.000	A
2	Entry	1	1	3	451	1002	0.450	451	454	1.1	0.7	5.377	A
			2	1, 2, 3, 4	461	1002	0.460	461	465	0.9	0.8	5.353	A
	Exit	1	1		517			517	521	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	504	1587	0.317	504	500	0.7	0.4	3.682	A
			2	2, 3	481	1587	0.303	482	484	0.6	0.4	3.666	A
	Exit	1	1		1448			1448	1459	0.0	0.0	0.000	A
4	Entry	1	1	1	863	1000	0.863	1009	1004	173.0	138.9	535.809	F
			2	2, 3, 4	213	1000	0.213	211	213	0.6	0.3	4.988	A
	Exit	1	1		630			630	626	0.0	0.0	0.000	A

Appendix 7 – LINSIG Outputs

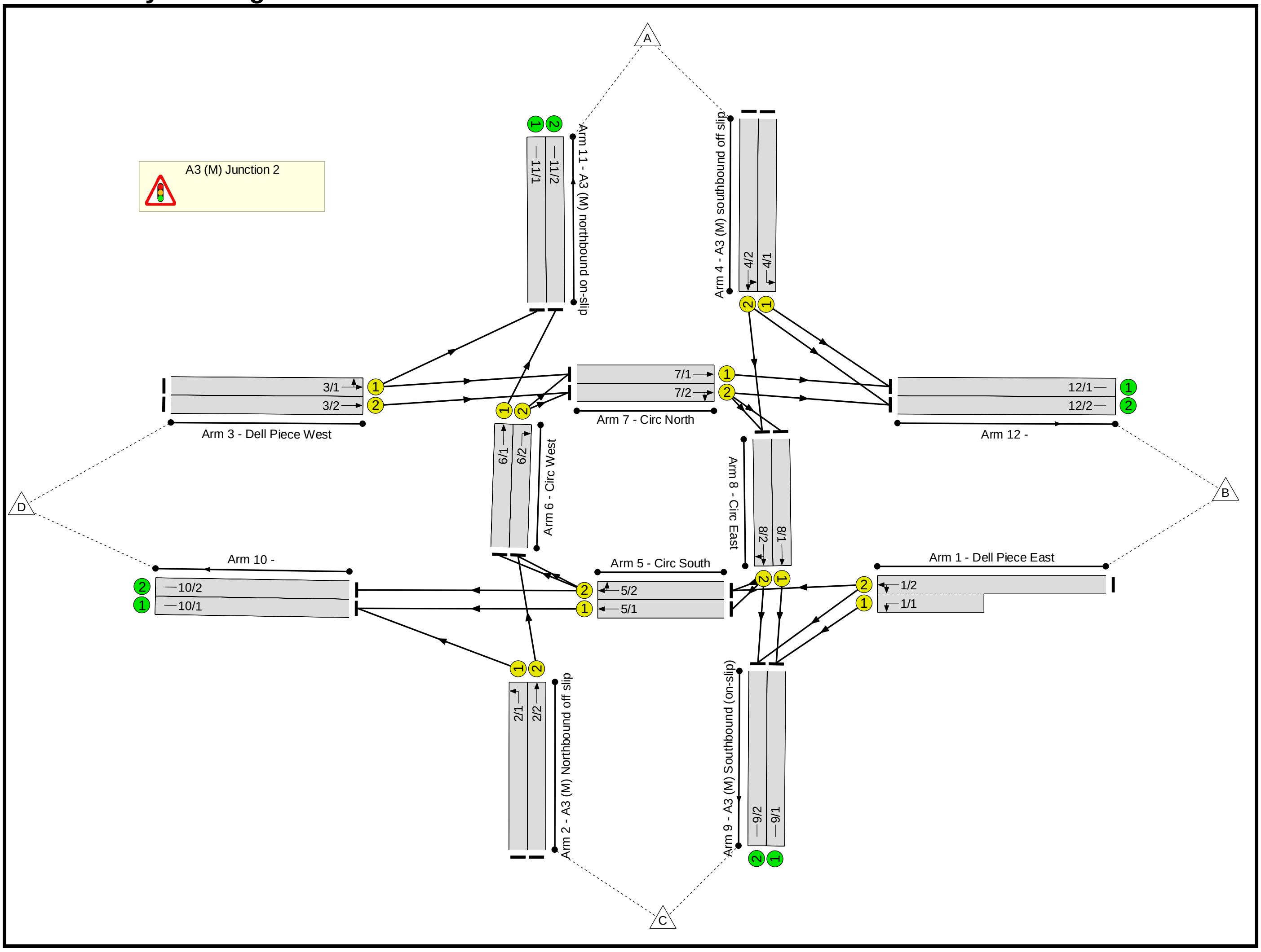
Full Input Data And Results

Full Input Data And Results

User and Project Details

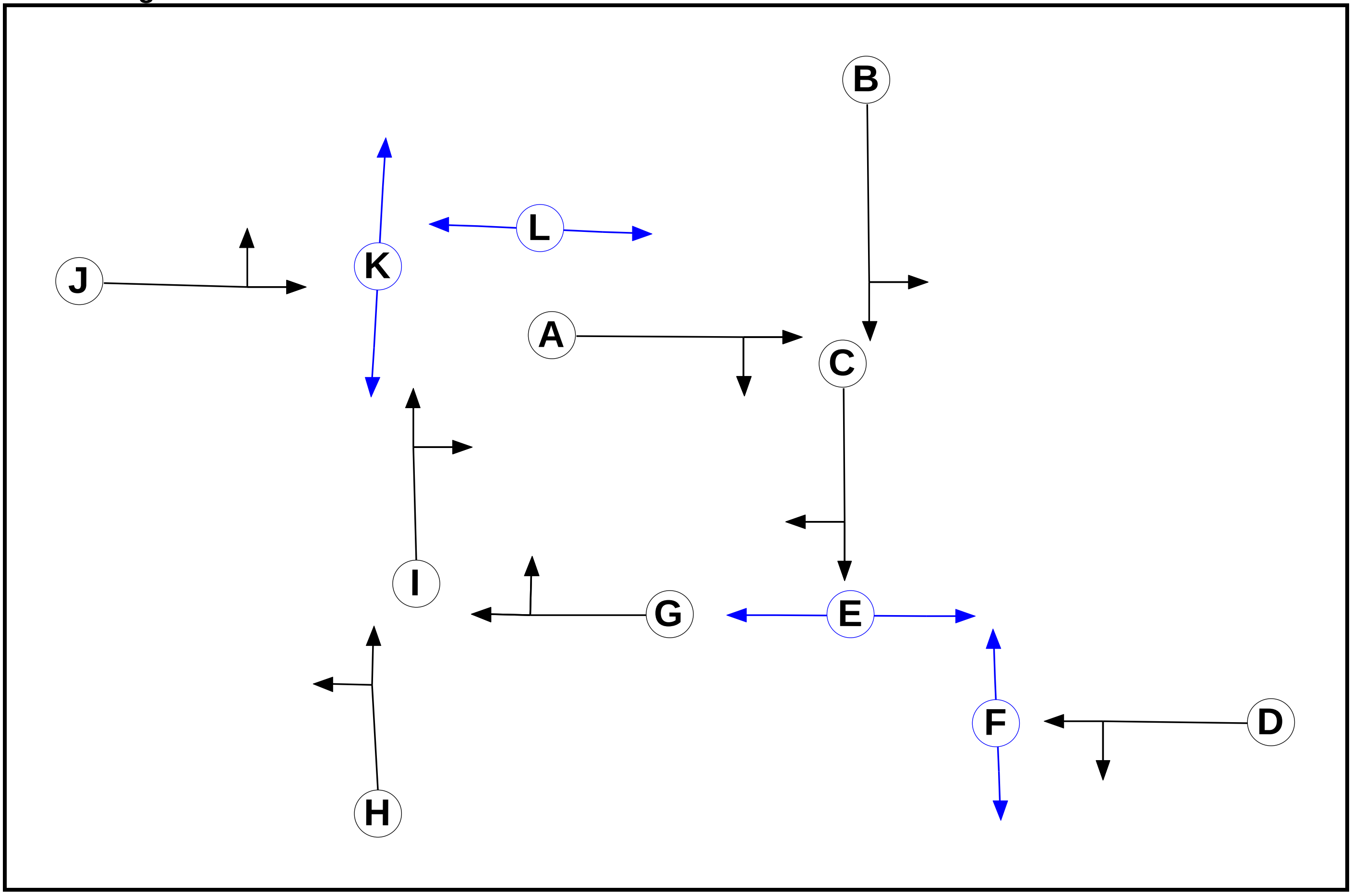
Project:	
Title:	
Location:	
Additional detail:	
File name:	A3 (M) Junction 2.lsg3x
Author:	
Company:	
Address:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		6	2
D	Traffic	2		6	2
E	Pedestrian	2		6	6
F	Pedestrian	2		6	6
G	Traffic	3		7	7
H	Traffic	3		7	7
I	Traffic	4		6	2
J	Traffic	4		6	2
K	Pedestrian	4		6	6
L	Pedestrian	4		6	6

Full Input Data And Results

Phase Intergreens Matrix

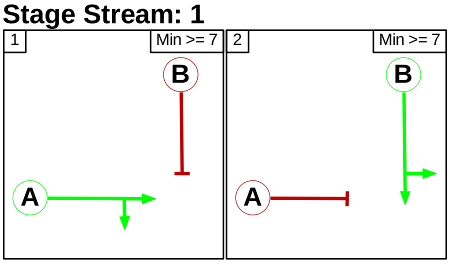
	Starting Phase											
Terminating Phase	A	B	C	D	E	F	G	H	I	J	K	L
A		6	-	-	-	-	-	-	-	-	-	-
B	6		-	-	-	-	-	-	-	-	-	-
C	-	-		6	6	-	-	-	-	-	-	-
D	-	-	6		-	6	-	-	-	-	-	-
E	-	-	10	-		-	-	-	-	-	-	-
F	-	-	-	10	-		-	-	-	-	-	-
G	-	-	-	-	-	-		6	-	-	-	-
H	-	-	-	-	-	-	6		-	-	-	-
I	-	-	-	-	-	-	-	-		6	-	6
J	-	-	-	-	-	-	-	-	6		6	-
K	-	-	-	-	-	-	-	-	-	10		-
L	-	-	-	-	-	-	-	-	10	-	-	

Phases in Stage

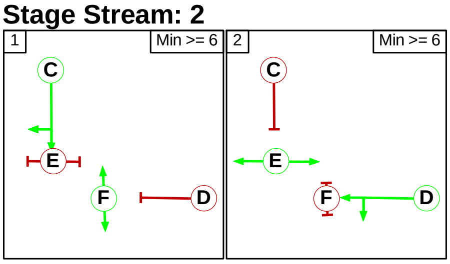
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C F
2	2	D E
3	1	G
3	2	H
4	1	I K
4	2	J L

Stage Diagram

Stage Stream: 1

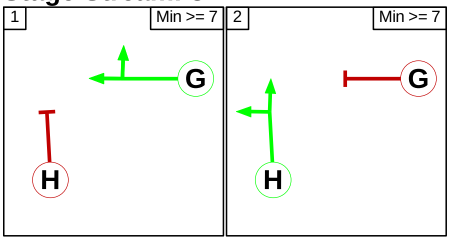


Stage Stream: 2

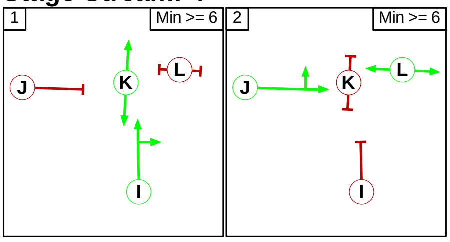


Full Input Data And Results

Stage Stream: 3



Stage Stream: 4



Phase Delays

Stage Stream: 1

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

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	C	Losing	4	4
2	1	D	Losing	4	4

Stage Stream: 3

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

Stage Stream: 4

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	I	Losing	4	4
2	1	J	Losing	4	4

Prohibited Stage Change

Stage Stream: 1

		To Stage	
From Stage		1	2
	1		6
	2	6	

Stage Stream: 2

		To Stage	
From Stage		1	2
	1		10
	2	10	

Full Input Data And Results

Stage Stream: 3

	To Stage	
From Stage	1	2
1		6
2	6	

Stage Stream: 4

	To Stage	
From Stage	1	2
1		10
2	10	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A3 (M) Junction 2
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: A3 (M) Junction 2												
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 (Dell Piece East)	U	D	2	3	8.7	User	1900	-	-	-	-	-
1/2 (Dell Piece East)	U	D	2	3	60.0	User	1900	-	-	-	-	-
2/1 (A3 (M) Northbound off slip)	U	H	2	3	60.0	User	1800	-	-	-	-	-
2/2 (A3 (M) Northbound off slip)	U	H	2	3	60.0	User	1800	-	-	-	-	-
3/1 (Dell Piece West)	U	J	2	3	60.0	User	1800	-	-	-	-	-
3/2 (Dell Piece West)	U	J	2	3	60.0	User	1800	-	-	-	-	-
4/1 (A3 (M) southbound off slip)	U	B	2	3	60.0	User	1800	-	-	-	-	-
4/2 (A3 (M) southbound off slip)	U	B	2	3	60.0	User	1800	-	-	-	-	-
5/1 (Circ South)	U	G	2	3	15.7	User	1900	-	-	-	-	-
5/2 (Circ South)	U	G	2	3	15.7	User	1900	-	-	-	-	-
6/1 (Circ West)	U	I	2	3	7.0	User	1800	-	-	-	-	-
6/2 (Circ West)	U	I	2	3	7.0	User	1800	-	-	-	-	-
7/1 (Circ North)	U	A	2	3	15.7	User	1800	-	-	-	-	-
7/2 (Circ North)	U	A	2	3	15.7	User	1800	-	-	-	-	-
8/1 (Circ East)	U	C	2	3	7.0	User	1900	-	-	-	-	-
8/2 (Circ East)	U	C	2	3	7.0	User	1900	-	-	-	-	-
9/1 (A3 (M) Southbound (on-slip))	U		2	3	60.0	Inf	-	-	-	-	-	-
9/2 (A3 (M) Southbound (on-slip))	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1	U		2	3	60.0	Inf	-	-	-	-	-	-

10/2	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (A3 (M) northbound on-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A3 (M) northbound on-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'DM AM'	08:00	09:00	01:00	
2: 'DM PM'	17:00	18:00	01:00	
3: 'DS1 AM'	08:00	09:00	01:00	
4: 'DS1 PM'	17:00	18:00	01:00	
5: 'DS2 AM'	08:00	09:00	01:00	
6: 'DS2 PM'	17:00	18:00	01:00	

Scenario 1: 'DM AM' (FG1: 'DM AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	162	0	788	950
	B	2	0	880	21	903
	C	0	459	0	393	852
	D	597	145	560	0	1302
	Tot.	599	766	1440	1202	4007

Traffic Lane Flows

Lane	Scenario 1: DM AM
Junction: A3 (M) Junction 2	
1/1 (short)	45
1/2 (with short)	903(In) 858(Out)
2/1	393
2/2	459
3/1	687
3/2	615
4/1	162
4/2	788
5/1	410
5/2	401
6/1	2
6/2	459
7/1	549
7/2	615
8/1	560
8/2	788
9/1	605
9/2	835
10/1	803
10/2	399
11/1	597
11/2	2
12/1	711
12/2	55

Lane Saturation Flows

Junction: A3 (M) Junction 2								
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 (Dell Piece East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (Dell Piece East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A3 (M) Northbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
2/2 (A3 (M) Northbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (Dell Piece West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/2 (Dell Piece West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A3 (M) southbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
4/2 (A3 (M) southbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
5/1 (Circ South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Circ South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Circ West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
6/2 (Circ West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
7/1 (Circ North Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Circ North Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
8/1 (Circ East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Circ East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A3 (M) Southbound (on-slip) Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A3 (M) Southbound (on-slip) Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
11/1 (A3 (M) northbound on-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (A3 (M) northbound on-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'DM PM' (FG2: 'DM PM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Desired
Desired Flow :

		Destination				
Origin		A	B	C	D	Tot.
	A	0	72	0	434	506
	B	0	0	740	23	763
	C	0	631	0	468	1099
	D	405	121	1019	0	1545
	Tot.	405	824	1759	925	3913

Traffic Lane Flows

Lane	Scenario 2: DM PM
Junction: A3 (M) Junction 2	
1/1 (short)	0
1/2 (with short)	763(In) 763(Out)
2/1	468
2/2	631
3/1	526
3/2	1019
4/1	72
4/2	434
5/1	232
5/2	225
6/1	0
6/2	631
7/1	752
7/2	1019
8/1	734
8/2	719
9/1	734
9/2	1025
10/1	700
10/2	225
11/1	405
11/2	0
12/1	824
12/2	0

Lane Saturation Flows

Junction: A3 (M) Junction 2								
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 (Dell Piece East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (Dell Piece East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A3 (M) Northbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
2/2 (A3 (M) Northbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (Dell Piece West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/2 (Dell Piece West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A3 (M) southbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
4/2 (A3 (M) southbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
5/1 (Circ South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Circ South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Circ West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
6/2 (Circ West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
7/1 (Circ North Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Circ North Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
8/1 (Circ East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Circ East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A3 (M) Southbound (on-slip) Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A3 (M) Southbound (on-slip) Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
11/1 (A3 (M) northbound on-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (A3 (M) northbound on-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: 'DS1 AM' (FG3: 'DS1 AM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Desired
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	146	0	796	942
	B	2	0	847	16	865
	C	0	458	0	418	876
	D	551	151	605	0	1307
	Tot.	553	755	1452	1230	3990

Traffic Lane Flows

Lane	Scenario 3: DS1 AM
Junction: A3 (M) Junction 2	
1/1 (short)	72
1/2 (with short)	865(In) 793(Out)
2/1	418
2/2	458
3/1	702
3/2	605
4/1	146
4/2	796
5/1	410
5/2	404
6/1	2
6/2	458
7/1	609
7/2	605
8/1	605
8/2	796
9/1	677
9/2	775
10/1	828
10/2	402
11/1	551
11/2	2
12/1	755
12/2	0

Lane Saturation Flows

Junction: A3 (M) Junction 2								
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 (Dell Piece East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (Dell Piece East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A3 (M) Northbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
2/2 (A3 (M) Northbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (Dell Piece West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/2 (Dell Piece West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A3 (M) southbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
4/2 (A3 (M) southbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
5/1 (Circ South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Circ South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Circ West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
6/2 (Circ West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
7/1 (Circ North Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Circ North Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
8/1 (Circ East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Circ East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A3 (M) Southbound (on-slip) Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A3 (M) Southbound (on-slip) Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
11/1 (A3 (M) northbound on-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (A3 (M) northbound on-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 4: 'DS1 PM' (FG4: 'DS1 PM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Desired
Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	80	0	398	478
	B	0	0	739	6	745
	C	0	600	0	657	1257
	D	445	127	1044	0	1616
	Tot.	445	807	1783	1061	4096

Traffic Lane Flows

Lane	Scenario 4: DS1 PM
Junction: A3 (M) Junction 2	
1/1 (short)	0
1/2 (with short)	745(In) 745(Out)
2/1	657
2/2	600
3/1	572
3/2	1044
4/1	80
4/2	398
5/1	203
5/2	201
6/1	0
6/2	600
7/1	727
7/2	1044
8/1	720
8/2	722
9/1	720
9/2	1063
10/1	860
10/2	201
11/1	445
11/2	0
12/1	807
12/2	0

Lane Saturation Flows

Junction: A3 (M) Junction 2								
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 (Dell Piece East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (Dell Piece East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A3 (M) Northbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
2/2 (A3 (M) Northbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (Dell Piece West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/2 (Dell Piece West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A3 (M) southbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
4/2 (A3 (M) southbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
5/1 (Circ South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Circ South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Circ West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
6/2 (Circ West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
7/1 (Circ North Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Circ North Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
8/1 (Circ East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Circ East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A3 (M) Southbound (on-slip) Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A3 (M) Southbound (on-slip) Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
11/1 (A3 (M) northbound on-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (A3 (M) northbound on-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 5: 'DS2 AM' (FG5: 'DS2 AM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Desired
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	145	0	796	941
	B	2	0	846	16	864
	C	0	457	0	417	874
	D	549	152	606	0	1307
	Tot.	551	754	1452	1229	3986

Traffic Lane Flows

Lane	Scenario 5: DS2 AM
Junction: A3 (M) Junction 2	
1/1 (short)	72
1/2 (with short)	864(In) 792(Out)
2/1	417
2/2	457
3/1	701
3/2	606
4/1	145
4/2	796
5/1	410
5/2	404
6/1	2
6/2	457
7/1	609
7/2	606
8/1	606
8/2	796
9/1	678
9/2	774
10/1	827
10/2	402
11/1	549
11/2	2
12/1	754
12/2	0

Lane Saturation Flows

Junction: A3 (M) Junction 2								
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 (Dell Piece East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (Dell Piece East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A3 (M) Northbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
2/2 (A3 (M) Northbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (Dell Piece West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/2 (Dell Piece West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A3 (M) southbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
4/2 (A3 (M) southbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
5/1 (Circ South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Circ South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Circ West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
6/2 (Circ West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
7/1 (Circ North Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Circ North Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
8/1 (Circ East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Circ East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A3 (M) Southbound (on-slip) Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A3 (M) Southbound (on-slip) Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
11/1 (A3 (M) northbound on-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (A3 (M) northbound on-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 6: 'DS2 PM' (FG6: 'DS2 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	80	0	400	480
	B	0	0	738	6	744
	C	0	601	0	653	1254
	D	446	126	1044	0	1616
	Tot.	446	807	1782	1059	4094

Traffic Lane Flows

Lane	Scenario 6: DS2 PM
Junction: A3 (M) Junction 2	
1/1 (short)	0
1/2 (with short)	744(In) 744(Out)
2/1	653
2/2	601
3/1	572
3/2	1044
4/1	80
4/2	400
5/1	204
5/2	202
6/1	0
6/2	601
7/1	727
7/2	1044
8/1	722
8/2	722
9/1	722
9/2	1060
10/1	857
10/2	202
11/1	446
11/2	0
12/1	807
12/2	0

Lane Saturation Flows

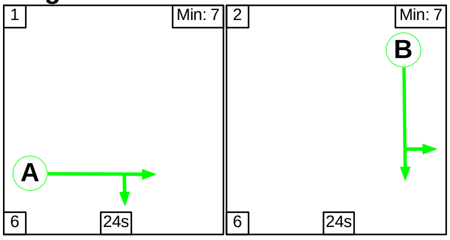
Junction: A3 (M) Junction 2								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Dell Piece East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (Dell Piece East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A3 (M) Northbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
2/2 (A3 (M) Northbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (Dell Piece West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/2 (Dell Piece West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A3 (M) southbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
4/2 (A3 (M) southbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
5/1 (Circ South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Circ South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Circ West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
6/2 (Circ West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
7/1 (Circ North Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Circ North Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
8/1 (Circ East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Circ East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A3 (M) Southbound (on-slip) Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A3 (M) Southbound (on-slip) Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
11/1 (A3 (M) northbound on-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (A3 (M) northbound on-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

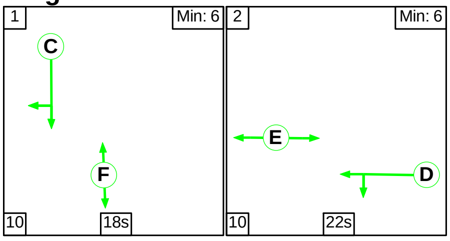
Scenario 1: 'DM AM' (FG1: 'DM AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

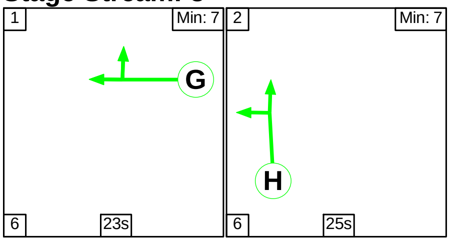
Stage Stream: 1



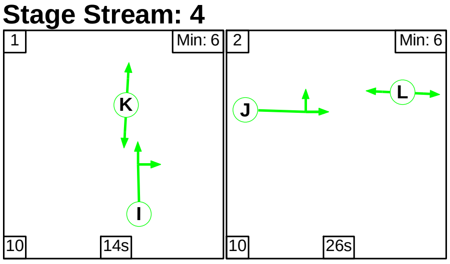
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	24	24
Change Point	15	45

Stage Stream: 2

Stage	1	2
Duration	18	22
Change Point	51	19

Stage Stream: 3

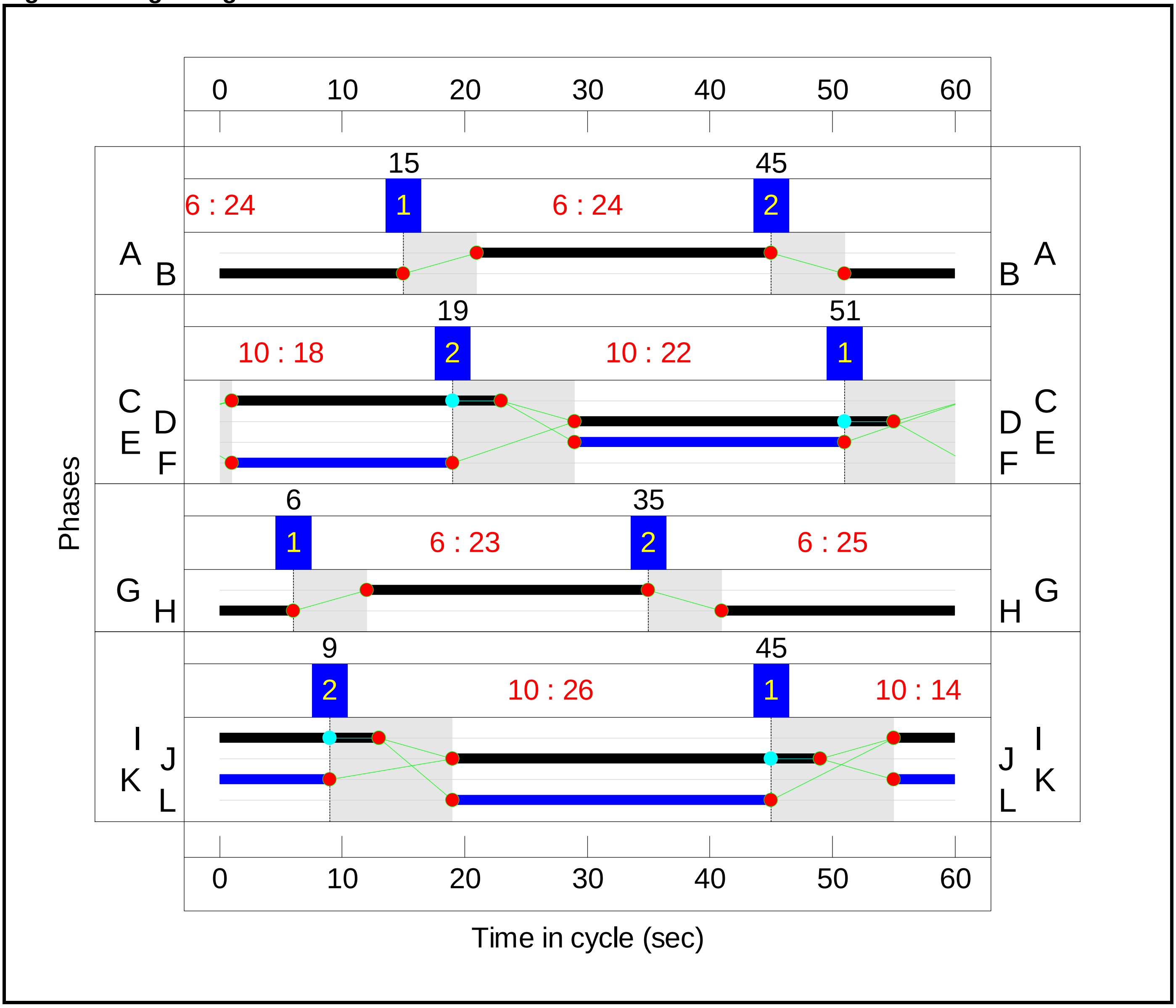
Stage	1	2
Duration	23	25
Change Point	6	35

Full Input Data And Results

Stage Stream: 4

Stage	1	2
Duration	14	26
Change Point	45	9

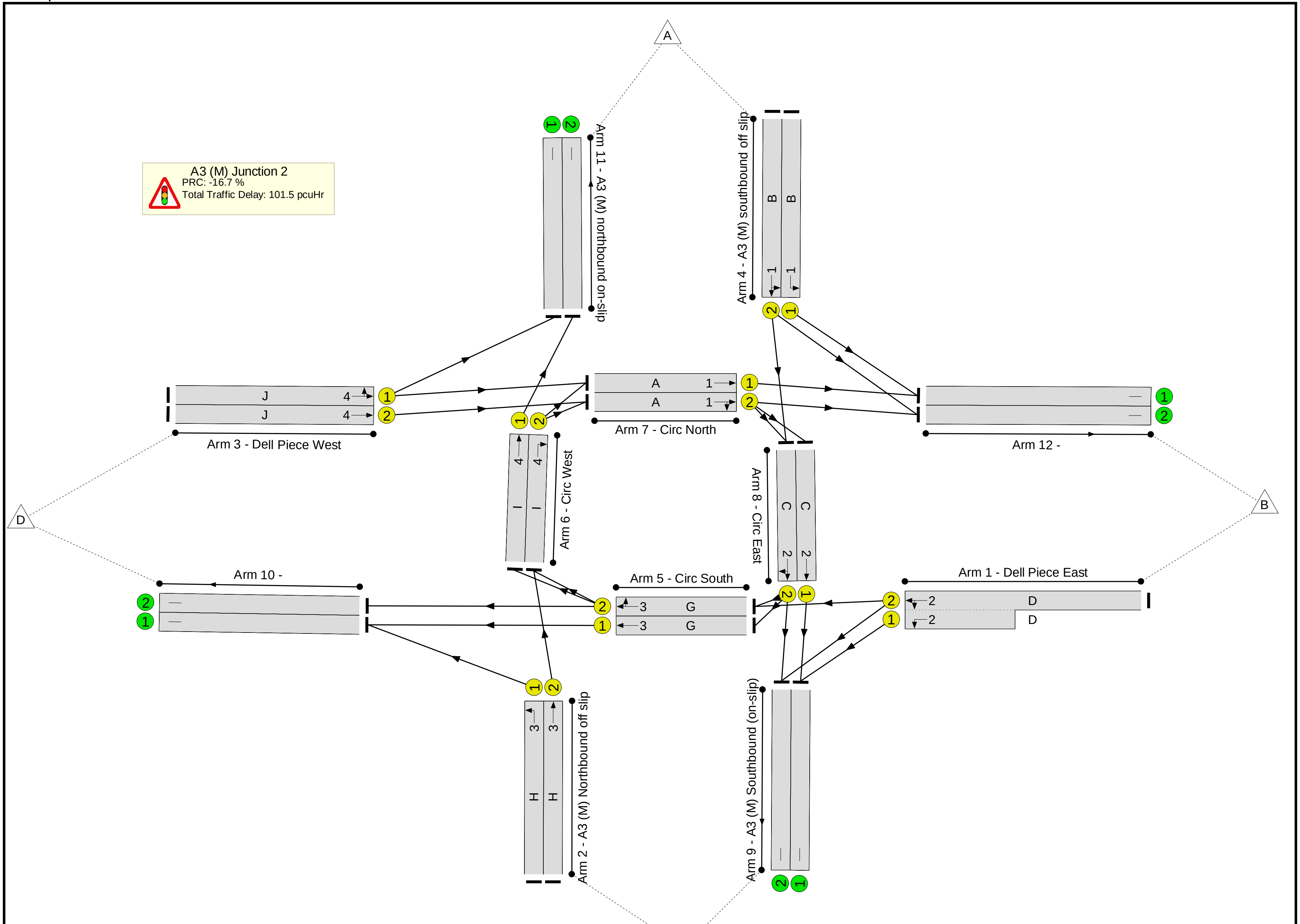
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**105.1%**
A3 (M) Junction 2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**105.1%**
1/2+1/1	Dell Piece East Ahead Left	U	2	N/A	D		1	26	-	903	1900:1900	855+45	100.4 : 100.4%
2/1	A3 (M) Northbound off slip Left	U	3	N/A	H		1	25	-	393	1800	780	50.4%
2/2	A3 (M) Northbound off slip Ahead	U	3	N/A	H		1	25	-	459	1800	780	58.8%
3/1	Dell Piece West Ahead Left	U	4	N/A	J		1	30	-	687	1800	930	73.9%
3/2	Dell Piece West Ahead	U	4	N/A	J		1	30	-	615	1800	930	66.1%
4/1	A3 (M) southbound off slip Left	U	1	N/A	B		1	24	-	162	1800	750	21.6%
4/2	A3 (M) southbound off slip Ahead Left	U	1	N/A	B		1	24	-	788	1800	750	105.1%
5/1	Circ South Ahead	U	3	N/A	G		1	23	-	410	1900	760	49.9%
5/2	Circ South Right Ahead	U	3	N/A	G		1	23	-	401	1900	760	49.0%
6/1	Circ West Ahead	U	4	N/A	I		1	18	-	2	1800	570	0.3%
6/2	Circ West Right	U	4	N/A	I		1	18	-	459	1800	570	80.5%
7/1	Circ North Ahead	U	1	N/A	A		1	24	-	549	1800	750	73.2%
7/2	Circ North Right Ahead	U	1	N/A	A		1	24	-	615	1800	750	82.0%
8/1	Circ East Ahead	U	2	N/A	C		1	22	-	560	1900	728	76.9%
8/2	Circ East Right Ahead	U	2	N/A	C		1	22	-	788	1900	728	103.0%

Full Input Data And Results

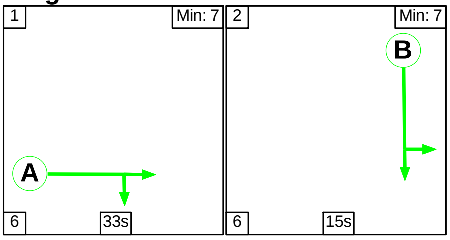
9/1	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	605	Inf	Inf	0.0%
9/2	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	835	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	803	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	399	Inf	Inf	0.0%
11/1	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	597	Inf	Inf	0.0%
11/2	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	2	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	711	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	55	Inf	Inf	0.0%

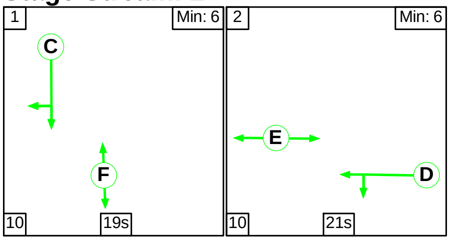
Full Input Data And Results

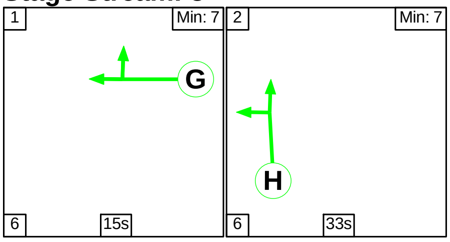
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**27.2**	**74.3**	**0.0**	**101.5**	**-**	**-**	**-**	**-**
A3 (M) Junction 2	**-**	**-**	**0**	**0**	**0**	**27.2**	**74.3**	**0.0**	**101.5**	**-**	**-**	**-**	**-**
1/2+1/1	903	900	-	-	-	4.1	15.8	-	20.0	79.6	14.4	15.8	30.2
2/1	393	393	-	-	-	1.3	0.5	-	1.9	17.0	4.7	0.5	5.2
2/2	459	459	-	-	-	1.6	0.7	-	2.4	18.5	5.7	0.7	6.4
3/1	687	687	-	-	-	2.2	1.4	-	3.6	18.7	8.8	1.4	10.2
3/2	615	615	-	-	-	1.8	1.0	-	2.8	16.3	7.5	1.0	8.5
4/1	162	162	-	-	-	0.5	0.1	-	0.6	14.3	1.7	0.1	1.8
4/2	788	750	-	-	-	5.0	26.4	-	31.5	143.9	13.8	26.4	40.2
5/1	379	379	-	-	-	0.1	0.5	-	0.6	6.0	0.8	0.5	1.3
5/2	372	372	-	-	-	0.3	0.5	-	0.7	7.2	1.3	0.5	1.8
6/1	2	2	-	-	-	0.0	0.0	-	0.0	35.2	0.0	0.0	0.0
6/2	459	459	-	-	-	0.8	2.0	-	2.8	21.7	6.8	2.0	8.8
7/1	549	549	-	-	-	2.3	1.3	-	3.6	23.8	8.6	1.3	10.0
7/2	615	615	-	-	-	1.4	2.2	-	3.6	21.2	2.8	2.2	5.0
8/1	560	560	-	-	-	4.0	1.6	-	5.6	36.2	9.3	1.6	11.0
8/2	750	728	-	-	-	1.7	20.1	-	21.8	104.7	12.9	20.1	33.0
9/1	605	605	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	832	832	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	772	772	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	370	370	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	597	597	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	2	2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	711	711	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	55	55	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

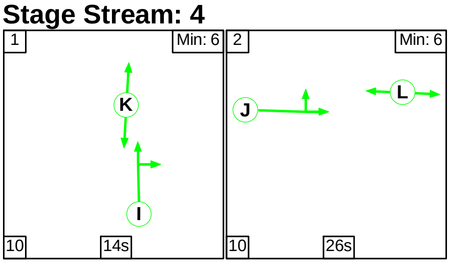
Full Input Data And Results

C1	Stream: 1	PRC for Signalled Lanes (%):	-16.7	Total Delay for Signalled Lanes (pcuHr):	39.40	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	-14.4	Total Delay for Signalled Lanes (pcuHr):	47.41	Cycle Time (s):	60
C1	Stream: 3	PRC for Signalled Lanes (%):	52.9	Total Delay for Signalled Lanes (pcuHr):	5.59	Cycle Time (s):	60
C1	Stream: 4	PRC for Signalled Lanes (%):	11.8	Total Delay for Signalled Lanes (pcuHr):	9.13	Cycle Time (s):	60
		PRC Over All Lanes (%):	-16.7	Total Delay Over All Lanes(pcuHr):	101.53		

Full Input Data And Results
Scenario 2: 'DM PM' (FG2: 'DM PM', Plan 1: 'Network Control Plan 1')
Stage Sequence Diagram
Stage Stream: 1


Stage Stream: 2


Stage Stream: 3


Stage Stream: 4


Stage Timings
Stage Stream: 1

Stage	1	2
Duration	33	15
Change Point	40	19

Stage Stream: 2

Stage	1	2
Duration	19	21
Change Point	16	45

Stage Stream: 3

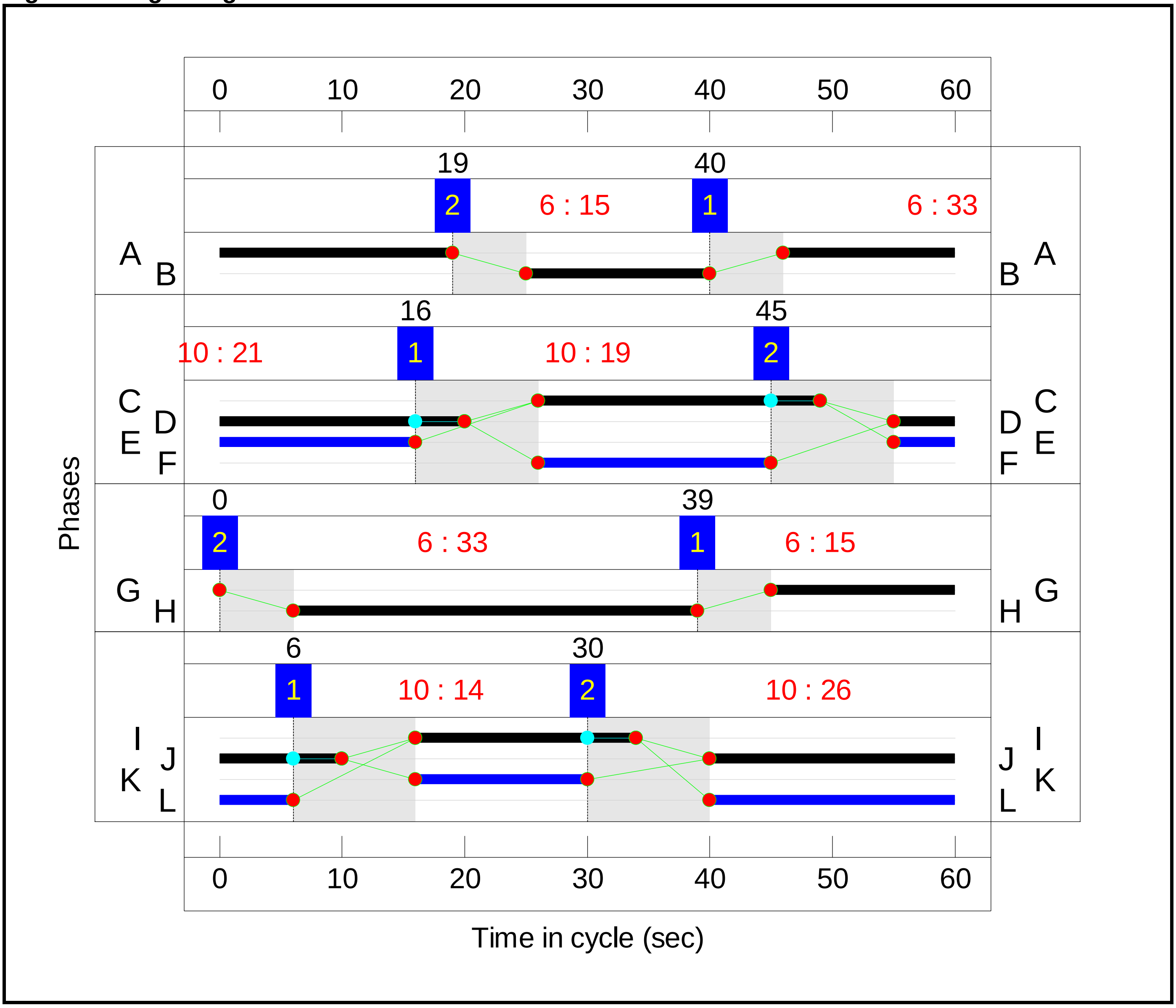
Stage	1	2
Duration	15	33
Change Point	39	0

Full Input Data And Results

Stage Stream: 4

Stage	1	2
Duration	14	26
Change Point	6	30

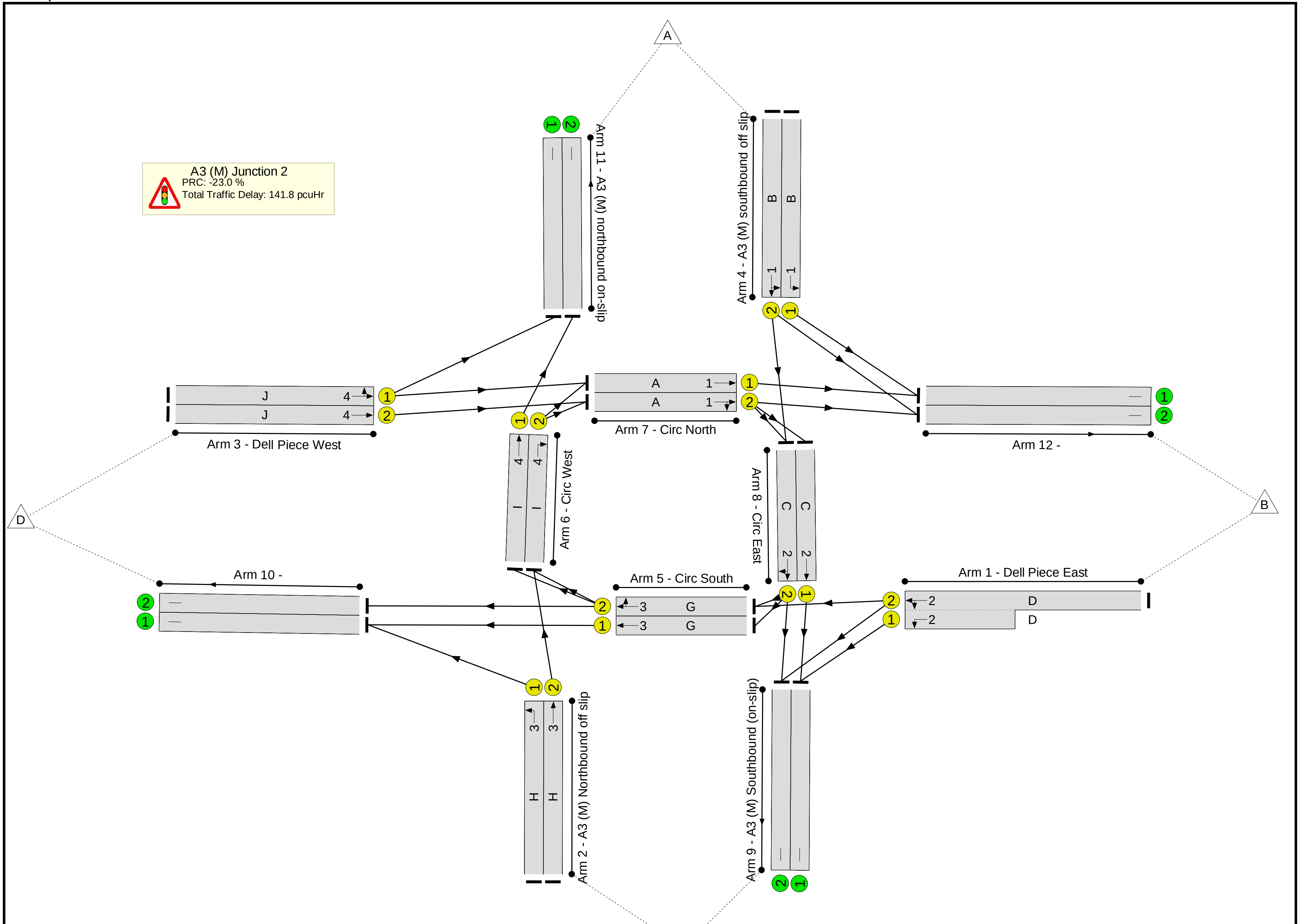
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**110.7%**
A3 (M) Junction 2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**110.7%**
1/2+1/1	Dell Piece East Ahead Left	U	2	N/A	D		1	25	-	763	1900:1900	823+0	92.7 : 0.0%
2/1	A3 (M) Northbound off slip Left	U	3	N/A	H		1	33	-	468	1800	1020	45.9%
2/2	A3 (M) Northbound off slip Ahead	U	3	N/A	H		1	33	-	631	1800	1020	61.9%
3/1	Dell Piece West Ahead Left	U	4	N/A	J		1	30	-	526	1800	930	56.6%
3/2	Dell Piece West Ahead	U	4	N/A	J		1	30	-	1019	1800	930	109.6%
4/1	A3 (M) southbound off slip Left	U	1	N/A	B		1	15	-	72	1800	480	15.0%
4/2	A3 (M) southbound off slip Ahead Left	U	1	N/A	B		1	15	-	434	1800	480	90.4%
5/1	Circ South Ahead	U	3	N/A	G		1	15	-	232	1900	507	45.8%
5/2	Circ South Right Ahead	U	3	N/A	G		1	15	-	225	1900	507	44.4%
6/1	Circ West Ahead	U	4	N/A	I		1	18	-	0	1800	570	0.0%
6/2	Circ West Right	U	4	N/A	I		1	18	-	631	1800	570	110.7%
7/1	Circ North Ahead	U	1	N/A	A		1	33	-	752	1800	1020	67.7%
7/2	Circ North Right Ahead	U	1	N/A	A		1	33	-	1019	1800	1020	91.2%
8/1	Circ East Ahead	U	2	N/A	C		1	23	-	734	1900	760	88.1%
8/2	Circ East Right Ahead	U	2	N/A	C		1	23	-	719	1900	760	91.3%

Full Input Data And Results

9/1	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	734	Inf	Inf	0.0%
9/2	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	1025	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	700	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	225	Inf	Inf	0.0%
11/1	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	405	Inf	Inf	0.0%
11/2	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	824	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**0**	**0**	**0**	**31.1**	**110.6**	**0.0**	**141.8**	**-**	**-**	**-**	**-**
A3 (M) Junction 2	**-**	**-**	**0**	**0**	**0**	**31.1**	**110.6**	**0.0**	**141.8**	**-**	**-**	**-**	**-**
1/2+1/1	763	763	-	-	-	3.4	5.4	-	8.8	41.4	11.9	5.4	17.2
2/1	468	468	-	-	-	1.0	0.4	-	1.4	10.9	4.5	0.4	5.0
2/2	631	631	-	-	-	1.5	0.8	-	2.3	13.3	7.0	0.8	7.8
3/1	526	526	-	-	-	1.4	0.6	-	2.1	14.3	5.8	0.6	6.5
3/2	1019	930	-	-	-	7.1	49.6	-	56.8	200.6	18.5	49.6	68.1
4/1	72	72	-	-	-	0.3	0.1	-	0.4	21.2	0.9	0.1	1.0
4/2	434	434	-	-	-	2.6	4.0	-	6.6	54.6	6.9	4.0	10.9
5/1	232	232	-	-	-	0.2	0.4	-	0.6	9.8	0.9	0.4	1.3
5/2	225	225	-	-	-	0.4	0.4	-	0.8	12.2	1.3	0.4	1.7
6/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	631	570	-	-	-	3.8	35.0	-	38.8	221.1	11.5	35.0	46.5
7/1	691	691	-	-	-	3.3	1.0	-	4.4	22.8	11.1	1.0	12.1
7/2	930	930	-	-	-	0.4	4.7	-	5.1	19.7	1.0	4.7	5.7
8/1	670	670	-	-	-	4.1	3.5	-	7.5	40.5	11.2	3.5	14.6
8/2	694	694	-	-	-	1.6	4.6	-	6.2	32.2	6.4	4.6	11.0
9/1	670	670	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	1000	1000	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	700	700	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	225	225	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	405	405	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	763	763	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

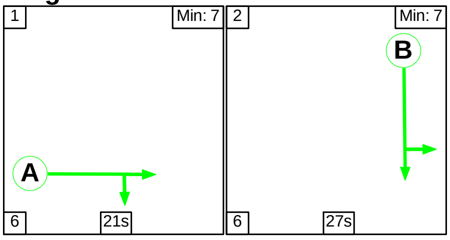
C1	Stream: 1	PRC for Signalled Lanes (%):	-1.3	Total Delay for Signalled Lanes (pcuHr):	16.46	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	-3.0	Total Delay for Signalled Lanes (pcuHr):	22.52	Cycle Time (s):	60
C1	Stream: 3	PRC for Signalled Lanes (%):	45.5	Total Delay for Signalled Lanes (pcuHr):	5.14	Cycle Time (s):	60
C1	Stream: 4	PRC for Signalled Lanes (%):	-23.0	Total Delay for Signalled Lanes (pcuHr):	97.63	Cycle Time (s):	60
		PRC Over All Lanes (%):	-23.0	Total Delay Over All Lanes(pcuHr):	141.75		

Full Input Data And Results

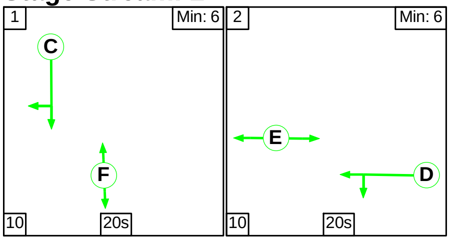
Scenario 3: 'DS1 AM' (FG3: 'DS1 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

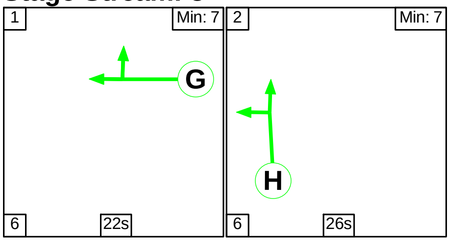
Stage Stream: 1



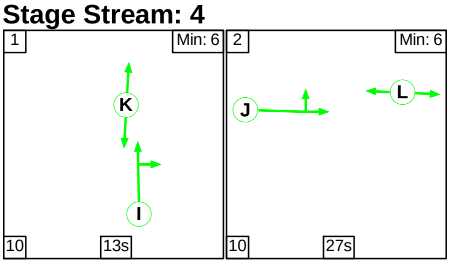
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	21	27
Change Point	0	27

Stage Stream: 2

Stage	1	2
Duration	20	20
Change Point	33	3

Stage Stream: 3

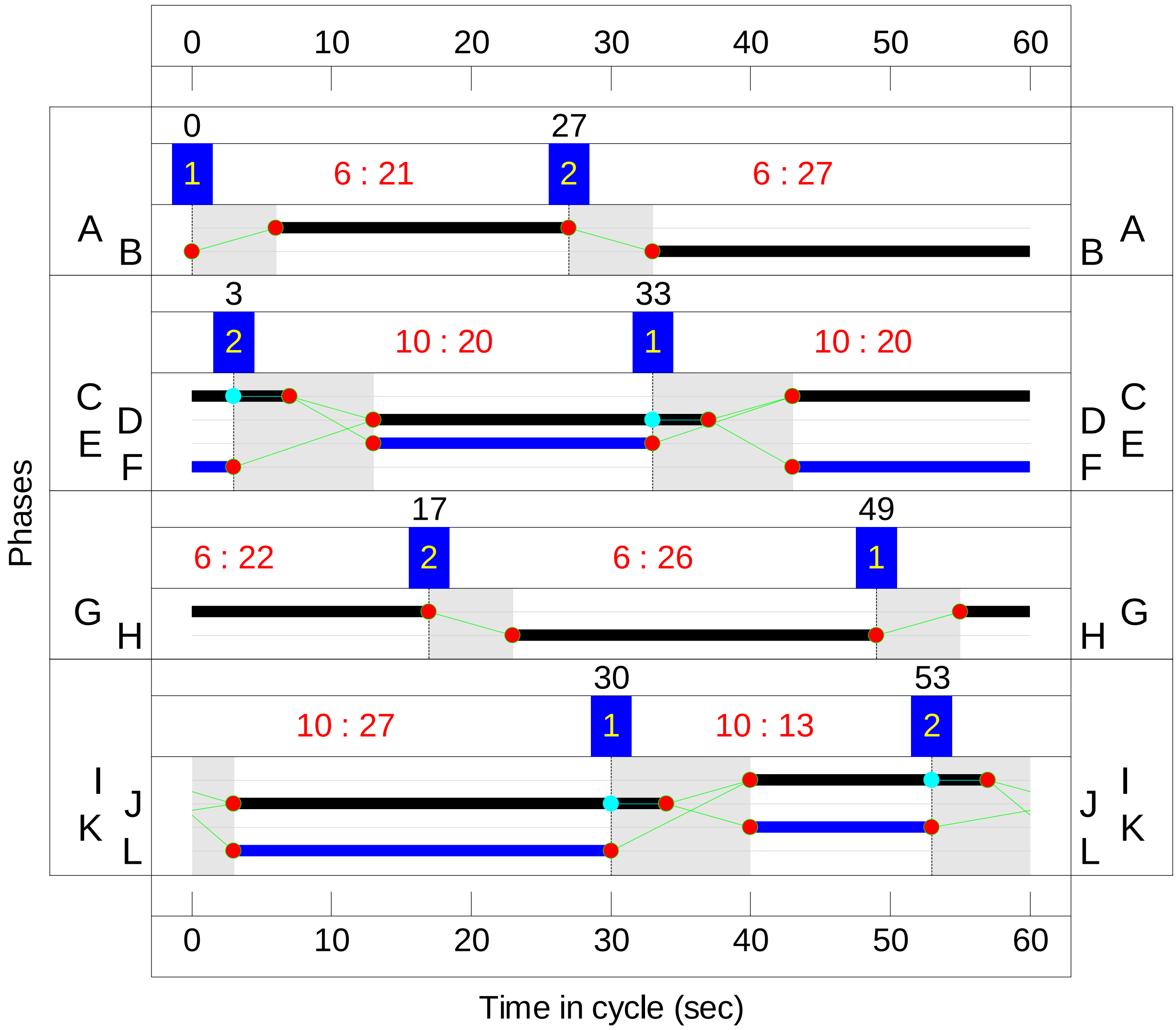
Stage	1	2
Duration	22	26
Change Point	49	17

Full Input Data And Results

Stage Stream: 4

Stage	1	2
Duration	13	27
Change Point	30	53

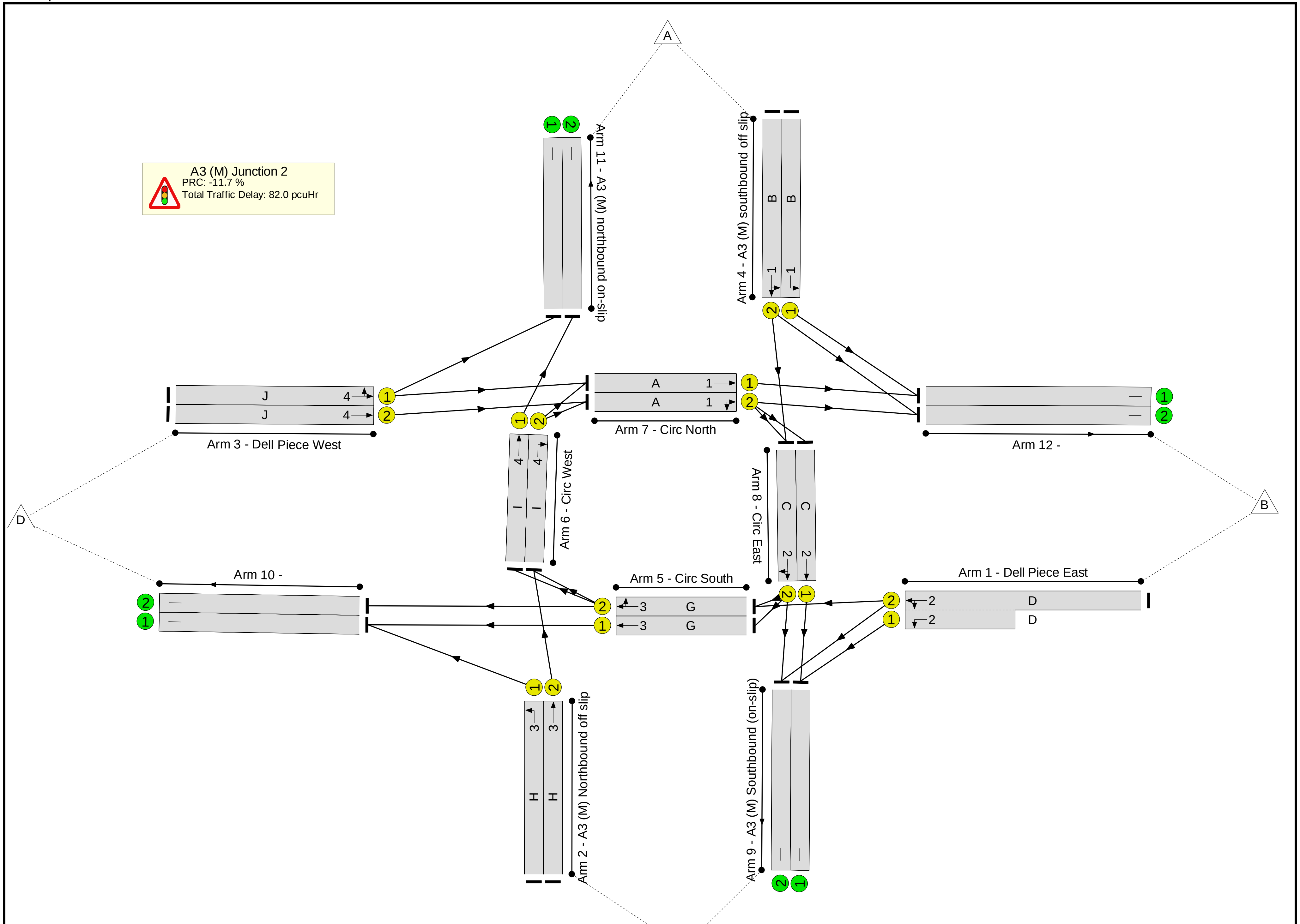
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**100.5%**
A3 (M) Junction 2	-	-	**N/A**	-	-		-	-	-	-	-	-	**100.5%**
1/2+1/1	Dell Piece East Ahead Left	U	2	N/A	D		1	24	-	865	1900:1900	792+72	100.2 : 100.2%
2/1	A3 (M) Northbound off slip Left	U	3	N/A	H		1	26	-	418	1800	810	51.6%
2/2	A3 (M) Northbound off slip Ahead	U	3	N/A	H		1	26	-	458	1800	810	56.5%
3/1	Dell Piece West Ahead Left	U	4	N/A	J		1	31	-	702	1800	960	73.1%
3/2	Dell Piece West Ahead	U	4	N/A	J		1	31	-	605	1800	960	63.0%
4/1	A3 (M) southbound off slip Left	U	1	N/A	B		1	27	-	146	1800	840	17.4%
4/2	A3 (M) southbound off slip Ahead Left	U	1	N/A	B		1	27	-	796	1800	840	94.8%
5/1	Circ South Ahead	U	3	N/A	G		1	22	-	410	1900	728	56.0%
5/2	Circ South Right Ahead	U	3	N/A	G		1	22	-	404	1900	728	55.2%
6/1	Circ West Ahead	U	4	N/A	I		1	17	-	2	1800	540	0.4%
6/2	Circ West Right	U	4	N/A	I		1	17	-	458	1800	540	84.8%
7/1	Circ North Ahead	U	1	N/A	A		1	21	-	609	1800	660	92.3%
7/2	Circ North Right Ahead	U	1	N/A	A		1	21	-	605	1800	660	91.7%
8/1	Circ East Ahead	U	2	N/A	C		1	24	-	605	1900	792	76.4%
8/2	Circ East Right Ahead	U	2	N/A	C		1	24	-	796	1900	792	100.5%

Full Input Data And Results

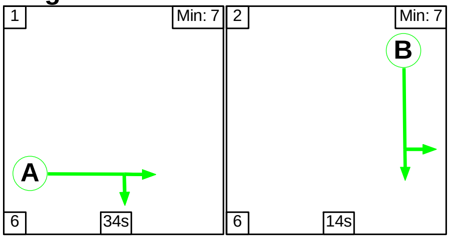
9/1	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	677	Inf	Inf	0.0%
9/2	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	775	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	828	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	402	Inf	Inf	0.0%
11/1	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	551	Inf	Inf	0.0%
11/2	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	2	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	755	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%

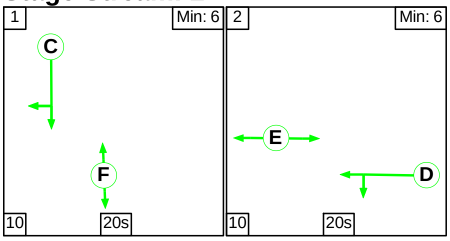
Full Input Data And Results

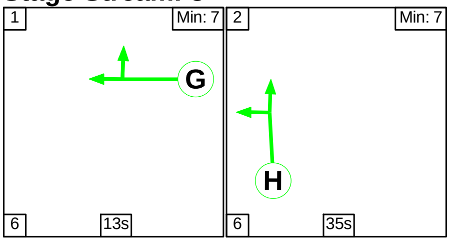
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**26.2**	**55.8**	**0.0**	**82.0**	**-**	**-**	**-**	**-**
A3 (M) Junction 2	**-**	**-**	**0**	**0**	**0**	**26.2**	**55.8**	**0.0**	**82.0**	**-**	**-**	**-**	**-**
1/2+1/1	865	864	-	-	-	4.1	15.1	-	19.2	80.0	13.7	15.1	28.7
2/1	418	418	-	-	-	1.4	0.5	-	1.9	16.4	4.9	0.5	5.4
2/2	458	458	-	-	-	1.5	0.6	-	2.2	17.3	5.6	0.6	6.2
3/1	702	702	-	-	-	2.1	1.3	-	3.4	17.6	8.8	1.3	10.1
3/2	605	605	-	-	-	1.7	0.8	-	2.5	14.9	7.1	0.8	7.9
4/1	146	146	-	-	-	0.4	0.1	-	0.5	11.9	1.4	0.1	1.5
4/2	796	796	-	-	-	3.4	6.9	-	10.3	46.5	12.6	6.9	19.5
5/1	408	408	-	-	-	0.3	0.6	-	0.9	8.0	1.6	0.6	2.3
5/2	402	402	-	-	-	0.4	0.6	-	1.0	8.8	1.8	0.6	2.5
6/1	2	2	-	-	-	0.0	0.0	-	0.0	37.0	0.0	0.0	0.0
6/2	458	458	-	-	-	1.0	2.6	-	3.6	28.2	7.1	2.6	9.7
7/1	609	609	-	-	-	2.8	5.0	-	7.8	46.1	9.8	5.0	14.8
7/2	605	605	-	-	-	1.9	4.7	-	6.6	39.0	4.0	4.7	8.7
8/1	605	605	-	-	-	4.2	1.6	-	5.8	34.6	10.1	1.6	11.7
8/2	796	792	-	-	-	1.1	15.2	-	16.3	73.9	13.3	15.2	28.6
9/1	677	677	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	774	774	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	826	826	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	551	551	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	2	2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	755	755	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

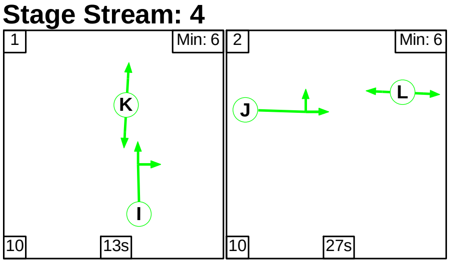
Full Input Data And Results

C1	Stream: 1	PRC for Signalled Lanes (%):	-5.3	Total Delay for Signalled Lanes (pcuHr):	25.10	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	-11.7	Total Delay for Signalled Lanes (pcuHr):	41.38	Cycle Time (s):	60
C1	Stream: 3	PRC for Signalled Lanes (%):	59.2	Total Delay for Signalled Lanes (pcuHr):	5.99	Cycle Time (s):	60
C1	Stream: 4	PRC for Signalled Lanes (%):	6.1	Total Delay for Signalled Lanes (pcuHr):	9.55	Cycle Time (s):	60
		PRC Over All Lanes (%):	-11.7	Total Delay Over All Lanes(pcuHr):	82.02		

Full Input Data And Results
Scenario 4: 'DS1 PM' (FG4: 'DS1 PM', Plan 1: 'Network Control Plan 1')
Stage Sequence Diagram
Stage Stream: 1


Stage Stream: 2


Stage Stream: 3


Stage Stream: 4


Stage Timings
Stage Stream: 1

Stage	1	2
Duration	34	14
Change Point	0	40

Stage Stream: 2

Stage	1	2
Duration	20	20
Change Point	34	4

Stage Stream: 3

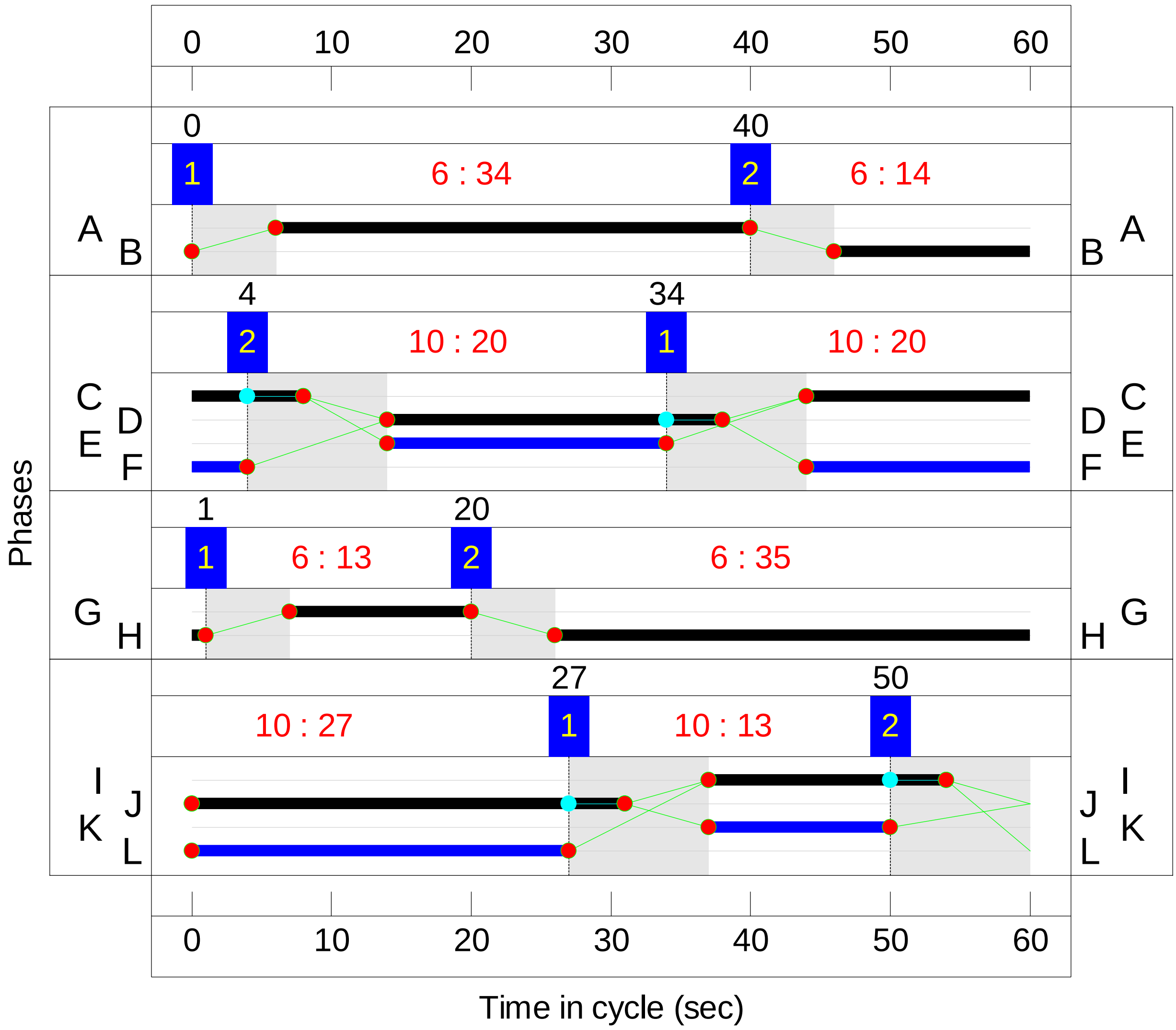
Stage	1	2
Duration	13	35
Change Point	1	20

Full Input Data And Results

Stage Stream: 4

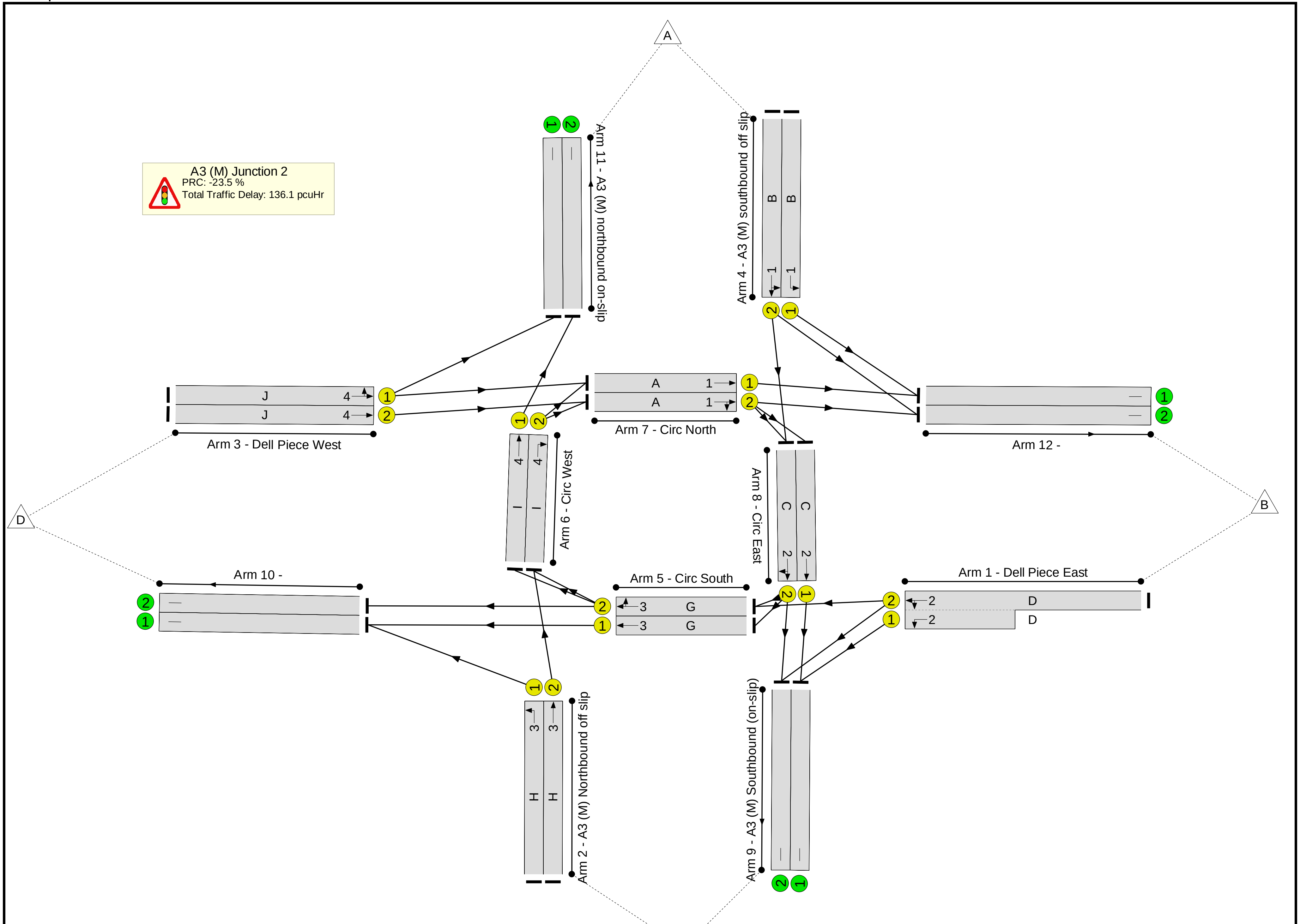
Stage	**1**	**2**
Duration	13	27
Change Point	27	50

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**111.1%**
A3 (M) Junction 2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**111.1%**
1/2+1/1	Dell Piece East Ahead Left	U	2	N/A	D		1	24	-	745	1900:1900	792+0	94.1 : 0.0%
2/1	A3 (M) Northbound off slip Left	U	3	N/A	H		1	35	-	657	1800	1080	60.8%
2/2	A3 (M) Northbound off slip Ahead	U	3	N/A	H		1	35	-	600	1800	1080	55.6%
3/1	Dell Piece West Ahead Left	U	4	N/A	J		1	31	-	572	1800	960	59.6%
3/2	Dell Piece West Ahead	U	4	N/A	J		1	31	-	1044	1800	960	108.8%
4/1	A3 (M) southbound off slip Left	U	1	N/A	B		1	14	-	80	1800	450	17.8%
4/2	A3 (M) southbound off slip Ahead Left	U	1	N/A	B		1	14	-	398	1800	450	88.4%
5/1	Circ South Ahead	U	3	N/A	G		1	13	-	203	1900	443	45.8%
5/2	Circ South Right Ahead	U	3	N/A	G		1	13	-	201	1900	443	45.3%
6/1	Circ West Ahead	U	4	N/A	I		1	17	-	0	1800	540	0.0%
6/2	Circ West Right	U	4	N/A	I		1	17	-	600	1800	540	111.1%
7/1	Circ North Ahead	U	1	N/A	A		1	34	-	727	1800	1050	63.5%
7/2	Circ North Right Ahead	U	1	N/A	A		1	34	-	1044	1800	1050	91.4%
8/1	Circ East Ahead	U	2	N/A	C		1	24	-	720	1900	792	83.6%
8/2	Circ East Right Ahead	U	2	N/A	C		1	24	-	722	1900	792	87.9%

Full Input Data And Results

9/1	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	720	Inf	Inf	0.0%
9/2	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	1063	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	860	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	201	Inf	Inf	0.0%
11/1	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	445	Inf	Inf	0.0%
11/2	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	807	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**0**	**0**	**0**	**30.0**	**106.1**	**0.0**	**136.1**	**-**	**-**	**-**	**-**
A3 (M) Junction 2	**-**	**-**	**0**	**0**	**0**	**30.0**	**106.1**	**0.0**	**136.1**	**-**	**-**	**-**	**-**
1/2+1/1	745	745	-	-	-	3.5	6.3	-	9.8	47.2	11.8	6.3	18.1
2/1	657	657	-	-	-	1.4	0.8	-	2.2	11.8	6.8	0.8	7.5
2/2	600	600	-	-	-	1.2	0.6	-	1.8	10.9	6.0	0.6	6.6
3/1	572	572	-	-	-	1.5	0.7	-	2.3	14.2	6.5	0.7	7.2
3/2	1044	960	-	-	-	6.5	47.5	-	53.9	186.0	18.8	47.5	66.3
4/1	80	80	-	-	-	0.4	0.1	-	0.5	22.5	1.0	0.1	1.2
4/2	398	398	-	-	-	2.4	3.4	-	5.8	52.3	6.3	3.4	9.7
5/1	203	203	-	-	-	0.2	0.4	-	0.7	11.6	1.3	0.4	1.7
5/2	201	201	-	-	-	0.3	0.4	-	0.7	12.4	1.3	0.4	1.7
6/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	600	540	-	-	-	4.0	34.4	-	38.4	230.4	11.5	34.4	45.8
7/1	667	667	-	-	-	3.0	0.9	-	3.9	20.8	10.6	0.9	11.5
7/2	960	960	-	-	-	0.4	4.8	-	5.2	19.5	1.0	4.8	5.8
8/1	662	662	-	-	-	3.5	2.5	-	6.0	32.7	11.0	2.5	13.5
8/2	696	696	-	-	-	1.7	3.4	-	5.1	26.4	5.9	3.4	9.3
9/1	662	662	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	1037	1037	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	860	860	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	201	201	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	445	445	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	747	747	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

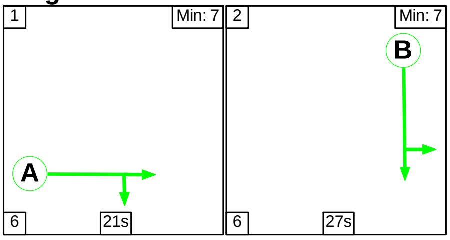
C1	Stream: 1	PRC for Signalled Lanes (%):	-1.6	Total Delay for Signalled Lanes (pcuHr):	15.35	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	-4.6	Total Delay for Signalled Lanes (pcuHr):	20.88	Cycle Time (s):	60
C1	Stream: 3	PRC for Signalled Lanes (%):	47.9	Total Delay for Signalled Lanes (pcuHr):	5.32	Cycle Time (s):	60
C1	Stream: 4	PRC for Signalled Lanes (%):	-23.5	Total Delay for Signalled Lanes (pcuHr):	94.60	Cycle Time (s):	60
		PRC Over All Lanes (%):	-23.5	Total Delay Over All Lanes(pcuHr):	136.15		

Full Input Data And Results

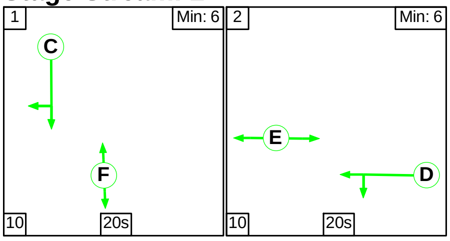
Scenario 5: 'DS2 AM' (FG5: 'DS2 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

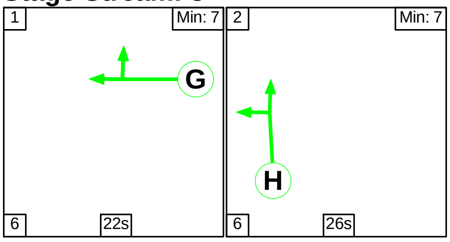
Stage Stream: 1



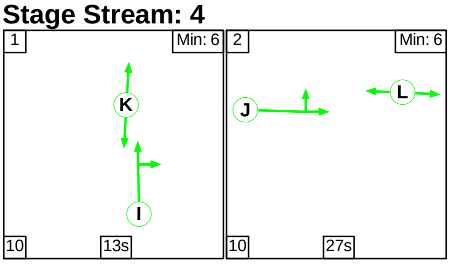
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	21	27
Change Point	0	27

Stage Stream: 2

Stage	1	2
Duration	20	20
Change Point	33	3

Stage Stream: 3

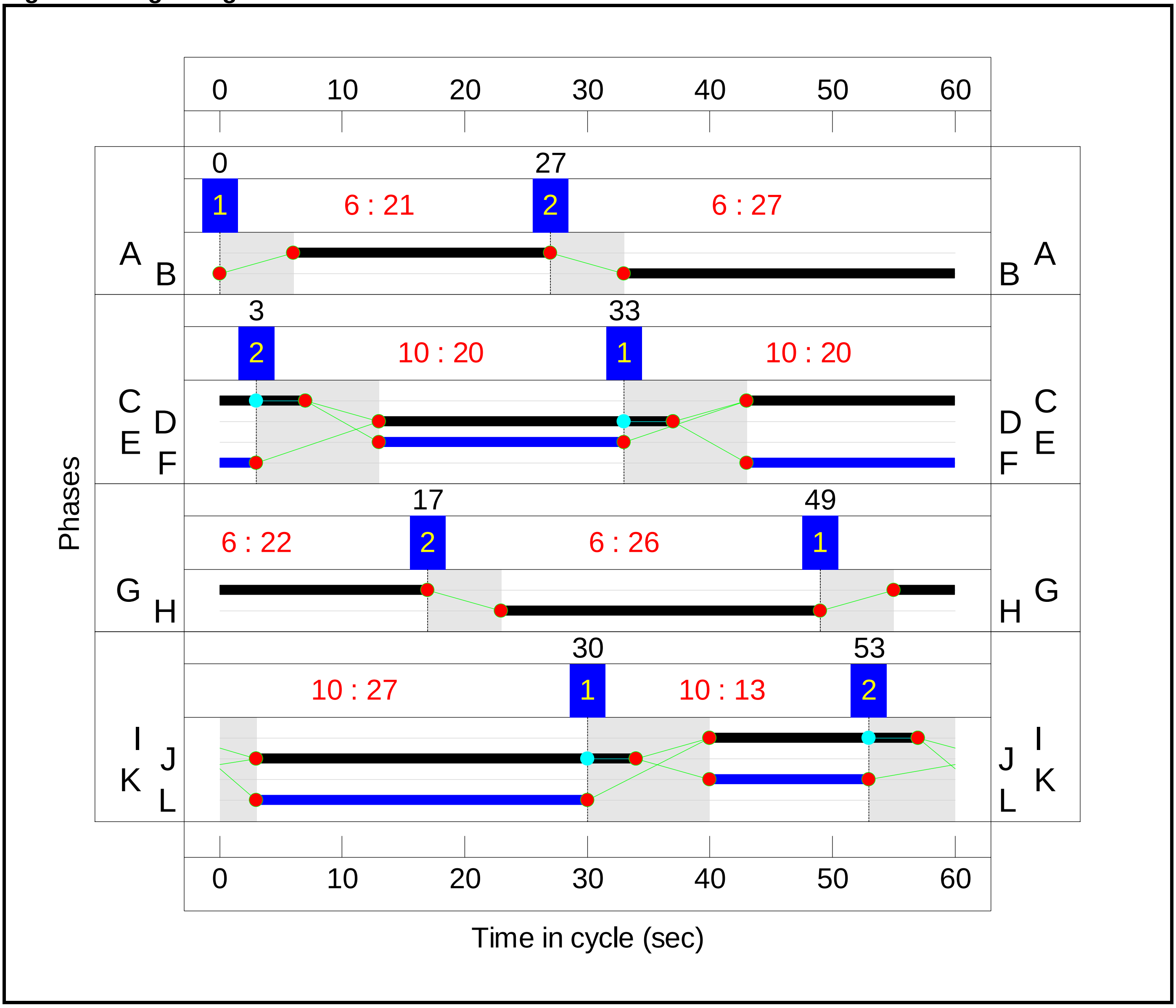
Stage	1	2
Duration	22	26
Change Point	49	17

Full Input Data And Results

Stage Stream: 4

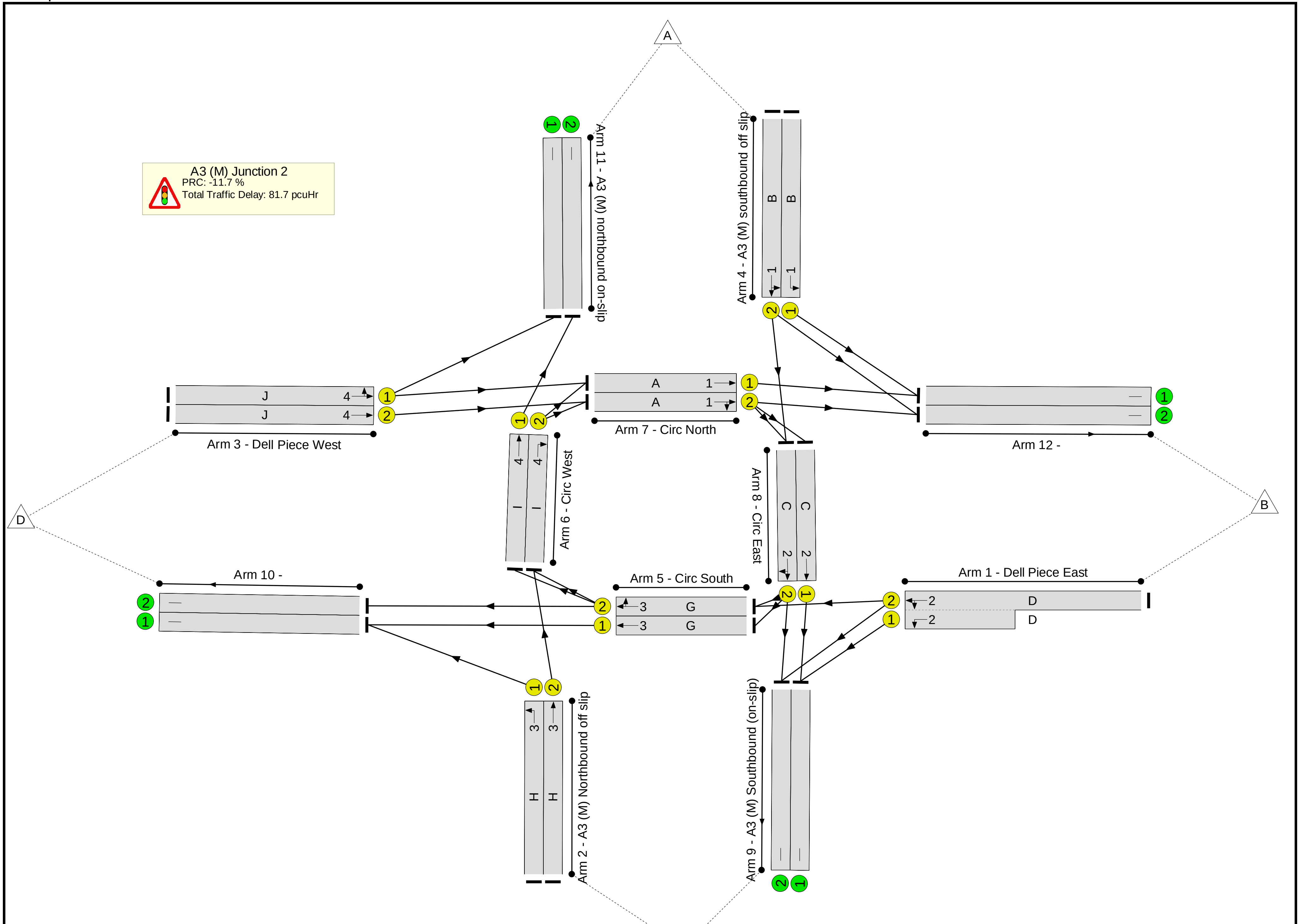
Stage	1	2
Duration	13	27
Change Point	30	53

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**100.5%**
A3 (M) Junction 2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**100.5%**
1/2+1/1	Dell Piece East Ahead Left	U	2	N/A	D		1	24	-	864	1900:1900	792+72	100.0 : 100.0%
2/1	A3 (M) Northbound off slip Left	U	3	N/A	H		1	26	-	417	1800	810	51.5%
2/2	A3 (M) Northbound off slip Ahead	U	3	N/A	H		1	26	-	457	1800	810	56.4%
3/1	Dell Piece West Ahead Left	U	4	N/A	J		1	31	-	701	1800	960	73.0%
3/2	Dell Piece West Ahead	U	4	N/A	J		1	31	-	606	1800	960	63.1%
4/1	A3 (M) southbound off slip Left	U	1	N/A	B		1	27	-	145	1800	840	17.3%
4/2	A3 (M) southbound off slip Ahead Left	U	1	N/A	B		1	27	-	796	1800	840	94.8%
5/1	Circ South Ahead	U	3	N/A	G		1	22	-	410	1900	728	56.0%
5/2	Circ South Right Ahead	U	3	N/A	G		1	22	-	404	1900	728	55.2%
6/1	Circ West Ahead	U	4	N/A	I		1	17	-	2	1800	540	0.4%
6/2	Circ West Right	U	4	N/A	I		1	17	-	457	1800	540	84.6%
7/1	Circ North Ahead	U	1	N/A	A		1	21	-	609	1800	660	92.3%
7/2	Circ North Right Ahead	U	1	N/A	A		1	21	-	606	1800	660	91.8%
8/1	Circ East Ahead	U	2	N/A	C		1	24	-	606	1900	792	76.5%
8/2	Circ East Right Ahead	U	2	N/A	C		1	24	-	796	1900	792	100.5%

Full Input Data And Results

9/1	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	678	Inf	Inf	0.0%
9/2	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	774	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	827	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	402	Inf	Inf	0.0%
11/1	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	549	Inf	Inf	0.0%
11/2	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	2	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	754	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**0**	**0**	**0**	**26.2**	**55.6**	**0.0**	**81.7**	**-**	**-**	**-**	**-**
A3 (M) Junction 2	**-**	**-**	**0**	**0**	**0**	**26.2**	**55.6**	**0.0**	**81.7**	**-**	**-**	**-**	**-**
1/2+1/1	864	864	-	-	-	4.1	14.8	-	18.9	78.7	13.4	14.8	28.2
2/1	417	417	-	-	-	1.4	0.5	-	1.9	16.4	4.9	0.5	5.4
2/2	457	457	-	-	-	1.5	0.6	-	2.2	17.2	5.6	0.6	6.2
3/1	701	701	-	-	-	2.1	1.3	-	3.4	17.6	8.8	1.3	10.1
3/2	606	606	-	-	-	1.7	0.9	-	2.5	14.9	7.1	0.9	7.9
4/1	145	145	-	-	-	0.4	0.1	-	0.5	11.9	1.4	0.1	1.5
4/2	796	796	-	-	-	3.4	6.9	-	10.3	46.5	12.6	6.9	19.5
5/1	408	408	-	-	-	0.3	0.6	-	0.9	8.0	1.6	0.6	2.3
5/2	402	402	-	-	-	0.4	0.6	-	1.0	8.8	1.8	0.6	2.5
6/1	2	2	-	-	-	0.0	0.0	-	0.0	37.0	0.0	0.0	0.0
6/2	457	457	-	-	-	1.0	2.6	-	3.6	28.0	7.1	2.6	9.7
7/1	609	609	-	-	-	2.8	5.0	-	7.8	46.1	9.8	5.0	14.8
7/2	606	606	-	-	-	1.9	4.8	-	6.6	39.4	4.0	4.8	8.8
8/1	606	606	-	-	-	4.2	1.6	-	5.8	34.7	10.1	1.6	11.7
8/2	796	792	-	-	-	1.1	15.2	-	16.3	73.9	13.3	15.2	28.6
9/1	678	678	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	774	774	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	825	825	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	549	549	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	2	2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	754	754	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

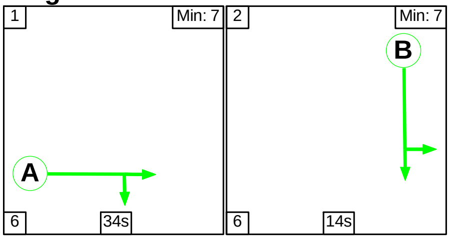
C1	Stream: 1	PRC for Signalled Lanes (%):	-5.3	Total Delay for Signalled Lanes (pcuHr):	25.18	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	-11.7	Total Delay for Signalled Lanes (pcuHr):	41.09	Cycle Time (s):	60
C1	Stream: 3	PRC for Signalled Lanes (%):	59.5	Total Delay for Signalled Lanes (pcuHr):	5.97	Cycle Time (s):	60
C1	Stream: 4	PRC for Signalled Lanes (%):	6.3	Total Delay for Signalled Lanes (pcuHr):	9.51	Cycle Time (s):	60
		PRC Over All Lanes (%):	-11.7	Total Delay Over All Lanes(pcuHr):	81.74		

Full Input Data And Results

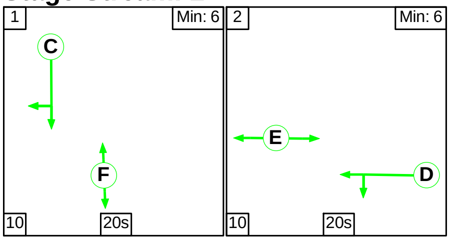
Scenario 6: 'DS2 PM' (FG6: 'DS2 PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

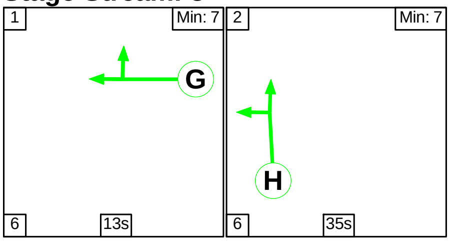
Stage Stream: 1



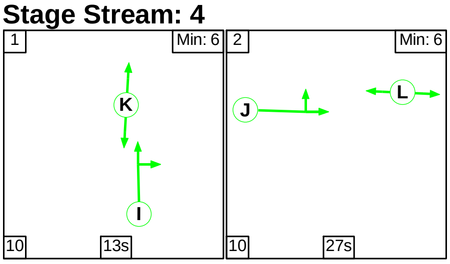
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	34	14
Change Point	0	40

Stage Stream: 2

Stage	1	2
Duration	20	20
Change Point	34	4

Stage Stream: 3

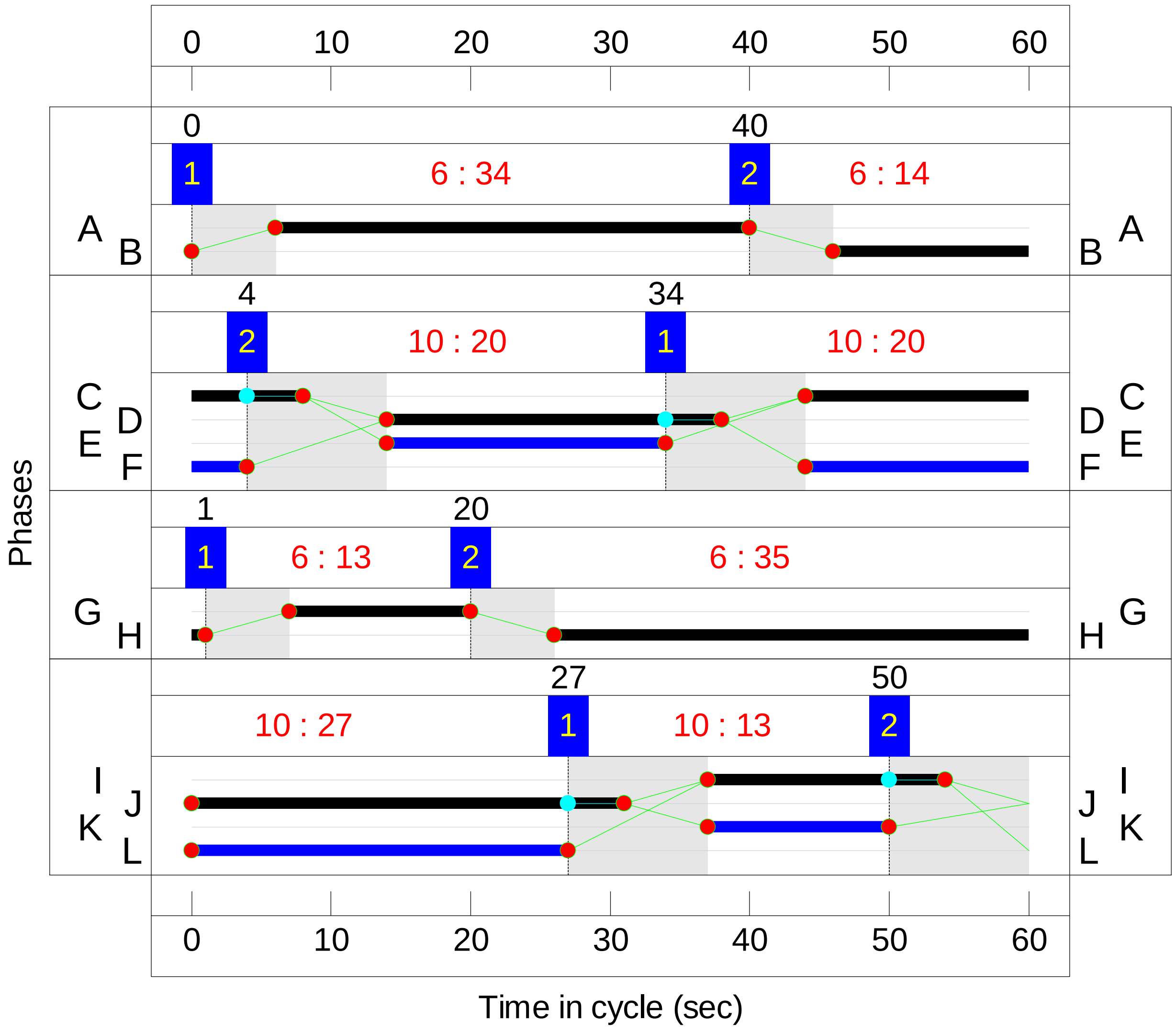
Stage	1	2
Duration	13	35
Change Point	1	20

Full Input Data And Results

Stage Stream: 4

Stage	1	2
Duration	13	27
Change Point	27	50

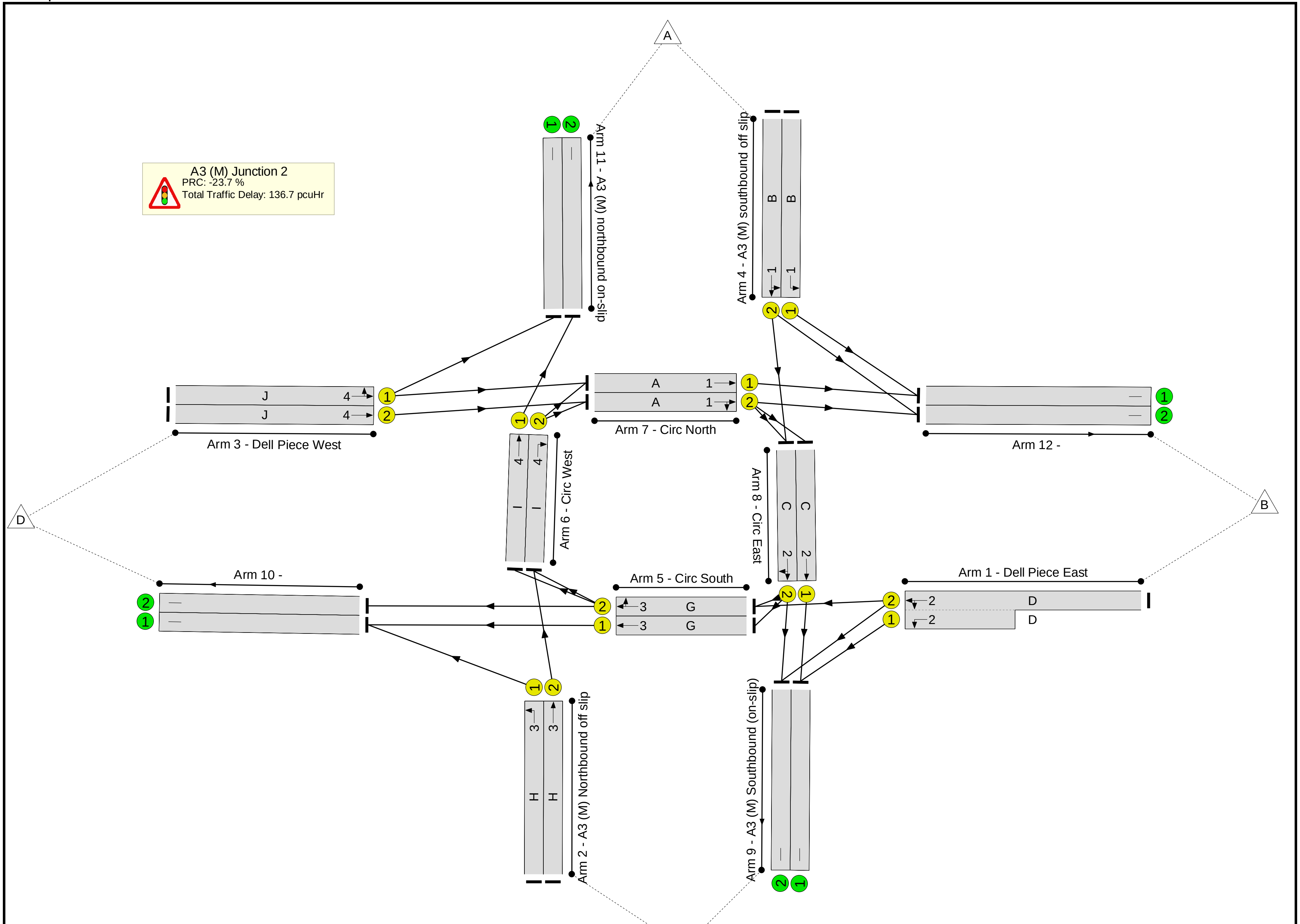
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**111.3%**
A3 (M) Junction 2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**111.3%**
1/2+1/1	Dell Piece East Ahead Left	U	2	N/A	D		1	24	-	744	1900:1900	792+0	94.0 : 0.0%
2/1	A3 (M) Northbound off slip Left	U	3	N/A	H		1	35	-	653	1800	1080	60.5%
2/2	A3 (M) Northbound off slip Ahead	U	3	N/A	H		1	35	-	601	1800	1080	55.6%
3/1	Dell Piece West Ahead Left	U	4	N/A	J		1	31	-	572	1800	960	59.6%
3/2	Dell Piece West Ahead	U	4	N/A	J		1	31	-	1044	1800	960	108.8%
4/1	A3 (M) southbound off slip Left	U	1	N/A	B		1	14	-	80	1800	450	17.8%
4/2	A3 (M) southbound off slip Ahead Left	U	1	N/A	B		1	14	-	400	1800	450	88.9%
5/1	Circ South Ahead	U	3	N/A	G		1	13	-	204	1900	443	46.0%
5/2	Circ South Right Ahead	U	3	N/A	G		1	13	-	202	1900	443	45.6%
6/1	Circ West Ahead	U	4	N/A	I		1	17	-	0	1800	540	0.0%
6/2	Circ West Right	U	4	N/A	I		1	17	-	601	1800	540	111.3%
7/1	Circ North Ahead	U	1	N/A	A		1	34	-	727	1800	1050	63.4%
7/2	Circ North Right Ahead	U	1	N/A	A		1	34	-	1044	1800	1050	91.4%
8/1	Circ East Ahead	U	2	N/A	C		1	24	-	722	1900	792	83.9%
8/2	Circ East Right Ahead	U	2	N/A	C		1	24	-	722	1900	792	87.9%

Full Input Data And Results

9/1	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	722	Inf	Inf	0.0%
9/2	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	1060	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	857	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	202	Inf	Inf	0.0%
11/1	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	446	Inf	Inf	0.0%
11/2	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	807	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**0**	**0**	**0**	**30.1**	**106.7**	**0.0**	**136.7**	**-**	**-**	**-**	**-**
A3 (M) Junction 2	**-**	**-**	**0**	**0**	**0**	**30.1**	**106.7**	**0.0**	**136.7**	**-**	**-**	**-**	**-**
1/2+1/1	744	744	-	-	-	3.5	6.2	-	9.7	46.8	11.8	6.2	18.0
2/1	653	653	-	-	-	1.4	0.8	-	2.1	11.7	6.7	0.8	7.5
2/2	601	601	-	-	-	1.2	0.6	-	1.8	11.0	6.0	0.6	6.6
3/1	572	572	-	-	-	1.5	0.7	-	2.3	14.2	6.5	0.7	7.2
3/2	1044	960	-	-	-	6.5	47.5	-	53.9	186.0	18.8	47.5	66.3
4/1	80	80	-	-	-	0.4	0.1	-	0.5	22.5	1.0	0.1	1.2
4/2	400	400	-	-	-	2.4	3.5	-	5.9	53.3	6.3	3.5	9.8
5/1	204	204	-	-	-	0.2	0.4	-	0.7	11.6	1.3	0.4	1.7
5/2	202	202	-	-	-	0.3	0.4	-	0.7	12.4	1.3	0.4	1.8
6/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	601	540	-	-	-	4.1	34.8	-	38.9	232.9	11.5	34.8	46.3
7/1	666	666	-	-	-	3.0	0.9	-	3.8	20.8	10.6	0.9	11.4
7/2	960	960	-	-	-	0.4	4.8	-	5.2	19.5	1.0	4.8	5.8
8/1	664	664	-	-	-	3.6	2.5	-	6.1	32.9	11.1	2.5	13.6
8/2	696	696	-	-	-	1.7	3.4	-	5.1	26.5	5.9	3.4	9.3
9/1	664	664	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	1034	1034	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	857	857	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	202	202	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	446	446	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	746	746	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

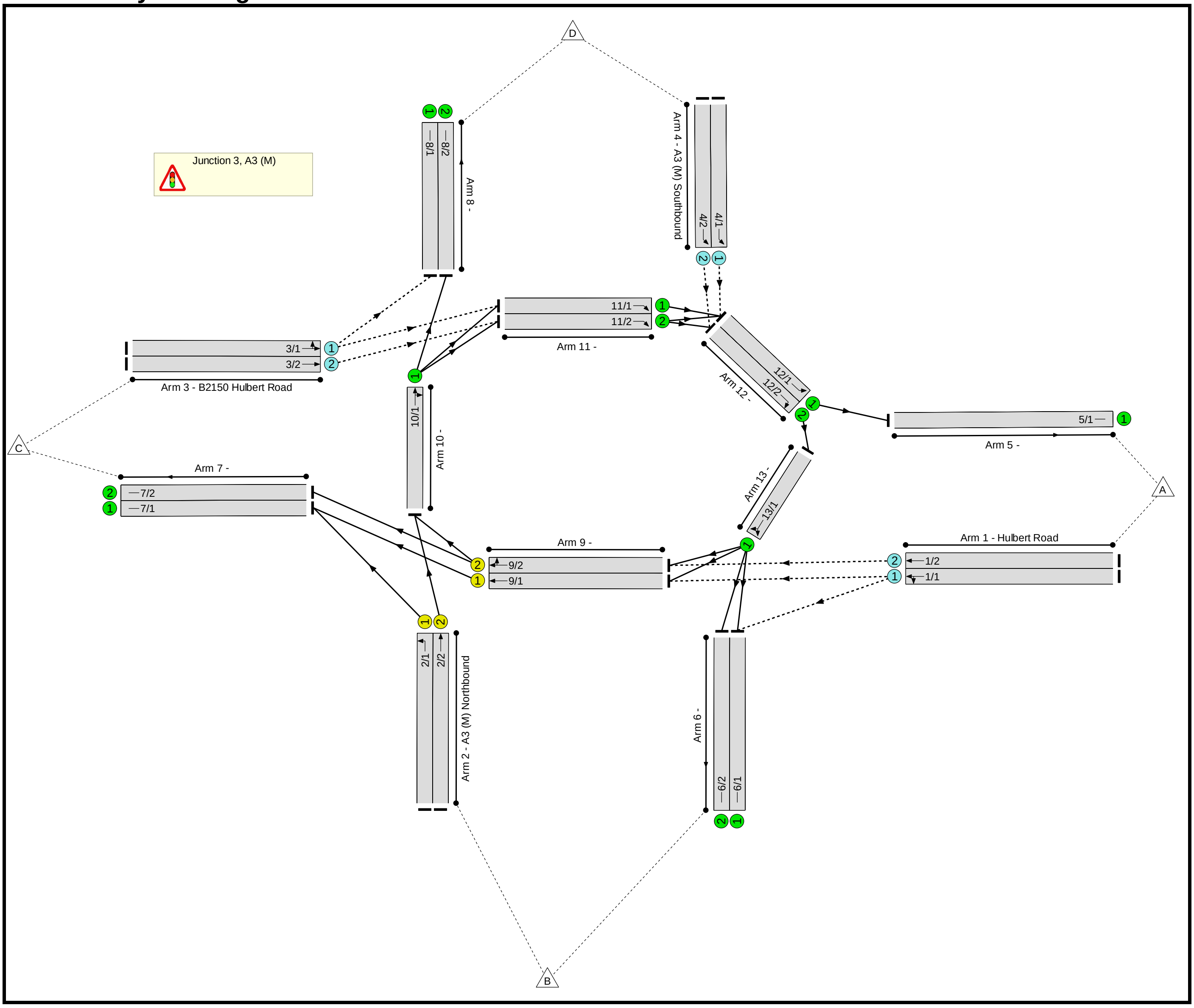
C1	Stream: 1	PRC for Signalled Lanes (%):	-1.6	Total Delay for Signalled Lanes (pcuHr):	15.48	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	-4.4	Total Delay for Signalled Lanes (pcuHr):	20.84	Cycle Time (s):	60
C1	Stream: 3	PRC for Signalled Lanes (%):	48.9	Total Delay for Signalled Lanes (pcuHr):	5.31	Cycle Time (s):	60
C1	Stream: 4	PRC for Signalled Lanes (%):	-23.7	Total Delay for Signalled Lanes (pcuHr):	95.09	Cycle Time (s):	60
		PRC Over All Lanes (%):	-23.7	Total Delay Over All Lanes(pcuHr):	136.72		

Full Input Data And Results

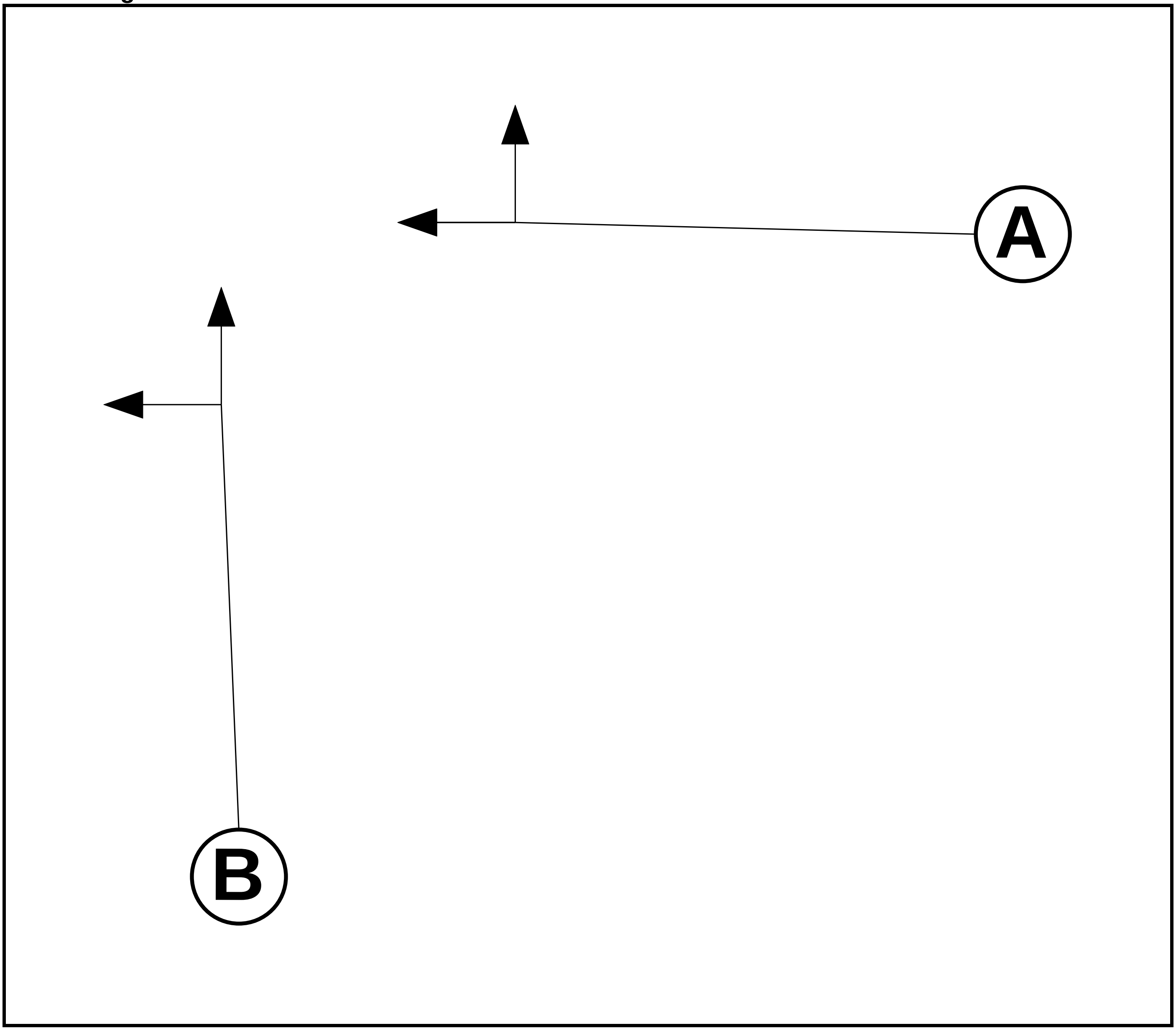
User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	A3 (M) J3 – Prohibited left turn from offside lane of A3 (south) approach .lsg3x
Author:	
Company:	
Address:	

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

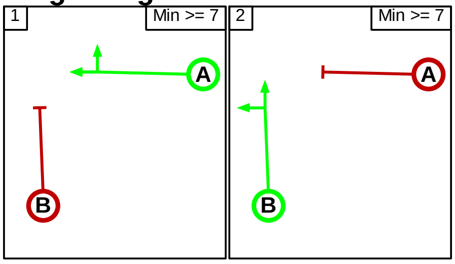
		Starting Phase	
		A	B
Terminating Phase	A		5
	B	5	

Phases in Stage

Stage No.	Phases in Stage
1	A
2	B

Full Input Data And Results

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		5
	2	5	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Junction 3, A3 (M)											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/1 (Hulbert Road)	6/1 (Left)	1000	0	13/1	0.33	All	-	-	-	-	-
	9/1 (Ahead)	1000	0	13/1	0.33	All					
1/2 (Hulbert Road)	9/2 (Ahead)	1000	0	13/1	0.33	All	-	-	-	-	-
3/1 (B2150 Hulbert Road)	8/1 (Left)	1000	0	10/1	0.33	To 8/2 (Ahead)	-	-	-	-	-
	11/1 (Ahead)	1000	0	10/1	1.09	To 8/2 (Ahead) To 11/1 (Right)					
3/2 (B2150 Hulbert Road)	11/2 (Ahead)	1000	0	10/1	0.33	All	-	-	-	-	-
4/1 (A3 (M) Southbound)	12/1 (Left)	1000	0	11/1	0.33	All	-	-	-	-	-
4/2 (A3 (M) Southbound)	12/2 (Left)	1000	0	11/2	0.33	All	-	-	-	-	-
				11/1	0.33	All					

Full Input Data And Results

Lane Input Data

Junction: Junction 3, A3 (M)

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 (Hulbert Road)	O		2	3	60.0	Geom	-	3.75	0.00	Y	Arm 6 Left	Inf
											Arm 9 Ahead	Inf
1/2 (Hulbert Road)	O		2	3	60.0	Geom	-	3.75	0.00	N	Arm 9 Ahead	Inf
2/1 (A3 (M) Northbound)	U	B	2	3	60.0	Geom	-	3.83	0.00	Y	Arm 7 Left	5431.00
2/2 (A3 (M) Northbound)	U	B	2	3	60.0	Geom	-	3.61	0.00	N	Arm 10 Ahead	126.00
3/1 (B2150 Hulbert Road)	O		2	3	60.0	Geom	-	3.81	0.00	Y	Arm 8 Left	645.00
											Arm 11 Ahead	Inf
3/2 (B2150 Hulbert Road)	O		2	3	60.0	Geom	-	3.90	0.00	N	Arm 11 Ahead	122.00
4/1 (A3 (M) Southbound)	O		2	3	60.0	Geom	-	3.48	0.00	Y	Arm 12 Left	122.00
4/2 (A3 (M) Southbound)	O		2	3	60.0	Geom	-	3.58	0.00	N	Arm 12 Left	164.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/2	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/2	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1	U	A	2	3	20.9	Geom	-	4.04	0.00	Y	Arm 7 Ahead	111.00
9/2	U	A	2	3	20.9	Geom	-	4.00	0.00	N	Arm 7 Ahead	127.00
											Arm 10 Right	70.00
10/1	U		2	3	19.1	Inf	-	-	-	-	-	-
11/1	U		2	3	27.0	Inf	-	-	-	-	-	-
11/2	U		2	3	27.0	Inf	-	-	-	-	-	-
12/1	U		2	3	15.7	Inf	-	-	-	-	-	-
12/2	U		2	3	15.7	Inf	-	-	-	-	-	-
13/1	U		2	3	7.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2026 DM AM'	08:00	09:00	01:00	
2: '2026 DM PM'	17:00	18:00	01:00	
3: '2026 DS1 AM'	08:00	09:00	01:00	
4: '2026 DS1 PM'	17:00	18:00	01:00	
5: '2026 DS2 AM'	08:00	09:00	01:00	
6: '2026 DS2 PM'	17:00	18:00	01:00	

Scenario 1: '2026 DM AM' (FG1: '2026 DM AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	15	257	404	676
	B	42	0	1063	0	1105
	C	853	399	0	574	1826
	D	733	0	252	0	985
	Tot.	1628	414	1572	978	4592

Traffic Lane Flows

Lane	Scenario 1: 2026 DM AM
Junction: Junction 3, A3 (M)	
1/1	245
1/2	431
2/1	1063
2/2	42
3/1	841
3/2	985
4/1	733
4/2	252
5/1	1628
6/1	215
6/2	199
7/1	1506
7/2	66
8/1	574
8/2	404
9/1	443
9/2	470
10/1	446
11/1	288
11/2	1006
12/1	1628
12/2	651
13/1	651

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	6.1 %	1990	1990
				Arm 9 Ahead	Inf	93.9 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 10 Ahead	126.00	100.0 %	2091	2091
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	68.3 %	1993	1993
				Arm 11 Ahead	Inf	31.7 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2	4.00	0.00	N	Arm 7 Ahead	127.00	14.0 %	2113	2113
				Arm 10 Right	70.00	86.0 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2026 DM PM' (FG2: '2026 DM PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	48	464	141	653
	B	19	0	1141	0	1160
	C	52	703	0	818	1573
	D	1150	0	314	0	1464
	Tot.	1221	751	1919	959	4850

Traffic Lane Flows

Lane	Scenario 2: 2026 DM PM
Junction: Junction 3, A3 (M)	
1/1	323
1/2	330
2/1	1141
2/2	19
3/1	818
3/2	755
4/1	1150
4/2	314
5/1	1221
6/1	400
6/2	351
7/1	1583
7/2	336
8/1	818
8/2	141
9/1	442
9/2	477
10/1	160
11/1	10
11/2	764
12/1	1221
12/2	1017
13/1	1017

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	14.9 %	1990	1990
				Arm 9 Ahead	Inf	85.1 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 10 Ahead	126.00	100.0 %	2091	2091
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	100.0 %	1991	1991
				Arm 11 Ahead	Inf	0.0 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2	4.00	0.00	N	Arm 7 Ahead	127.00	70.4 %	2124	2124
				Arm 10 Right	70.00	29.6 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2026 DS1 AM' (FG3: '2026 DS1 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	15	290	415	720
	B	42	0	1160	0	1202
	C	851	358	0	603	1812
	D	741	0	223	0	964
	Tot.	1634	373	1673	1018	4698

Traffic Lane Flows

Lane	Scenario 3: 2026 DS1 AM
Junction: Junction 3, A3 (M)	
1/1	277
1/2	443
2/1	1160
2/2	42
3/1	837
3/2	975
4/1	741
4/2	223
5/1	1634
6/1	194
6/2	179
7/1	1610
7/2	63
8/1	603
8/2	415
9/1	450
9/2	478
10/1	457
11/1	255
11/2	996
12/1	1634
12/2	581
13/1	581

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	5.4 %	1990	1990
				Arm 9 Ahead	Inf	94.6 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 10 Ahead	126.00	100.0 %	2091	2091
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	72.0 %	1993	1993
				Arm 11 Ahead	Inf	28.0 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2	4.00	0.00	N	Arm 7 Ahead	127.00	13.2 %	2112	2112
				Arm 10 Right	70.00	86.8 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2026 DS1 PM' (FG4: '2026 DS1 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	48	457	211	716
	B	19	0	1226	0	1245
	C	56	703	0	641	1400
	D	1155	0	292	0	1447
	Tot.	1230	751	1975	852	4808

Traffic Lane Flows

Lane	Scenario 4: 2026 DS1 PM
Junction: Junction 3, A3 (M)	
1/1	333
1/2	383
2/1	1226
2/2	19
3/1	677
3/2	723
4/1	1155
4/2	292
5/1	1230
6/1	400
6/2	351
7/1	1689
7/2	286
8/1	641
8/2	211
9/1	463
9/2	497
10/1	230
11/1	46
11/2	732
12/1	1230
12/2	995
13/1	995

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	14.4 %	1990	1990
				Arm 9 Ahead	Inf	85.6 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 10 Ahead	126.00	100.0 %	2091	2091
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	94.7 %	1992	1992
				Arm 11 Ahead	Inf	5.3 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2	4.00	0.00	N	Arm 7 Ahead	127.00	57.5 %	2121	2121
				Arm 10 Right	70.00	42.5 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2026 DS2 AM' (FG5: '2026 DS2 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	15	289	416	720
	B	42	0	1154	0	1196
	C	849	360	0	604	1813
	D	740	0	224	0	964
	Tot.	1631	375	1667	1020	4693

Traffic Lane Flows

Lane	Scenario 5: 2026 DS2 AM
Junction: Junction 3, A3 (M)	
1/1	274
1/2	446
2/1	1154
2/2	42
3/1	837
3/2	976
4/1	740
4/2	224
5/1	1631
6/1	195
6/2	180
7/1	1605
7/2	62
8/1	604
8/2	416
9/1	451
9/2	478
10/1	458
11/1	254
11/2	997
12/1	1631
12/2	584
13/1	584

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	5.5 %	1990	1990
				Arm 9 Ahead	Inf	94.5 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 10 Ahead	126.00	100.0 %	2091	2091
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	72.2 %	1993	1993
				Arm 11 Ahead	Inf	27.8 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2	4.00	0.00	N	Arm 7 Ahead	127.00	13.0 %	2112	2112
				Arm 10 Right	70.00	87.0 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2026 DS2 PM' (FG6: '2026 DS2 PM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Desired
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	48	450	211	709
	B	19	0	1233	0	1252
	C	58	703	0	643	1404
	D	1159	0	290	0	1449
	Tot.	1236	751	1973	854	4814

Traffic Lane Flows

Lane	Scenario 6: 2026 DS2 PM
Junction: Junction 3, A3 (M)	
1/1	330
1/2	379
2/1	1233
2/2	19
3/1	677
3/2	727
4/1	1159
4/2	290
5/1	1236
6/1	400
6/2	351
7/1	1693
7/2	280
8/1	643
8/2	211
9/1	460
9/2	491
10/1	230
11/1	44
11/2	736
12/1	1236
12/2	993
13/1	993

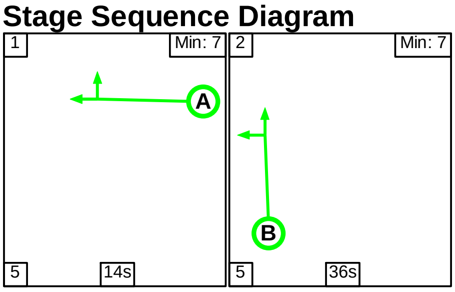
Full Input Data And Results

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	14.5 %	1990	1990
				Arm 9 Ahead	Inf	85.5 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 10 Ahead	126.00	100.0 %	2091	2091
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	95.0 %	1992	1992
				Arm 11 Ahead	Inf	5.0 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2	4.00	0.00	N	Arm 7 Ahead	127.00	57.0 %	2121	2121
				Arm 10 Right	70.00	43.0 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2026 DM AM' (FG1: '2026 DM AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

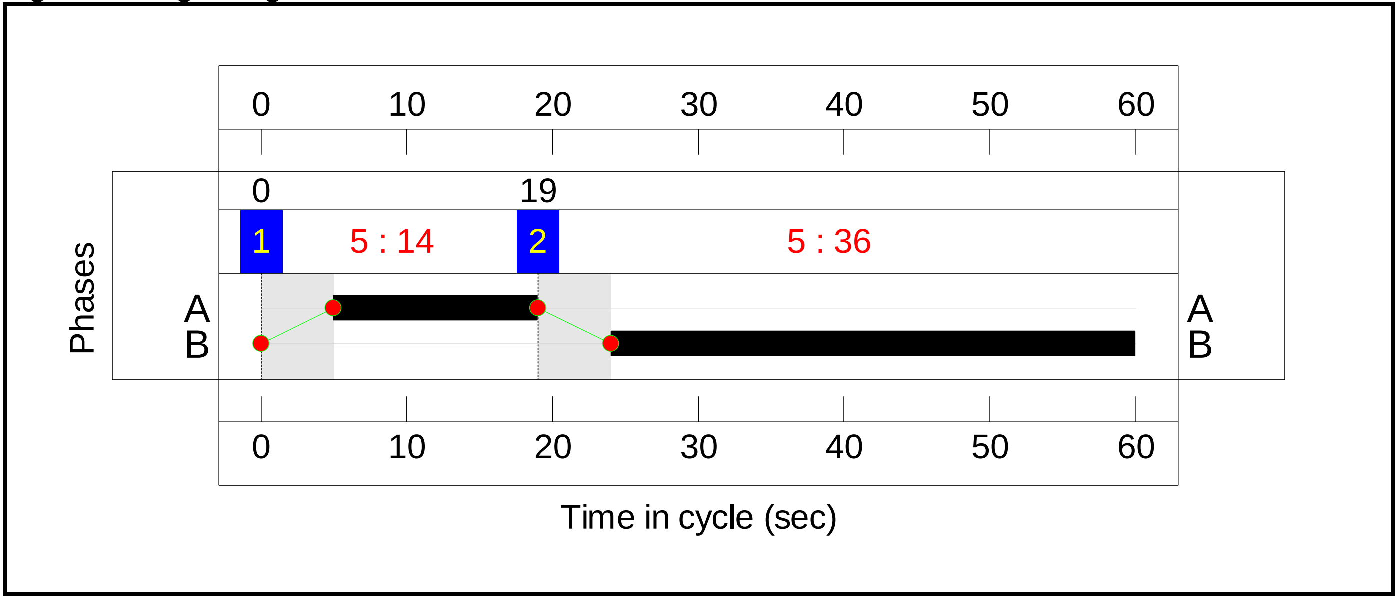


Full Input Data And Results

Stage Timings

Stage	1	2
Duration	14	36
Change Point	0	19

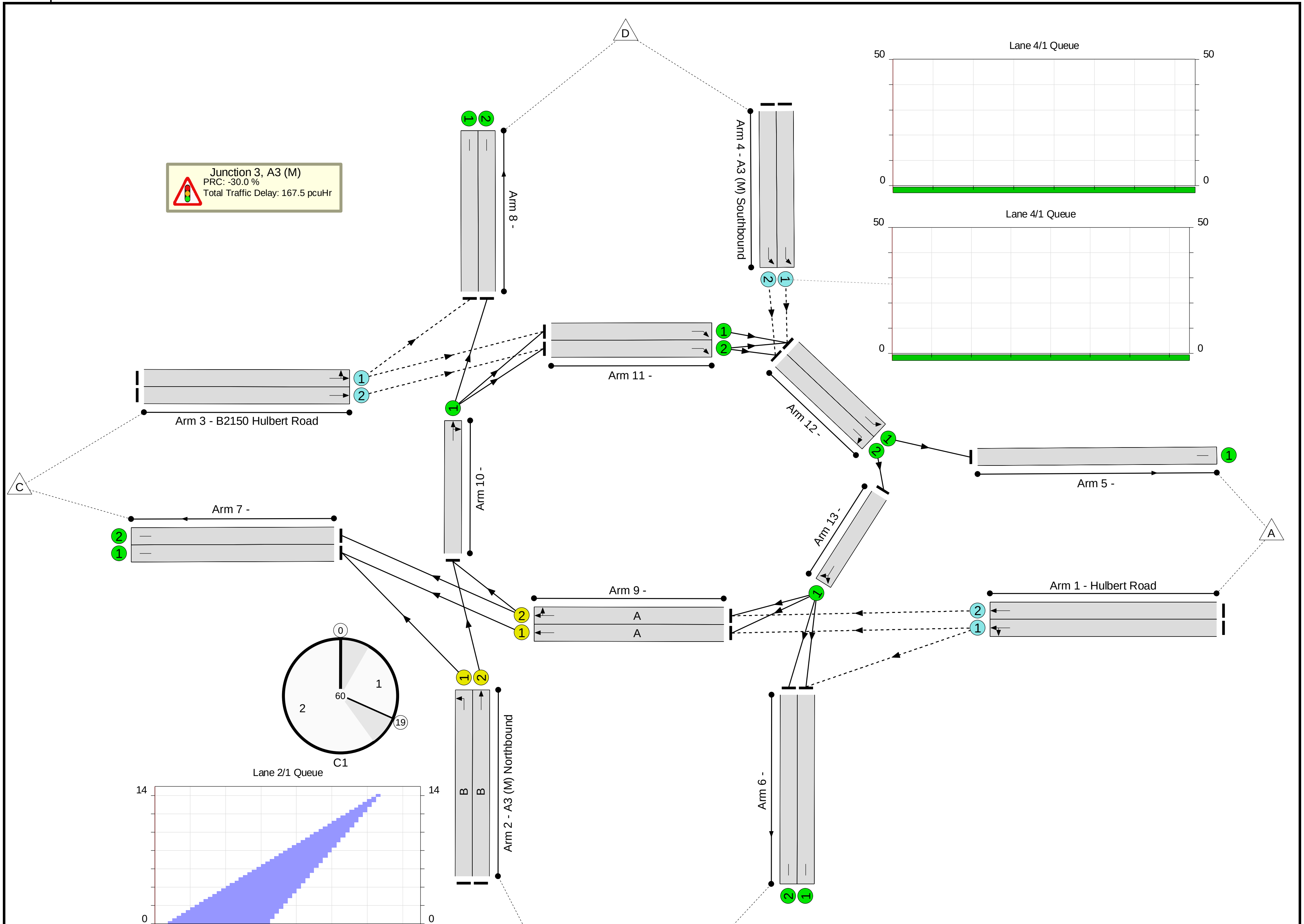
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.0%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.0%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	245	1990	803	30.5%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	431	2130	803	53.7%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	36	-	1063	1997	1231	86.3%
2/2	A3 (M) Northbound Ahead	U	N/A	N/A	B		1	36	-	42	2091	1289	3.3%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	841	1993	719	117.0%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	985	2119	853	115.5%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	733	1939	917	79.9%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	252	2094	629	40.0%
5/1		U	N/A	N/A	-		-	-	-	1628	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	215	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	199	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1506	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	66	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	574	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	404	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	A		1	14	-	443	1992	498	89.0%
9/2	Ahead Right	U	N/A	N/A	A		1	14	-	470	2113	528	89.0%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	446	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	288	Inf	Inf	0.0%

Full Input Data And Results

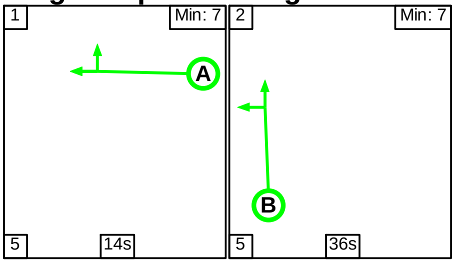
11/2	Ahead	U	N/A	N/A	-		-	-	-	1006	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	1628	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	651	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	651	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**3232**	**0**	**0**	**20.1**	**147.4**	**0.0**	**167.5**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**3232**	**0**	**0**	**20.1**	**147.4**	**0.0**	**167.5**	**-**	**-**	**-**	**-**
1/1	245	245	245	0	0	0.0	0.2	-	0.2	3.2	0.0	0.2	0.2
1/2	431	431	431	0	0	0.0	0.6	-	0.6	4.8	0.0	0.6	0.6
2/1	1063	1063	-	-	-	2.8	3.0	-	5.8	19.7	14.5	3.0	17.5
2/2	42	42	-	-	-	0.1	0.0	-	0.1	6.0	0.3	0.0	0.3
3/1	841	719	719	0	0	6.1	64.4	-	70.5	301.6	38.1	64.4	102.4
3/2	985	853	853	0	0	5.7	69.8	-	75.4	275.7	44.6	69.8	114.4
4/1	733	733	733	0	0	0.0	1.9	-	1.9	9.6	0.0	1.9	1.9
4/2	252	252	252	0	0	0.0	0.3	-	0.3	4.8	0.0	0.3	0.3
5/1	1510	1510	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	188	188	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	172	172	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1506	1506	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	66	66	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	491	491	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	404	404	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	443	443	-	-	-	2.7	3.6	-	6.2	50.7	7.0	3.6	10.6
9/2	470	470	-	-	-	2.8	3.6	-	6.4	49.2	7.4	3.6	11.0
10/1	446	446	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	249	249	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	874	874	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	1510	1510	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	597	597	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	597	597	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

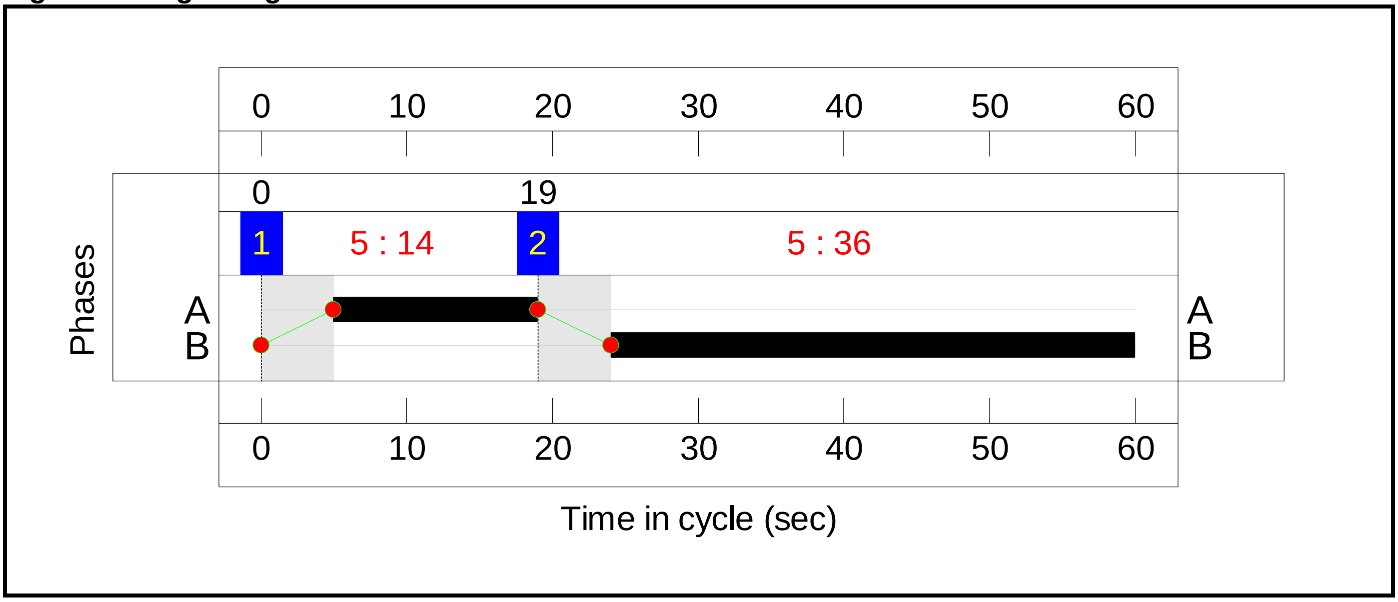
C1 PRC for Signalled Lanes (%): 1.2 Total Delay for Signalled Lanes (pcuHr): 18.56 Cycle Time (s): 60
PRC Over All Lanes (%): -30.0 Total Delay Over All Lanes(pcuHr): 167.51

Full Input Data And Results

Full Input Data And Results
Scenario 2: '2026 DM PM' (FG2: '2026 DM PM', Plan 1: 'Network Control Plan 1')
Stage Sequence Diagram


Stage Timings

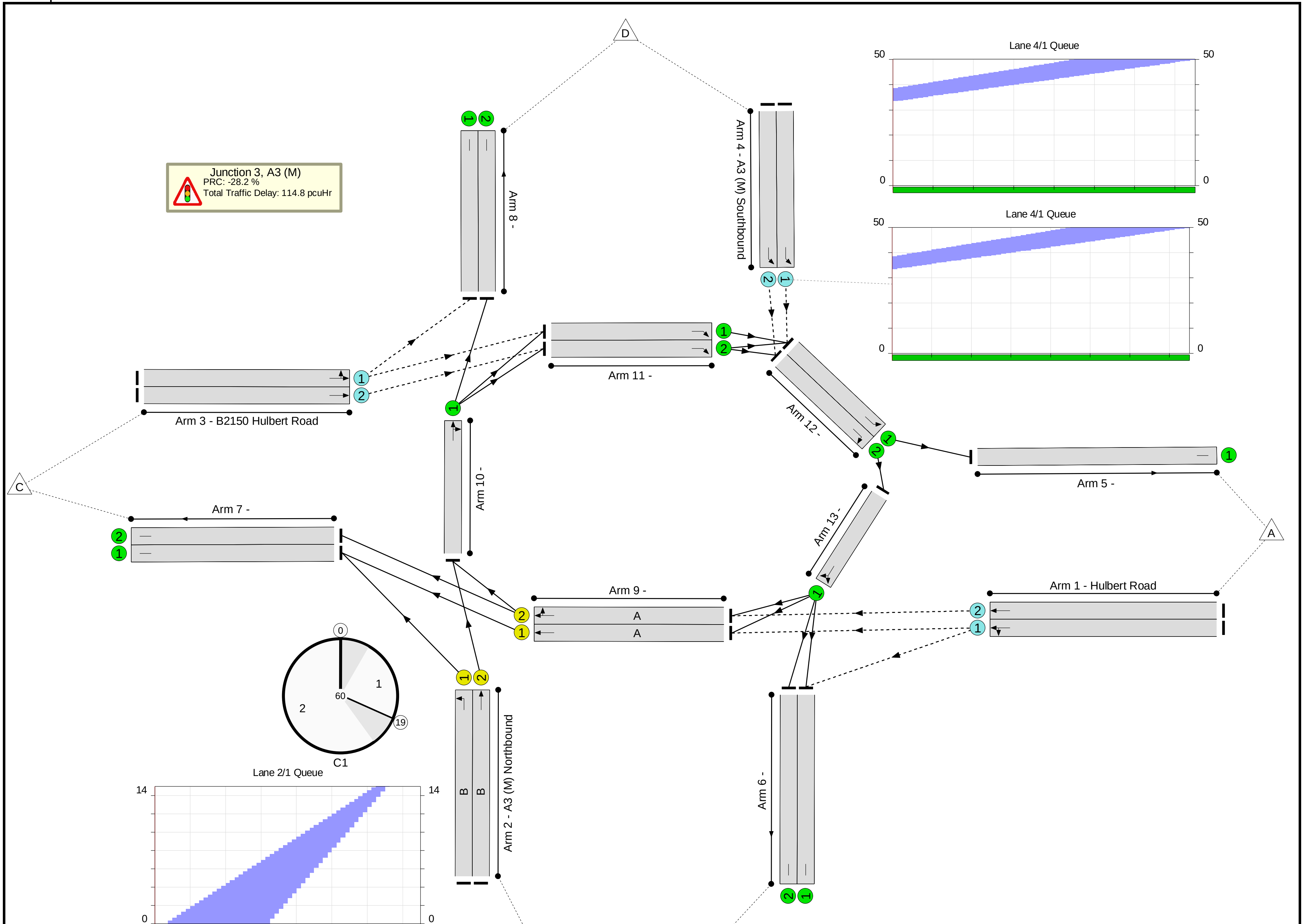
Stage	1	2
Duration	14	36
Change Point	0	19

Signal Timings Diagram


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**115.4%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**115.4%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	323	1990	664	48.6%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	330	2130	664	49.7%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	36	-	1141	1997	1231	92.7%
2/2	A3 (M) Northbound Ahead	U	N/A	N/A	B		1	36	-	19	2091	1289	1.5%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	818	1991	953	85.8%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	755	2119	947	79.7%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	1150	1939	996	115.4%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	314	2094	744	42.2%
5/1		U	N/A	N/A	-		-	-	-	1221	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	400	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	351	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1583	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	336	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	818	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	141	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	A		1	14	-	442	1992	498	88.8%
9/2	Ahead Right	U	N/A	N/A	A		1	14	-	477	2124	531	89.8%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	160	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	10	Inf	Inf	0.0%

Full Input Data And Results

11/2	Ahead	U	N/A	N/A	-		-	-	-	764	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	1221	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	1017	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	1017	Inf	Inf	0.0%

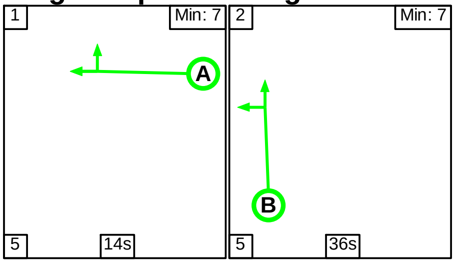
Full Input Data And Results

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)
Network	**-**	**-**	**3536**	**0**	**0**	**15.3**	**99.5**	**0.0**	**114.8**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**3536**	**0**	**0**	**15.3**	**99.5**	**0.0**	**114.8**	**-**	**-**	**-**	**-**
1/1	323	323	323	0	0	0.0	0.5	-	0.5	5.3	0.0	0.5	0.5
1/2	330	330	330	0	0	0.0	0.5	-	0.5	5.4	0.0	0.5	0.5
2/1	1141	1141	-	-	-	3.3	5.6	-	8.9	28.0	16.8	5.6	22.4
2/2	19	19	-	-	-	0.0	0.0	-	0.0	6.0	0.1	0.0	0.1
3/1	818	818	818	0	0	0.0	2.9	-	2.9	12.8	2.0	2.9	4.9
3/2	755	755	755	0	0	0.0	1.9	-	1.9	9.2	0.0	1.9	1.9
4/1	1150	996	996	0	0	6.4	80.4	-	86.8	271.7	57.5	80.4	137.9
4/2	314	314	314	0	0	0.0	0.4	-	0.4	4.2	0.0	0.4	0.4
5/1	1067	1067	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	351	351	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1583	1583	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	336	336	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	818	818	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	141	141	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	442	442	-	-	-	2.7	3.5	-	6.2	50.3	7.0	3.5	10.5
9/2	477	477	-	-	-	2.9	3.9	-	6.7	50.9	7.7	3.9	11.5
10/1	160	160	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	10	10	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	764	764	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	1067	1067	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	1017	1017	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	1017	1017	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -2.9 Total Delay for Signalled Lanes (pcuHr): 21.82 Cycle Time (s): 60
PRC Over All Lanes (%): -28.2 Total Delay Over All Lanes(pcuHr): 114.76

Full Input Data And Results

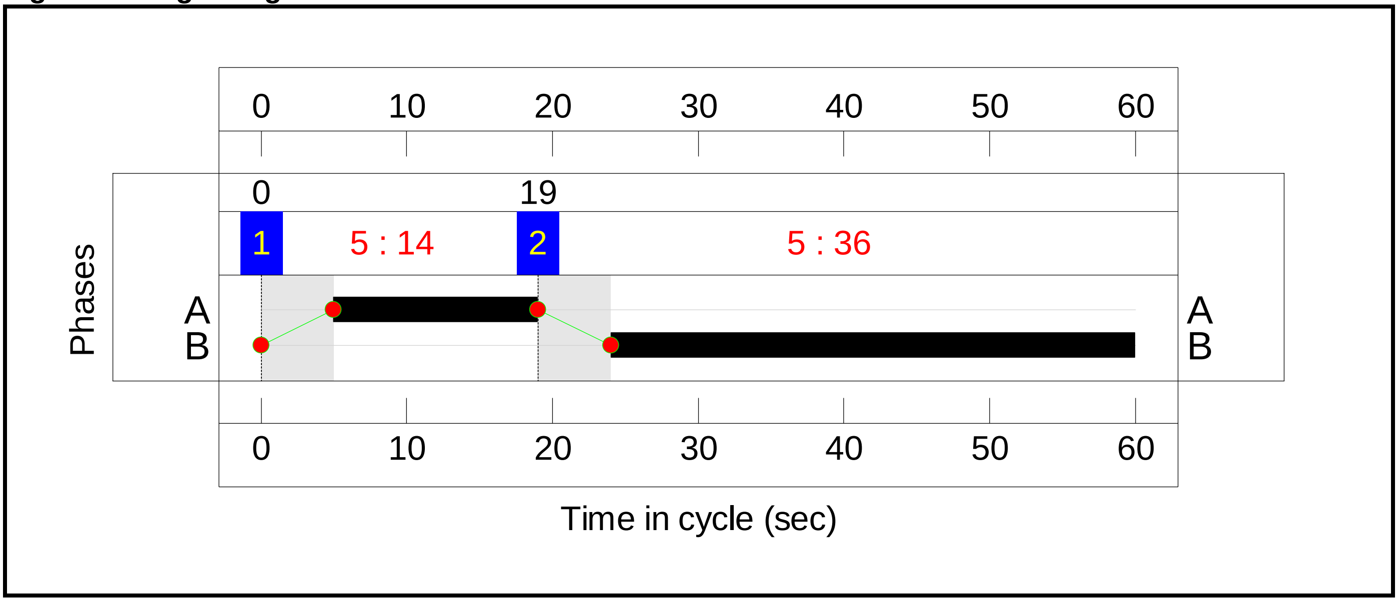
Full Input Data And Results
Scenario 3: '2026 DS1 AM' (FG3: '2026 DS1 AM', Plan 1: 'Network Control Plan 1')
Stage Sequence Diagram



Stage Timings

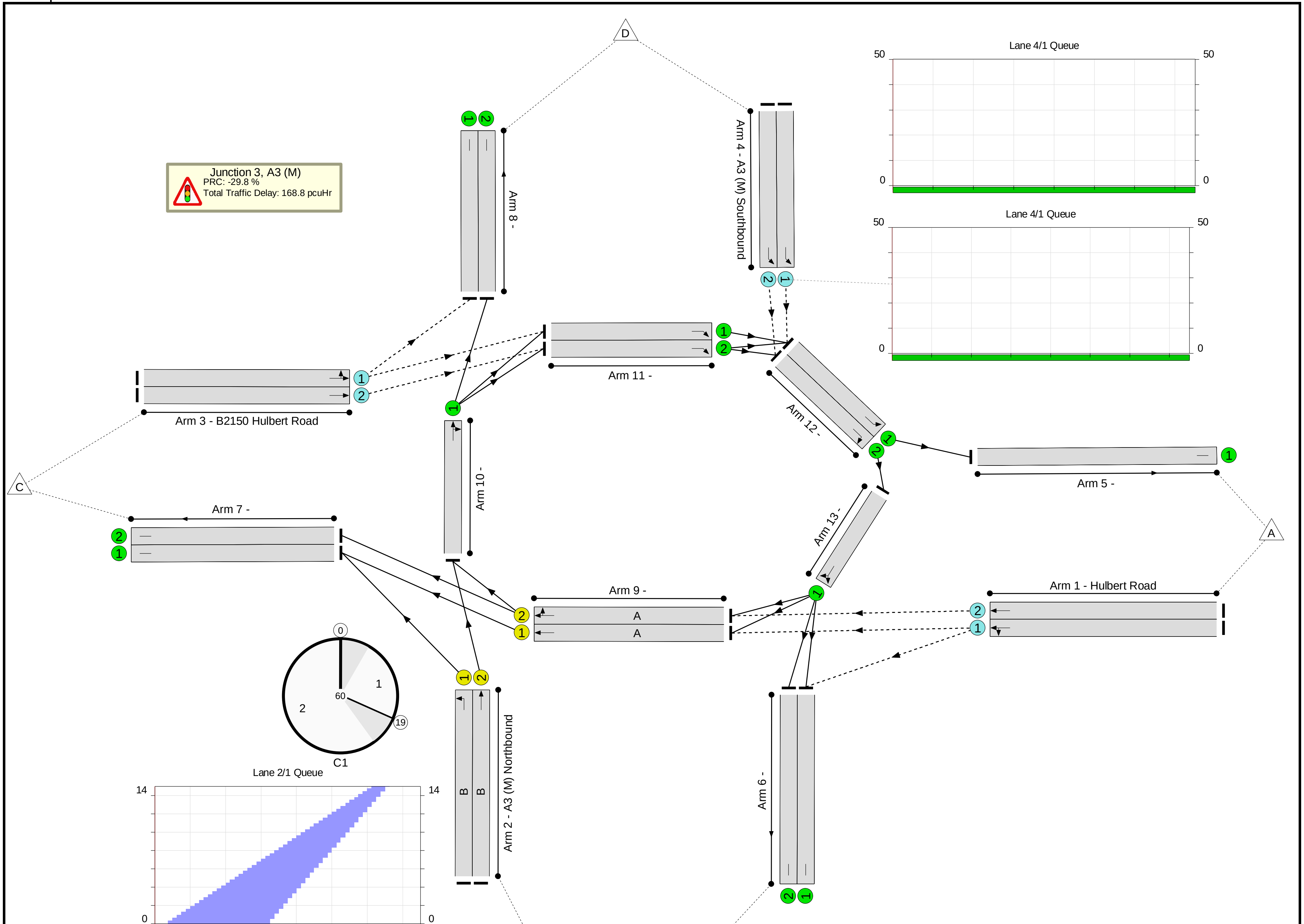
Stage	1	2
Duration	14	36
Change Point	0	19

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**116.8%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**116.8%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	277	1990	823	33.6%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	443	2130	823	53.8%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	36	-	1160	1997	1231	94.2%
2/2	A3 (M) Northbound Ahead	U	N/A	N/A	B		1	36	-	42	2091	1289	3.3%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	837	1993	716	116.8%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	975	2119	849	114.9%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	741	1939	927	80.0%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	223	2094	640	34.9%
5/1		U	N/A	N/A	-		-	-	-	1634	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	194	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	179	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1610	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	63	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	603	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	415	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	A		1	14	-	450	1992	498	90.4%
9/2	Ahead Right	U	N/A	N/A	A		1	14	-	478	2112	528	90.5%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	457	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	255	Inf	Inf	0.0%

Full Input Data And Results

11/2	Ahead	U	N/A	N/A	-		-	-	-	996	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	1634	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	581	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	581	Inf	Inf	0.0%

Full Input Data And Results

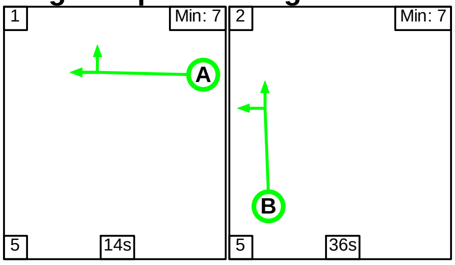
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**3249**	**0**	**0**	**20.6**	**148.3**	**0.0**	**168.8**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**3249**	**0**	**0**	**20.6**	**148.3**	**0.0**	**168.8**	**-**	**-**	**-**	**-**
1/1	277	277	277	0	0	0.0	0.3	-	0.3	3.3	0.0	0.3	0.3
1/2	443	443	443	0	0	0.0	0.6	-	0.6	4.7	0.0	0.6	0.6
2/1	1160	1160	-	-	-	3.4	6.8	-	10.2	31.7	17.4	6.8	24.2
2/2	42	42	-	-	-	0.1	0.0	-	0.1	6.0	0.3	0.0	0.3
3/1	837	716	716	0	0	6.0	63.6	-	69.6	299.4	37.9	63.6	101.5
3/2	975	849	849	0	0	5.4	66.7	-	72.1	266.4	44.1	66.7	110.8
4/1	741	741	741	0	0	0.0	2.0	-	2.0	9.5	0.0	2.0	2.0
4/2	223	223	223	0	0	0.0	0.3	-	0.3	4.3	0.0	0.3	0.3
5/1	1521	1521	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	171	171	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	156	156	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1610	1610	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	63	63	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	516	516	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	415	415	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	450	450	-	-	-	2.7	4.0	-	6.7	53.9	7.3	4.0	11.3
9/2	478	478	-	-	-	2.9	4.1	-	7.0	52.7	7.7	4.1	11.8
10/1	457	457	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	221	221	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	870	870	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	1521	1521	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	535	535	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	535	535	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -4.7 Total Delay for Signalled Lanes (pcuHr): 24.02 Cycle Time (s): 60
PRC Over All Lanes (%): -29.8 Total Delay Over All Lanes(pcuHr): 168.83

Full Input Data And Results

Full Input Data And Results
Scenario 4: '2026 DS1 PM' (FG4: '2026 DS1 PM', Plan 1: 'Network Control Plan 1')

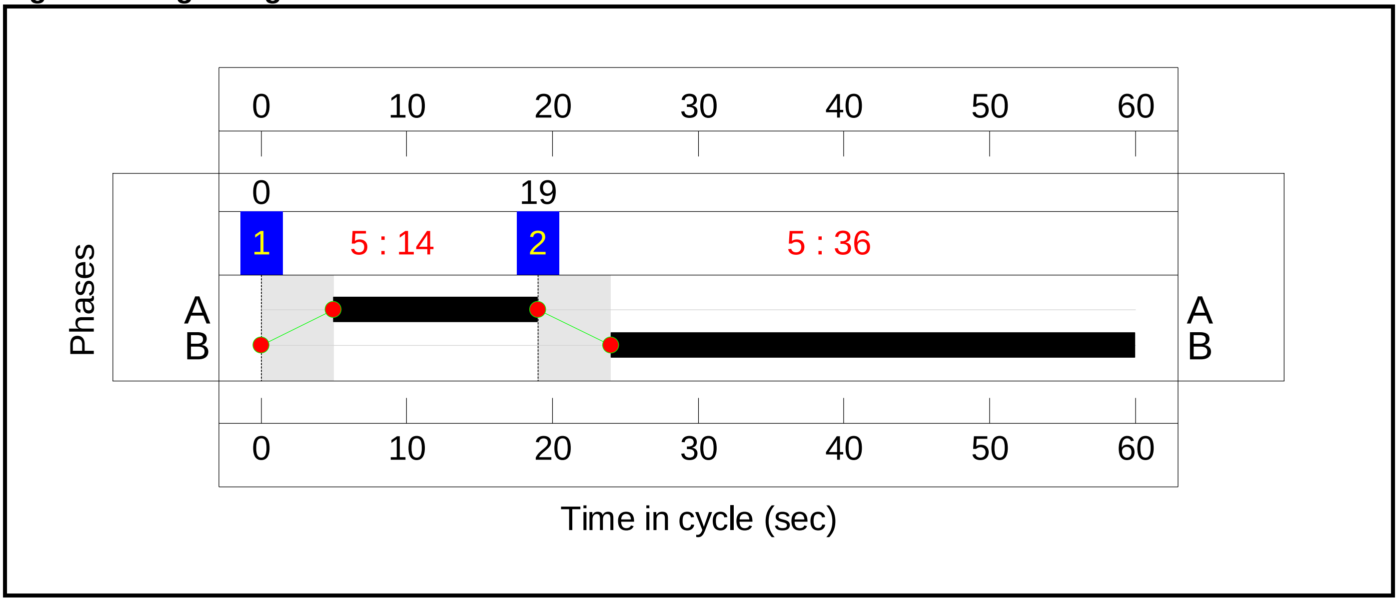
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	14	36
Change Point	0	19

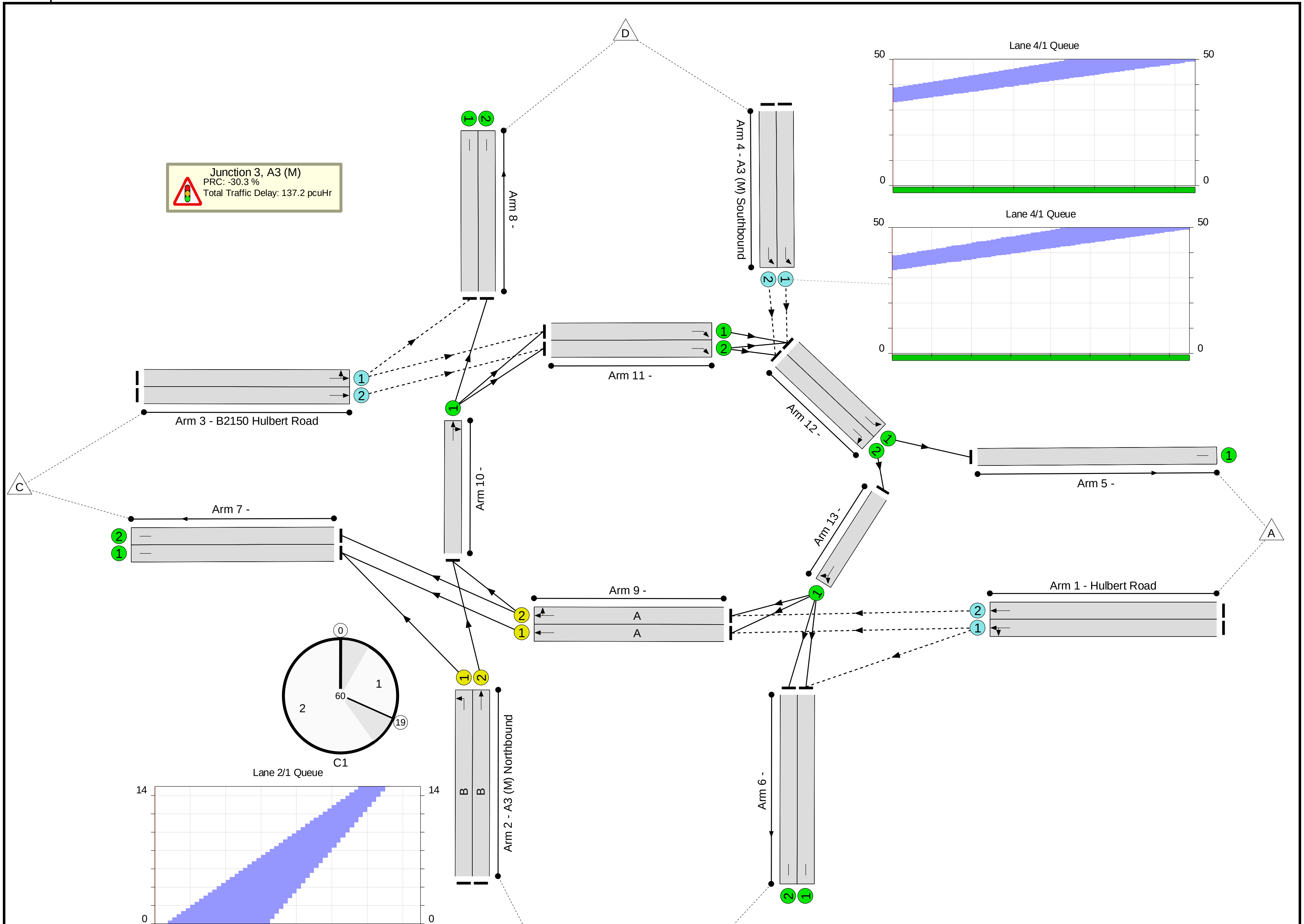
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.3%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.3%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	333	1990	671	49.6%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	383	2130	671	57.0%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	36	-	1226	1997	1231	99.6%
2/2	A3 (M) Northbound Ahead	U	N/A	N/A	B		1	36	-	19	2091	1289	1.5%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	677	1992	888	76.2%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	723	2119	924	78.3%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	1155	1939	985	117.3%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	292	2094	743	39.3%
5/1		U	N/A	N/A	-		-	-	-	1230	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	400	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	351	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1689	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	286	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	641	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	211	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	A		1	14	-	463	1992	498	93.0%
9/2	Ahead Right	U	N/A	N/A	A		1	14	-	497	2121	530	93.7%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	230	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	46	Inf	Inf	0.0%

Full Input Data And Results

11/2	Ahead	U	N/A	N/A	-		-	-	-	732	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	1230	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	995	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	995	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**3393**	**0**	**0**	**17.0**	**120.2**	**0.0**	**137.2**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**3393**	**0**	**0**	**17.0**	**120.2**	**0.0**	**137.2**	**-**	**-**	**-**	**-**
1/1	333	333	333	0	0	0.0	0.5	-	0.5	5.3	0.0	0.5	0.5
1/2	383	383	383	0	0	0.0	0.7	-	0.7	6.2	0.0	0.7	0.7
2/1	1226	1226	-	-	-	3.9	16.2	-	20.1	59.0	20.1	16.2	36.3
2/2	19	19	-	-	-	0.0	0.0	-	0.0	6.0	0.1	0.0	0.1
3/1	677	677	677	0	0	0.1	1.6	-	1.6	8.7	3.2	1.6	4.8
3/2	723	723	723	0	0	0.0	1.8	-	1.8	8.8	1.2	1.8	3.0
4/1	1155	985	985	0	0	7.1	88.5	-	95.6	298.0	57.7	88.5	146.2
4/2	292	292	292	0	0	0.0	0.3	-	0.3	4.0	0.0	0.3	0.3
5/1	1060	1060	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	351	351	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1689	1689	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	286	286	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	641	641	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	211	211	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	463	463	-	-	-	2.8	5.1	-	7.9	61.8	7.5	5.1	12.6
9/2	497	497	-	-	-	3.0	5.6	-	8.6	62.6	8.0	5.6	13.6
10/1	230	230	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	46	46	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	732	732	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	1060	1060	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	995	995	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	995	995	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

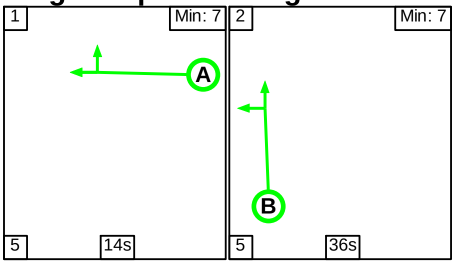
C1 PRC for Signalled Lanes (%): -10.6 Total Delay for Signalled Lanes (pcuHr): 36.69 Cycle Time (s): 60
PRC Over All Lanes (%): -30.3 Total Delay Over All Lanes(pcuHr): 137.20

Full Input Data And Results

Full Input Data And Results

Scenario 5: '2026 DS2 AM' (FG5: '2026 DS2 AM', Plan 1: 'Network Control Plan 1')

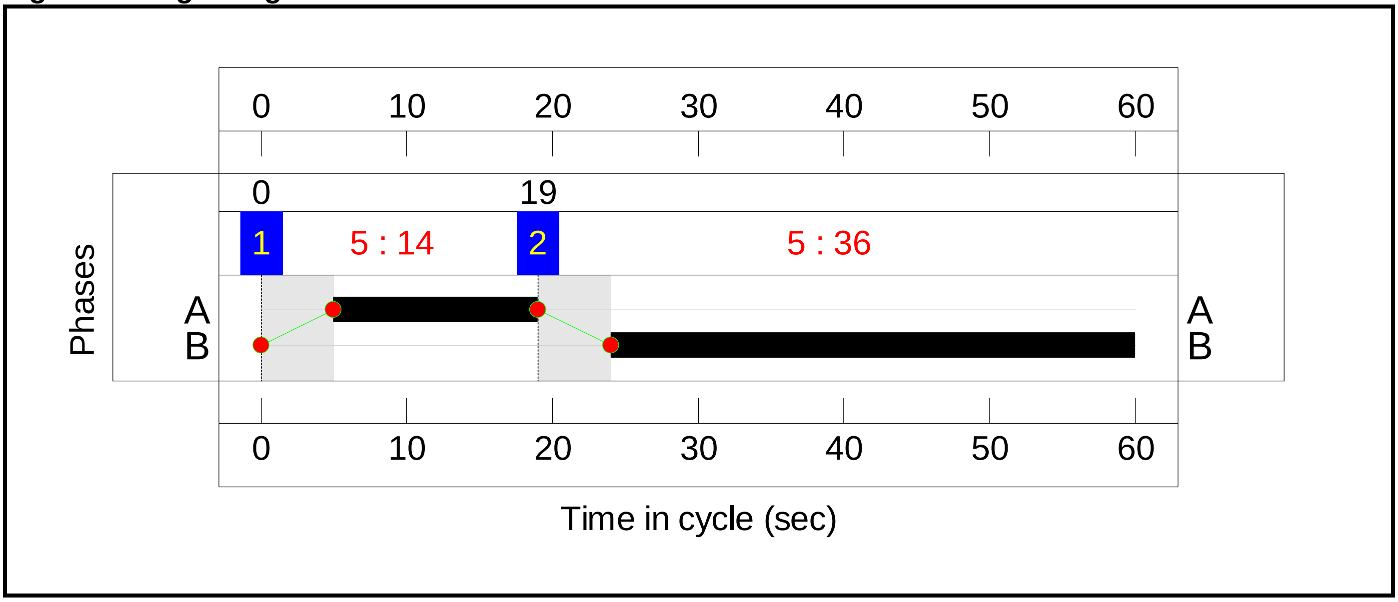
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	14	36
Change Point	0	19

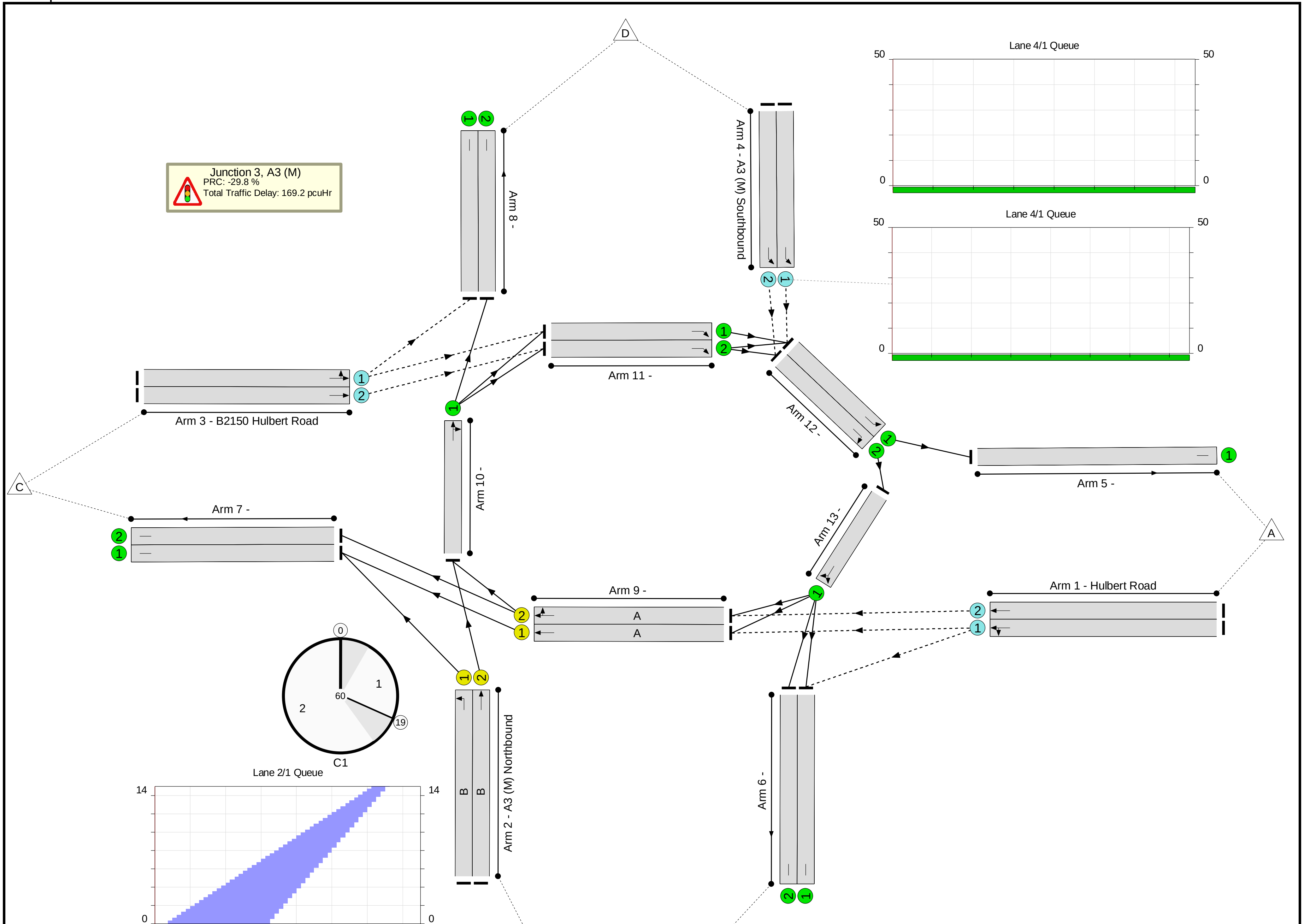
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**116.9%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**116.9%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	274	1990	823	33.3%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	446	2130	823	54.2%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	36	-	1154	1997	1231	93.7%
2/2	A3 (M) Northbound Ahead	U	N/A	N/A	B		1	36	-	42	2091	1289	3.3%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	837	1993	716	116.9%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	976	2119	849	115.0%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	740	1939	927	79.8%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	224	2094	640	35.0%
5/1		U	N/A	N/A	-		-	-	-	1631	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	195	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	180	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1605	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	62	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	604	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	416	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	A		1	14	-	451	1992	498	90.6%
9/2	Ahead Right	U	N/A	N/A	A		1	14	-	478	2112	528	90.5%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	458	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	254	Inf	Inf	0.0%

Full Input Data And Results

11/2	Ahead	U	N/A	N/A	-		-	-	-	997	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	1631	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	584	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	584	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**3249**	**0**	**0**	**20.6**	**148.6**	**0.0**	**169.2**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**3249**	**0**	**0**	**20.6**	**148.6**	**0.0**	**169.2**	**-**	**-**	**-**	**-**
1/1	274	274	274	0	0	0.0	0.2	-	0.2	3.3	0.0	0.2	0.2
1/2	446	446	446	0	0	0.0	0.6	-	0.6	4.8	0.0	0.6	0.6
2/1	1154	1154	-	-	-	3.3	6.4	-	9.7	30.4	17.3	6.4	23.7
2/2	42	42	-	-	-	0.1	0.0	-	0.1	6.0	0.3	0.0	0.3
3/1	837	716	716	0	0	6.1	63.7	-	69.7	299.9	37.9	63.7	101.6
3/2	976	849	849	0	0	5.5	67.3	-	72.8	268.6	44.2	67.3	111.5
4/1	740	740	740	0	0	0.0	1.9	-	1.9	9.4	0.0	1.9	1.9
4/2	224	224	224	0	0	0.0	0.3	-	0.3	4.3	0.0	0.3	0.3
5/1	1517	1517	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	172	172	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	157	157	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1605	1605	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	62	62	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	517	517	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	416	416	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	451	451	-	-	-	2.7	4.1	-	6.8	54.4	7.3	4.1	11.4
9/2	478	478	-	-	-	2.9	4.1	-	7.0	52.7	7.7	4.1	11.8
10/1	458	458	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	220	220	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	870	870	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	1517	1517	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	537	537	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	537	537	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

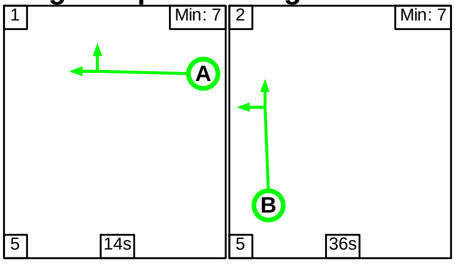
C1 PRC for Signalled Lanes (%): -4.1 Total Delay for Signalled Lanes (pcuHr): 23.63 Cycle Time (s): 60
PRC Over All Lanes (%): -29.8 Total Delay Over All Lanes(pcuHr): 169.23

Full Input Data And Results

Full Input Data And Results

Scenario 6: '2026 DS2 PM' (FG6: '2026 DS2 PM', Plan 1: 'Network Control Plan 1')

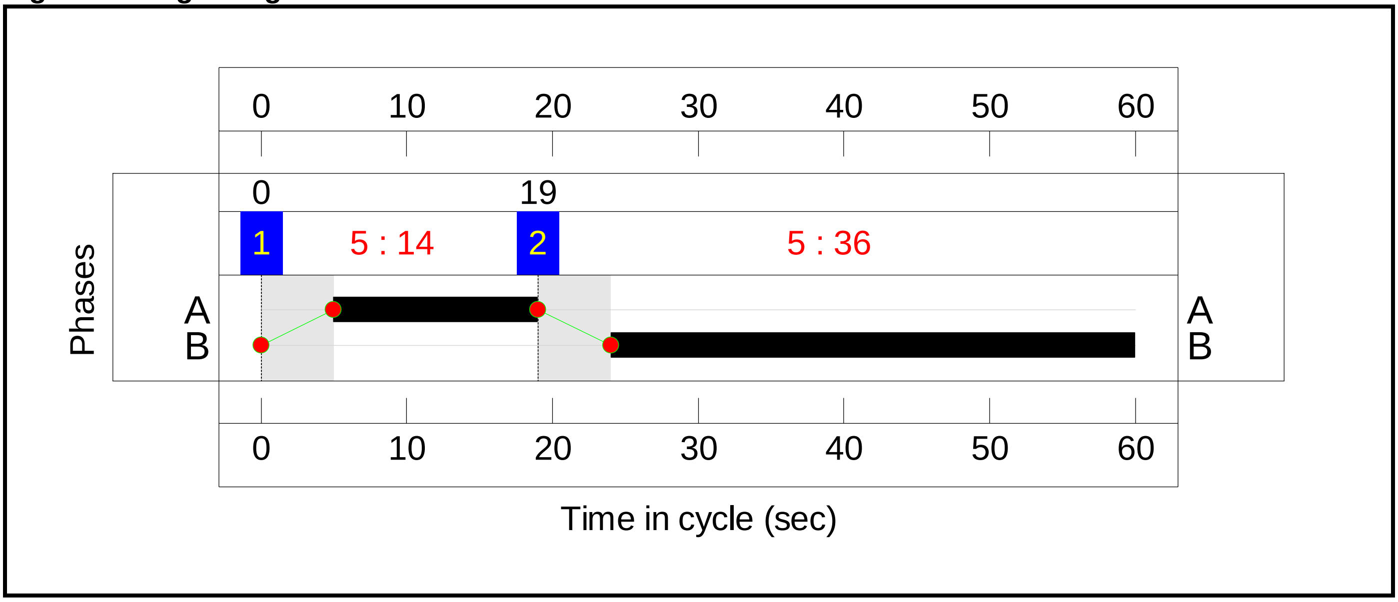
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	14	36
Change Point	0	19

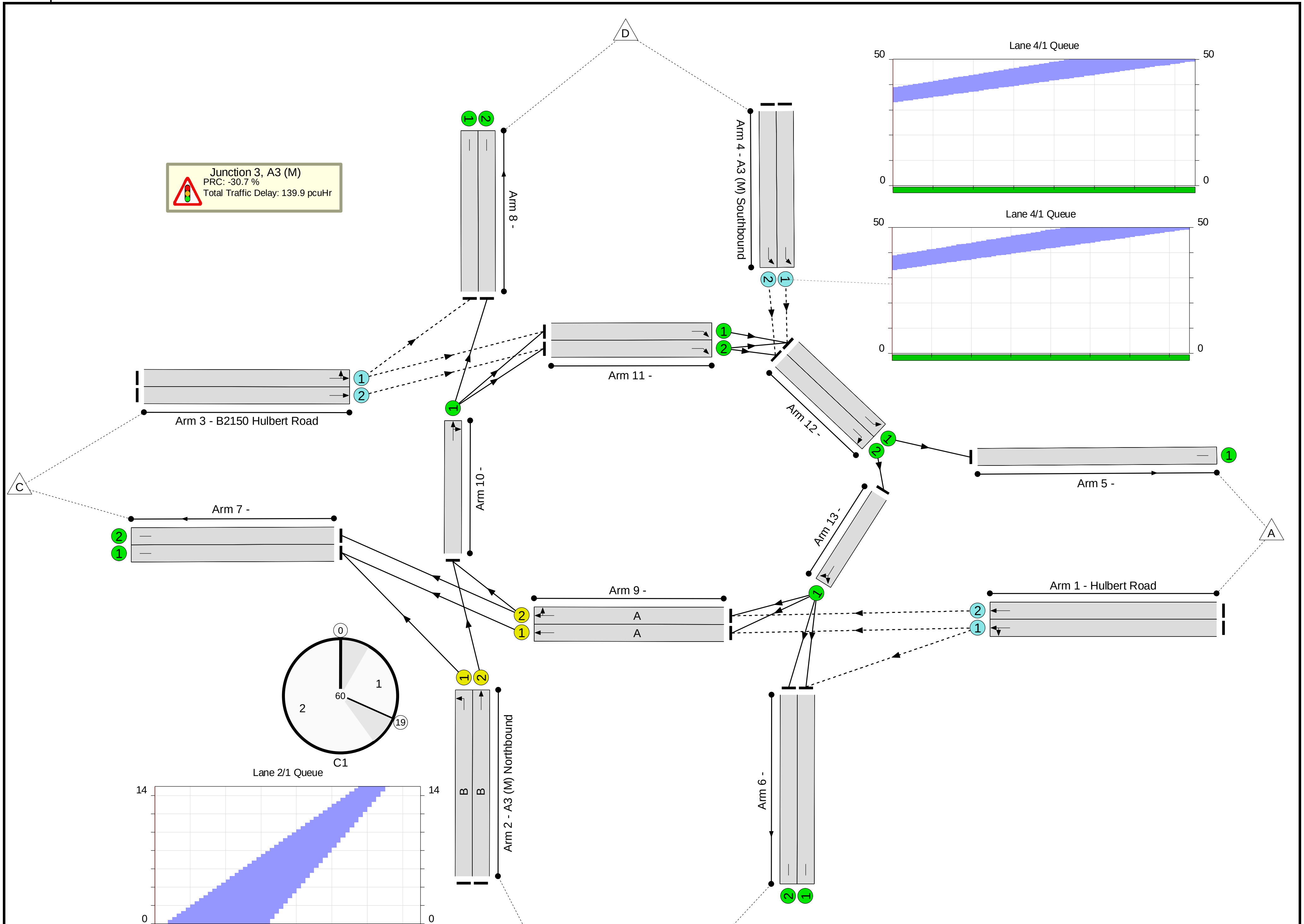
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.6%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.6%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	330	1990	672	49.1%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	379	2130	672	56.4%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	36	-	1233	1997	1231	100.1%
2/2	A3 (M) Northbound Ahead	U	N/A	N/A	B		1	36	-	19	2091	1289	1.5%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	677	1992	886	76.4%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	727	2119	924	78.7%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	1159	1939	985	117.6%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	290	2094	742	39.1%
5/1		U	N/A	N/A	-		-	-	-	1236	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	400	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	351	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1693	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	280	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	643	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	211	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	A		1	14	-	460	1992	498	92.4%
9/2	Ahead Right	U	N/A	N/A	A		1	14	-	491	2121	530	92.6%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	230	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	44	Inf	Inf	0.0%

Full Input Data And Results

11/2	Ahead	U	N/A	N/A	-		-	-	-	736	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	1236	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	993	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	993	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**3388**	**0**	**0**	**17.2**	**122.7**	**0.0**	**139.9**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**3388**	**0**	**0**	**17.2**	**122.7**	**0.0**	**139.9**	**-**	**-**	**-**	**-**
1/1	330	330	330	0	0	0.0	0.5	-	0.5	5.2	0.0	0.5	0.5
1/2	379	379	379	0	0	0.0	0.6	-	0.6	6.1	0.0	0.6	0.6
2/1	1233	1231	-	-	-	4.0	17.9	-	21.9	64.0	20.6	17.9	38.5
2/2	19	19	-	-	-	0.0	0.0	-	0.0	6.0	0.1	0.0	0.1
3/1	677	677	677	0	0	0.1	1.6	-	1.7	8.9	3.2	1.6	4.8
3/2	727	727	727	0	0	0.0	1.8	-	1.8	9.0	1.6	1.8	3.4
4/1	1159	985	985	0	0	7.3	90.1	-	97.4	302.5	57.9	90.1	148.1
4/2	290	290	290	0	0	0.0	0.3	-	0.3	4.0	0.0	0.3	0.3
5/1	1062	1062	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	351	351	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1691	1691	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	280	280	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	643	643	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	211	211	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	460	460	-	-	-	2.8	4.8	-	7.6	59.7	7.4	4.8	12.2
9/2	491	491	-	-	-	3.0	5.0	-	8.0	58.5	7.9	5.0	12.9
10/1	230	230	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	44	44	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	736	736	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	1062	1062	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	993	993	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	993	993	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -11.2 Total Delay for Signalled Lanes (pcuHr): 37.58 Cycle Time (s): 60
PRC Over All Lanes (%): -30.7 Total Delay Over All Lanes(pcuHr): 139.89

Full Input Data And Results

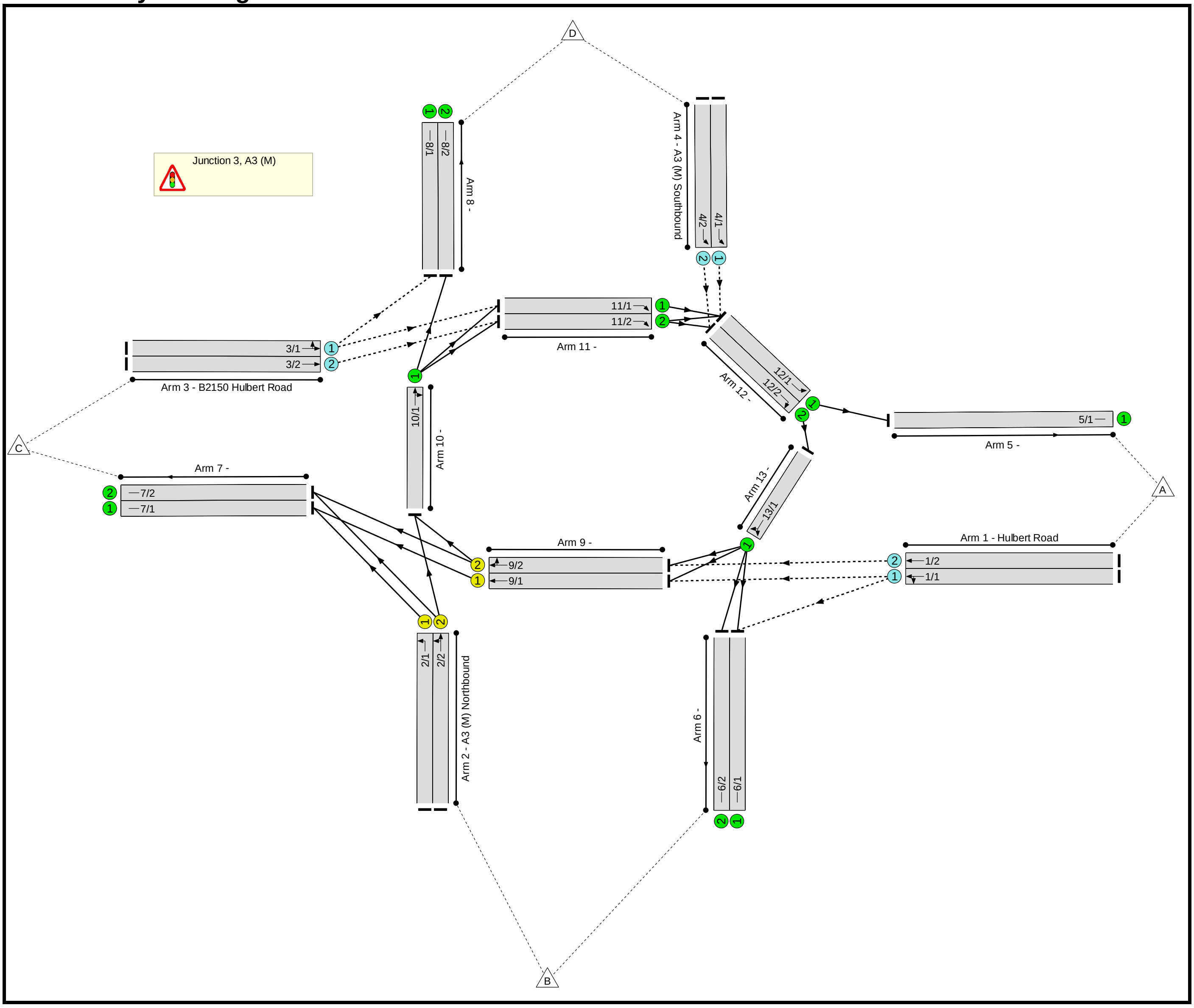
Full Input Data And Results

Full Input Data And Results

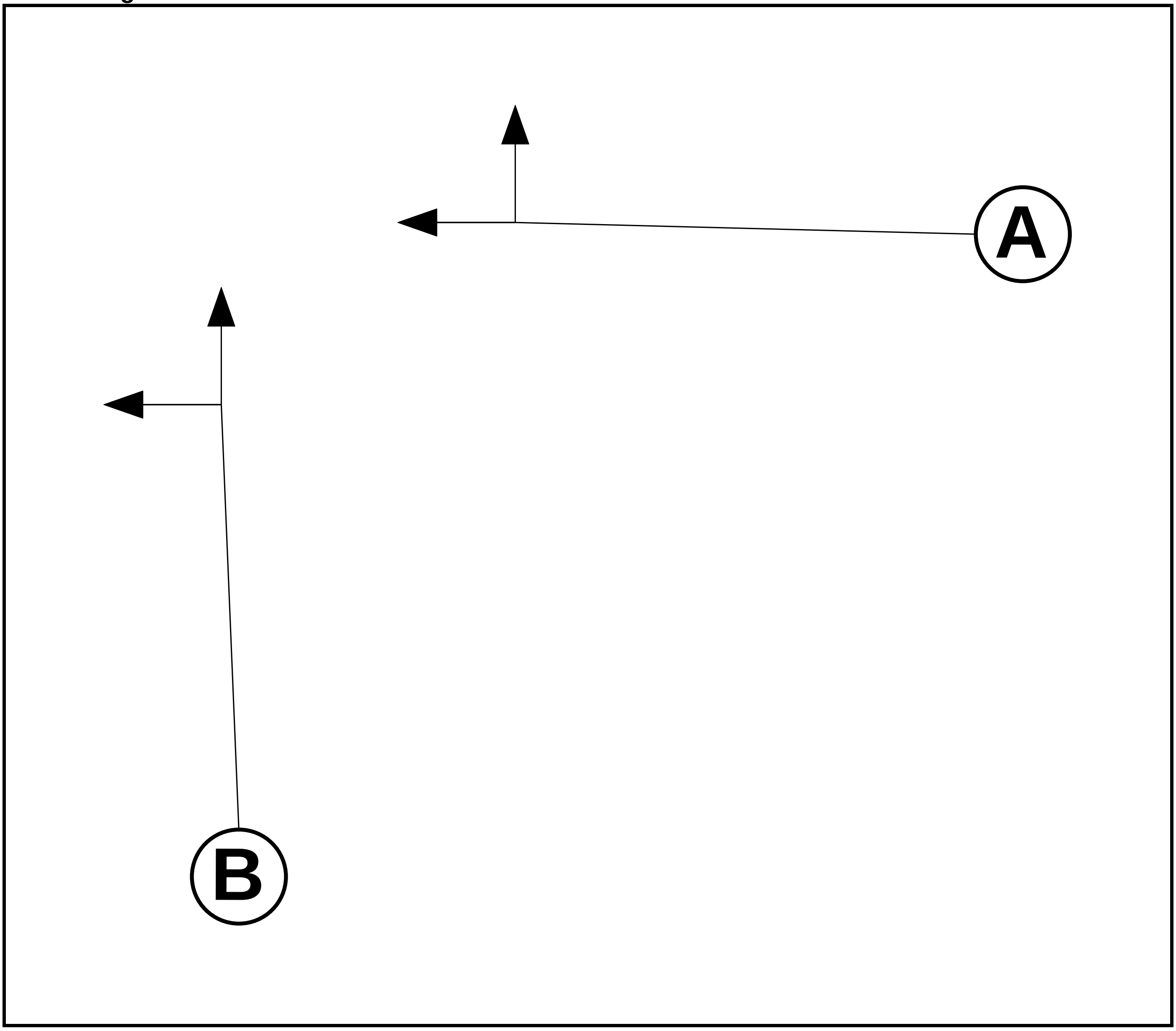
User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	A3 (M) J3 - Permitted left turn from offside lane of A3 (south) approach.lsg3x
Author:	
Company:	
Address:	

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

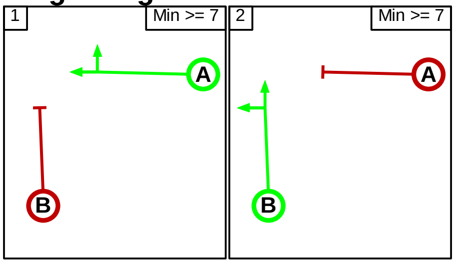
	Starting Phase		
Terminating Phase		A	B
	A		5
	B	5	

Phases in Stage

Stage No.	Phases in Stage
1	A
2	B

Full Input Data And Results

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		5
	2	5	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Junction 3, A3 (M)											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/1 (Hulbert Road)	6/1 (Left)	1000	0	13/1	0.33	All	-	-	-	-	-
	9/1 (Ahead)	1000	0	13/1	0.33	All					
1/2 (Hulbert Road)	9/2 (Ahead)	1000	0	13/1	0.33	All	-	-	-	-	-
3/1 (B2150 Hulbert Road)	8/1 (Left)	1000	0	10/1	0.33	To 8/2 (Ahead)	-	-	-	-	-
	11/1 (Ahead)	1000	0	10/1	1.09	To 8/2 (Ahead) To 11/1 (Right)					
3/2 (B2150 Hulbert Road)	11/2 (Ahead)	1000	0	10/1	0.33	All	-	-	-	-	-
4/1 (A3 (M) Southbound)	12/1 (Left)	1000	0	11/1	0.33	All	-	-	-	-	-
4/2 (A3 (M) Southbound)	12/2 (Left)	1000	0	11/2	0.33	All	-	-	-	-	-
				11/1	0.33	All					

Full Input Data And Results

Lane Input Data

Junction: Junction 3, A3 (M)												
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 (Hulbert Road)	O		2	3	60.0	Geom	-	3.75	0.00	Y	Arm 6 Left	Inf
											Arm 9 Ahead	Inf
1/2 (Hulbert Road)	O		2	3	60.0	Geom	-	3.75	0.00	N	Arm 9 Ahead	Inf
2/1 (A3 (M) Northbound)	U	B	2	3	60.0	Geom	-	3.83	0.00	Y	Arm 7 Left	5431.00
2/2 (A3 (M) Northbound)	U	B	2	3	60.0	Geom	-	3.61	0.00	N	Arm 7 Left	Inf
											Arm 10 Ahead	126.00
3/1 (B2150 Hulbert Road)	O		2	3	60.0	Geom	-	3.81	0.00	Y	Arm 8 Left	645.00
											Arm 11 Ahead	Inf
3/2 (B2150 Hulbert Road)	O		2	3	60.0	Geom	-	3.90	0.00	N	Arm 11 Ahead	122.00
4/1 (A3 (M) Southbound)	O		2	3	60.0	Geom	-	3.48	0.00	Y	Arm 12 Left	122.00
4/2 (A3 (M) Southbound)	O		2	3	60.0	Geom	-	3.58	0.00	N	Arm 12 Left	164.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/2	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/2	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1	U	A	2	3	20.9	Geom	-	4.04	0.00	Y	Arm 7 Ahead	111.00
9/2	U	A	2	3	20.9	Geom	-	4.00	0.00	N	Arm 7 Ahead	127.00
											Arm 10 Right	70.00
10/1	U		2	3	19.1	Inf	-	-	-	-	-	-
11/1	U		2	3	27.0	Inf	-	-	-	-	-	-
11/2	U		2	3	27.0	Inf	-	-	-	-	-	-
12/1	U		2	3	15.7	Inf	-	-	-	-	-	-
12/2	U		2	3	15.7	Inf	-	-	-	-	-	-

13/1	U		2	3	7.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2026 DM AM'	08:00	09:00	01:00	
2: '2026 DM PM'	17:00	18:00	01:00	
3: '2026 DS1 AM'	08:00	09:00	01:00	
4: '2026 DS1 PM'	17:00	18:00	01:00	
5: '2026 DS2 AM'	08:00	09:00	01:00	
6: '2026 DS2 PM'	17:00	18:00	01:00	

Scenario 1: '2026 DM AM' (FG1: '2026 DM AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	15	257	404	676
	B	42	0	1063	0	1105
	C	853	399	0	574	1826
	D	733	0	252	0	985
	Tot.	1628	414	1572	978	4592

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: 2026 DM AM
Junction: Junction 3, A3 (M)	
1/1	244
1/2	432
2/1	526
2/2	579
3/1	842
3/2	984
4/1	733
4/2	252
5/1	1628
6/1	215
6/2	199
7/1	969
7/2	603
8/1	574
8/2	404
9/1	443
9/2	470
10/1	446
11/1	289
11/2	1005
12/1	1628
12/2	651
13/1	651

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	6.1 %	1990	1990
				Arm 9 Ahead	Inf	93.9 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 7 Left	Inf	92.7 %	2114	2114
				Arm 10 Ahead	126.00	7.3 %		
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	68.2 %	1993	1993
				Arm 11 Ahead	Inf	31.8 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2	4.00	0.00	N	Arm 7 Ahead	127.00	14.0 %	2113	2113
				Arm 10 Right	70.00	86.0 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2026 DM PM' (FG2: '2026 DM PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	48	464	141	653
	B	19	0	1141	0	1160
	C	52	703	0	818	1573
	D	1150	0	314	0	1464
	Tot.	1221	751	1919	959	4850

Traffic Lane Flows

Lane	Scenario 2: 2026 DM PM
Junction: Junction 3, A3 (M)	
1/1	327
1/2	326
2/1	563
2/2	597
3/1	818
3/2	755
4/1	1150
4/2	314
5/1	1221
6/1	400
6/2	351
7/1	997
7/2	922
8/1	818
8/2	141
9/1	434
9/2	485
10/1	160
11/1	10
11/2	764
12/1	1221
12/2	1017
13/1	1017

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	14.7 %	1990	1990
				Arm 9 Ahead	Inf	85.3 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 7 Left	Inf	96.8 %	2115	2115
				Arm 10 Ahead	126.00	3.2 %		
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	100.0 %	1991	1991
				Arm 11 Ahead	Inf	0.0 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2	4.00	0.00	N	Arm 7 Ahead	127.00	70.9 %	2124	2124
				Arm 10 Right	70.00	29.1 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: '2026 DS1 AM' (FG3: '2026 DS1 AM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Desired
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	15	290	415	720
	B	42	0	1160	0	1202
	C	851	358	0	603	1812
	D	741	0	223	0	964
	Tot.	1634	373	1673	1018	4698

Traffic Lane Flows

Lane	Scenario 3: 2026 DS1 AM
Junction: Junction 3, A3 (M)	
1/1	276
1/2	444
2/1	574
2/2	628
3/1	837
3/2	975
4/1	741
4/2	223
5/1	1634
6/1	194
6/2	179
7/1	1025
7/2	648
8/1	603
8/2	415
9/1	451
9/2	477
10/1	457
11/1	255
11/2	996
12/1	1634
12/2	581
13/1	581

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	5.4 %	1990	1990
				Arm 9 Ahead	Inf	94.6 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 7 Left	Inf	93.3 %	2114	2114
				Arm 10 Ahead	126.00	6.7 %		
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	72.0 %	1993	1993
				Arm 11 Ahead	Inf	28.0 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2	4.00	0.00	N	Arm 7 Ahead	127.00	13.0 %	2112	2112
				Arm 10 Right	70.00	87.0 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2026 DS1 PM' (FG4: '2026 DS1 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	48	457	211	716
	B	19	0	1226	0	1245
	C	56	703	0	641	1400
	D	1155	0	292	0	1447
	Tot.	1230	751	1975	852	4808

Traffic Lane Flows

Lane	Scenario 4: 2026 DS1 PM
Junction: Junction 3, A3 (M)	
1/1	358
1/2	358
2/1	598
2/2	647
3/1	684
3/2	716
4/1	1155
4/2	292
5/1	1230
6/1	400
6/2	351
7/1	1057
7/2	918
8/1	641
8/2	211
9/1	459
9/2	501
10/1	230
11/1	53
11/2	725
12/1	1230
12/2	995
13/1	995

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	13.4 %	1990	1990
				Arm 9 Ahead	Inf	86.6 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 7 Left	Inf	97.1 %	2115	2115
				Arm 10 Ahead	126.00	2.9 %		
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	93.7 %	1992	1992
				Arm 11 Ahead	Inf	6.3 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2	4.00	0.00	N	Arm 7 Ahead	127.00	57.9 %	2121	2121
				Arm 10 Right	70.00	42.1 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2026 DS2 AM' (FG5: '2026 DS2 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	15	289	416	720
	B	42	0	1154	0	1196
	C	849	360	0	604	1813
	D	740	0	224	0	964
	Tot.	1631	375	1667	1020	4693

Traffic Lane Flows

Lane	Scenario 5: 2026 DS2 AM
Junction: Junction 3, A3 (M)	
1/1	274
1/2	446
2/1	571
2/2	625
3/1	838
3/2	975
4/1	740
4/2	224
5/1	1631
6/1	195
6/2	180
7/1	1022
7/2	645
8/1	604
8/2	416
9/1	451
9/2	478
10/1	458
11/1	255
11/2	996
12/1	1631
12/2	584
13/1	584

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	5.5 %	1990	1990
				Arm 9 Ahead	Inf	94.5 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 7 Left	Inf	93.3 %	2114	2114
				Arm 10 Ahead	126.00	6.7 %		
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	72.1 %	1993	1993
				Arm 11 Ahead	Inf	27.9 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2	4.00	0.00	N	Arm 7 Ahead	127.00	13.0 %	2112	2112
				Arm 10 Right	70.00	87.0 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2026 DS2 PM' (FG6: '2026 DS2 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	48	450	211	709
	B	19	0	1233	0	1252
	C	58	703	0	643	1404
	D	1159	0	290	0	1449
	Tot.	1236	751	1973	854	4814

Traffic Lane Flows

Lane	Scenario 6: 2026 DS2 PM
Junction: Junction 3, A3 (M)	
1/1	354
1/2	355
2/1	601
2/2	651
3/1	685
3/2	719
4/1	1159
4/2	290
5/1	1236
6/1	400
6/2	351
7/1	1056
7/2	917
8/1	643
8/2	211
9/1	455
9/2	496
10/1	230
11/1	52
11/2	728
12/1	1236
12/2	993
13/1	993

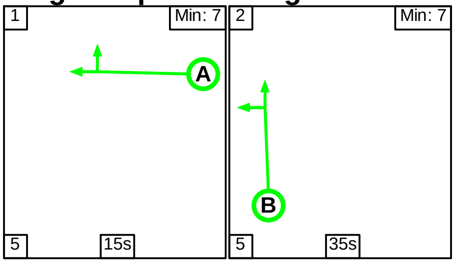
Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	13.6 %	1990	1990
				Arm 9 Ahead	Inf	86.4 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 7 Left	Inf	97.1 %	2115	2115
				Arm 10 Ahead	126.00	2.9 %		
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	93.9 %	1992	1992
				Arm 11 Ahead	Inf	6.1 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2	4.00	0.00	N	Arm 7 Ahead	127.00	57.5 %	2121	2121
				Arm 10 Right	70.00	42.5 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 1: '2026 DM AM' (FG1: '2026 DM AM', Plan 1: 'Network Control Plan 1')

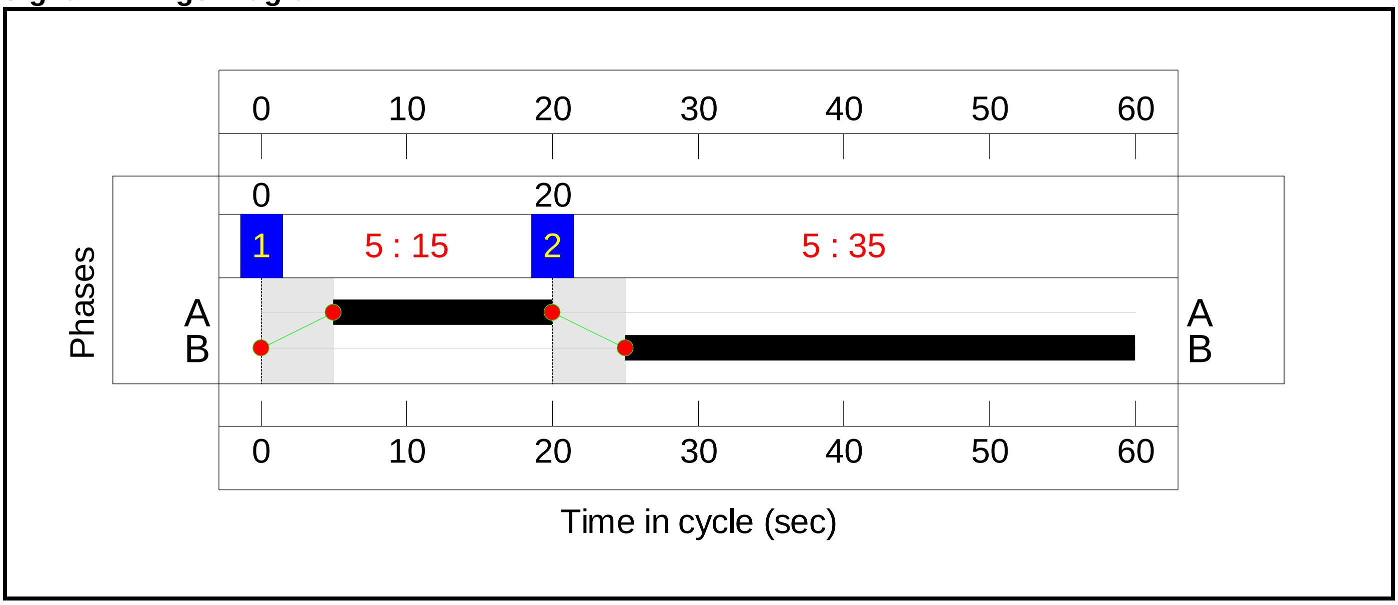
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	15	35
Change Point	0	20

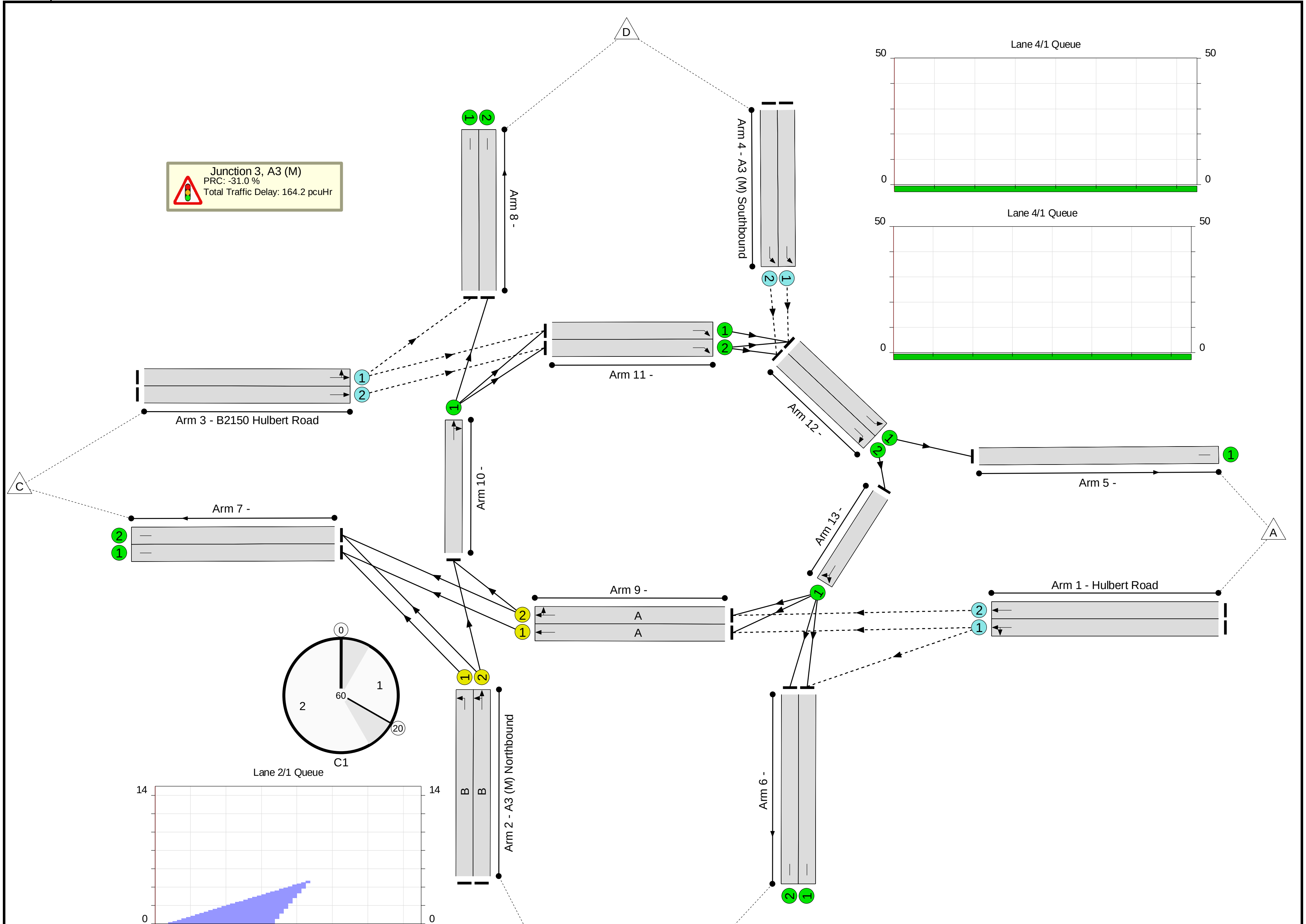
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.9%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.9%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	244	1990	802	30.4%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	432	2130	802	53.8%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	35	-	526	1997	1198	43.9%
2/2	A3 (M) Northbound Left Ahead	U	N/A	N/A	B		1	35	-	579	2114	1268	45.6%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	842	1993	714	117.9%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	984	2119	853	115.4%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	733	1939	918	79.9%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	252	2094	630	40.0%
5/1		U	N/A	N/A	-		-	-	-	1628	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	215	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	199	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	969	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	603	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	574	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	404	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	A		1	15	-	443	1992	531	83.4%
9/2	Ahead Right	U	N/A	N/A	A		1	15	-	470	2113	563	83.4%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	446	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	289	Inf	Inf	0.0%

Full Input Data And Results

11/2	Ahead	U	N/A	N/A	-		-	-	-	1005	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	1628	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	651	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	651	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**3228**	**0**	**0**	**19.2**	**145.0**	**0.0**	**164.2**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**3228**	**0**	**0**	**19.2**	**145.0**	**0.0**	**164.2**	**-**	**-**	**-**	**-**
1/1	244	244	244	0	0	0.0	0.2	-	0.2	3.2	0.0	0.2	0.2
1/2	432	432	432	0	0	0.0	0.6	-	0.6	4.8	0.0	0.6	0.6
2/1	526	526	-	-	-	1.0	0.4	-	1.3	9.2	4.7	0.4	5.1
2/2	579	579	-	-	-	1.1	0.4	-	1.5	9.2	5.3	0.4	5.7
3/1	842	714	714	0	0	6.3	67.0	-	73.3	313.6	38.1	67.0	105.2
3/2	984	853	853	0	0	5.6	69.3	-	74.9	274.0	44.6	69.3	113.8
4/1	733	733	733	0	0	0.0	1.9	-	1.9	9.5	0.0	1.9	1.9
4/2	252	252	252	0	0	0.0	0.3	-	0.3	4.8	0.0	0.3	0.3
5/1	1509	1509	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	188	188	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	172	172	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	969	969	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	603	603	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	487	487	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	404	404	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	443	443	-	-	-	2.6	2.4	-	4.9	40.1	6.9	2.4	9.3
9/2	470	470	-	-	-	2.7	2.4	-	5.1	39.1	7.3	2.4	9.7
10/1	446	446	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	248	248	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	874	874	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	1509	1509	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	598	598	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	598	598	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

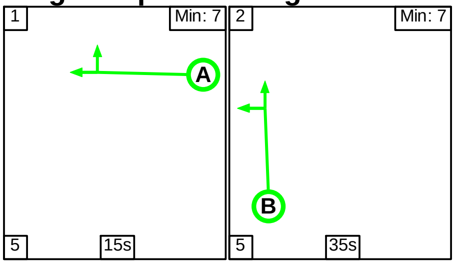
C1 PRC for Signalled Lanes (%): 7.9 Total Delay for Signalled Lanes (pcuHr): 12.86 Cycle Time (s): 60
PRC Over All Lanes (%): -31.0 Total Delay Over All Lanes(pcuHr): 164.18

Full Input Data And Results

Full Input Data And Results

Scenario 2: '2026 DM PM' (FG2: '2026 DM PM', Plan 1: 'Network Control Plan 1')

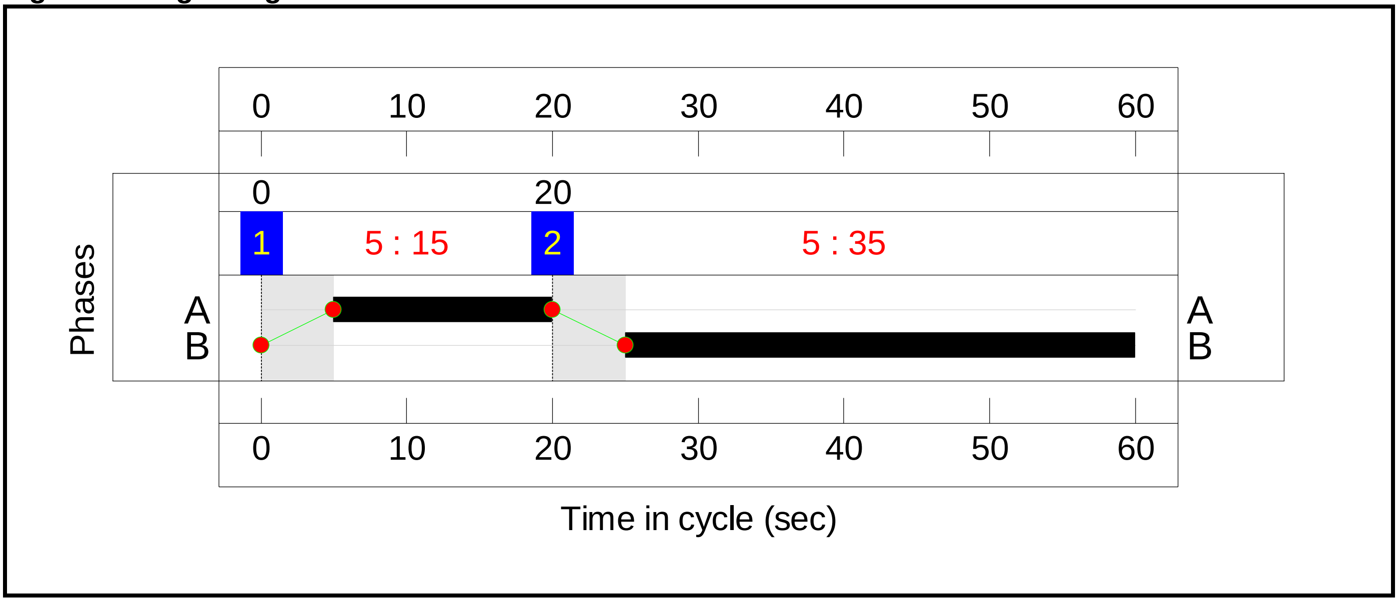
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	15	35
Change Point	0	20

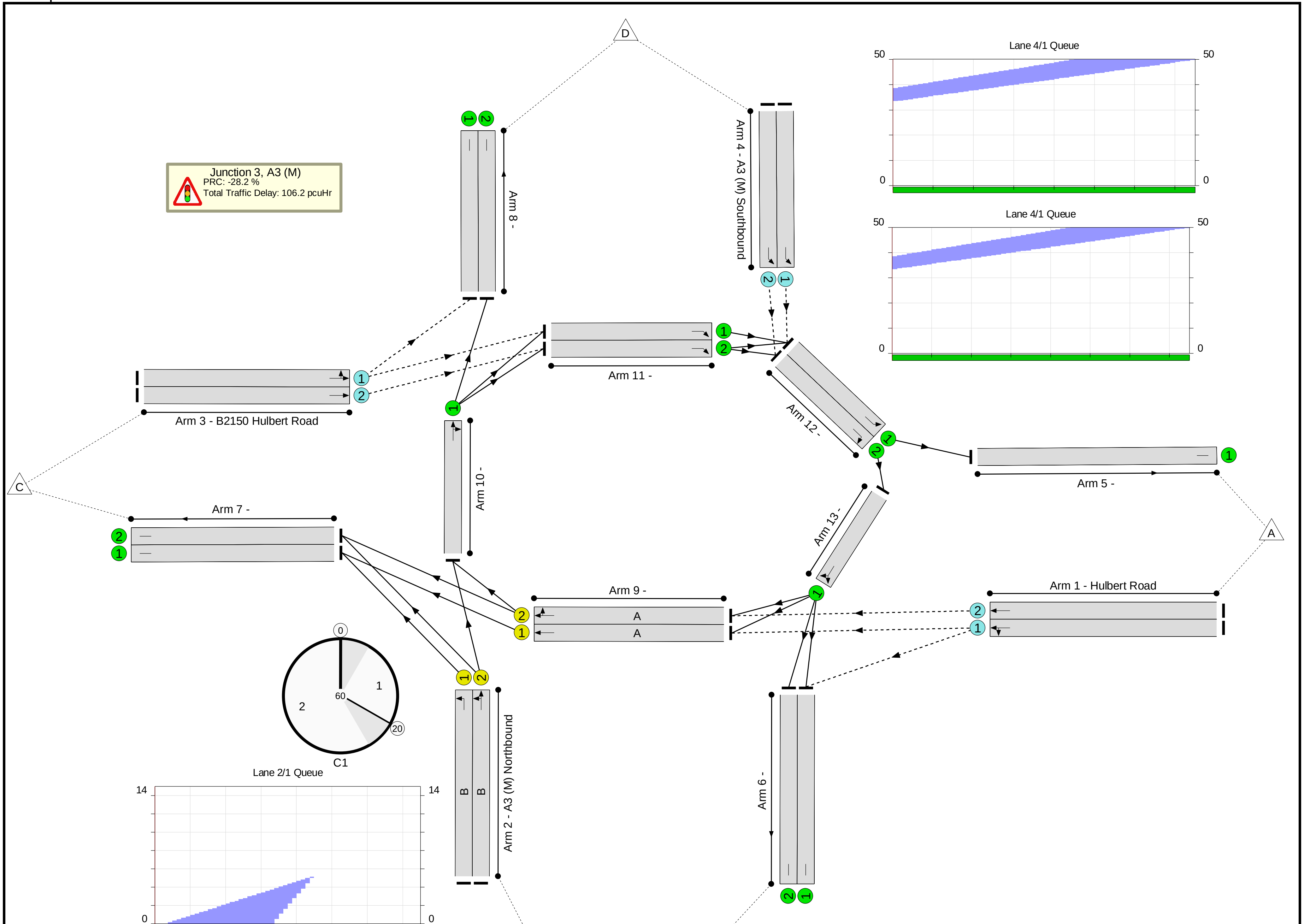
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**115.4%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**115.4%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	327	1990	664	49.2%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	326	2130	664	49.1%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	35	-	563	1997	1198	47.0%
2/2	A3 (M) Northbound Left Ahead	U	N/A	N/A	B		1	35	-	597	2115	1269	47.0%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	818	1991	953	85.8%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	755	2119	947	79.7%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	1150	1939	996	115.4%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	314	2094	744	42.2%
5/1		U	N/A	N/A	-		-	-	-	1221	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	400	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	351	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	997	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	922	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	818	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	141	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	A		1	15	-	434	1992	531	81.7%
9/2	Ahead Right	U	N/A	N/A	A		1	15	-	485	2124	566	85.6%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	160	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	10	Inf	Inf	0.0%

Full Input Data And Results

11/2	Ahead	U	N/A	N/A	-		-	-	-	764	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	1221	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	1017	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	1017	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**3536**	**0**	**0**	**13.9**	**92.3**	**0.0**	**106.2**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**3536**	**0**	**0**	**13.9**	**92.3**	**0.0**	**106.2**	**-**	**-**	**-**	**-**
1/1	327	327	327	0	0	0.0	0.5	-	0.5	5.3	0.0	0.5	0.5
1/2	326	326	326	0	0	0.0	0.5	-	0.5	5.3	0.0	0.5	0.5
2/1	563	563	-	-	-	1.0	0.4	-	1.5	9.5	5.2	0.4	5.6
2/2	597	597	-	-	-	1.1	0.4	-	1.6	9.4	5.5	0.4	5.9
3/1	818	818	818	0	0	0.0	2.9	-	2.9	12.8	1.8	2.9	4.7
3/2	755	755	755	0	0	0.0	1.9	-	1.9	9.2	0.0	1.9	1.9
4/1	1150	996	996	0	0	6.4	80.4	-	86.8	271.7	57.5	80.4	137.9
4/2	314	314	314	0	0	0.0	0.4	-	0.4	4.2	0.0	0.4	0.4
5/1	1067	1067	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	351	351	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	997	997	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	922	922	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	818	818	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	141	141	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	434	434	-	-	-	2.5	2.1	-	4.6	38.4	6.8	2.1	8.9
9/2	485	485	-	-	-	2.8	2.8	-	5.6	41.6	7.7	2.8	10.5
10/1	160	160	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	10	10	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	764	764	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	1067	1067	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	1017	1017	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	1017	1017	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

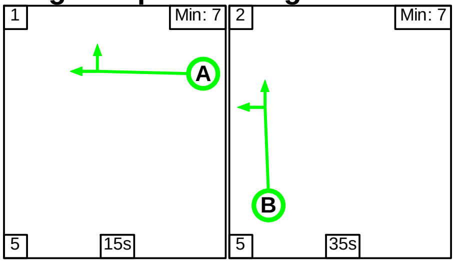
C1 PRC for Signalled Lanes (%): 5.1 Total Delay for Signalled Lanes (pcuHr): 13.27 Cycle Time (s): 60
PRC Over All Lanes (%): -28.2 Total Delay Over All Lanes(pcuHr): 106.22

Full Input Data And Results

Full Input Data And Results

Scenario 3: '2026 DS1 AM' (FG3: '2026 DS1 AM', Plan 1: 'Network Control Plan 1')

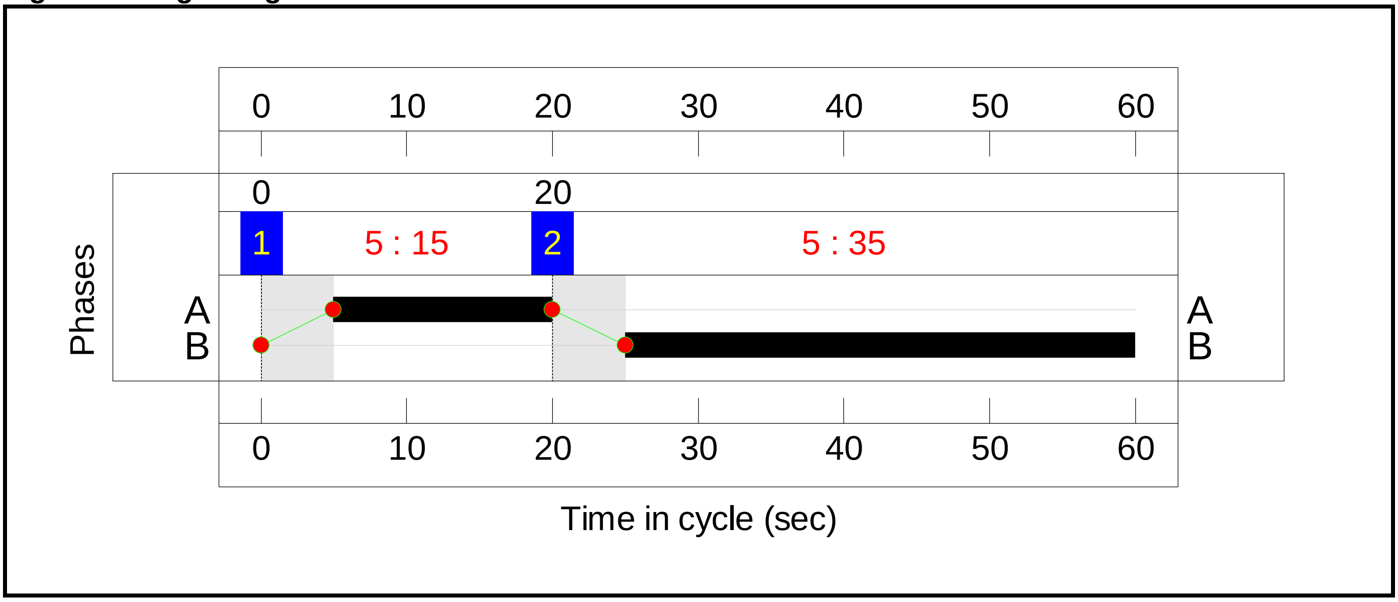
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	15	35
Change Point	0	20

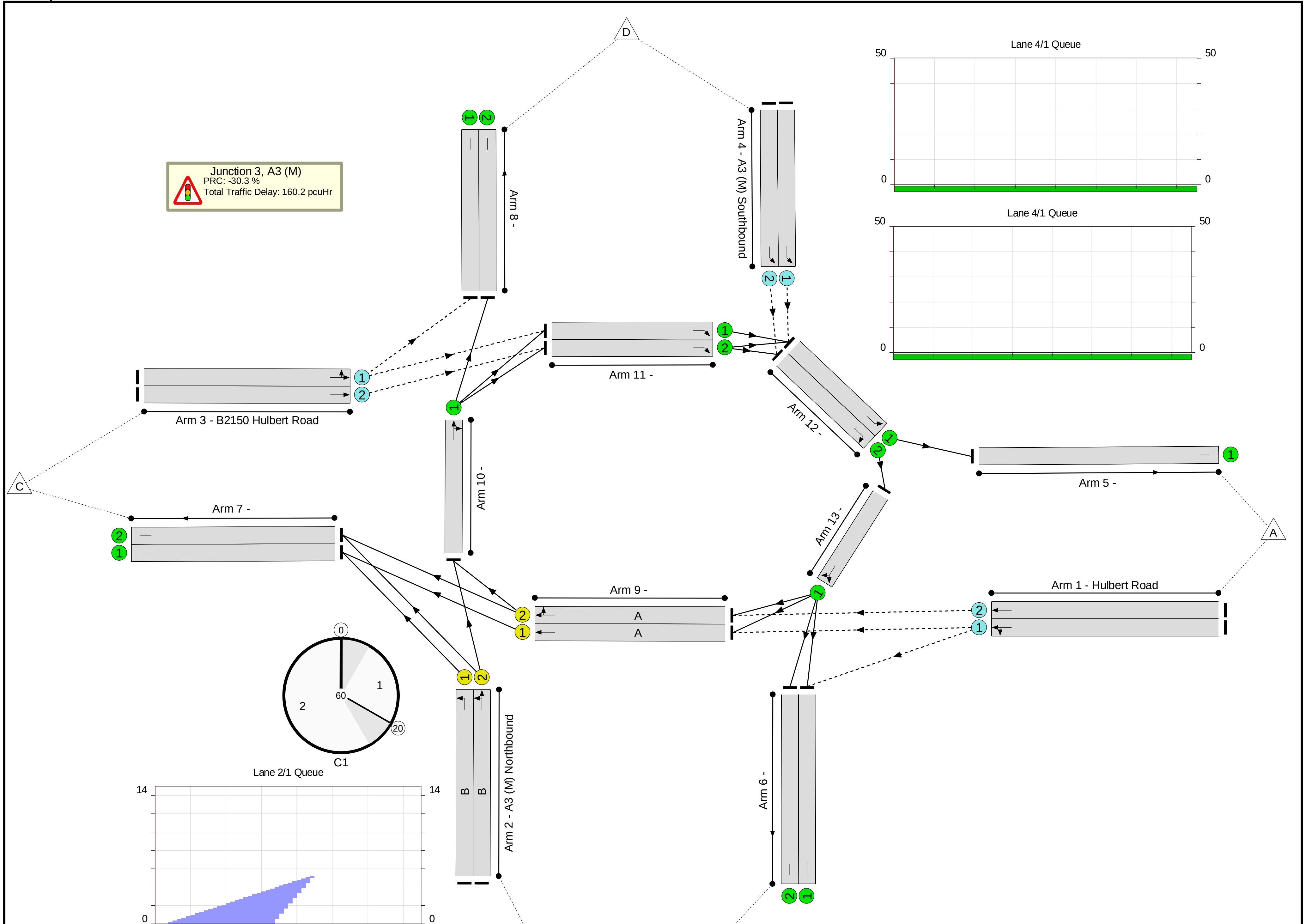
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.3%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.3%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	276	1990	823	33.5%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	444	2130	823	53.9%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	35	-	574	1997	1198	47.9%
2/2	A3 (M) Northbound Left Ahead	U	N/A	N/A	B		1	35	-	628	2114	1268	49.5%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	837	1993	713	117.3%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	975	2119	849	114.9%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	741	1939	927	79.9%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	223	2094	640	34.8%
5/1		U	N/A	N/A	-		-	-	-	1634	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	194	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	179	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1025	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	648	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	603	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	415	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	A		1	15	-	451	1992	531	84.9%
9/2	Ahead Right	U	N/A	N/A	A		1	15	-	477	2112	563	84.7%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	457	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	255	Inf	Inf	0.0%

Full Input Data And Results

11/2	Ahead	U	N/A	N/A	-		-	-	-	996	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	1634	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	581	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	581	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**3246**	**0**	**0**	**19.2**	**140.9**	**0.0**	**160.2**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**3246**	**0**	**0**	**19.2**	**140.9**	**0.0**	**160.2**	**-**	**-**	**-**	**-**
1/1	276	276	276	0	0	0.0	0.3	-	0.3	3.3	0.0	0.3	0.3
1/2	444	444	444	0	0	0.0	0.6	-	0.6	4.7	0.0	0.6	0.6
2/1	574	574	-	-	-	1.1	0.5	-	1.5	9.6	5.3	0.5	5.7
2/2	628	628	-	-	-	1.2	0.5	-	1.7	9.6	5.9	0.5	6.4
3/1	837	713	713	0	0	6.2	65.0	-	71.2	306.0	37.9	65.0	102.9
3/2	975	849	849	0	0	5.4	66.7	-	72.1	266.3	44.1	66.7	110.8
4/1	741	741	741	0	0	0.0	2.0	-	2.0	9.5	0.0	2.0	2.0
4/2	223	223	223	0	0	0.0	0.3	-	0.3	4.3	0.0	0.3	0.3
5/1	1520	1520	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	171	171	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	156	156	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1025	1025	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	648	648	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	514	514	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	415	415	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	451	451	-	-	-	2.6	2.6	-	5.3	41.9	7.0	2.6	9.7
9/2	477	477	-	-	-	2.8	2.6	-	5.4	40.5	7.4	2.6	10.0
10/1	457	457	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	220	220	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	870	870	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	1520	1520	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	535	535	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	535	535	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

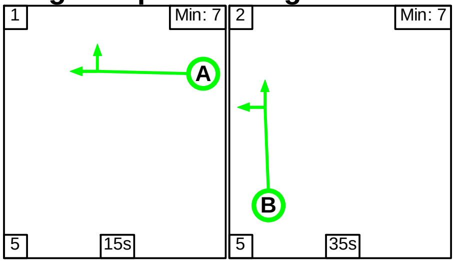
C1 PRC for Signalled Lanes (%): 6.0 Total Delay for Signalled Lanes (pcuHr): 13.84 Cycle Time (s): 60
PRC Over All Lanes (%): -30.3 Total Delay Over All Lanes(pcuHr): 160.17

Full Input Data And Results

Full Input Data And Results

Scenario 4: '2026 DS1 PM' (FG4: '2026 DS1 PM', Plan 1: 'Network Control Plan 1')

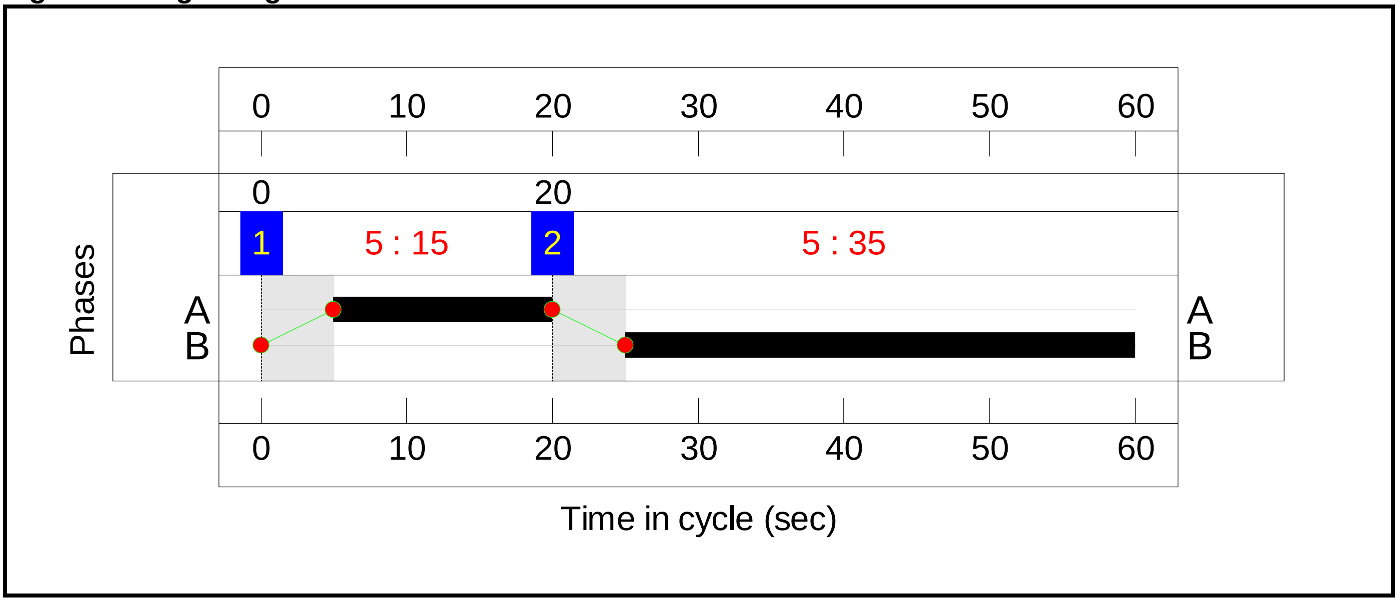
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	15	35
Change Point	0	20

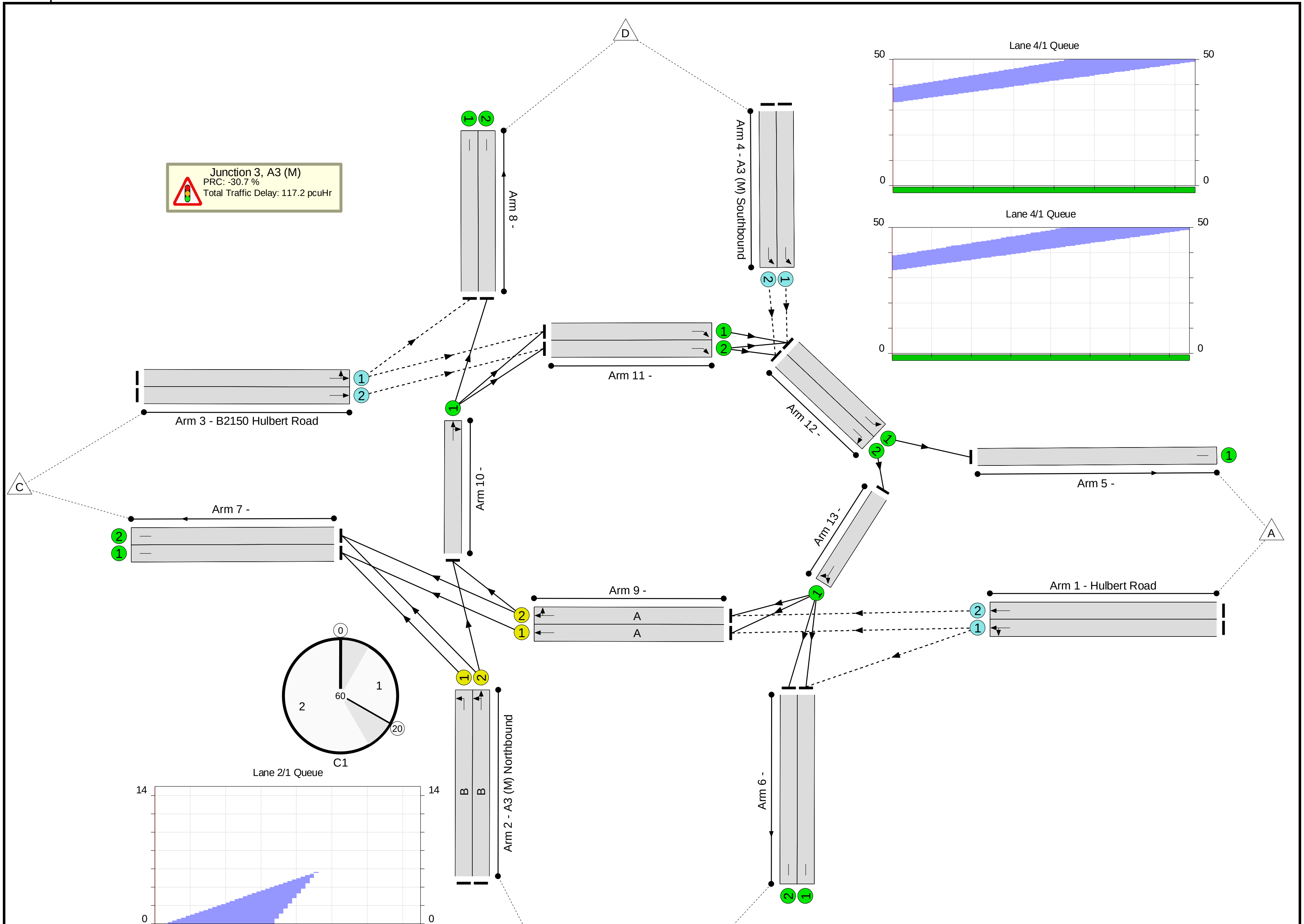
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.6%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.6%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	358	1990	671	53.3%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	358	2130	671	53.3%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	35	-	598	1997	1198	49.9%
2/2	A3 (M) Northbound Left Ahead	U	N/A	N/A	B		1	35	-	647	2115	1269	51.0%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	684	1992	887	77.1%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	716	2119	924	77.5%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	1155	1939	982	117.6%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	292	2094	743	39.3%
5/1		U	N/A	N/A	-		-	-	-	1230	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	400	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	351	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1057	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	918	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	641	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	211	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	A		1	15	-	459	1992	531	86.4%
9/2	Ahead Right	U	N/A	N/A	A		1	15	-	501	2121	566	88.6%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	230	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	53	Inf	Inf	0.0%

Full Input Data And Results

11/2	Ahead	U	N/A	N/A	-		-	-	-	725	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	1230	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	995	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	995	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**3390**	**0**	**0**	**15.3**	**101.9**	**0.0**	**117.2**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**3390**	**0**	**0**	**15.3**	**101.9**	**0.0**	**117.2**	**-**	**-**	**-**	**-**
1/1	358	358	358	0	0	0.0	0.6	-	0.6	5.7	0.0	0.6	0.6
1/2	358	358	358	0	0	0.0	0.6	-	0.6	5.7	0.0	0.6	0.6
2/1	598	598	-	-	-	1.1	0.5	-	1.6	9.8	5.6	0.5	6.1
2/2	647	647	-	-	-	1.2	0.5	-	1.8	9.8	6.1	0.5	6.6
3/1	684	684	684	0	0	0.1	1.7	-	1.7	9.1	3.4	1.7	5.1
3/2	716	716	716	0	0	0.0	1.7	-	1.7	8.5	0.6	1.7	2.3
4/1	1155	982	982	0	0	7.2	89.6	-	96.8	301.8	57.7	89.6	147.4
4/2	292	292	292	0	0	0.0	0.3	-	0.3	4.0	0.0	0.3	0.3
5/1	1057	1057	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	351	351	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1057	1057	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	918	918	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	641	641	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	211	211	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	459	459	-	-	-	2.7	2.9	-	5.6	44.0	7.3	2.9	10.2
9/2	501	501	-	-	-	2.9	3.5	-	6.4	46.3	7.9	3.5	11.4
10/1	230	230	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	53	53	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	725	725	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	1057	1057	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	995	995	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	995	995	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

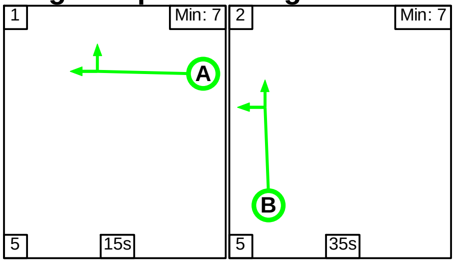
C1 PRC for Signalled Lanes (%): 1.6 Total Delay for Signalled Lanes (pcuHr): 15.45 Cycle Time (s): 60
PRC Over All Lanes (%): -30.7 Total Delay Over All Lanes(pcuHr): 117.17

Full Input Data And Results

Full Input Data And Results

Scenario 5: '2026 DS2 AM' (FG5: '2026 DS2 AM', Plan 1: 'Network Control Plan 1')

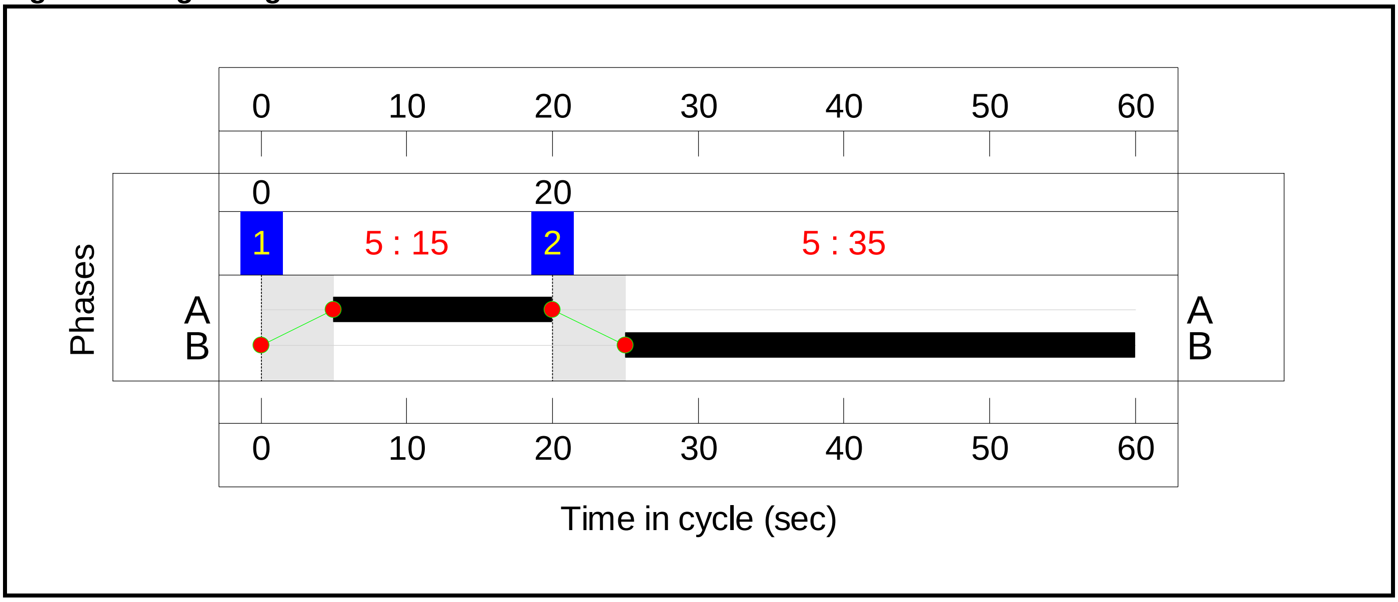
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	15	35
Change Point	0	20

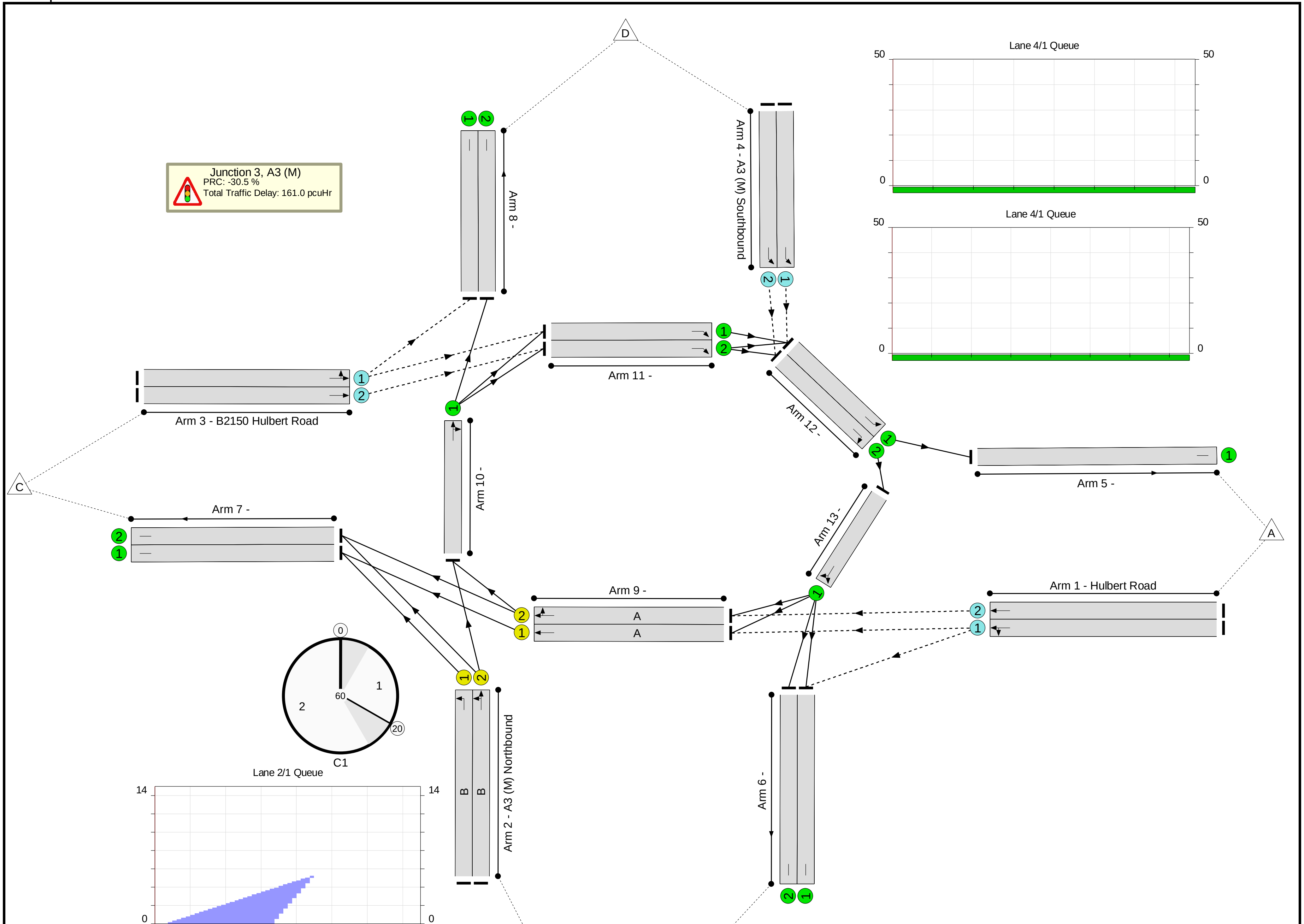
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.5%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.5%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	274	1990	822	33.3%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	446	2130	822	54.2%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	35	-	571	1997	1198	47.7%
2/2	A3 (M) Northbound Left Ahead	U	N/A	N/A	B		1	35	-	625	2114	1268	49.3%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	838	1993	713	117.5%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	975	2119	849	114.9%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	740	1939	927	79.8%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	224	2094	640	35.0%
5/1		U	N/A	N/A	-		-	-	-	1631	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	195	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	180	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1022	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	645	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	604	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	416	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	A		1	15	-	451	1992	531	84.9%
9/2	Ahead Right	U	N/A	N/A	A		1	15	-	478	2112	563	84.9%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	458	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	255	Inf	Inf	0.0%

Full Input Data And Results

11/2	Ahead	U	N/A	N/A	-		-	-	-	996	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	1631	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	584	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	584	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**3246**	**0**	**0**	**19.3**	**141.7**	**0.0**	**161.0**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**3246**	**0**	**0**	**19.3**	**141.7**	**0.0**	**161.0**	**-**	**-**	**-**	**-**
1/1	274	274	274	0	0	0.0	0.2	-	0.2	3.3	0.0	0.2	0.2
1/2	446	446	446	0	0	0.0	0.6	-	0.6	4.8	0.0	0.6	0.6
2/1	571	571	-	-	-	1.1	0.5	-	1.5	9.6	5.2	0.5	5.7
2/2	625	625	-	-	-	1.2	0.5	-	1.7	9.6	5.9	0.5	6.4
3/1	838	713	713	0	0	6.2	65.6	-	71.8	308.4	37.9	65.6	103.5
3/2	975	849	849	0	0	5.4	66.9	-	72.3	267.0	44.1	66.9	111.0
4/1	740	740	740	0	0	0.0	1.9	-	1.9	9.4	0.0	1.9	1.9
4/2	224	224	224	0	0	0.0	0.3	-	0.3	4.3	0.0	0.3	0.3
5/1	1516	1516	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	172	172	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	157	157	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1022	1022	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	645	645	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	514	514	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	416	416	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	451	451	-	-	-	2.6	2.6	-	5.3	41.9	7.0	2.6	9.7
9/2	478	478	-	-	-	2.8	2.6	-	5.4	40.7	7.4	2.6	10.1
10/1	458	458	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	220	220	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	870	870	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	1516	1516	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	537	537	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	537	537	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

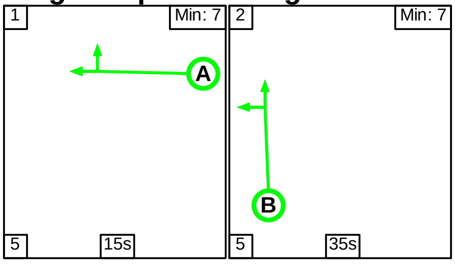
C1 PRC for Signalled Lanes (%): 6.0 Total Delay for Signalled Lanes (pcuHr): 13.85 Cycle Time (s): 60
PRC Over All Lanes (%): -30.5 Total Delay Over All Lanes(pcuHr): 160.99

Full Input Data And Results

Full Input Data And Results

Scenario 6: '2026 DS2 PM' (FG6: '2026 DS2 PM', Plan 1: 'Network Control Plan 1')

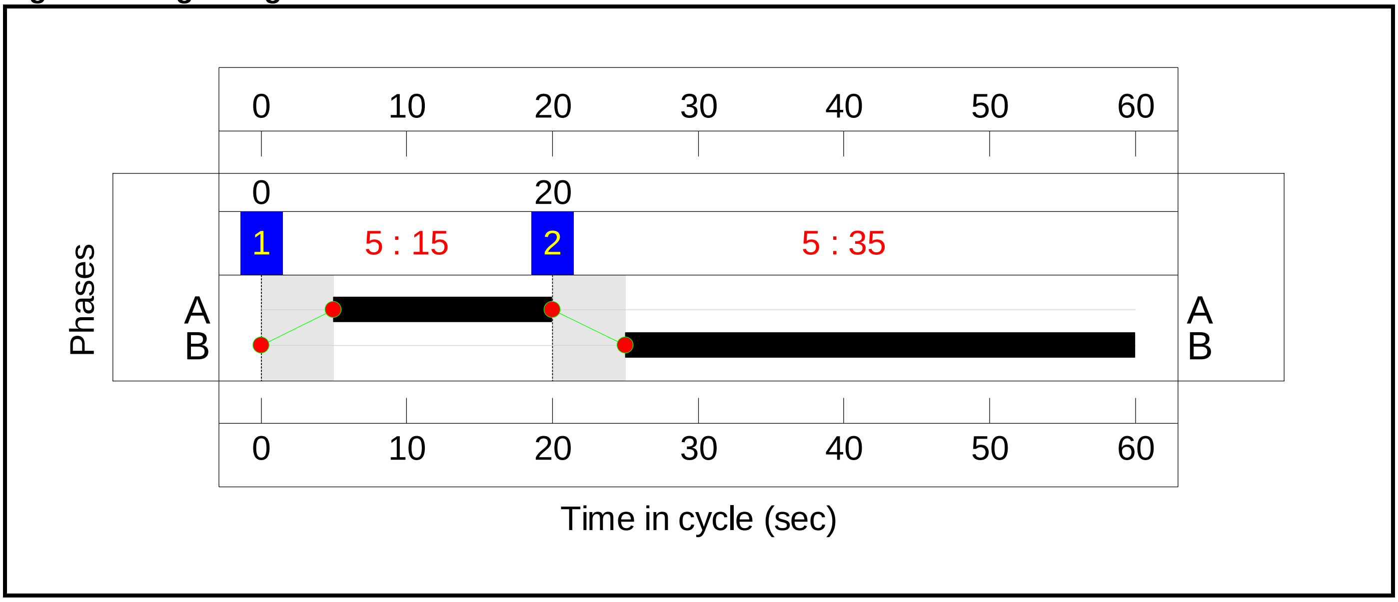
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	15	35
Change Point	0	20

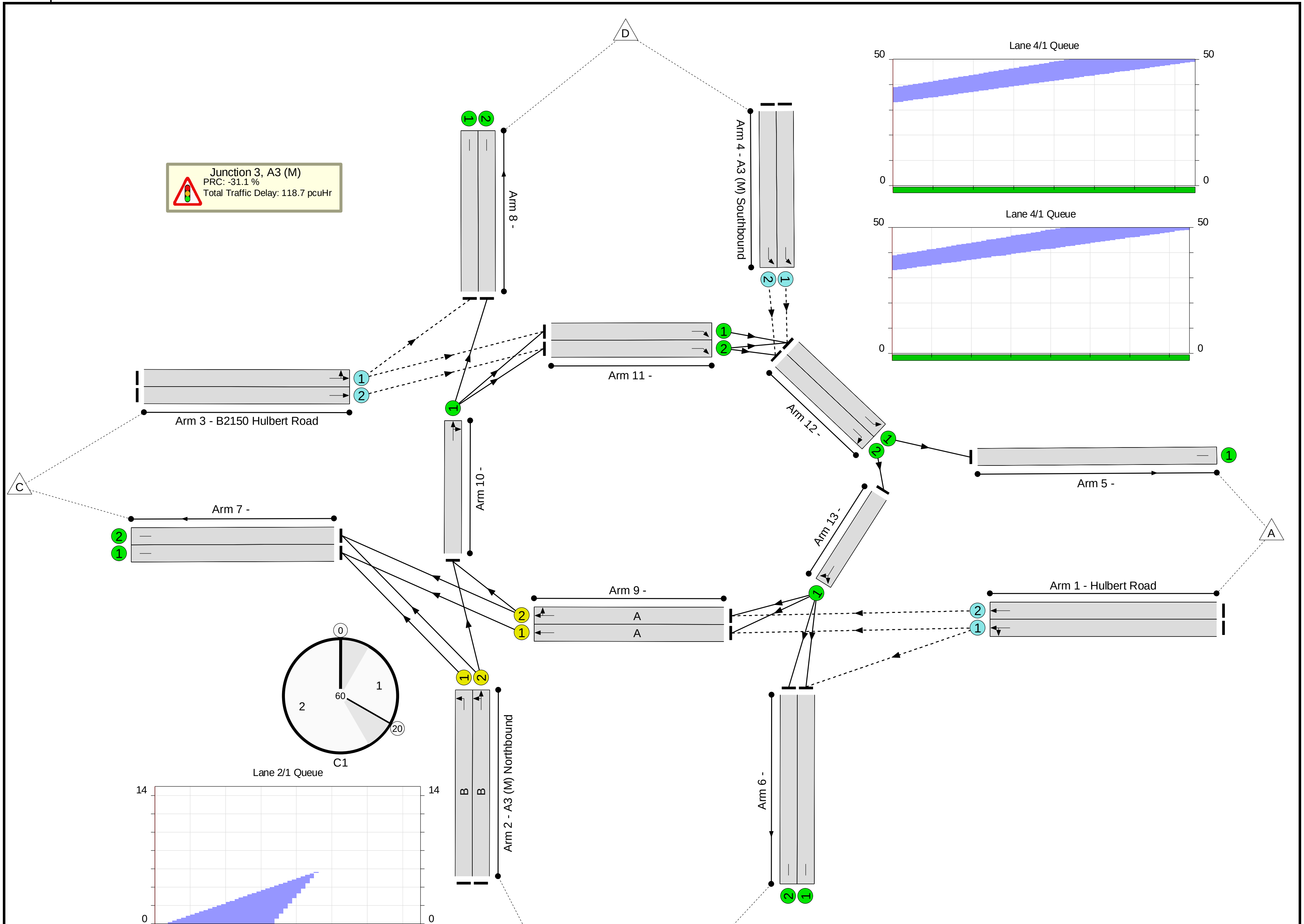
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**118.0%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**118.0%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	354	1990	672	52.7%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	355	2130	672	52.8%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	35	-	601	1997	1198	50.2%
2/2	A3 (M) Northbound Left Ahead	U	N/A	N/A	B		1	35	-	651	2115	1269	51.3%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	685	1992	885	77.4%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	719	2119	924	77.8%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	1159	1939	983	118.0%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	290	2094	742	39.1%
5/1		U	N/A	N/A	-		-	-	-	1236	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	400	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	351	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1056	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	917	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	643	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	211	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	A		1	15	-	455	1992	531	85.7%
9/2	Ahead Right	U	N/A	N/A	A		1	15	-	496	2121	566	87.7%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	230	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	52	Inf	Inf	0.0%

Full Input Data And Results

11/2	Ahead	U	N/A	N/A	-		-	-	-	728	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	1236	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	993	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	993	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**3386**	**0**	**0**	**15.4**	**103.3**	**0.0**	**118.7**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**3386**	**0**	**0**	**15.4**	**103.3**	**0.0**	**118.7**	**-**	**-**	**-**	**-**
1/1	354	354	354	0	0	0.0	0.6	-	0.6	5.6	0.0	0.6	0.6
1/2	355	355	355	0	0	0.0	0.6	-	0.6	5.7	0.0	0.6	0.6
2/1	601	601	-	-	-	1.1	0.5	-	1.6	9.9	5.7	0.5	6.2
2/2	651	651	-	-	-	1.3	0.5	-	1.8	9.8	6.1	0.5	6.7
3/1	685	685	685	0	0	0.1	1.7	-	1.8	9.3	3.6	1.7	5.3
3/2	719	719	719	0	0	0.0	1.7	-	1.7	8.6	1.0	1.7	2.7
4/1	1159	983	983	0	0	7.4	91.4	-	98.8	306.8	57.9	91.4	149.3
4/2	290	290	290	0	0	0.0	0.3	-	0.3	4.0	0.0	0.3	0.3
5/1	1060	1060	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	351	351	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1056	1056	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	917	917	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	643	643	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	211	211	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	455	455	-	-	-	2.6	2.8	-	5.4	42.9	7.2	2.8	10.0
9/2	496	496	-	-	-	2.9	3.3	-	6.2	44.7	7.9	3.3	11.1
10/1	230	230	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	52	52	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	728	728	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	1060	1060	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	993	993	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	993	993	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 2.6 Total Delay for Signalled Lanes (pcuHr): 15.02 Cycle Time (s): 60
PRC Over All Lanes (%): -31.1 Total Delay Over All Lanes(pcuHr): 118.71

Full Input Data And Results

Appendix 8 – Alternative Assessment Outputs

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

Filename: J2.j9
Path: \\uk.wspgroup.com\central data\Projects\62100xxx\62100616 - Aquind VO No.3\A DCO\POST SUBMISSION\D. EIA POST SUBMISSION\Transport\WIP\Reports\Highways England Response\20-08-21 HE Note TN03\HE Review 301120 \Observed Only
Report generation date: 01/12/2020 11:41:08

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	[Lane Simulation] - Alternative DM									
Arm 1	D3	6.8	17.79		C	D4	5.3	15.95		C
Arm 2		0.9	5.48		A		2.8	9.48		A
Arm 3		3.6	8.35		A		1.9	6.32		A
Arm 4		0.5	4.94		A		1.3	6.61		A
	[Lane Simulation] - Alternative DS									
Arm 1	D5	4.9	13.57		B	D6	4.5	14.27		B
Arm 2		1.1	5.60		A		6.8	16.72		C
Arm 3		3.4	8.62		A		2.2	6.65		A
Arm 4		0.5	4.71		A		1.5	6.69		A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

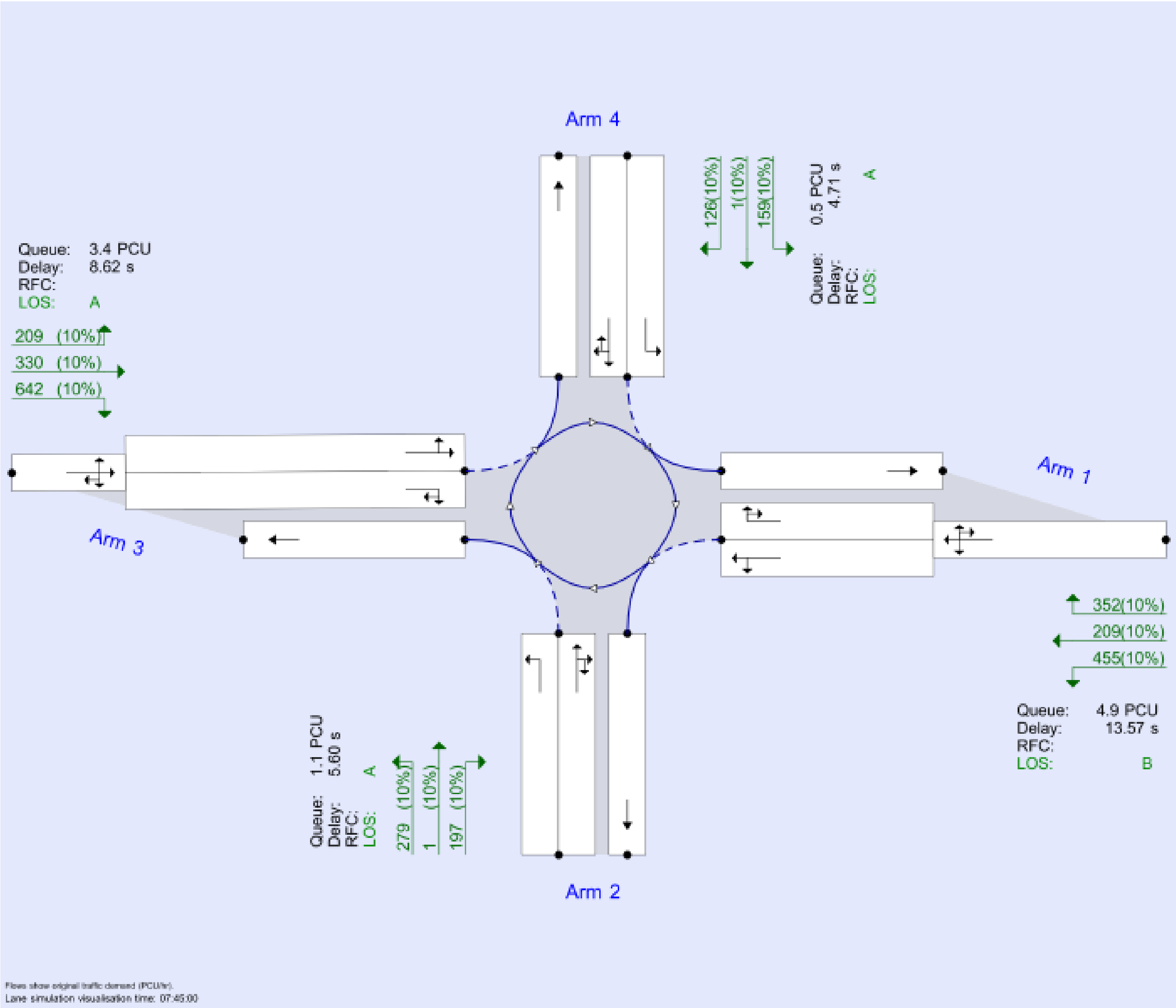
File summary

File Description

Title	Junction 2, A3(M)
Location	
Site number	
Date	26/09/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	62100616
Enumerator	CORP\UKAJT009
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓			1553187562	109	14.17

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	Alternative DM	AM	ONE HOUR	07:45	09:15	15	✓
D4	Alternative DM	PM	ONE HOUR	16:45	18:15	15	✓
D5	Alternative DS	AM	ONE HOUR	07:45	09:15	15	✓
D6	Alternative DS	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	100.000	100.000

Alternative DM, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	10.92	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Dell Piece East	
2	A3(M) south	
3	B2149 Dell Piece West	
4	A3(M) north	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.50	7.60	23.4	45.0	125.0	7.0	
2	6.00	6.20	0.1	999.0	125.0	5.0	
3	3.50	8.50	26.4	50.0	125.0	10.0	
4	6.00	6.50	22.0	999.0	125.0	5.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1093	0.00
2	1048	165.00
3	233	0.00
4	839	150.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.891	2671
2	0.914	2342
3	1.100	3017
4	0.994	2574

The slope and intercept shown above include any corrections and adjustments.

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
1	Evenly split	10.00
2	Evenly split	10.00
3	Evenly split	10.00
4	Evenly split	10.00

Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised
1	Entry	1	1	2, 3	✓	5.00		1000	99999	
			2	1, 4	✓	5.00		1000	99999	
		2	1	(1, 2, 3, 4)		Infinity				
	Exit	1	1			Infinity				
2	Entry	1	1	3		Infinity		1000	99999	
			2	1, 2, 4		Infinity		1000	99999	
	Exit	1	1			Infinity				
3	Entry	1	1	1, 4	✓	8.00		1000	99999	
			2	2, 3	✓	8.00		1000	99999	
		2	1	(1, 2, 3, 4)		Infinity				
	Exit	1	1			Infinity				
4	Entry	1	1	1		Infinity		1000	99999	
			2	2, 3, 4		Infinity		1000	99999	
	Exit	1	1			Infinity				

Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
1	Entry	1	1	0.445	1335
			2	0.445	1335
2	Entry	1	1	0.457	1171
			2	0.457	1171
3	Entry	1	1	0.550	1509
			2	0.550	1509
4	Entry	1	1	0.497	1287
			2	0.497	1287

Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm			
			1	2	3	4
1	1	1		✓	✓	
		2	✓			✓
	2	1	✓	✓	✓	✓
2	1	1			✓	
		2	✓	✓		✓
3	1	1	✓			✓
		2		✓	✓	
	2	1	✓	✓	✓	✓
4	1	1	✓			
		2		✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	Alternative DM	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1056	100.000
2		ONE HOUR	✓	456	100.000
3		ONE HOUR	✓	1178	100.000
4		ONE HOUR	✓	294	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	489	214	353
	2	199	2	254	1
	3	323	597	2	256
	4	175	1	118	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	17.79	6.8	C	967	1450
2	5.48	0.9	A	415	622
3	8.35	3.6	A	1083	1624
4	4.94	0.5	A	267	401

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	797	199	550	797	793	529	0.0	1.3	6.550	A
2	340	85	530	339	344	817	0.0	0.5	4.853	A
3	894	223	425	896	889	444	0.0	1.1	4.831	A
4	230	57	850	229	224	472	0.0	0.3	4.527	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	941	235	657	940	938	628	1.3	2.6	8.287	A
2	410	102	621	408	411	976	0.5	0.7	5.073	A
3	1065	266	507	1068	1059	521	1.1	1.4	5.681	A
4	263	66	1021	264	263	555	0.3	0.3	4.745	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1157	289	802	1153	1150	772	2.6	5.9	16.083	C
2	494	124	757	496	494	1198	0.7	0.7	5.484	A
3	1310	328	608	1312	1301	645	1.4	3.2	7.756	A
4	316	79	1256	318	324	663	0.3	0.5	4.943	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1168	292	782	1147	1153	751	5.9	6.8	17.789	C
2	491	123	748	489	493	1182	0.7	0.9	5.387	A
3	1287	322	599	1287	1295	638	3.2	3.6	8.347	A
4	316	79	1217	316	323	669	0.5	0.4	4.690	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	945	236	634	943	973	621	6.8	2.6	10.427	B
2	408	102	599	411	416	978	0.9	0.5	5.214	A
3	1050	263	488	1050	1053	522	3.6	1.8	5.996	A
4	258	64	997	259	264	542	0.4	0.3	4.658	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	791	198	537	785	795	533	2.6	1.6	6.333	A
2	344	86	517	346	343	804	0.5	0.4	4.820	A
3	890	223	422	892	893	442	1.8	1.1	4.847	A
4	222	55	847	223	219	466	0.3	0.3	4.392	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	524	1091	0.481	524	526	0.0	0.9	6.848	A
			2	1, 4	272	1091	0.249	273	267	0.0	0.3	4.859	A
		2	1	(1, 2, 3, 4)	797			796	798	0.0	0.1	0.369	A
	Exit	1	1		529			529	525	0.0	0.0	0.000	A
2	Entry	1	1	3	188	1001	0.187	187	192	0.0	0.4	4.941	A
			2	1, 2, 4	152	1001	0.152	153	151	0.0	0.2	4.743	A
	Exit	1	1		817			817	818	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	442	1275	0.347	443	436	0.0	0.6	4.751	A
			2	2, 3	451	1275	0.354	453	453	0.0	0.5	4.878	A
		2	1	(1, 2, 3, 4)	894			894	893	0.0	0.0	0.015	A
	Exit	1	1		444			444	447	0.0	0.0	0.000	A
4	Entry	1	1	1	135	1000	0.135	135	131	0.0	0.1	4.492	A
			2	2, 3, 4	94	1000	0.094	94	93	0.0	0.2	4.578	A
	Exit	1	1		472			472	460	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	617	1047	0.589	617	617	0.9	1.7	8.258	A
			2	1, 4	325	1047	0.310	323	320	0.3	0.7	5.328	A
		2	1	(1, 2, 3, 4)	941			942	942	0.1	0.3	1.028	A
	Exit	1	1		628			628	624	0.0	0.0	0.000	A
2	Entry	1	1	3	224	1000	0.224	223	228	0.4	0.4	5.278	A
			2	1, 2, 4	185	1000	0.185	185	183	0.2	0.2	4.816	A
	Exit	1	1		976			976	975	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	520	1230	0.423	520	514	0.6	0.8	5.397	A
			2	2, 3	545	1230	0.443	548	545	0.5	0.7	5.803	A
		2	1	(1, 2, 3, 4)	1065			1065	1061	0.0	0.0	0.076	A
	Exit	1	1		521			521	522	0.0	0.0	0.000	A
4	Entry	1	1	1	156	1000	0.156	156	158	0.1	0.2	4.771	A
			2	2, 3, 4	107	1000	0.107	108	106	0.2	0.1	4.705	A
	Exit	1	1		555			555	549	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	762	1011	0.754	762	770	1.7	2.6	11.531	B
			2	1, 4	393	1011	0.389	391	380	0.7	1.0	6.612	A
		2	1	(1, 2, 3, 4)	1157			1156	1155	0.3	2.3	6.119	A
	Exit	1	1		772			772	769	0.0	0.0	0.000	A
2	Entry	1	1	3	278	1000	0.278	278	275	0.4	0.4	5.619	A
			2	1, 2, 4	216	1000	0.216	217	220	0.2	0.2	5.315	A
	Exit	1	1		1198			1198	1202	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	637	1174	0.543	636	633	0.8	1.5	7.139	A
			2	2, 3	674	1174	0.574	675	667	0.7	1.5	7.692	A
		2	1	(1, 2, 3, 4)	1310			1311	1307	0.0	0.1	0.332	A
	Exit	1	1		645			645	641	0.0	0.0	0.000	A
4	Entry	1	1	1	192	1000	0.192	192	196	0.2	0.3	5.000	A
			2	2, 3, 4	124	1000	0.124	125	128	0.1	0.2	4.858	A
	Exit	1	1		663			663	657	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	769	1012	0.759	766	768	2.6	2.7	11.850	B
			2	1, 4	380	1012	0.376	381	385	1.0	0.8	6.513	A
		2	1	(1, 2, 3, 4)	1168			1149	1153	2.3	3.4	7.709	A
	Exit	1	1		751			751	766	0.0	0.0	0.000	A
2	Entry	1	1	3	272	1000	0.272	271	274	0.4	0.5	5.588	A
			2	1, 2, 4	219	1000	0.219	218	219	0.2	0.4	5.137	A
	Exit	1	1		1182			1182	1186	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	640	1179	0.543	640	644	1.5	1.8	7.919	A
			2	2, 3	647	1179	0.549	647	651	1.5	1.6	7.665	A
		2	1	(1, 2, 3, 4)	1287			1287	1296	0.1	0.2	0.551	A
	Exit	1	1		638			638	639	0.0	0.0	0.000	A
4	Entry	1	1	1	182	1000	0.182	183	193	0.3	0.3	4.924	A
			2	2, 3, 4	133	1000	0.133	133	130	0.2	0.1	4.346	A
	Exit	1	1		669			669	673	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	636	1056	0.602	634	653	2.7	1.7	9.306	A
			2	1, 4	309	1056	0.293	310	321	0.8	0.5	5.728	A
		2	1	(1, 2, 3, 4)	945			945	968	3.4	0.4	2.396	A
	Exit	1	1		621			621	631	0.0	0.0	0.000	A
2	Entry	1	1	3	233	1000	0.233	232	231	0.5	0.3	5.345	A
			2	1, 2, 4	176	1000	0.176	179	185	0.4	0.2	5.051	A
	Exit	1	1		978			978	988	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	520	1240	0.419	518	520	1.8	0.9	5.816	A
			2	2, 3	530	1240	0.427	531	532	1.6	0.8	6.015	A
		2	1	(1, 2, 3, 4)	1050			1050	1046	0.2	0.0	0.089	A
	Exit	1	1		522			522	534	0.0	0.0	0.000	A
4	Entry	1	1	1	158	1000	0.158	159	160	0.3	0.2	4.676	A
			2	2, 3, 4	100	1000	0.100	100	105	0.1	0.1	4.632	A
	Exit	1	1		542			542	553	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	521	1096	0.475	515	527	1.7	1.2	6.546	A
			2	1, 4	270	1096	0.246	270	268	0.5	0.3	4.995	A
		2	1	(1, 2, 3, 4)	791			790	792	0.4	0.1	0.327	A
	Exit	1	1		533			533	529	0.0	0.0	0.000	A
2	Entry	1	1	3	194	1001	0.194	194	192	0.3	0.3	4.918	A
			2	1, 2, 4	150	1001	0.150	152	151	0.2	0.1	4.695	A
	Exit	1	1		804			804	818	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	445	1277	0.348	445	443	0.9	0.6	4.708	A
			2	2, 3	446	1277	0.349	446	451	0.8	0.5	4.948	A
		2	1	(1, 2, 3, 4)	890			890	891	0.0	0.0	0.018	A
	Exit	1	1		442			442	439	0.0	0.0	0.000	A
4	Entry	1	1	1	133	1000	0.133	133	132	0.2	0.2	4.418	A
			2	2, 3, 4	89	1000	0.089	90	87	0.1	0.1	4.351	A
	Exit	1	1		466			466	464	0.0	0.0	0.000	A

Alternative DM, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	9.94	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1093	0.00
2	1048	165.00
3	233	0.00
4	839	150.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	Alternative DM	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	932	100.000
2		ONE HOUR	✓	1005	100.000
3		ONE HOUR	✓	833	100.000
4		ONE HOUR	✓	641	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	370	335	227
	2	449	0	556	0
	3	249	396	5	183
	4	392	3	246	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	15.95	5.3	C	859	1289
2	9.48	2.8	A	920	1380
3	6.32	1.9	A	760	1140
4	6.61	1.3	A	593	889

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	714	179	494	714	695	835	0.0	1.4	6.308	A
2	755	189	623	757	748	585	0.0	1.3	6.432	A
3	627	157	522	626	621	858	0.0	1.0	4.370	A
4	493	123	837	492	487	310	0.0	1.0	5.643	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	850	213	586	848	834	992	1.4	2.2	8.291	A
2	909	227	734	910	898	700	1.3	2.0	7.456	A
3	746	187	612	746	744	1031	1.0	1.0	5.071	A
4	586	146	989	589	584	370	1.0	0.9	5.953	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1023	256	721	1016	1011	1204	2.2	4.9	14.378	B
2	1100	275	889	1103	1093	848	2.0	2.8	9.395	A
3	932	233	733	925	921	1260	1.0	1.9	6.322	A
4	711	178	1213	713	712	445	0.9	1.2	6.583	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1040	260	723	1024	1020	1190	4.9	5.3	15.951	C
2	1096	274	893	1101	1096	855	2.8	2.7	9.481	A
3	907	227	741	912	916	1253	1.9	1.5	6.249	A
4	707	177	1202	710	712	451	1.2	1.3	6.608	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	821	205	562	820	839	988	5.3	2.1	9.201	A
2	910	228	715	913	909	667	2.7	2.0	7.836	A
3	731	183	604	733	750	1024	1.5	1.0	5.258	A
4	567	142	982	568	584	355	1.3	1.0	5.878	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	705	176	476	706	708	826	2.1	1.1	6.370	A
2	748	187	615	745	751	567	2.0	1.5	6.649	A
3	619	155	511	614	613	850	1.0	1.1	4.413	A
4	495	124	809	494	491	317	1.0	0.8	5.503	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	539	1115	0.483	538	525	0.0	1.1	6.573	A
			2	1, 4	176	1115	0.158	176	170	0.0	0.2	4.271	A
		2	1	(1, 2, 3, 4)	714			715	701	0.0	0.1	0.300	A
	Exit	1	1		835			835	822	0.0	0.0	0.000	A
2	Entry	1	1	3	410	1000	0.410	411	409	0.0	0.7	6.783	A
			2	1, 2, 4	346	1000	0.346	346	338	0.0	0.6	6.007	A
	Exit	1	1		585			585	574	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	322	1222	0.264	321	319	0.0	0.6	4.412	A
			2	2, 3	305	1222	0.249	305	302	0.0	0.4	4.326	A
		2	1	(1, 2, 3, 4)	627			627	625	0.0	0.0	0.000	A
	Exit	1	1		858			858	851	0.0	0.0	0.000	A
4	Entry	1	1	1	302	1000	0.302	303	298	0.0	0.5	6.140	A
			2	2, 3, 4	192	1000	0.192	189	189	0.0	0.5	4.860	A
	Exit	1	1		310			310	304	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	643	1075	0.598	642	630	1.1	1.6	8.031	A
			2	1, 4	208	1075	0.194	206	205	0.2	0.3	4.616	A
		2	1	(1, 2, 3, 4)	850			851	837	0.1	0.3	1.088	A
	Exit	1	1		992			992	984	0.0	0.0	0.000	A
2	Entry	1	1	3	507	1000	0.507	504	496	0.7	1.2	7.848	A
			2	1, 2, 4	402	1000	0.402	406	403	0.6	0.8	6.974	A
	Exit	1	1		700			700	690	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	386	1172	0.329	386	386	0.6	0.5	5.253	A
			2	2, 3	361	1172	0.308	360	358	0.4	0.6	4.851	A
		2	1	(1, 2, 3, 4)	746			746	744	0.0	0.0	0.011	A
	Exit	1	1		1031			1031	1017	0.0	0.0	0.000	A
4	Entry	1	1	1	362	1000	0.362	363	359	0.5	0.6	6.370	A
			2	2, 3, 4	223	1000	0.223	226	224	0.5	0.3	5.288	A
	Exit	1	1		370			370	369	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	772	1026	0.752	773	766	1.6	2.6	11.310	B
			2	1, 4	244	1026	0.238	243	245	0.3	0.5	5.270	A
		2	1	(1, 2, 3, 4)	1023			1016	1016	0.3	1.8	4.510	A
	Exit	1	1		1204			1204	1192	0.0	0.0	0.000	A
2	Entry	1	1	3	613	1000	0.613	613	606	1.2	1.9	10.515	B
			2	1, 2, 4	487	1000	0.487	490	488	0.8	0.9	8.004	A
	Exit	1	1		848			848	843	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	489	1107	0.442	484	479	0.5	1.1	6.531	A
			2	2, 3	442	1107	0.400	442	442	0.6	0.8	5.950	A
		2	1	(1, 2, 3, 4)	932			931	924	0.0	0.0	0.068	A
	Exit	1	1		1260			1260	1250	0.0	0.0	0.000	A
4	Entry	1	1	1	431	1000	0.431	433	432	0.6	0.7	7.320	A
			2	2, 3, 4	279	1000	0.279	279	279	0.3	0.5	5.447	A
	Exit	1	1		445			445	451	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	779	1025	0.760	775	770	2.6	2.6	11.705	B
			2	1, 4	249	1025	0.243	249	250	0.5	0.3	5.288	A
		2	1	(1, 2, 3, 4)	1040			1028	1019	1.8	2.4	5.794	A
	Exit	1	1		1190			1190	1204	0.0	0.0	0.000	A
2	Entry	1	1	3	606	1000	0.606	610	600	1.9	1.5	10.829	B
			2	1, 2, 4	491	1000	0.491	492	496	0.9	1.2	7.853	A
	Exit	1	1		855			855	844	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	467	1102	0.423	472	474	1.1	0.8	6.258	A
			2	2, 3	440	1102	0.399	440	443	0.8	0.7	6.203	A
		2	1	(1, 2, 3, 4)	907			907	915	0.0	0.0	0.018	A
	Exit	1	1		1253			1253	1247	0.0	0.0	0.000	A
4	Entry	1	1	1	425	1000	0.425	427	433	0.7	0.8	7.143	A
			2	2, 3, 4	282	1000	0.282	283	279	0.5	0.5	5.779	A
	Exit	1	1		451			451	448	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	626	1085	0.577	625	635	2.6	1.5	8.586	A
			2	1, 4	194	1085	0.179	194	204	0.3	0.3	4.672	A
		2	1	(1, 2, 3, 4)	821			820	834	2.4	0.3	1.642	A
	Exit	1	1		988			988	987	0.0	0.0	0.000	A
2	Entry	1	1	3	506	1000	0.506	504	505	1.5	1.3	8.523	A
			2	1, 2, 4	404	1000	0.404	409	404	1.2	0.8	6.977	A
	Exit	1	1		667			667	695	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	383	1177	0.326	385	385	0.8	0.5	5.249	A
			2	2, 3	347	1177	0.295	348	365	0.7	0.5	5.248	A
		2	1	(1, 2, 3, 4)	731			731	749	0.0	0.0	0.009	A
	Exit	1	1		1024			1024	1034	0.0	0.0	0.000	A
4	Entry	1	1	1	352	1000	0.352	354	359	0.8	0.6	6.339	A
			2	2, 3, 4	214	1000	0.214	214	225	0.5	0.4	5.145	A
	Exit	1	1		355			355	366	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	529	1123	0.471	531	535	1.5	0.8	6.524	A
			2	1, 4	175	1123	0.156	175	174	0.3	0.2	4.421	A
		2	1	(1, 2, 3, 4)	705			704	705	0.3	0.1	0.372	A
	Exit	1	1		826			826	822	0.0	0.0	0.000	A
2	Entry	1	1	3	412	1000	0.412	410	414	1.3	0.9	7.110	A
			2	1, 2, 4	336	1000	0.336	336	337	0.8	0.6	6.081	A
	Exit	1	1		567			567	567	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	326	1228	0.266	324	322	0.5	0.6	4.504	A
			2	2, 3	293	1228	0.238	290	290	0.5	0.5	4.309	A
		2	1	(1, 2, 3, 4)	619			619	613	0.0	0.0	0.002	A
	Exit	1	1		850			850	864	0.0	0.0	0.000	A
4	Entry	1	1	1	309	1000	0.309	308	300	0.6	0.6	5.783	A
			2	2, 3, 4	186	1000	0.185	186	192	0.4	0.2	5.064	A
	Exit	1	1		317			317	311	0.0	0.0	0.000	A

Alternative DS, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	9.46	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1093	0.00
2	1048	165.00
3	233	0.00
4	839	150.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	Alternative DS	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1016	100.000
2		ONE HOUR	✓	479	100.000
3		ONE HOUR	✓	1183	100.000
4		ONE HOUR	✓	286	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	455	209	352
	2	197	2	279	1
	3	330	642	2	209
	4	159	1	126	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	13.57	4.9	B	937	1405
2	5.60	1.1	A	432	648
3	8.62	3.4	A	1083	1625
4	4.71	0.5	A	265	397

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	766	192	571	767	757	524	0.0	1.4	6.266	A
2	357	89	521	358	361	818	0.0	0.5	4.925	A
3	874	219	419	875	890	460	0.0	1.3	5.017	A
4	221	55	877	219	216	417	0.0	0.3	4.541	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	901	225	701	900	903	623	1.4	2.1	8.331	A
2	430	107	629	431	431	971	0.5	0.5	5.147	A
3	1066	266	499	1068	1057	561	1.3	1.9	5.673	A
4	267	67	1057	267	262	510	0.3	0.4	4.614	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1136	284	846	1135	1114	768	2.1	4.9	13.567	B
2	517	129	770	519	525	1211	0.5	0.7	5.555	A
3	1304	326	608	1307	1305	681	1.9	3.0	8.622	A
4	319	80	1296	318	311	619	0.4	0.5	4.666	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1134	284	859	1132	1122	757	4.9	4.1	13.301	B
2	520	130	775	524	524	1217	0.7	0.8	5.596	A
3	1311	328	618	1306	1302	681	3.0	3.4	8.215	A
4	314	78	1301	314	313	622	0.5	0.3	4.708	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	918	230	681	921	928	611	4.1	2.0	8.849	A
2	425	106	633	421	430	970	0.8	1.1	5.252	A
3	1061	265	492	1058	1061	561	3.4	2.0	6.049	A
4	255	64	1036	257	256	514	0.3	0.3	4.560	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	765	191	576	768	770	510	2.0	1.3	6.556	A
2	344	86	531	344	358	814	1.1	0.4	4.866	A
3	884	221	419	885	892	456	2.0	1.2	5.037	A
4	213	53	872	214	218	432	0.3	0.2	4.421	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	504	1082	0.465	505	498	0.0	0.9	6.585	A
			2	1, 4	262	1082	0.243	262	259	0.0	0.4	4.708	A
		2	1	(1, 2, 3, 4)	766			766	763	0.0	0.1	0.320	A
	Exit	1	1		524			524	524	0.0	0.0	0.000	A
2	Entry	1	1	3	201	1000	0.201	202	206	0.0	0.3	4.964	A
			2	1, 2, 4	156	1000	0.156	157	155	0.0	0.2	4.873	A
	Exit	1	1		818			818	822	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	403	1279	0.315	403	409	0.0	0.6	4.871	A
			2	2, 3	472	1279	0.369	472	481	0.0	0.7	5.128	A
		2	1	(1, 2, 3, 4)	874			874	895	0.0	0.0	0.007	A
	Exit	1	1		460			460	461	0.0	0.0	0.000	A
4	Entry	1	1	1	122	1000	0.122	121	120	0.0	0.1	4.456	A
			2	2, 3, 4	99	1000	0.099	98	96	0.0	0.2	4.646	A
	Exit	1	1		417			417	418	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	582	1035	0.562	582	587	0.9	1.4	8.263	A
			2	1, 4	317	1035	0.306	317	315	0.4	0.4	5.575	A
		2	1	(1, 2, 3, 4)	901			898	904	0.1	0.3	0.998	A
	Exit	1	1		623			623	619	0.0	0.0	0.000	A
2	Entry	1	1	3	249	1000	0.249	250	249	0.3	0.3	5.256	A
			2	1, 2, 4	180	1000	0.180	182	181	0.2	0.2	4.997	A
	Exit	1	1		971			971	971	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	486	1234	0.394	487	484	0.6	0.8	5.189	A
			2	2, 3	580	1234	0.470	580	572	0.7	1.1	5.978	A
		2	1	(1, 2, 3, 4)	1066			1066	1060	0.0	0.0	0.056	A
	Exit	1	1		561			561	556	0.0	0.0	0.000	A
4	Entry	1	1	1	149	1000	0.149	149	145	0.1	0.2	4.690	A
			2	2, 3, 4	118	1000	0.118	118	117	0.2	0.2	4.520	A
	Exit	1	1		510			510	506	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	748	1004	0.745	748	730	1.4	2.4	10.938	B
			2	1, 4	386	1004	0.384	387	385	0.4	0.7	6.231	A
		2	1	(1, 2, 3, 4)	1136			1134	1120	0.3	1.8	4.228	A
	Exit	1	1		768			768	757	0.0	0.0	0.000	A
2	Entry	1	1	3	297	1000	0.297	298	305	0.3	0.4	5.874	A
			2	1, 2, 4	220	1000	0.220	220	220	0.2	0.3	5.114	A
	Exit	1	1		1211			1211	1209	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	600	1174	0.511	602	594	0.8	1.2	7.001	A
			2	2, 3	702	1174	0.598	705	711	1.1	1.5	8.678	A
		2	1	(1, 2, 3, 4)	1304			1302	1308	0.0	0.3	0.700	A
	Exit	1	1		681			681	675	0.0	0.0	0.000	A
4	Entry	1	1	1	180	1000	0.180	179	175	0.2	0.3	4.704	A
			2	2, 3, 4	138	1000	0.138	139	136	0.2	0.2	4.618	A
	Exit	1	1		619			619	614	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	741	1005	0.737	742	737	2.4	2.2	10.904	B
			2	1, 4	391	1005	0.389	390	386	0.7	0.7	6.546	A
		2	1	(1, 2, 3, 4)	1134			1132	1122	1.8	1.2	3.907	A
	Exit	1	1		757			757	755	0.0	0.0	0.000	A
2	Entry	1	1	3	295	1000	0.295	296	302	0.4	0.6	5.847	A
			2	1, 2, 4	225	1000	0.225	228	222	0.3	0.2	5.253	A
	Exit	1	1		1217			1217	1216	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	595	1169	0.509	592	591	1.2	1.1	6.721	A
			2	2, 3	712	1169	0.609	713	711	1.5	1.9	8.538	A
		2	1	(1, 2, 3, 4)	1311			1307	1303	0.3	0.4	0.499	A
	Exit	1	1		681			681	675	0.0	0.0	0.000	A
4	Entry	1	1	1	170	1000	0.170	170	175	0.3	0.2	4.744	A
			2	2, 3, 4	144	1000	0.144	145	138	0.2	0.1	4.663	A
	Exit	1	1		622			622	616	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	604	1040	0.581	606	604	2.2	1.3	8.536	A
			2	1, 4	315	1040	0.303	316	324	0.7	0.5	5.886	A
		2	1	(1, 2, 3, 4)	918			919	924	1.2	0.2	1.266	A
	Exit	1	1		611			611	615	0.0	0.0	0.000	A
2	Entry	1	1	3	246	1000	0.246	244	250	0.6	0.6	5.553	A
			2	1, 2, 4	179	1000	0.179	176	180	0.2	0.4	4.837	A
	Exit	1	1		970			970	986	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	499	1238	0.403	495	487	1.1	1.0	5.585	A
			2	2, 3	563	1238	0.455	562	574	1.9	0.9	6.317	A
		2	1	(1, 2, 3, 4)	1061			1061	1057	0.4	0.0	0.082	A
	Exit	1	1		561			561	556	0.0	0.0	0.000	A
4	Entry	1	1	1	139	1000	0.139	140	143	0.2	0.2	4.581	A
			2	2, 3, 4	116	1000	0.116	117	113	0.1	0.1	4.532	A
	Exit	1	1		514			514	518	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	496	1079	0.460	499	506	1.3	0.8	6.781	A
			2	1, 4	270	1079	0.251	270	263	0.5	0.5	5.128	A
		2	1	(1, 2, 3, 4)	765			767	767	0.2	0.0	0.347	A
	Exit	1	1		510			510	520	0.0	0.0	0.000	A
2	Entry	1	1	3	195	1000	0.195	195	206	0.6	0.2	5.082	A
			2	1, 2, 4	150	1000	0.150	149	153	0.4	0.2	4.575	A
	Exit	1	1		814			814	830	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	408	1278	0.319	409	406	1.0	0.4	4.789	A
			2	2, 3	476	1278	0.372	476	486	0.9	0.8	5.226	A
		2	1	(1, 2, 3, 4)	884			884	889	0.0	0.0	0.011	A
	Exit	1	1		456			456	467	0.0	0.0	0.000	A
4	Entry	1	1	1	115	1000	0.115	116	121	0.2	0.1	4.469	A
			2	2, 3, 4	99	1000	0.099	99	97	0.1	0.1	4.361	A
	Exit	1	1		432			432	421	0.0	0.0	0.000	A

Alternative DS, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	11.85	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1093	0.00
2	1048	165.00
3	233	0.00
4	839	150.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	Alternative DS	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	914	100.000
2		ONE HOUR	✓	1161	100.000
3		ONE HOUR	✓	904	100.000
4		ONE HOUR	✓	614	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	369	318	227
	2	418	0	743	0
	3	254	421	5	224
	4	400	3	211	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	14.27	4.5	B	845	1268
2	16.72	6.8	C	1071	1606
3	6.65	2.2	A	835	1252
4	6.69	1.5	A	566	849

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	690	172	474	687	686	817	0.0	1.0	5.878	A
2	859	215	559	862	875	603	0.0	2.0	7.624	A
3	677	169	476	677	685	944	0.0	0.8	4.513	A
4	471	118	823	469	471	330	0.0	0.9	5.770	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	824	206	571	824	820	974	1.0	2.0	7.810	A
2	1062	266	682	1056	1048	713	2.0	3.4	10.500	B
3	824	206	580	820	799	1158	0.8	1.1	5.020	A
4	542	136	1004	542	550	395	0.9	0.9	5.842	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1040	260	688	1045	1007	1207	2.0	3.3	12.506	B
2	1292	323	840	1293	1283	893	3.4	6.3	16.723	C
3	995	249	724	998	986	1409	1.1	2.2	6.654	A
4	675	169	1217	678	676	505	0.9	1.4	6.527	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1004	251	686	999	1009	1170	3.3	4.5	14.272	B
2	1297	324	835	1289	1282	850	6.3	6.8	16.688	C
3	999	250	710	1002	985	1414	2.2	2.0	6.648	A
4	670	167	1192	665	677	519	1.4	1.5	6.687	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	808	202	601	802	816	1003	4.5	2.2	8.399	A
2	1043	261	691	1043	1062	713	6.8	2.9	10.796	B
3	848	212	587	846	826	1147	2.0	1.4	5.445	A
4	579	145	1024	581	560	410	1.5	0.8	5.919	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	708	177	474	712	698	814	2.2	1.1	6.233	A
2	874	218	579	881	878	608	2.9	1.7	8.675	A
3	668	167	499	669	682	961	1.4	0.7	4.560	A
4	458	114	828	460	463	339	0.8	0.6	5.437	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	524	1124	0.466	523	513	0.0	0.8	6.242	A
			2	1, 4	166	1124	0.148	165	173	0.0	0.2	4.117	A
		2	1	(1, 2, 3, 4)	690			690	690	0.0	0.0	0.173	A
	Exit	1	1		817			817	814	0.0	0.0	0.000	A
2	Entry	1	1	3	553	1000	0.553	551	558	0.0	1.7	8.533	A
			2	1, 2, 4	306	1000	0.306	311	317	0.0	0.4	6.001	A
	Exit	1	1		603			603	599	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	356	1247	0.285	357	360	0.0	0.3	4.618	A
			2	2, 3	321	1247	0.257	320	325	0.0	0.5	4.395	A
		2	1	(1, 2, 3, 4)	677			677	689	0.0	0.0	0.000	A
	Exit	1	1		944			944	962	0.0	0.0	0.000	A
4	Entry	1	1	1	317	1000	0.317	313	306	0.0	0.7	6.181	A
			2	2, 3, 4	154	1000	0.154	155	165	0.0	0.2	5.016	A
	Exit	1	1		330			330	342	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	617	1081	0.571	620	621	0.8	1.3	7.884	A
			2	1, 4	204	1081	0.188	203	199	0.2	0.3	4.443	A
		2	1	(1, 2, 3, 4)	824			821	822	0.0	0.4	0.752	A
	Exit	1	1		974			974	961	0.0	0.0	0.000	A
2	Entry	1	1	3	687	1000	0.687	680	673	1.7	2.6	12.581	B
			2	1, 2, 4	375	1000	0.375	377	375	0.4	0.8	6.753	A
	Exit	1	1		713			713	704	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	437	1190	0.367	435	423	0.3	0.4	4.978	A
			2	2, 3	387	1190	0.325	384	376	0.5	0.7	5.059	A
		2	1	(1, 2, 3, 4)	824			824	800	0.0	0.0	0.004	A
	Exit	1	1		1158			1158	1158	0.0	0.0	0.000	A
4	Entry	1	1	1	357	1000	0.357	355	358	0.7	0.6	6.353	A
			2	2, 3, 4	186	1000	0.186	187	192	0.2	0.2	4.886	A
	Exit	1	1		395			395	395	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	782	1034	0.757	785	757	1.3	2.1	10.466	B
			2	1, 4	265	1034	0.256	259	251	0.3	0.7	5.362	A
		2	1	(1, 2, 3, 4)	1040			1047	1012	0.4	0.6	3.306	A
	Exit	1	1		1207			1207	1177	0.0	0.0	0.000	A
2	Entry	1	1	3	825	1000	0.825	829	825	2.6	5.4	21.803	C
			2	1, 2, 4	467	1000	0.467	464	458	0.8	1.0	7.480	A
	Exit	1	1		893			893	875	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	536	1111	0.482	537	522	0.4	1.1	6.847	A
			2	2, 3	459	1111	0.413	461	464	0.7	1.1	6.253	A
		2	1	(1, 2, 3, 4)	995			995	991	0.0	0.0	0.086	A
	Exit	1	1		1409			1409	1406	0.0	0.0	0.000	A
4	Entry	1	1	1	449	1000	0.449	451	441	0.6	1.1	7.292	A
			2	2, 3, 4	227	1000	0.227	227	235	0.2	0.3	5.106	A
	Exit	1	1		505			505	494	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	739	1034	0.714	738	755	2.1	2.5	11.255	B
			2	1, 4	261	1034	0.252	260	254	0.7	0.4	5.092	A
		2	1	(1, 2, 3, 4)	1004			999	1009	0.6	1.6	4.549	A
	Exit	1	1		1170			1170	1175	0.0	0.0	0.000	A
2	Entry	1	1	3	845	1000	0.845	840	822	5.4	5.8	21.949	C
			2	1, 2, 4	452	1000	0.452	450	460	1.0	1.0	7.348	A
	Exit	1	1		850			850	870	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	541	1118	0.484	544	519	1.1	1.0	6.756	A
			2	2, 3	459	1118	0.410	458	465	1.1	1.0	6.375	A
		2	1	(1, 2, 3, 4)	999			998	984	0.0	0.0	0.068	A
	Exit	1	1		1414			1414	1404	0.0	0.0	0.000	A
4	Entry	1	1	1	439	1000	0.439	435	445	1.1	1.0	7.423	A
			2	2, 3, 4	231	1000	0.231	228	233	0.3	0.5	5.284	A
	Exit	1	1		519			519	503	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	597	1070	0.558	596	611	2.5	1.5	8.337	A
			2	1, 4	207	1070	0.194	206	205	0.4	0.4	4.831	A
		2	1	(1, 2, 3, 4)	808			804	812	1.6	0.3	0.981	A
	Exit	1	1		1003			1003	974	0.0	0.0	0.000	A
2	Entry	1	1	3	663	1000	0.663	663	683	5.8	2.2	13.188	B
			2	1, 2, 4	380	1000	0.380	381	378	1.0	0.7	6.505	A
	Exit	1	1		713			713	711	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	449	1186	0.379	446	440	1.0	0.9	5.574	A
			2	2, 3	400	1186	0.337	402	386	1.0	0.5	5.285	A
		2	1	(1, 2, 3, 4)	848			848	823	0.0	0.0	0.011	A
	Exit	1	1		1147			1147	1164	0.0	0.0	0.000	A
4	Entry	1	1	1	380	1000	0.380	382	364	1.0	0.5	6.407	A
			2	2, 3, 4	200	1000	0.200	200	195	0.5	0.2	5.014	A
	Exit	1	1		410			410	414	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	539	1124	0.480	542	530	1.5	0.8	6.439	A
			2	1, 4	170	1124	0.151	170	168	0.4	0.3	4.308	A
		2	1	(1, 2, 3, 4)	708			710	694	0.3	0.1	0.319	A
	Exit	1	1		814			814	812	0.0	0.0	0.000	A
2	Entry	1	1	3	546	1001	0.546	552	562	2.2	1.3	10.310	B
			2	1, 2, 4	327	1001	0.327	329	317	0.7	0.4	5.819	A
	Exit	1	1		608			608	596	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	356	1234	0.288	355	366	0.9	0.4	4.645	A
			2	2, 3	312	1234	0.253	314	316	0.5	0.3	4.450	A
		2	1	(1, 2, 3, 4)	668			668	679	0.0	0.0	0.005	A
	Exit	1	1		961			961	973	0.0	0.0	0.000	A
4	Entry	1	1	1	297	1000	0.297	299	302	0.5	0.4	5.785	A
			2	2, 3, 4	161	1000	0.161	161	162	0.2	0.2	4.772	A
	Exit	1	1		339			339	341	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Filename: J3.j9
Path: \\uk.wspgroup.com\central data\Projects\62100xxx\62100616 - Aquind VO No.3\A DCO\POST SUBMISSION\D. EIA POST SUBMISSION\Transport\WIP\Reports\Highways England Response\20-08-21 HE Note TN03\HE Review 301120 \Observed Only
Report generation date: 08/12/2020 13:29:54

»Alternative DM, AM
»Alternative DM, PM
»Alternative DS, AM
»Alternative DS, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	[Lane Simulation] - Alternative DM							
Arm 1	1.4	5.35		A	1.1	5.46		A
Arm 2	1.8	6.06		A	3.3	7.88		A
Arm 3	41.9	57.57		F	2.5	5.14		A
Arm 4	1.1	5.75		A	2.7	8.35		A
	[Lane Simulation] - Alternative DS							
Arm 1	1.3	5.45		A	1.7	5.95		A
Arm 2	2.4	6.72		A	4.8	9.36		A
Arm 3	33.8	46.61		E	1.8	5.13		A
Arm 4	1.1	5.72		A	2.6	8.11		A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

File summary

File Description

Title	Junction 3, A3(M)
Location	
Site number	
Date	26/09/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	62100616
Enumerator	CORP\UKAJT009
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓			1015540362	142	27.33

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	Alternative DM	AM	ONE HOUR	07:45	09:15	15	✓
D4	Alternative DM	PM	ONE HOUR	16:45	18:15	15	✓
D5	Alternative DS	AM	ONE HOUR	07:45	09:15	15	✓
D6	Alternative DS	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	100.000	100.000

Alternative DM, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	31.60	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Hulbert Road east	
2	A3(M) south	
3	Hulbert Road west	
4	A3(M) north	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	4.10	7.50	24.9	40.0	145.0	9.0	
2	6.00	6.90	5.7	50.0	145.0	5.0	
3	7.60	7.60	0.0	45.0	145.0	4.0	
4	6.50	6.50	0.0	50.0	145.0	26.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.762	2597
2	0.951	2551
3	1.208	3386
4	0.716	2207

The slope and intercept shown above include any corrections and adjustments.

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
1	Evenly split	10.00
2	Evenly split	10.00
3	Evenly split	10.00
4	Evenly split	10.00

Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised
1	Entry	1	1	2, 3	✓	4.00		1000	99999	
			2	1, 3, 4	✓	4.00		1000	99999	
		2	1	(1, 2, 3, 4)		Infinity				
	Exit	1	1			Infinity				
2	Entry	1	1	3		Infinity		1000	99999	
			2	1, 2, 3, 4		Infinity		1000	99999	
	Exit	1	1			Infinity				
3	Entry	1	1	1, 4		Infinity		1000	99999	
			2	2, 3		Infinity		1000	99999	
	Exit	1	1			Infinity				
4	Entry	1	1	1		Infinity		1000	99999	
			2	2, 3, 4		Infinity		1000	99999	
	Exit	1	1			Infinity				

Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
1	Entry	1	1	0.381	1298
			2	0.381	1298
2	Entry	1	1	0.476	1276
			2	0.476	1276
3	Entry	1	1	0.604	1693
			2	0.604	1693
4	Entry	1	1	0.358	1104
			2	0.358	1104

Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm			
			1	2	3	4
1	1	1		✓	✓	
		2	✓		✓	✓
	2	1	✓	✓	✓	✓
2	1	1			✓	
		2	✓	✓	✓	✓
3	1	1	✓			✓
		2		✓	✓	
4	1	1	✓			
		2		✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	Alternative DM	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	669	100.000
2		ONE HOUR	✓	962	100.000
3		ONE HOUR	✓	2128	100.000
4		ONE HOUR	✓	524	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	15	459	195
	2	40	3	917	2
	3	325	1410	6	387
	4	212	3	309	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	5.35	1.4	A	615	923
2	6.06	1.8	A	872	1308
3	57.57	41.9	F	1959	2939
4	5.75	1.1	A	482	722

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	501	125	1318	499	508	433	0.0	0.8	4.575	A
2	726	181	731	724	729	1086	0.0	1.1	4.890	A
3	1594	399	180	1605	1587	1274	0.0	2.8	6.318	A
4	402	101	1349	402	402	437	0.0	0.6	5.078	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	611	153	1553	612	601	531	0.8	0.8	4.874	A
2	865	216	883	865	866	1283	1.1	1.4	5.196	A
3	1929	482	220	1915	1903	1528	2.8	7.0	10.462	B
4	472	118	1610	475	470	525	0.6	0.8	5.352	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	736	184	1841	734	731	629	0.8	1.4	5.285	A
2	1048	262	1066	1053	1057	1509	1.4	1.6	5.940	A
3	2358	589	262	2280	2253	1858	7.0	29.5	33.104	D
4	576	144	1895	575	576	647	0.8	1.0	5.724	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	738	184	1838	735	740	632	1.4	1.3	5.353	A
2	1031	258	1056	1035	1053	1517	1.6	1.8	6.059	A
3	2337	584	254	2289	2292	1836	29.5	41.9	57.568	F
4	574	143	1900	570	573	643	1.0	1.1	5.747	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	607	152	1622	609	605	517	1.3	0.7	4.889	A
2	846	212	875	846	865	1356	1.8	1.4	5.228	A
3	1926	481	216	1990	2046	1504	41.9	9.2	33.983	D
4	468	117	1671	468	476	536	1.1	0.6	5.350	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	498	124	1318	498	509	434	0.7	0.8	4.715	A
2	716	179	730	718	734	1086	1.4	1.0	4.915	A
3	1613	403	174	1618	1628	1273	9.2	3.1	8.422	A
4	397	99	1353	398	398	439	0.6	0.5	5.102	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	206	1000	0.206	205	208	0.0	0.3	4.193	A
			2	1, 3, 4	295	1000	0.295	294	301	0.0	0.5	4.809	A
		2	1	(1, 2, 3, 4)	501			501	511	0.0	0.0	0.017	A
	Exit	1	1		433			433	433	0.0	0.0	0.000	A
2	Entry	1	1	3	357	1001	0.356	356	357	0.0	0.5	4.822	A
			2	1, 2, 3, 4	369	1001	0.369	367	372	0.0	0.6	4.955	A
	Exit	1	1		1086			1086	1086	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	529	1584	0.334	531	532	0.0	0.6	3.885	A
			2	2, 3	1065	1584	0.672	1074	1054	0.0	2.2	7.545	A
	Exit	1	1		1274			1274	1287	0.0	0.0	0.000	A
4	Entry	1	1	1	161	1000	0.161	161	164	0.0	0.2	4.787	A
			2	2, 3, 4	241	1000	0.241	241	238	0.0	0.4	5.278	A
	Exit	1	1		437			437	440	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	244	1000	0.244	245	244	0.3	0.3	4.443	A
			2	1, 3, 4	367	1000	0.367	367	357	0.5	0.5	5.081	A
		2	1	(1, 2, 3, 4)	611			611	601	0.0	0.0	0.053	A
	Exit	1	1		531			531	525	0.0	0.0	0.000	A
2	Entry	1	1	3	431	1000	0.431	430	426	0.5	0.7	5.107	A
			2	1, 2, 3, 4	435	1000	0.435	435	440	0.6	0.8	5.282	A
	Exit	1	1		1283			1283	1271	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	643	1560	0.412	645	646	0.6	0.6	4.409	A
			2	2, 3	1286	1560	0.824	1270	1257	2.2	6.4	13.538	B
	Exit	1	1		1528			1528	1516	0.0	0.0	0.000	A
4	Entry	1	1	1	192	1000	0.192	194	191	0.2	0.2	4.986	A
			2	2, 3, 4	280	1000	0.280	281	280	0.4	0.5	5.600	A
	Exit	1	1		525			525	528	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	307	1000	0.307	307	304	0.3	0.5	4.823	A
			2	1, 3, 4	429	1000	0.429	427	427	0.5	0.9	5.477	A
		2	1	(1, 2, 3, 4)	736			736	734	0.0	0.0	0.079	A
	Exit	1	1		629			629	631	0.0	0.0	0.000	A
2	Entry	1	1	3	516	1000	0.516	519	518	0.7	0.8	5.869	A
			2	1, 2, 3, 4	532	1000	0.532	534	538	0.8	0.8	6.008	A
	Exit	1	1		1509			1509	1483	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	787	1535	0.513	787	785	0.6	1.2	5.273	A
			2	2, 3	1571	1535	1.024	1493	1468	6.4	28.3	47.176	E
	Exit	1	1		1858			1858	1861	0.0	0.0	0.000	A
4	Entry	1	1	1	230	1000	0.230	230	231	0.2	0.3	5.029	A
			2	2, 3, 4	347	1000	0.347	345	345	0.5	0.7	6.192	A
	Exit	1	1		647			647	642	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	308	1000	0.308	308	309	0.5	0.4	4.823	A
			2	1, 3, 4	429	1000	0.429	426	430	0.9	0.9	5.571	A
		2	1	(1, 2, 3, 4)	738			737	739	0.0	0.0	0.095	A
	Exit	1	1		632			632	627	0.0	0.0	0.000	A
2	Entry	1	1	3	501	1000	0.501	501	516	0.8	1.0	6.009	A
			2	1, 2, 3, 4	530	1000	0.530	532	538	0.8	0.8	6.107	A
	Exit	1	1		1517			1517	1523	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	792	1540	0.514	791	787	1.2	1.3	5.551	A
			2	2, 3	1545	1540	1.003	1498	1505	28.3	40.5	83.979	F
	Exit	1	1		1836			1836	1864	0.0	0.0	0.000	A
4	Entry	1	1	1	236	1000	0.236	233	228	0.3	0.4	5.156	A
			2	2, 3, 4	338	1000	0.338	337	345	0.7	0.6	6.140	A
	Exit	1	1		643			643	644	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	247	1000	0.247	249	249	0.4	0.2	4.518	A
			2	1, 3, 4	360	1000	0.360	360	356	0.9	0.5	5.099	A
		2	1	(1, 2, 3, 4)	607			607	603	0.0	0.0	0.029	A
	Exit	1	1		517			517	519	0.0	0.0	0.000	A
2	Entry	1	1	3	411	1000	0.411	411	422	1.0	0.7	5.166	A
			2	1, 2, 3, 4	436	1000	0.436	435	443	0.8	0.8	5.287	A
	Exit	1	1		1356			1356	1417	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	649	1562	0.415	646	642	1.3	0.9	4.384	A
			2	2, 3	1277	1562	0.817	1344	1404	40.5	8.3	48.826	E
	Exit	1	1		1504			1504	1530	0.0	0.0	0.000	A
4	Entry	1	1	1	192	1000	0.192	192	191	0.4	0.2	4.832	A
			2	2, 3, 4	276	1000	0.276	276	285	0.6	0.3	5.700	A
	Exit	1	1		536			536	527	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	204	1000	0.204	204	205	0.2	0.2	4.319	A
			2	1, 3, 4	294	1000	0.294	293	304	0.5	0.6	4.920	A
		2	1	(1, 2, 3, 4)	498			498	509	0.0	0.0	0.036	A
	Exit	1	1		434			434	436	0.0	0.0	0.000	A
2	Entry	1	1	3	349	1002	0.349	349	359	0.7	0.5	4.918	A
			2	1, 2, 3, 4	367	1002	0.366	368	375	0.8	0.5	4.913	A
	Exit	1	1		1086			1086	1094	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	543	1588	0.342	543	544	0.9	0.5	3.922	A
			2	2, 3	1070	1588	0.674	1076	1084	8.3	2.6	10.727	B
	Exit	1	1		1273			1273	1289	0.0	0.0	0.000	A
4	Entry	1	1	1	157	1000	0.157	159	161	0.2	0.1	4.829	A
			2	2, 3, 4	239	1000	0.239	240	237	0.3	0.4	5.287	A
	Exit	1	1		439			439	449	0.0	0.0	0.000	A

Alternative DM, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	6.68	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	Alternative DM	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	695	100.000
2		ONE HOUR	✓	1201	100.000
3		ONE HOUR	✓	1316	100.000
4		ONE HOUR	✓	850	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	45	487	163
	2	18	0	1183	0
	3	291	736	26	263
	4	326	0	524	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	5.46	1.1	A	638	957
2	7.88	3.3	A	1100	1650
3	5.14	2.5	A	1208	1812
4	8.35	2.7	A	786	1179

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	527	132	956	520	516	480	0.0	1.1	4.522	A
2	917	229	901	919	911	576	0.0	1.1	5.403	A
3	997	249	131	994	989	1689	0.0	1.3	3.617	A
4	637	159	800	636	639	323	0.0	1.1	5.933	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	644	161	1204	640	634	544	1.1	1.1	4.728	A
2	1091	273	1117	1093	1089	727	1.1	1.4	6.239	A
3	1211	303	157	1215	1182	2054	1.3	1.6	4.210	A
4	756	189	990	757	756	381	1.1	1.4	6.896	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	767	192	1438	774	773	718	1.1	0.9	5.458	A
2	1299	325	1322	1313	1304	889	1.4	2.6	7.881	A
3	1470	367	204	1469	1438	2431	1.6	2.5	5.144	A
4	948	237	1215	940	933	458	1.4	2.7	8.310	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	755	189	1408	755	767	713	0.9	0.9	5.352	A
2	1322	330	1309	1311	1300	852	2.6	3.3	7.655	A
3	1435	359	194	1431	1436	2427	2.5	2.3	5.011	A
4	957	239	1164	956	963	461	2.7	2.2	8.350	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	601	150	1157	608	618	546	0.9	0.5	4.793	A
2	1069	267	1071	1063	1076	693	3.3	2.0	6.392	A
3	1161	290	165	1163	1190	1969	2.3	1.4	4.186	A
4	765	191	943	760	762	385	2.2	1.7	7.039	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	532	133	962	532	534	473	0.5	0.8	4.779	A
2	904	226	923	904	910	573	2.0	1.2	5.276	A
3	973	243	134	971	974	1693	1.4	0.9	3.600	A
4	655	164	779	657	633	327	1.7	1.2	6.199	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	238	1001	0.238	235	233	0.0	0.5	4.296	A
			2	1, 3, 4	289	1001	0.289	285	284	0.0	0.6	4.704	A
		2	1	(1, 2, 3, 4)	527			527	521	0.0	0.0	0.003	A
	Exit	1	1		480			480	476	0.0	0.0	0.000	A
2	Entry	1	1	3	457	1000	0.457	457	455	0.0	0.5	5.232	A
			2	1, 2, 3, 4	458	1000	0.458	462	455	0.0	0.6	5.573	A
	Exit	1	1		576			576	587	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	429	1614	0.266	426	414	0.0	0.5	3.446	A
			2	2, 3	567	1614	0.351	566	575	0.0	0.8	3.740	A
	Exit	1	1		1689			1689	1675	0.0	0.0	0.000	A
4	Entry	1	1	1	247	1000	0.247	247	246	0.0	0.3	5.250	A
			2	2, 3, 4	389	1000	0.389	390	393	0.0	0.8	6.361	A
	Exit	1	1		323			323	317	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	293	1000	0.293	293	288	0.5	0.4	4.562	A
			2	1, 3, 4	351	1000	0.351	348	347	0.6	0.7	4.834	A
		2	1	(1, 2, 3, 4)	644			644	634	0.0	0.0	0.012	A
	Exit	1	1		544			544	554	0.0	0.0	0.000	A
2	Entry	1	1	3	540	1000	0.540	541	549	0.5	0.8	6.152	A
			2	1, 2, 3, 4	551	1000	0.551	553	540	0.6	0.6	6.327	A
	Exit	1	1		727			727	704	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	504	1598	0.315	506	498	0.5	0.4	3.632	A
			2	2, 3	707	1598	0.443	709	684	0.8	1.2	4.628	A
	Exit	1	1		2054			2054	2020	0.0	0.0	0.000	A
4	Entry	1	1	1	265	1000	0.265	263	277	0.3	0.5	5.538	A
			2	2, 3, 4	491	1000	0.491	495	479	0.8	0.9	7.698	A
	Exit	1	1		381			381	384	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	346	1000	0.346	349	346	0.4	0.4	5.230	A
			2	1, 3, 4	422	1000	0.422	425	427	0.7	0.5	5.471	A
		2	1	(1, 2, 3, 4)	767			768	773	0.0	0.0	0.098	A
	Exit	1	1		718			718	694	0.0	0.0	0.000	A
2	Entry	1	1	3	661	1000	0.661	665	647	0.8	1.5	7.922	A
			2	1, 2, 3, 4	637	1000	0.637	649	657	0.6	1.1	7.841	A
	Exit	1	1		889			889	862	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	612	1569	0.390	607	598	0.4	1.2	4.035	A
			2	2, 3	858	1569	0.547	862	840	1.2	1.3	5.935	A
	Exit	1	1		2431			2431	2432	0.0	0.0	0.000	A
4	Entry	1	1	1	369	1000	0.369	365	359	0.5	1.0	6.413	A
			2	2, 3, 4	578	1000	0.578	576	574	0.9	1.7	9.484	A
	Exit	1	1		458			458	460	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	346	1000	0.346	346	346	0.4	0.4	4.963	A
			2	1, 3, 4	408	1000	0.408	408	421	0.5	0.5	5.420	A
		2	1	(1, 2, 3, 4)	755			755	767	0.0	0.0	0.138	A
	Exit	1	1		713			713	703	0.0	0.0	0.000	A
2	Entry	1	1	3	671	1000	0.671	665	653	1.5	1.5	7.550	A
			2	1, 2, 3, 4	651	1000	0.651	646	647	1.1	1.8	7.760	A
	Exit	1	1		852			852	852	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	608	1576	0.386	604	608	1.2	1.0	4.310	A
			2	2, 3	827	1576	0.525	825	828	1.3	1.3	5.523	A
	Exit	1	1		2427			2427	2444	0.0	0.0	0.000	A
4	Entry	1	1	1	372	1000	0.372	375	384	1.0	0.5	6.678	A
			2	2, 3, 4	586	1000	0.586	581	599	1.7	1.7	9.362	A
	Exit	1	1		461			461	466	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	259	1000	0.259	263	270	0.4	0.3	4.613	A
			2	1, 3, 4	342	1000	0.342	345	348	0.5	0.2	4.905	A
		2	1	(1, 2, 3, 4)	601			601	617	0.0	0.0	0.016	A
	Exit	1	1		546			546	564	0.0	0.0	0.000	A
2	Entry	1	1	3	531	1000	0.531	529	536	1.5	1.0	6.379	A
			2	1, 2, 3, 4	538	1000	0.538	534	540	1.8	1.0	6.404	A
	Exit	1	1		693			693	704	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	481	1593	0.302	483	501	1.0	0.6	3.890	A
			2	2, 3	679	1593	0.427	680	689	1.3	0.8	4.401	A
	Exit	1	1		1969			1969	1992	0.0	0.0	0.000	A
4	Entry	1	1	1	285	1000	0.285	283	288	0.5	0.6	5.663	A
			2	2, 3, 4	480	1000	0.480	477	474	1.7	1.2	7.876	A
	Exit	1	1		385			385	387	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	240	1001	0.240	241	237	0.3	0.3	4.798	A
			2	1, 3, 4	291	1001	0.291	290	297	0.2	0.5	4.738	A
		2	1	(1, 2, 3, 4)	532			532	536	0.0	0.0	0.015	A
	Exit	1	1		473			473	466	0.0	0.0	0.000	A
2	Entry	1	1	3	447	1000	0.447	448	443	1.0	0.5	5.474	A
			2	1, 2, 3, 4	458	1000	0.458	456	467	1.0	0.7	5.087	A
	Exit	1	1		573			573	577	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	419	1612	0.260	419	412	0.6	0.4	3.250	A
			2	2, 3	553	1612	0.343	554	562	0.8	0.5	3.859	A
	Exit	1	1		1693			1693	1690	0.0	0.0	0.000	A
4	Entry	1	1	1	245	1000	0.245	247	237	0.6	0.4	5.198	A
			2	2, 3, 4	410	1000	0.410	411	396	1.2	0.8	6.801	A
	Exit	1	1		327			327	318	0.0	0.0	0.000	A

Alternative DS, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	25.62	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	Alternative DS	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	711	100.000
2		ONE HOUR	✓	1056	100.000
3		ONE HOUR	✓	2114	100.000
4		ONE HOUR	✓	502	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	15	491	205
	2	40	3	1011	2
	3	322	1370	6	416
	4	219	3	280	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	5.45	1.3	A	654	980
2	6.72	2.4	A	972	1458
3	46.61	33.8	E	1944	2916
4	5.72	1.1	A	464	696

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	527	132	1257	528	536	429	0.0	0.7	4.666	A
2	804	201	733	806	797	1051	0.0	1.2	5.045	A
3	1585	396	188	1591	1585	1351	0.0	2.7	6.464	A
4	374	93	1311	375	377	469	0.0	0.5	4.922	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	629	157	1485	627	637	537	0.7	1.0	5.019	A
2	939	235	870	941	947	1241	1.2	1.4	5.589	A
3	1893	473	225	1893	1883	1586	2.7	5.2	9.546	A
4	454	113	1565	456	457	553	0.5	0.5	5.277	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	791	198	1797	787	784	653	1.0	1.2	5.451	A
2	1175	294	1086	1173	1165	1499	1.4	2.4	6.721	A
3	2362	591	274	2305	2259	1984	5.2	25.0	27.871	D
4	562	140	1886	563	553	694	0.5	0.9	5.719	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	786	197	1804	786	789	648	1.2	1.3	5.427	A
2	1157	289	1090	1158	1163	1500	2.4	2.1	6.662	A
3	2333	583	279	2293	2288	1969	25.0	33.8	46.611	E
4	576	144	1877	575	558	694	0.9	1.1	5.656	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	644	161	1525	645	645	521	1.3	0.9	5.065	A
2	950	238	884	948	954	1286	2.1	1.6	5.576	A
3	1908	477	223	1941	2015	1609	33.8	7.9	25.698	D
4	447	112	1600	446	452	565	1.1	0.8	5.205	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	544	136	1235	542	544	438	0.9	0.9	4.789	A
2	805	201	739	803	799	1037	1.6	1.4	5.127	A
3	1580	395	188	1576	1611	1354	7.9	3.0	7.097	A
4	373	93	1300	373	377	465	0.8	0.5	4.754	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	213	1000	0.213	213	218	0.0	0.2	4.365	A
			2	1, 3, 4	314	1000	0.314	314	318	0.0	0.5	4.821	A
		2	1	(1, 2, 3, 4)	527			528	539	0.0	0.0	0.030	A
	Exit	1	1		429			429	436	0.0	0.0	0.000	A
2	Entry	1	1	3	394	1001	0.394	395	390	0.0	0.7	5.036	A
			2	1, 2, 3, 4	410	1001	0.410	411	408	0.0	0.5	5.053	A
	Exit	1	1		1051			1051	1042	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	552	1579	0.350	552	554	0.0	0.6	3.932	A
			2	2, 3	1033	1579	0.654	1039	1031	0.0	2.1	7.825	A
	Exit	1	1		1351			1351	1349	0.0	0.0	0.000	A
4	Entry	1	1	1	159	1000	0.159	160	163	0.0	0.2	4.742	A
			2	2, 3, 4	214	1000	0.214	215	215	0.0	0.3	5.057	A
	Exit	1	1		469			469	468	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	258	1000	0.258	257	263	0.2	0.4	4.510	A
			2	1, 3, 4	372	1000	0.372	370	375	0.5	0.6	5.305	A
		2	1	(1, 2, 3, 4)	629			629	639	0.0	0.0	0.043	A
	Exit	1	1		537			537	528	0.0	0.0	0.000	A
2	Entry	1	1	3	467	1000	0.467	469	468	0.7	0.7	5.542	A
			2	1, 2, 3, 4	471	1000	0.471	472	479	0.5	0.8	5.635	A
	Exit	1	1		1241			1241	1235	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	663	1557	0.426	663	660	0.6	0.9	4.707	A
			2	2, 3	1230	1557	0.790	1230	1222	2.1	4.3	12.133	B
	Exit	1	1		1586			1586	1604	0.0	0.0	0.000	A
4	Entry	1	1	1	202	1000	0.202	204	204	0.2	0.2	5.123	A
			2	2, 3, 4	251	1000	0.251	252	253	0.3	0.3	5.400	A
	Exit	1	1		553			553	558	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	329	1000	0.329	327	327	0.4	0.5	4.859	A
			2	1, 3, 4	461	1000	0.461	460	457	0.6	0.7	5.642	A
		2	1	(1, 2, 3, 4)	791			790	785	0.0	0.1	0.133	A
	Exit	1	1		653			653	637	0.0	0.0	0.000	A
2	Entry	1	1	3	583	1000	0.583	583	577	0.7	1.1	6.603	A
			2	1, 2, 3, 4	592	1000	0.592	590	589	0.8	1.3	6.836	A
	Exit	1	1		1499			1499	1464	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	828	1527	0.542	825	811	0.9	1.5	5.775	A
			2	2, 3	1534	1527	1.005	1480	1447	4.3	23.5	39.710	E
	Exit	1	1		1984			1984	1973	0.0	0.0	0.000	A
4	Entry	1	1	1	249	1000	0.249	249	240	0.2	0.3	5.606	A
			2	2, 3, 4	313	1000	0.313	314	312	0.3	0.5	5.806	A
	Exit	1	1		694			694	686	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	327	1000	0.327	327	330	0.5	0.5	4.782	A
			2	1, 3, 4	459	1000	0.459	459	459	0.7	0.8	5.686	A
		2	1	(1, 2, 3, 4)	786			787	790	0.1	0.0	0.124	A
	Exit	1	1		648			648	643	0.0	0.0	0.000	A
2	Entry	1	1	3	568	1000	0.568	569	575	1.1	1.0	6.553	A
			2	1, 2, 3, 4	589	1000	0.589	589	588	1.3	1.2	6.769	A
	Exit	1	1		1500			1500	1491	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	812	1524	0.533	812	815	1.5	1.4	5.740	A
			2	2, 3	1521	1524	0.998	1481	1473	23.5	32.4	68.698	F
	Exit	1	1		1969			1969	1975	0.0	0.0	0.000	A
4	Entry	1	1	1	254	1000	0.254	255	244	0.3	0.4	5.183	A
			2	2, 3, 4	321	1000	0.321	320	314	0.5	0.6	6.026	A
	Exit	1	1		694			694	690	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	266	1000	0.266	266	263	0.5	0.3	4.687	A
			2	1, 3, 4	379	1000	0.379	379	382	0.8	0.5	5.236	A
		2	1	(1, 2, 3, 4)	644			644	643	0.0	0.0	0.053	A
	Exit	1	1		521			521	526	0.0	0.0	0.000	A
2	Entry	1	1	3	463	1000	0.463	461	469	1.0	0.8	5.512	A
			2	1, 2, 3, 4	487	1000	0.487	486	485	1.2	0.8	5.637	A
	Exit	1	1		1286			1286	1357	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	667	1558	0.428	668	670	1.4	1.0	4.714	A
			2	2, 3	1241	1558	0.797	1274	1345	32.4	6.9	36.988	E
	Exit	1	1		1609			1609	1615	0.0	0.0	0.000	A
4	Entry	1	1	1	198	1000	0.198	198	200	0.4	0.3	4.795	A
			2	2, 3, 4	249	1000	0.249	248	252	0.6	0.5	5.532	A
	Exit	1	1		565			565	567	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	223	1000	0.223	222	220	0.3	0.3	4.447	A
			2	1, 3, 4	321	1000	0.321	319	325	0.5	0.6	4.966	A
		2	1	(1, 2, 3, 4)	544			544	544	0.0	0.0	0.034	A
	Exit	1	1		438			438	437	0.0	0.0	0.000	A
2	Entry	1	1	3	399	1000	0.399	398	392	0.8	0.7	5.114	A
			2	1, 2, 3, 4	406	1000	0.406	405	407	0.8	0.8	5.139	A
	Exit	1	1		1037			1037	1067	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	550	1579	0.349	550	556	1.0	0.7	3.940	A
			2	2, 3	1029	1579	0.652	1026	1055	6.9	2.3	8.788	A
	Exit	1	1		1354			1354	1353	0.0	0.0	0.000	A
4	Entry	1	1	1	166	1000	0.166	168	167	0.3	0.1	4.565	A
			2	2, 3, 4	207	1000	0.207	206	210	0.5	0.3	4.904	A
	Exit	1	1		465			465	474	0.0	0.0	0.000	A

Alternative DS, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Large Roundabout		1, 2, 3, 4	7.26	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	1822	0.00
2	1020	145.00
3	252	0.00
4	1878	130.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	Alternative DS	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	754	100.000
2		ONE HOUR	✓	1290	100.000
3		ONE HOUR	✓	1145	100.000
4		ONE HOUR	✓	834	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	45	476	233
	2	18	0	1272	0
	3	296	736	26	87
	4	333	0	501	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	5.95	1.7	A	695	1042
2	9.36	4.8	A	1183	1775
3	5.13	1.8	A	1038	1557
4	8.11	2.6	A	760	1140

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	589	147	935	588	580	496	0.0	0.9	4.747	A
2	967	242	944	965	970	580	0.0	1.5	5.591	A
3	849	212	193	848	856	1716	0.0	1.0	3.783	A
4	630	158	798	633	637	243	0.0	1.0	6.037	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	678	170	1126	679	674	578	0.9	1.1	5.219	A
2	1163	291	1118	1167	1172	688	1.5	1.9	6.537	A
3	1015	254	223	1013	1017	2062	1.0	1.4	4.152	A
4	752	188	954	750	749	282	1.0	1.5	7.038	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	841	210	1397	841	839	700	1.1	1.5	5.949	A
2	1407	352	1375	1401	1398	862	1.9	4.0	8.633	A
3	1258	315	285	1261	1254	2492	1.4	1.8	5.123	A
4	915	229	1185	911	917	361	1.5	2.6	8.112	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	837	209	1379	829	825	705	1.5	1.7	5.750	A
2	1430	357	1355	1413	1416	853	4.0	4.8	9.357	A
3	1242	310	287	1248	1257	2482	1.8	1.6	5.127	A
4	905	226	1179	904	919	355	2.6	2.1	7.923	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	667	167	1121	666	687	588	1.7	1.0	5.304	A
2	1146	287	1083	1138	1169	705	4.8	2.5	6.715	A
3	1019	255	223	1019	1027	1998	1.6	1.2	4.244	A
4	739	185	969	740	749	273	2.1	1.5	6.821	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	557	139	919	554	568	490	1.0	1.0	4.893	A
2	987	247	907	982	985	565	2.5	1.8	5.562	A
3	844	211	193	846	858	1696	1.2	0.8	3.603	A
4	620	155	794	615	624	246	1.5	1.1	5.979	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	241	1001	0.241	240	237	0.0	0.4	4.505	A
			2	1, 3, 4	348	1001	0.348	348	343	0.0	0.5	4.865	A
		2	1	(1, 2, 3, 4)	589			589	584	0.0	0.0	0.030	A
	Exit	1	1		496			496	493	0.0	0.0	0.000	A
2	Entry	1	1	3	476	1000	0.476	476	481	0.0	0.7	5.590	A
			2	1, 2, 3, 4	490	1000	0.490	489	489	0.0	0.8	5.591	A
	Exit	1	1		580			580	585	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	282	1576	0.179	282	286	0.0	0.2	3.146	A
			2	2, 3	567	1576	0.360	566	570	0.0	0.7	4.102	A
	Exit	1	1		1716			1716	1723	0.0	0.0	0.000	A
4	Entry	1	1	1	262	1000	0.262	264	258	0.0	0.3	5.469	A
			2	2, 3, 4	368	1000	0.368	369	378	0.0	0.7	6.423	A
	Exit	1	1		243			243	243	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	289	1000	0.289	289	282	0.4	0.4	4.603	A
			2	1, 3, 4	390	1000	0.390	390	391	0.5	0.7	5.500	A
		2	1	(1, 2, 3, 4)	678			679	674	0.0	0.0	0.093	A
	Exit	1	1		578			578	582	0.0	0.0	0.000	A
2	Entry	1	1	3	584	1000	0.584	587	584	0.7	0.9	6.519	A
			2	1, 2, 3, 4	578	1000	0.578	580	588	0.8	1.0	6.555	A
	Exit	1	1		688			688	690	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	343	1558	0.220	341	344	0.2	0.4	3.274	A
			2	2, 3	673	1558	0.432	672	673	0.7	1.0	4.598	A
	Exit	1	1		2062			2062	2054	0.0	0.0	0.000	A
4	Entry	1	1	1	296	1000	0.296	295	300	0.3	0.6	5.849	A
			2	2, 3, 4	457	1000	0.457	454	449	0.7	1.0	7.835	A
	Exit	1	1		282			282	286	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	355	1000	0.355	355	354	0.4	0.6	5.242	A
			2	1, 3, 4	487	1000	0.487	485	485	0.7	0.9	6.087	A
		2	1	(1, 2, 3, 4)	841			842	841	0.0	0.0	0.218	A
	Exit	1	1		700			700	705	0.0	0.0	0.000	A
2	Entry	1	1	3	700	1000	0.700	698	699	0.9	1.9	8.601	A
			2	1, 2, 3, 4	707	1000	0.707	703	699	1.0	2.1	8.665	A
	Exit	1	1		862			862	854	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	423	1521	0.278	424	424	0.4	0.3	3.678	A
			2	2, 3	836	1521	0.550	837	829	1.0	1.5	5.856	A
	Exit	1	1		2492			2492	2488	0.0	0.0	0.000	A
4	Entry	1	1	1	354	1000	0.354	352	358	0.6	0.9	6.329	A
			2	2, 3, 4	560	1000	0.560	559	559	1.0	1.7	9.252	A
	Exit	1	1		361			361	360	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	351	1000	0.351	349	345	0.6	0.6	5.098	A
			2	1, 3, 4	485	1000	0.485	481	480	0.9	1.0	5.887	A
		2	1	(1, 2, 3, 4)	837			836	826	0.0	0.1	0.190	A
	Exit	1	1		705			705	714	0.0	0.0	0.000	A
2	Entry	1	1	3	716	1000	0.716	708	706	1.9	2.3	9.315	A
			2	1, 2, 3, 4	714	1000	0.714	706	710	2.1	2.5	9.399	A
	Exit	1	1		853			853	855	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	411	1520	0.271	415	421	0.3	0.4	3.546	A
			2	2, 3	830	1520	0.546	833	836	1.5	1.3	5.925	A
	Exit	1	1		2482			2482	2488	0.0	0.0	0.000	A
4	Entry	1	1	1	359	1000	0.359	359	369	0.9	0.7	6.820	A
			2	2, 3, 4	546	1000	0.546	546	550	1.7	1.4	8.663	A
	Exit	1	1		355			355	360	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	281	1000	0.281	280	287	0.6	0.4	4.894	A
			2	1, 3, 4	386	1000	0.386	387	401	1.0	0.6	5.403	A
		2	1	(1, 2, 3, 4)	667			668	685	0.1	0.0	0.116	A
	Exit	1	1		588			588	585	0.0	0.0	0.000	A
2	Entry	1	1	3	564	1000	0.564	561	579	2.3	1.2	6.746	A
			2	1, 2, 3, 4	582	1000	0.582	577	590	2.5	1.2	6.684	A
	Exit	1	1		705			705	703	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	335	1558	0.215	335	341	0.4	0.3	3.248	A
			2	2, 3	683	1558	0.439	685	686	1.3	0.9	4.742	A
	Exit	1	1		1998			1998	2057	0.0	0.0	0.000	A
4	Entry	1	1	1	303	1000	0.303	304	302	0.7	0.6	5.955	A
			2	2, 3, 4	436	1000	0.436	437	447	1.4	0.9	7.408	A
	Exit	1	1		273			273	287	0.0	0.0	0.000	A

18:00 - 18:15

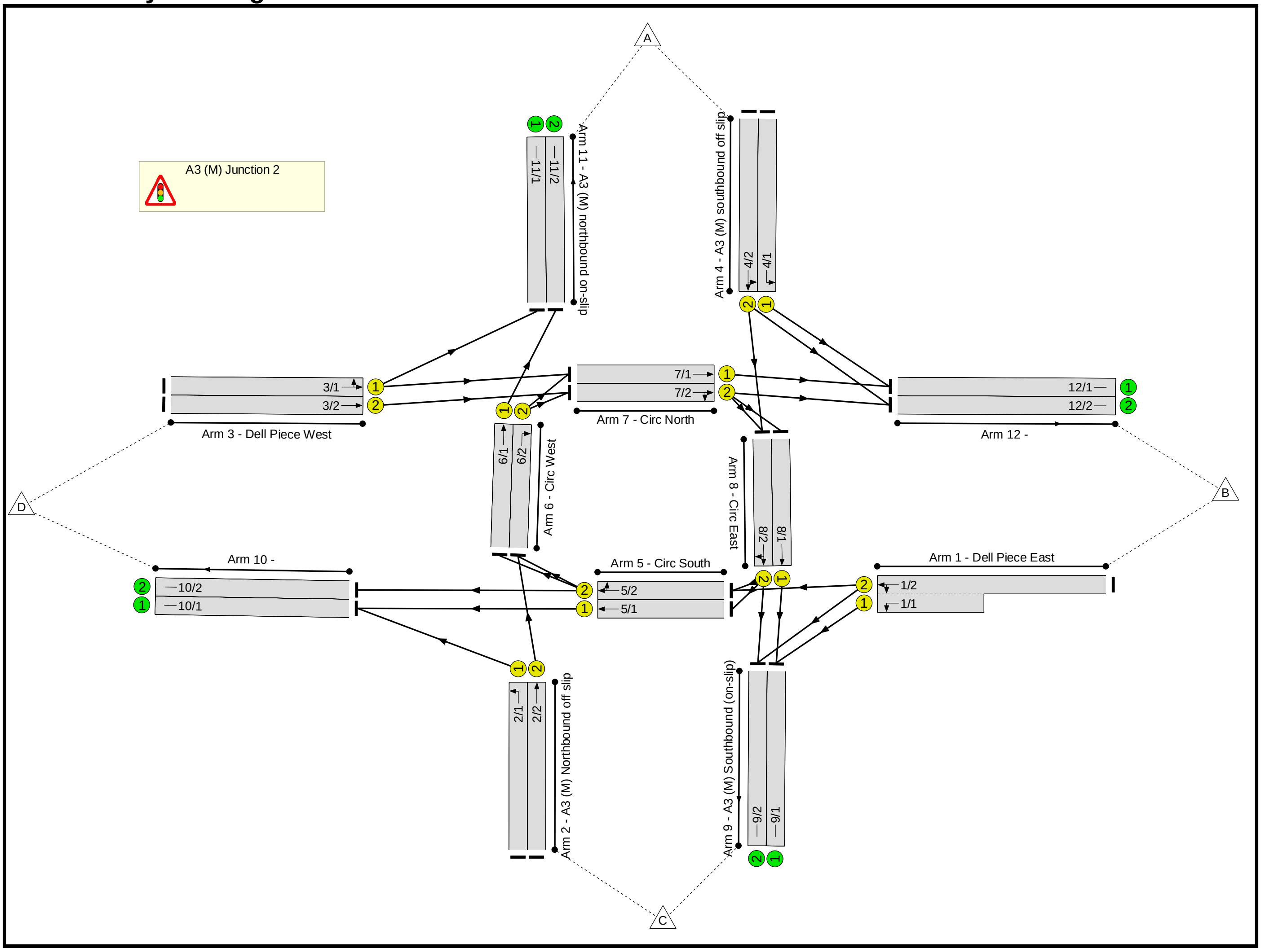
Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2, 3	224	1003	0.223	223	233	0.4	0.3	4.378	A
			2	1, 3, 4	333	1003	0.332	330	336	0.6	0.6	5.150	A
		2	1	(1, 2, 3, 4)	557			556	568	0.0	0.0	0.060	A
	Exit	1	1		490			490	493	0.0	0.0	0.000	A
2	Entry	1	1	3	484	1000	0.484	482	492	1.2	0.9	5.543	A
			2	1, 2, 3, 4	502	1000	0.502	500	493	1.2	0.9	5.581	A
	Exit	1	1		565			565	582	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	291	1576	0.184	291	292	0.3	0.3	3.031	A
			2	2, 3	554	1576	0.351	555	566	0.9	0.5	3.897	A
	Exit	1	1		1696			1696	1715	0.0	0.0	0.000	A
4	Entry	1	1	1	253	1000	0.253	251	254	0.6	0.4	5.283	A
			2	2, 3, 4	367	1000	0.367	364	371	0.9	0.7	6.451	A
	Exit	1	1		246			246	246	0.0	0.0	0.000	A

Full Input Data And Results

User and Project Details

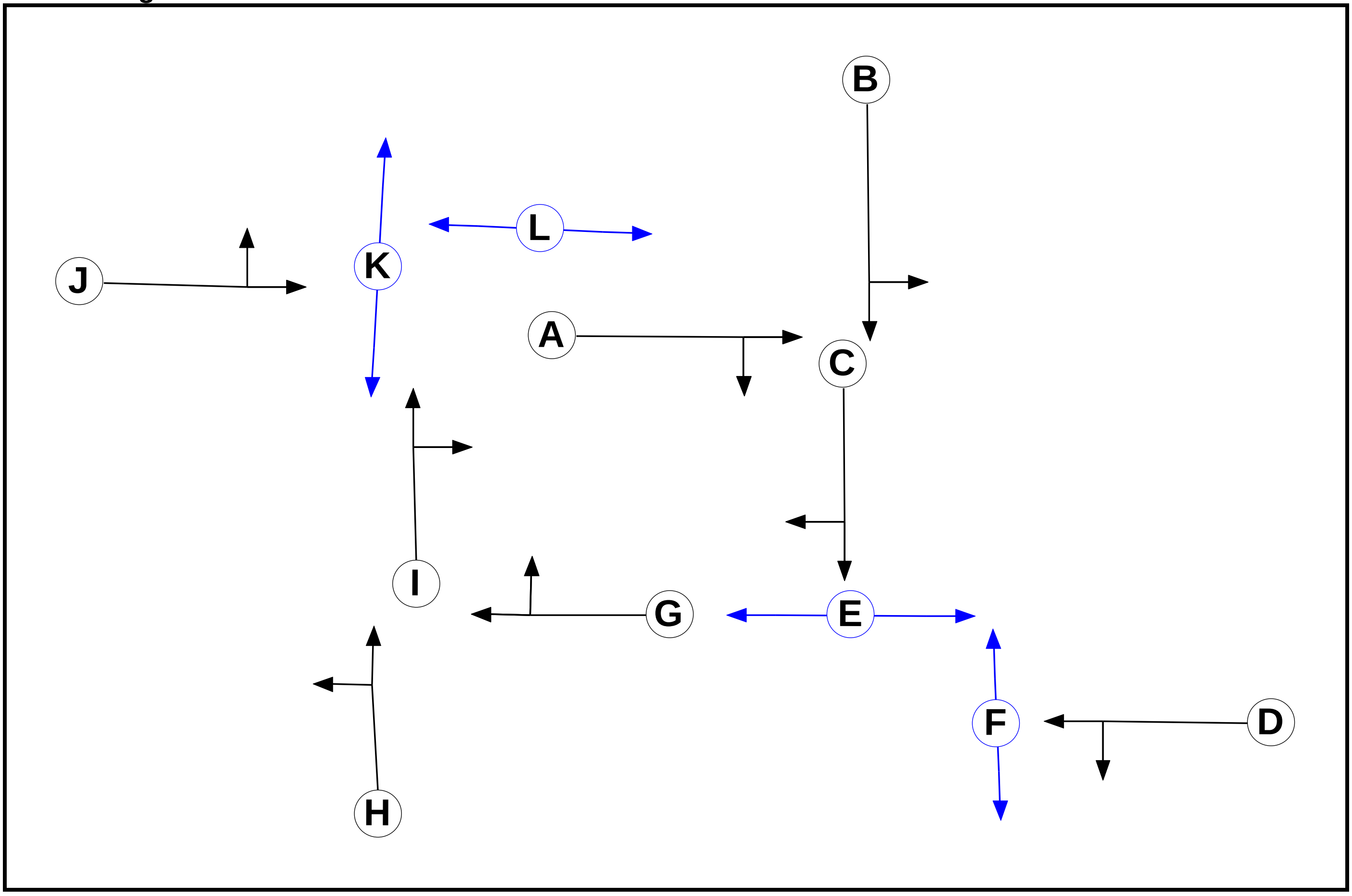
Project:	
Title:	
Location:	
Additional detail:	
File name:	A3 (M) J2.lsg3x
Author:	
Company:	
Address:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		6	2
D	Traffic	2		6	2
E	Pedestrian	2		6	6
F	Pedestrian	2		6	6
G	Traffic	3		7	7
H	Traffic	3		7	7
I	Traffic	4		6	2
J	Traffic	4		6	2
K	Pedestrian	4		6	6
L	Pedestrian	4		6	6

Full Input Data And Results

Phase Intergreens Matrix

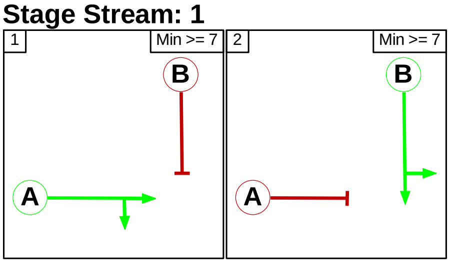
		Starting Phase											
		A	B	C	D	E	F	G	H	I	J	K	L
Terminating Phase	A		6	-	-	-	-	-	-	-	-	-	-
	B	6		-	-	-	-	-	-	-	-	-	-
	C	-	-		6	6	-	-	-	-	-	-	-
	D	-	-	6		-	6	-	-	-	-	-	-
	E	-	-	10	-		-	-	-	-	-	-	-
	F	-	-	-	10	-		-	-	-	-	-	-
	G	-	-	-	-	-	-		6	-	-	-	-
	H	-	-	-	-	-	-	6		-	-	-	-
	I	-	-	-	-	-	-	-	-		6	-	6
	J	-	-	-	-	-	-	-	-	6		6	-
	K	-	-	-	-	-	-	-	-	-	10		-
	L	-	-	-	-	-	-	-	-	10	-	-	

Phases in Stage

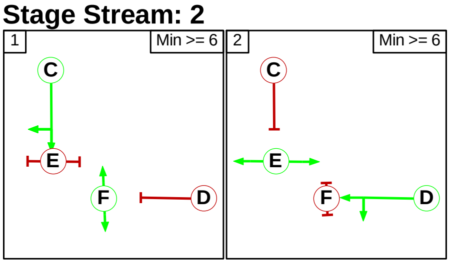
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C F
2	2	D E
3	1	G
3	2	H
4	1	I K
4	2	J L

Stage Diagram

Stage Stream: 1

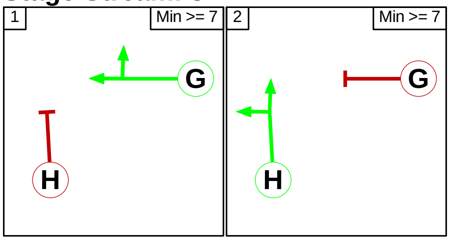


Stage Stream: 2

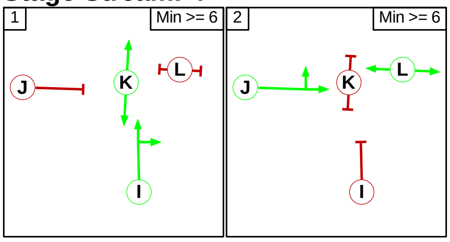


Full Input Data And Results

Stage Stream: 3



Stage Stream: 4



Phase Delays

Stage Stream: 1

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

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	C	Losing	4	4
2	1	D	Losing	4	4

Stage Stream: 3

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

Stage Stream: 4

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	I	Losing	4	4
2	1	J	Losing	4	4

Prohibited Stage Change

Stage Stream: 1

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		10
	2	10	

Full Input Data And Results

Stage Stream: 3

	To Stage	
From Stage	1	2
1		6
2	6	

Stage Stream: 4

	To Stage	
From Stage	1	2
1		10
2	10	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A3 (M) Junction 2
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: A3 (M) Junction 2												
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 (Dell Piece East)	U	D	2	3	8.7	User	1900	-	-	-	-	-
1/2 (Dell Piece East)	U	D	2	3	60.0	User	1900	-	-	-	-	-
2/1 (A3 (M) Northbound off slip)	U	H	2	3	60.0	User	1800	-	-	-	-	-
2/2 (A3 (M) Northbound off slip)	U	H	2	3	60.0	User	1800	-	-	-	-	-
3/1 (Dell Piece West)	U	J	2	3	60.0	User	1800	-	-	-	-	-
3/2 (Dell Piece West)	U	J	2	3	60.0	User	1800	-	-	-	-	-
4/1 (A3 (M) southbound off slip)	U	B	2	3	60.0	User	1800	-	-	-	-	-
4/2 (A3 (M) southbound off slip)	U	B	2	3	60.0	User	1800	-	-	-	-	-
5/1 (Circ South)	U	G	2	3	15.7	User	1900	-	-	-	-	-
5/2 (Circ South)	U	G	2	3	15.7	User	1900	-	-	-	-	-
6/1 (Circ West)	U	I	2	3	7.0	User	1800	-	-	-	-	-
6/2 (Circ West)	U	I	2	3	7.0	User	1800	-	-	-	-	-
7/1 (Circ North)	U	A	2	3	15.7	User	1800	-	-	-	-	-
7/2 (Circ North)	U	A	2	3	15.7	User	1800	-	-	-	-	-
8/1 (Circ East)	U	C	2	3	7.0	User	1900	-	-	-	-	-
8/2 (Circ East)	U	C	2	3	7.0	User	1900	-	-	-	-	-
9/1 (A3 (M) Southbound (on-slip))	U		2	3	60.0	Inf	-	-	-	-	-	-
9/2 (A3 (M) Southbound (on-slip))	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1	U		2	3	60.0	Inf	-	-	-	-	-	-

10/2	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (A3 (M) northbound on-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A3 (M) northbound on-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Alternative DM AM'	08:00	09:00	01:00	
2: 'Alternative DM PM'	17:00	18:00	01:00	
3: 'Alternative DS AM'	08:00	09:00	01:00	
4: 'Alternative DS PM'	17:00	18:00	01:00	

Scenario 1: 'Alternative DM AM' (FG1: 'Alternative DM AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
Origin		A	B	C	D	Tot.
	A	0	175	1	118	294
	B	353	0	489	214	1056
	C	1	199	2	254	456
	D	256	323	597	2	1178
	Tot.	610	697	1089	588	2984

Traffic Lane Flows

Lane	Scenario 1: Alternative DM AM
Junction: A3 (M) Junction 2	
1/1 (short)	489
1/2 (with short)	1056(In) 567(Out)
2/1	254
2/2	199
3/1	579
3/2	597
4/1	147
4/2	147
5/1	59
5/2	626
6/1	353
6/2	199
7/1	423
7/2	696
8/1	389
8/2	327
9/1	878
9/2	209
10/1	313
10/2	273
11/1	256
11/2	353
12/1	570
12/2	127

Lane Saturation Flows

Junction: A3 (M) Junction 2								
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 (Dell Piece East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (Dell Piece East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A3 (M) Northbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
2/2 (A3 (M) Northbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (Dell Piece West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/2 (Dell Piece West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A3 (M) southbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
4/2 (A3 (M) southbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
5/1 (Circ South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Circ South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Circ West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
6/2 (Circ West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
7/1 (Circ North Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Circ North Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
8/1 (Circ East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Circ East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A3 (M) Southbound (on-slip) Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A3 (M) Southbound (on-slip) Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
11/1 (A3 (M) northbound on-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (A3 (M) northbound on-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'Alternative DM PM' (FG2: 'Alternative DM PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	392	3	246	641
	B	227	0	370	335	932
	C	0	449	0	556	1005
	D	183	249	396	5	833
	Tot.	410	1090	769	1142	3411

Traffic Lane Flows

Lane	Scenario 2: Alternative DM PM
Junction: A3 (M) Junction 2	
1/1 (short)	370
1/2 (with short)	932(In) 562(Out)
2/1	556
2/2	449
3/1	414
3/2	414
4/1	320
4/2	321
5/1	123
5/2	685
6/1	227
6/2	449
7/1	456
7/2	638
8/1	198
8/2	447
9/1	568
9/2	201
10/1	679
10/2	458
11/1	183
11/2	227
12/1	776
12/2	314

Lane Saturation Flows

Junction: A3 (M) Junction 2								
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 (Dell Piece East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (Dell Piece East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A3 (M) Northbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
2/2 (A3 (M) Northbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (Dell Piece West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/2 (Dell Piece West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A3 (M) southbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
4/2 (A3 (M) southbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
5/1 (Circ South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Circ South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Circ West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
6/2 (Circ West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
7/1 (Circ North Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Circ North Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
8/1 (Circ East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Circ East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A3 (M) Southbound (on-slip) Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A3 (M) Southbound (on-slip) Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
11/1 (A3 (M) northbound on-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (A3 (M) northbound on-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: 'Alternative DS AM' (FG3: 'Alternative DS AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	159	1	126	286
	B	352	0	455	209	1016
	C	1	197	2	279	479
	D	209	330	642	2	1183
	Tot.	562	686	1100	616	2964

Traffic Lane Flows

Lane	Scenario 3: Alternative DS AM
Junction: A3 (M) Junction 2	
1/1 (short)	455
1/2 (with short)	1016(In) 561(Out)
2/1	279
2/2	197
3/1	539
3/2	642
4/1	143
4/2	143
5/1	63
5/2	624
6/1	352
6/2	197
7/1	429
7/2	740
8/1	350
8/2	419
9/1	805
9/2	293
10/1	342
10/2	272
11/1	209
11/2	352
12/1	572
12/2	114

Lane Saturation Flows

Junction: A3 (M) Junction 2								
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 (Dell Piece East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (Dell Piece East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A3 (M) Northbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
2/2 (A3 (M) Northbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (Dell Piece West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/2 (Dell Piece West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A3 (M) southbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
4/2 (A3 (M) southbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
5/1 (Circ South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Circ South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Circ West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
6/2 (Circ West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
7/1 (Circ North Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Circ North Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
8/1 (Circ East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Circ East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A3 (M) Southbound (on-slip) Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A3 (M) Southbound (on-slip) Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
11/1 (A3 (M) northbound on-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (A3 (M) northbound on-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 4: 'Alternative DS PM' (FG4: 'Alternative DS PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	400	3	211	614
	B	227	0	369	318	914
	C	0	418	0	743	1161
	D	224	254	421	5	904
	Tot.	451	1072	793	1277	3593

Traffic Lane Flows

Lane	Scenario 4: Alternative DS PM
Junction: A3 (M) Junction 2	
1/1 (short)	369
1/2 (with short)	914(In) 545(Out)
2/1	743
2/2	418
3/1	449
3/2	450
4/1	307
4/2	307
5/1	105
5/2	651
6/1	227
6/2	418
7/1	434
7/2	659
8/1	211
8/2	424
9/1	580
9/2	213
10/1	848
10/2	424
11/1	224
11/2	227
12/1	741
12/2	331

Lane Saturation Flows

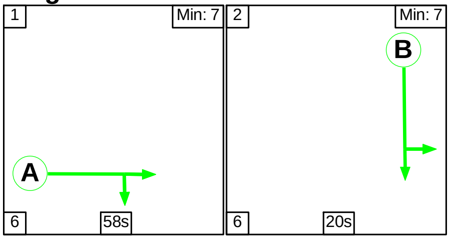
Junction: A3 (M) Junction 2								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Dell Piece East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (Dell Piece East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A3 (M) Northbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
2/2 (A3 (M) Northbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (Dell Piece West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/2 (Dell Piece West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A3 (M) southbound off slip Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
4/2 (A3 (M) southbound off slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
5/1 (Circ South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Circ South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Circ West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
6/2 (Circ West Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
7/1 (Circ North Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Circ North Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
8/1 (Circ East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Circ East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A3 (M) Southbound (on-slip) Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A3 (M) Southbound (on-slip) Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
11/1 (A3 (M) northbound on-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (A3 (M) northbound on-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

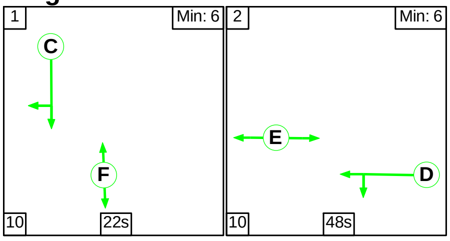
Scenario 1: 'Alternative DM AM' (FG1: 'Alternative DM AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

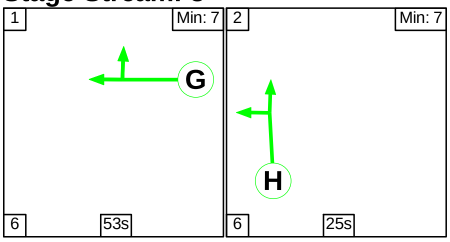
Stage Stream: 1



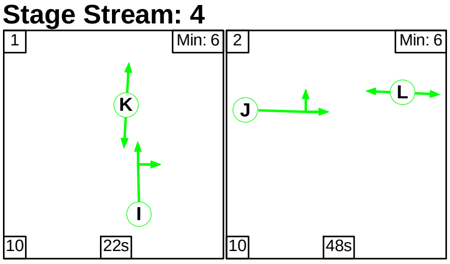
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	58	20
Change Point	15	79

Stage Stream: 2

Stage	1	2
Duration	22	48
Change Point	24	56

Stage Stream: 3

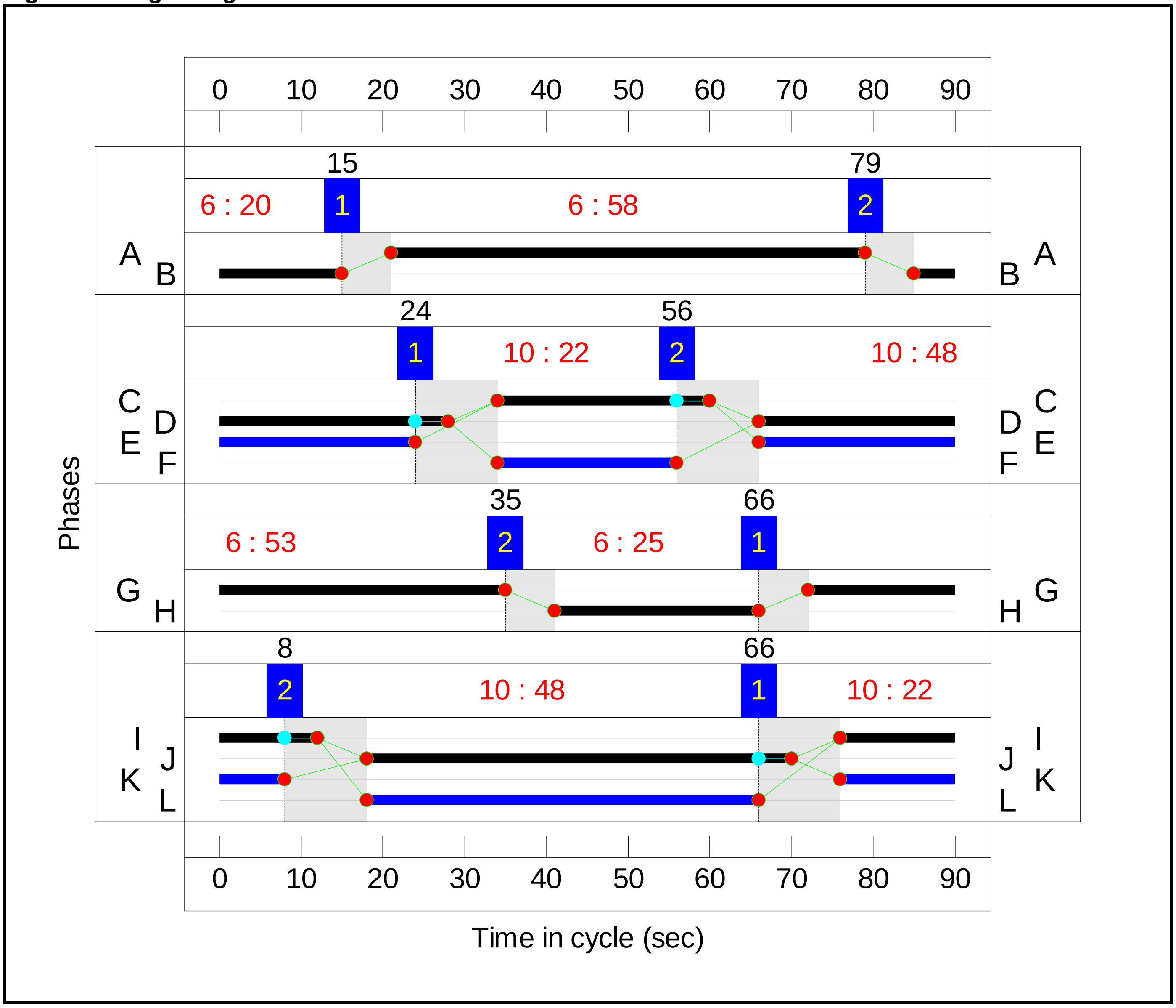
Stage	1	2
Duration	53	25
Change Point	66	35

Full Input Data And Results

Stage Stream: 4

Stage	1	2
Duration	22	48
Change Point	66	8

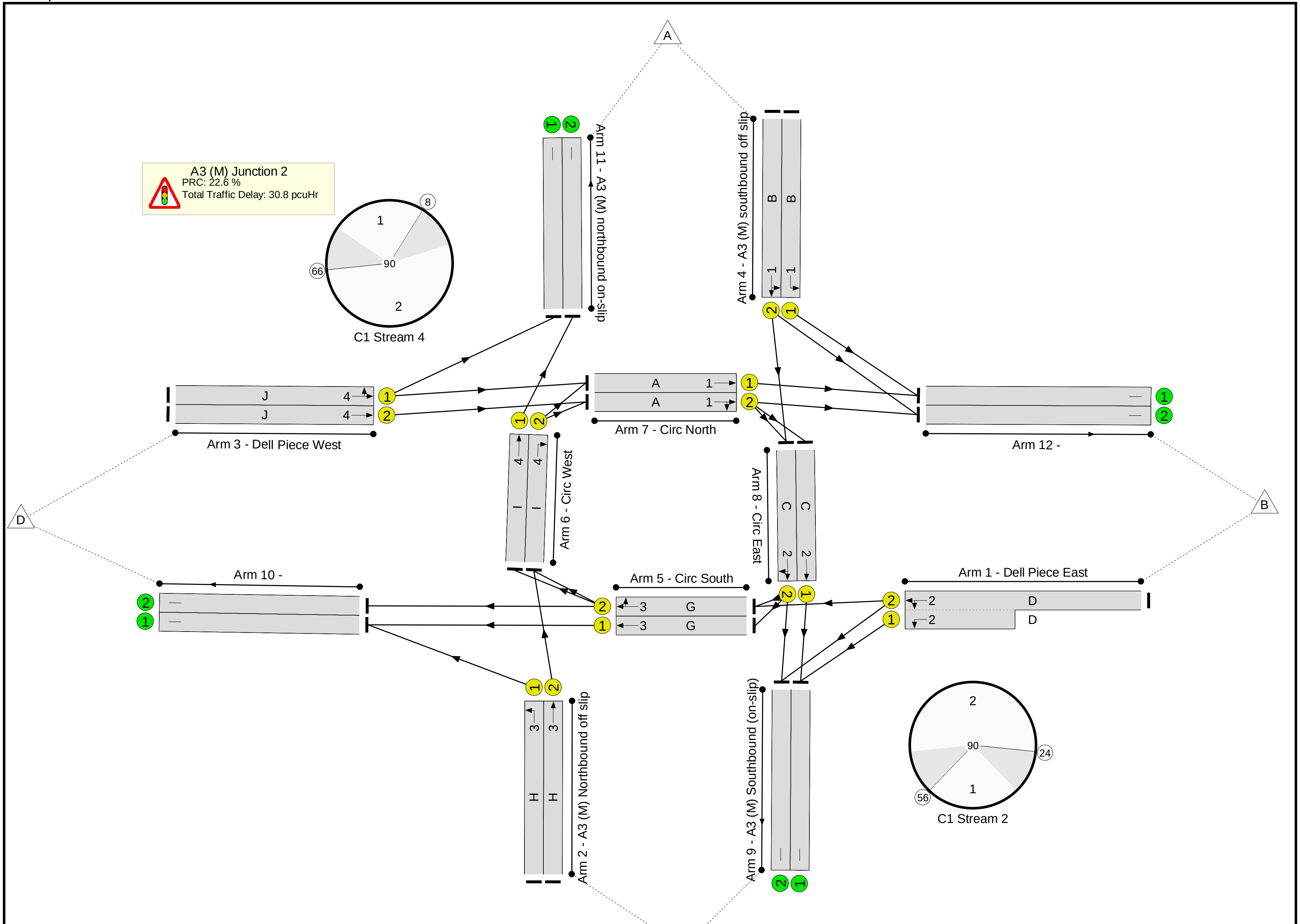
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**73.4%**
A3 (M) Junction 2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**73.4%**
1/2+1/1	Dell Piece East Ahead Left	U	2	N/A	D		1	52	-	1056	1900:1900	772+666	73.4 : 73.4%
2/1	A3 (M) Northbound off slip Left	U	3	N/A	H		1	25	-	254	1800	520	48.8%
2/2	A3 (M) Northbound off slip Ahead	U	3	N/A	H		1	25	-	199	1800	520	38.3%
3/1	Dell Piece West Ahead Left	U	4	N/A	J		1	52	-	579	1800	1060	54.6%
3/2	Dell Piece West Ahead	U	4	N/A	J		1	52	-	597	1800	1060	56.3%
4/1	A3 (M) southbound off slip Left	U	1	N/A	B		1	20	-	147	1800	420	35.0%
4/2	A3 (M) southbound off slip Ahead Left	U	1	N/A	B		1	20	-	147	1800	420	35.0%
5/1	Circ South Ahead	U	3	N/A	G		1	53	-	59	1900	1140	5.2%
5/2	Circ South Right Ahead	U	3	N/A	G		1	53	-	626	1900	1140	54.9%
6/1	Circ West Ahead	U	4	N/A	I		1	26	-	353	1800	540	65.4%
6/2	Circ West Right	U	4	N/A	I		1	26	-	199	1800	540	36.9%
7/1	Circ North Ahead	U	1	N/A	A		1	58	-	423	1800	1180	35.8%
7/2	Circ North Right Ahead	U	1	N/A	A		1	58	-	696	1800	1180	59.0%
8/1	Circ East Ahead	U	2	N/A	C		1	26	-	389	1900	570	68.2%
8/2	Circ East Right Ahead	U	2	N/A	C		1	26	-	327	1900	570	57.4%

Full Input Data And Results

9/1	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	878	Inf	Inf	0.0%
9/2	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	209	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	313	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	273	Inf	Inf	0.0%
11/1	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	256	Inf	Inf	0.0%
11/2	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	353	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	570	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	127	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**0**	**0**	**0**	**22.2**	**8.5**	**0.0**	**30.8**	**-**	**-**	**-**	**-**
A3 (M) Junction 2	**-**	**-**	**0**	**0**	**0**	**22.2**	**8.5**	**0.0**	**30.8**	**-**	**-**	**-**	**-**
1/2+1/1	1056	1056	-	-	-	3.1	1.4	-	4.5	15.2	8.2	1.4	9.6
2/1	254	254	-	-	-	1.9	0.5	-	2.3	33.2	5.2	0.5	5.7
2/2	199	199	-	-	-	1.4	0.3	-	1.7	31.2	3.9	0.3	4.2
3/1	579	579	-	-	-	1.8	0.6	-	2.4	14.9	8.7	0.6	9.3
3/2	597	597	-	-	-	1.9	0.6	-	2.5	15.3	9.1	0.6	9.8
4/1	147	147	-	-	-	1.2	0.3	-	1.4	35.4	3.1	0.3	3.3
4/2	147	147	-	-	-	1.2	0.3	-	1.4	35.4	3.1	0.3	3.3
5/1	59	59	-	-	-	0.4	0.0	-	0.4	24.1	1.5	0.0	1.5
5/2	626	626	-	-	-	0.6	0.6	-	1.2	7.0	2.8	0.6	3.4
6/1	353	353	-	-	-	2.1	0.9	-	3.1	31.3	4.0	0.9	4.9
6/2	199	199	-	-	-	1.2	0.3	-	1.5	27.9	5.0	0.3	5.3
7/1	423	423	-	-	-	0.7	0.3	-	1.0	8.1	2.7	0.3	3.0
7/2	696	696	-	-	-	0.7	0.7	-	1.4	7.4	2.8	0.7	3.5
8/1	389	389	-	-	-	2.0	1.1	-	3.1	28.3	5.0	1.1	6.0
8/2	327	327	-	-	-	2.0	0.7	-	2.7	29.8	5.9	0.7	6.6
9/1	878	878	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	209	209	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	313	313	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	273	273	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	256	256	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	353	353	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	570	570	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	127	127	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

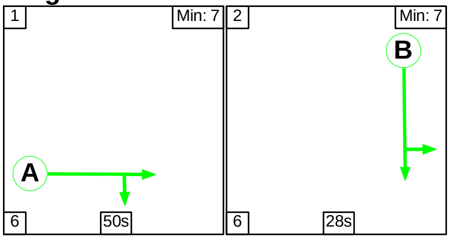
C1	Stream: 1	PRC for Signalled Lanes (%):	52.6	Total Delay for Signalled Lanes (pcuHr):	5.28	Cycle Time (s):	90
C1	Stream: 2	PRC for Signalled Lanes (%):	22.6	Total Delay for Signalled Lanes (pcuHr):	10.24	Cycle Time (s):	90
C1	Stream: 3	PRC for Signalled Lanes (%):	63.9	Total Delay for Signalled Lanes (pcuHr):	5.69	Cycle Time (s):	90
C1	Stream: 4	PRC for Signalled Lanes (%):	37.7	Total Delay for Signalled Lanes (pcuHr):	9.54	Cycle Time (s):	90
		PRC Over All Lanes (%):	22.6	Total Delay Over All Lanes(pcuHr):	30.75		

Full Input Data And Results

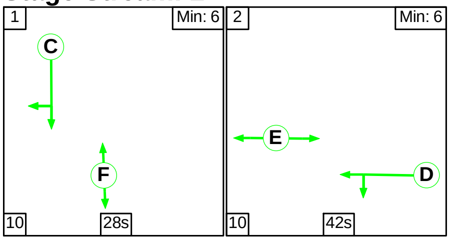
Scenario 2: 'Alternative DM PM' (FG2: 'Alternative DM PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

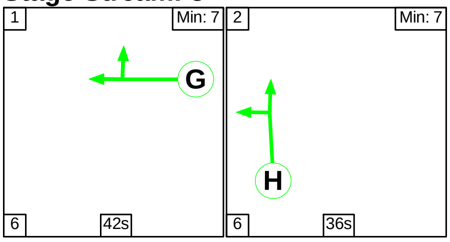
Stage Stream: 1



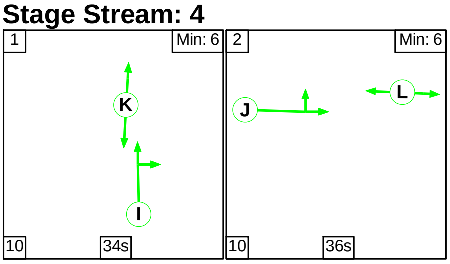
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	50	28
Change Point	16	72

Stage Stream: 2

Stage	1	2
Duration	28	42
Change Point	63	11

Stage Stream: 3

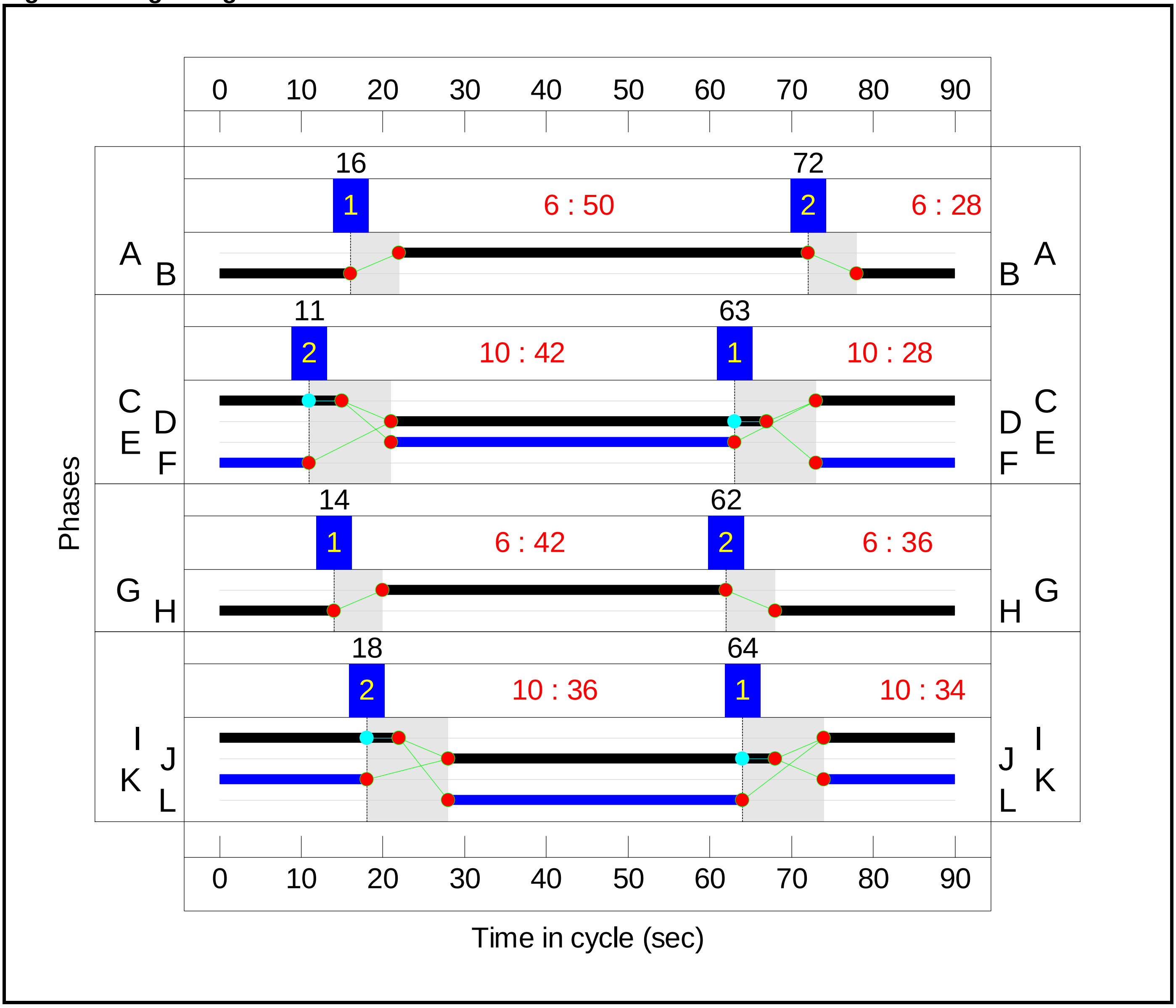
Stage	1	2
Duration	42	36
Change Point	14	62

Full Input Data And Results

Stage Stream: 4

Stage	1	2
Duration	34	36
Change Point	64	18

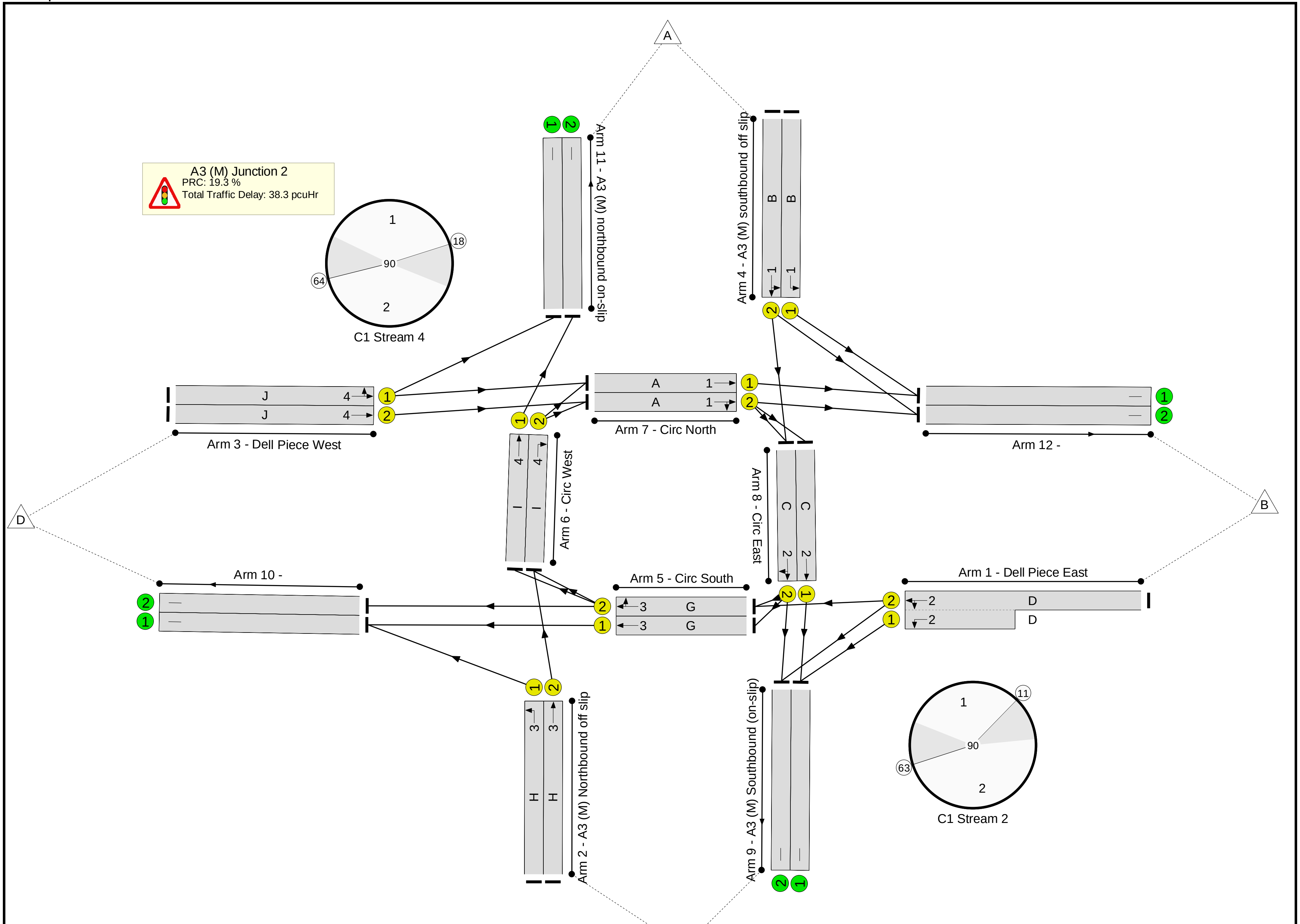
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**75.5%**
A3 (M) Junction 2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**75.5%**
1/2+1/1	Dell Piece East Ahead Left	U	2	N/A	D		1	46	-	932	1900:1900	748+492	75.1 : 75.1%
2/1	A3 (M) Northbound off slip Left	U	3	N/A	H		1	36	-	556	1800	740	75.1%
2/2	A3 (M) Northbound off slip Ahead	U	3	N/A	H		1	36	-	449	1800	740	60.7%
3/1	Dell Piece West Ahead Left	U	4	N/A	J		1	40	-	414	1800	820	50.5%
3/2	Dell Piece West Ahead	U	4	N/A	J		1	40	-	414	1800	820	50.5%
4/1	A3 (M) southbound off slip Left	U	1	N/A	B		1	28	-	320	1800	580	55.2%
4/2	A3 (M) southbound off slip Ahead Left	U	1	N/A	B		1	28	-	321	1800	580	55.3%
5/1	Circ South Ahead	U	3	N/A	G		1	42	-	123	1900	908	13.5%
5/2	Circ South Right Ahead	U	3	N/A	G		1	42	-	685	1900	908	75.5%
6/1	Circ West Ahead	U	4	N/A	I		1	38	-	227	1800	780	29.1%
6/2	Circ West Right	U	4	N/A	I		1	38	-	449	1800	780	57.6%
7/1	Circ North Ahead	U	1	N/A	A		1	50	-	456	1800	1020	44.7%
7/2	Circ North Right Ahead	U	1	N/A	A		1	50	-	638	1800	1020	62.5%
8/1	Circ East Ahead	U	2	N/A	C		1	32	-	198	1900	697	28.4%
8/2	Circ East Right Ahead	U	2	N/A	C		1	32	-	447	1900	697	64.2%

Full Input Data And Results

9/1	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	568	Inf	Inf	0.0%
9/2	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	201	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	679	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	458	Inf	Inf	0.0%
11/1	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	183	Inf	Inf	0.0%
11/2	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	227	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	776	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	314	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**0**	**0**	**0**	**27.6**	**10.8**	**0.0**	**38.3**	**-**	**-**	**-**	**-**
A3 (M) Junction 2	**-**	**-**	**0**	**0**	**0**	**27.6**	**10.8**	**0.0**	**38.3**	**-**	**-**	**-**	**-**
1/2+1/1	932	932	-	-	-	3.6	1.5	-	5.1	19.7	10.3	1.5	11.8
2/1	556	556	-	-	-	3.5	1.5	-	5.0	32.2	11.7	1.5	13.2
2/2	449	449	-	-	-	2.6	0.8	-	3.4	26.9	8.7	0.8	9.5
3/1	414	414	-	-	-	2.0	0.5	-	2.5	21.7	7.2	0.5	7.8
3/2	414	414	-	-	-	2.0	0.5	-	2.5	21.7	7.2	0.5	7.8
4/1	320	320	-	-	-	2.2	0.6	-	2.8	32.0	6.6	0.6	7.2
4/2	321	321	-	-	-	2.2	0.6	-	2.9	32.1	6.6	0.6	7.2
5/1	123	123	-	-	-	0.3	0.1	-	0.4	12.3	2.9	0.1	3.0
5/2	685	685	-	-	-	1.6	1.5	-	3.1	16.5	5.9	1.5	7.4
6/1	227	227	-	-	-	1.8	0.2	-	2.0	32.3	5.7	0.2	5.9
6/2	449	449	-	-	-	0.2	0.7	-	0.9	6.9	0.4	0.7	1.0
7/1	456	456	-	-	-	1.3	0.4	-	1.7	13.2	6.0	0.4	6.4
7/2	638	638	-	-	-	1.4	0.8	-	2.3	12.8	6.3	0.8	7.1
8/1	198	198	-	-	-	1.0	0.2	-	1.2	22.6	4.8	0.2	5.0
8/2	447	447	-	-	-	1.7	0.9	-	2.6	20.6	5.8	0.9	6.7
9/1	568	568	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	201	201	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	679	679	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	458	458	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	183	183	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	227	227	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	776	776	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	314	314	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

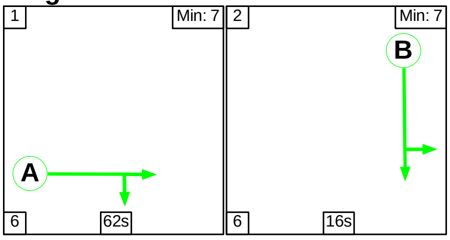
C1	Stream: 1	PRC for Signalled Lanes (%):	43.9	Total Delay for Signalled Lanes (pcuHr):	9.64	Cycle Time (s):	90
C1	Stream: 2	PRC for Signalled Lanes (%):	19.8	Total Delay for Signalled Lanes (pcuHr):	8.90	Cycle Time (s):	90
C1	Stream: 3	PRC for Signalled Lanes (%):	19.3	Total Delay for Signalled Lanes (pcuHr):	11.90	Cycle Time (s):	90
C1	Stream: 4	PRC for Signalled Lanes (%):	56.3	Total Delay for Signalled Lanes (pcuHr):	7.91	Cycle Time (s):	90
		PRC Over All Lanes (%):	19.3	Total Delay Over All Lanes(pcuHr):	38.35		

Full Input Data And Results

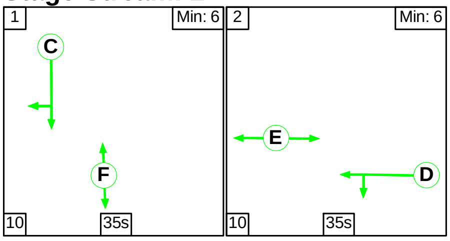
Scenario 3: 'Alternative DS AM' (FG3: 'Alternative DS AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

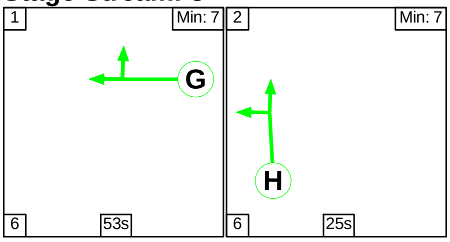
Stage Stream: 1



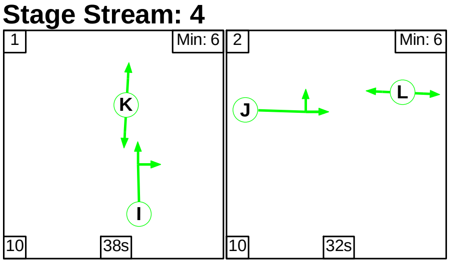
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	62	16
Change Point	0	68

Stage Stream: 2

Stage	1	2
Duration	35	35
Change Point	87	42

Stage Stream: 3

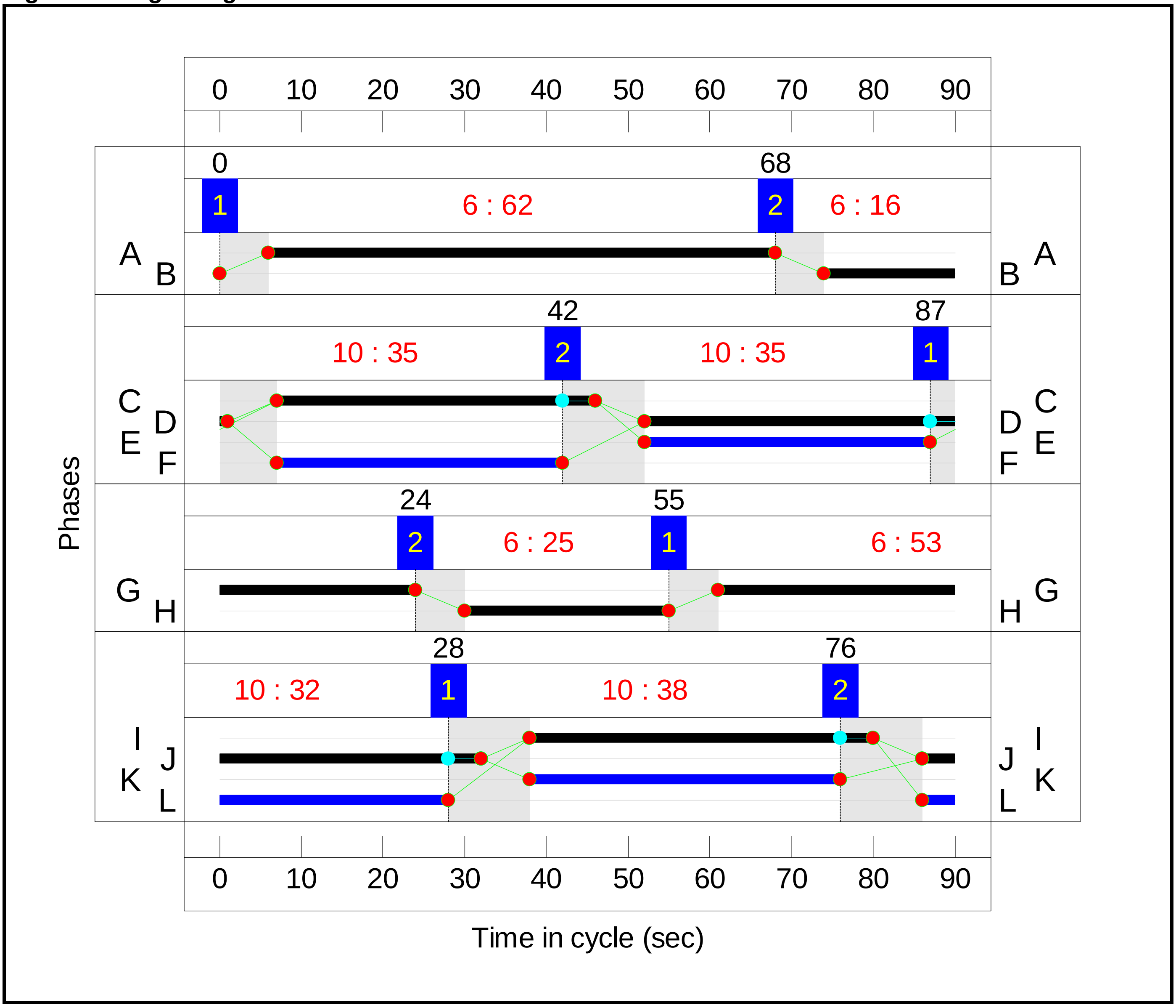
Stage	1	2
Duration	53	25
Change Point	55	24

Full Input Data And Results

Stage Stream: 4

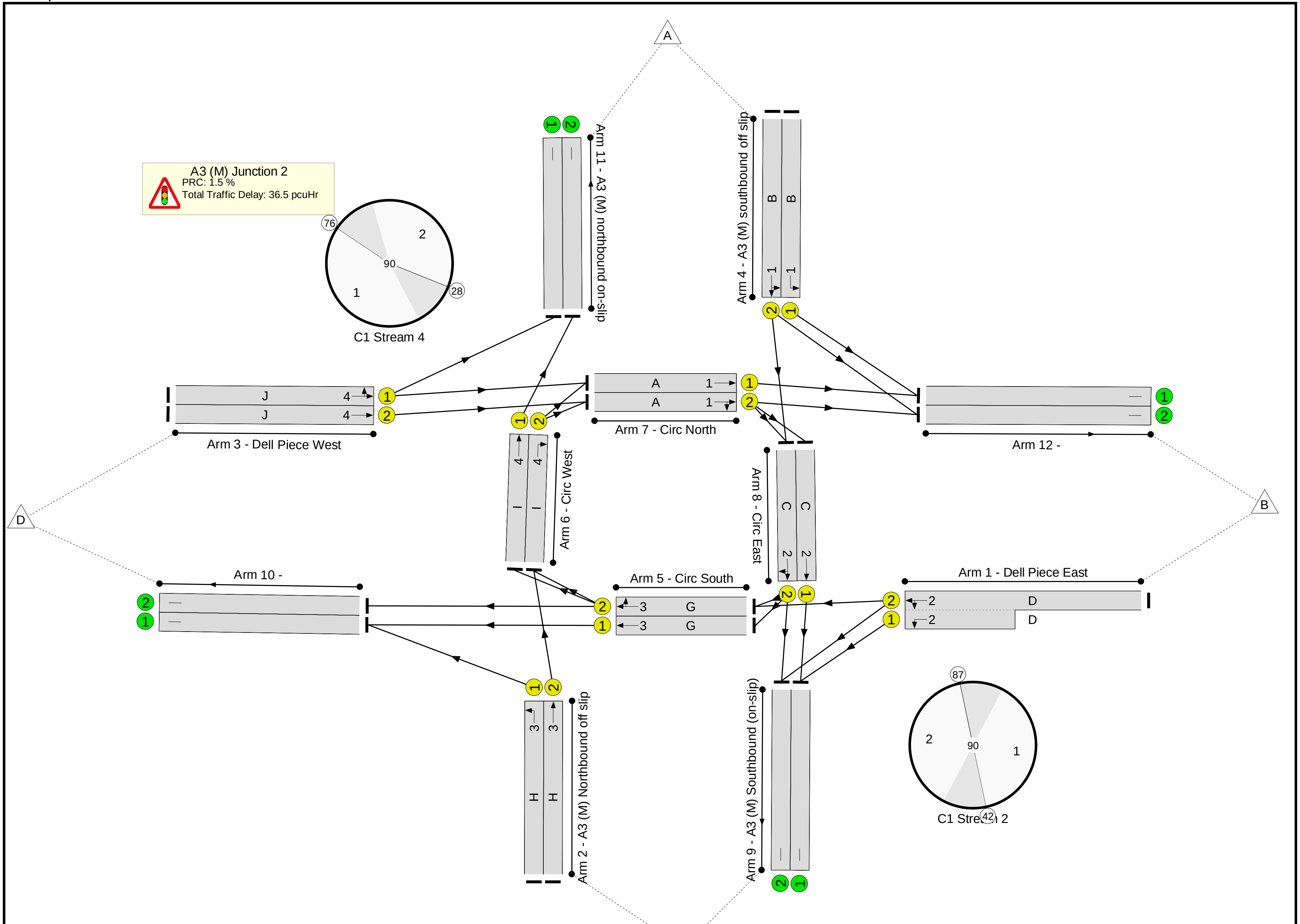
Stage	**1**	**2**
Duration	38	32
Change Point	28	76

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.6%**
A3 (M) Junction 2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.6%**
1/2+1/1	Dell Piece East Ahead Left	U	2	N/A	D		1	39	-	1016	1900:1900	633+513	88.6 : 88.6%
2/1	A3 (M) Northbound off slip Left	U	3	N/A	H		1	25	-	279	1800	520	53.7%
2/2	A3 (M) Northbound off slip Ahead	U	3	N/A	H		1	25	-	197	1800	520	37.9%
3/1	Dell Piece West Ahead Left	U	4	N/A	J		1	36	-	539	1800	740	72.8%
3/2	Dell Piece West Ahead	U	4	N/A	J		1	36	-	642	1800	740	86.8%
4/1	A3 (M) southbound off slip Left	U	1	N/A	B		1	16	-	143	1800	340	42.1%
4/2	A3 (M) southbound off slip Ahead Left	U	1	N/A	B		1	16	-	143	1800	340	42.1%
5/1	Circ South Ahead	U	3	N/A	G		1	53	-	63	1900	1140	5.5%
5/2	Circ South Right Ahead	U	3	N/A	G		1	53	-	624	1900	1140	54.7%
6/1	Circ West Ahead	U	4	N/A	I		1	42	-	352	1800	860	40.9%
6/2	Circ West Right	U	4	N/A	I		1	42	-	197	1800	860	22.9%
7/1	Circ North Ahead	U	1	N/A	A		1	62	-	429	1800	1260	34.0%
7/2	Circ North Right Ahead	U	1	N/A	A		1	62	-	740	1800	1260	58.7%
8/1	Circ East Ahead	U	2	N/A	C		1	39	-	350	1900	844	41.4%
8/2	Circ East Right Ahead	U	2	N/A	C		1	39	-	419	1900	844	49.6%

Full Input Data And Results

9/1	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	805	Inf	Inf	0.0%
9/2	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	293	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	342	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	272	Inf	Inf	0.0%
11/1	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	209	Inf	Inf	0.0%
11/2	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	352	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	572	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	114	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**0**	**0**	**0**	**23.9**	**12.6**	**0.0**	**36.5**	**-**	**-**	**-**	**-**
A3 (M) Junction 2	**-**	**-**	**0**	**0**	**0**	**23.9**	**12.6**	**0.0**	**36.5**	**-**	**-**	**-**	**-**
1/2+1/1	1016	1016	-	-	-	5.5	3.7	-	9.2	32.6	14.4	3.7	18.1
2/1	279	279	-	-	-	2.1	0.6	-	2.7	34.4	5.8	0.6	6.4
2/2	197	197	-	-	-	1.4	0.3	-	1.7	31.1	3.9	0.3	4.2
3/1	539	539	-	-	-	3.3	1.3	-	4.7	31.1	11.2	1.3	12.6
3/2	642	642	-	-	-	4.3	3.1	-	7.4	41.5	14.6	3.1	17.7
4/1	143	143	-	-	-	1.3	0.4	-	1.6	41.3	3.1	0.4	3.5
4/2	143	143	-	-	-	1.3	0.4	-	1.6	41.3	3.1	0.4	3.5
5/1	63	63	-	-	-	0.1	0.0	-	0.1	8.2	0.3	0.0	0.3
5/2	624	624	-	-	-	0.1	0.6	-	0.7	4.2	0.7	0.6	1.3
6/1	352	352	-	-	-	2.8	0.3	-	3.2	32.4	6.3	0.3	6.6
6/2	197	197	-	-	-	0.0	0.1	-	0.1	2.7	0.0	0.1	0.1
7/1	429	429	-	-	-	0.1	0.3	-	0.3	2.8	0.7	0.3	0.9
7/2	740	740	-	-	-	0.1	0.7	-	0.8	3.9	2.5	0.7	3.2
8/1	350	350	-	-	-	0.5	0.4	-	0.9	9.2	1.0	0.4	1.4
8/2	419	419	-	-	-	0.9	0.5	-	1.4	11.9	4.0	0.5	4.5
9/1	805	805	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	293	293	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	342	342	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	272	272	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	209	209	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	352	352	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	572	572	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	114	114	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

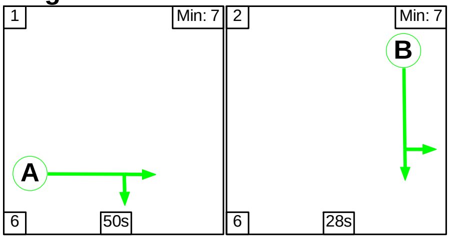
C1	Stream: 1	PRC for Signalled Lanes (%):	53.2	Total Delay for Signalled Lanes (pcuHr):	4.40	Cycle Time (s):	90
C1	Stream: 2	PRC for Signalled Lanes (%):	1.5	Total Delay for Signalled Lanes (pcuHr):	11.48	Cycle Time (s):	90
C1	Stream: 3	PRC for Signalled Lanes (%):	64.4	Total Delay for Signalled Lanes (pcuHr):	5.23	Cycle Time (s):	90
C1	Stream: 4	PRC for Signalled Lanes (%):	3.7	Total Delay for Signalled Lanes (pcuHr):	15.39	Cycle Time (s):	90
		PRC Over All Lanes (%):	1.5	Total Delay Over All Lanes(pcuHr):	36.50		

Full Input Data And Results

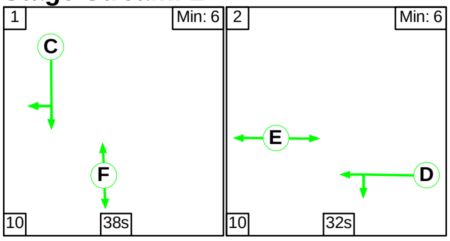
Scenario 4: 'Alternative DS PM' (FG4: 'Alternative DS PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

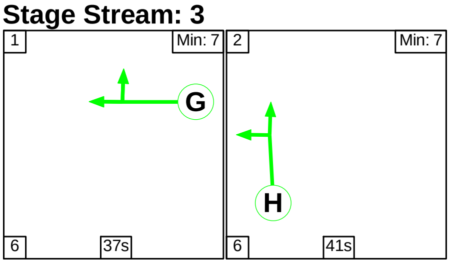
Stage Stream: 1



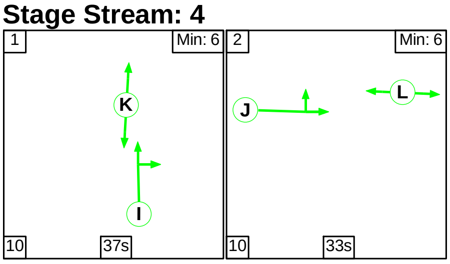
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	50	28
Change Point	0	56

Stage Stream: 2

Stage	1	2
Duration	38	32
Change Point	36	84

Stage Stream: 3

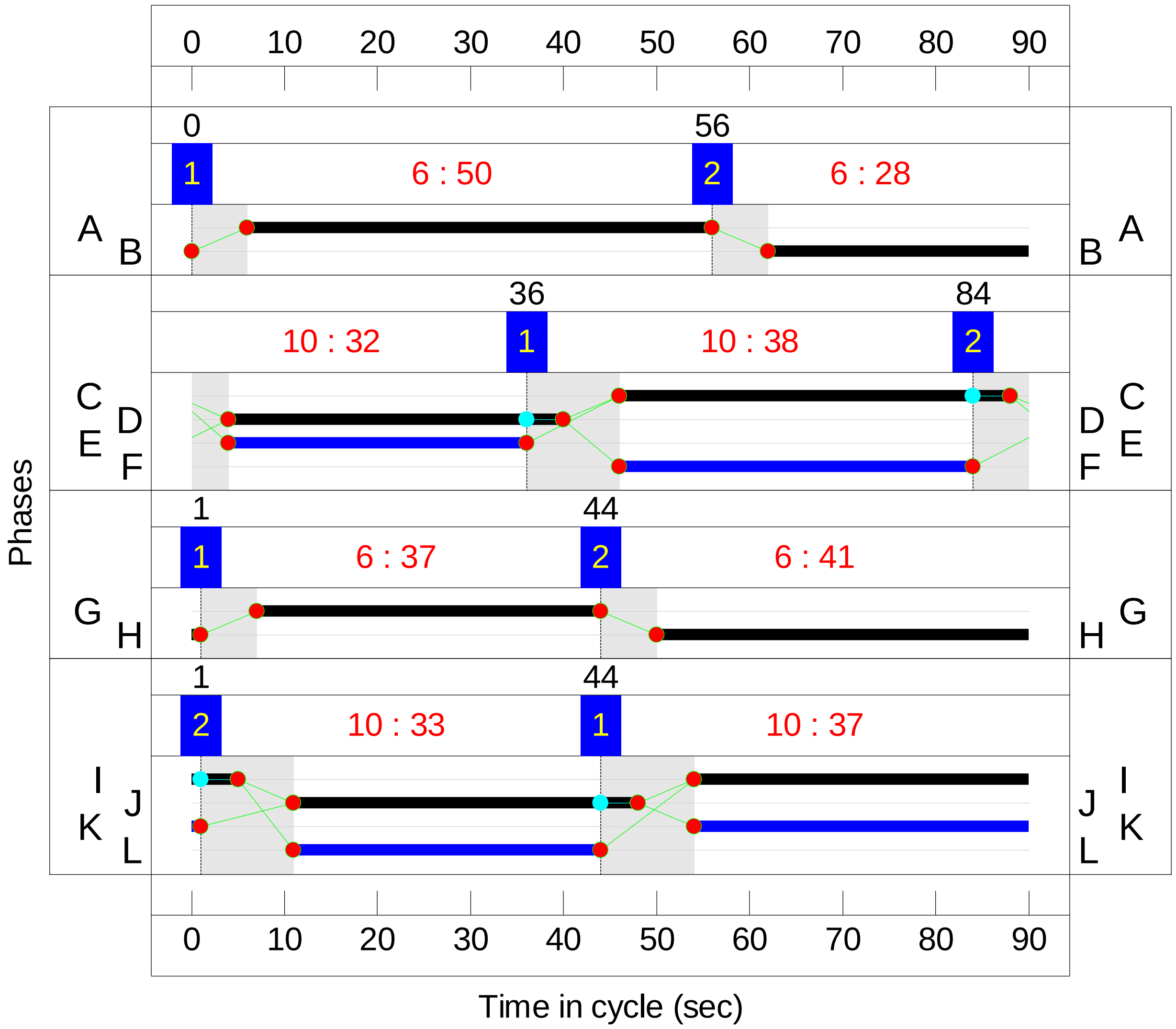
Stage	1	2
Duration	37	41
Change Point	1	44

Full Input Data And Results

Stage Stream: 4

Stage	1	2
Duration	37	33
Change Point	44	1

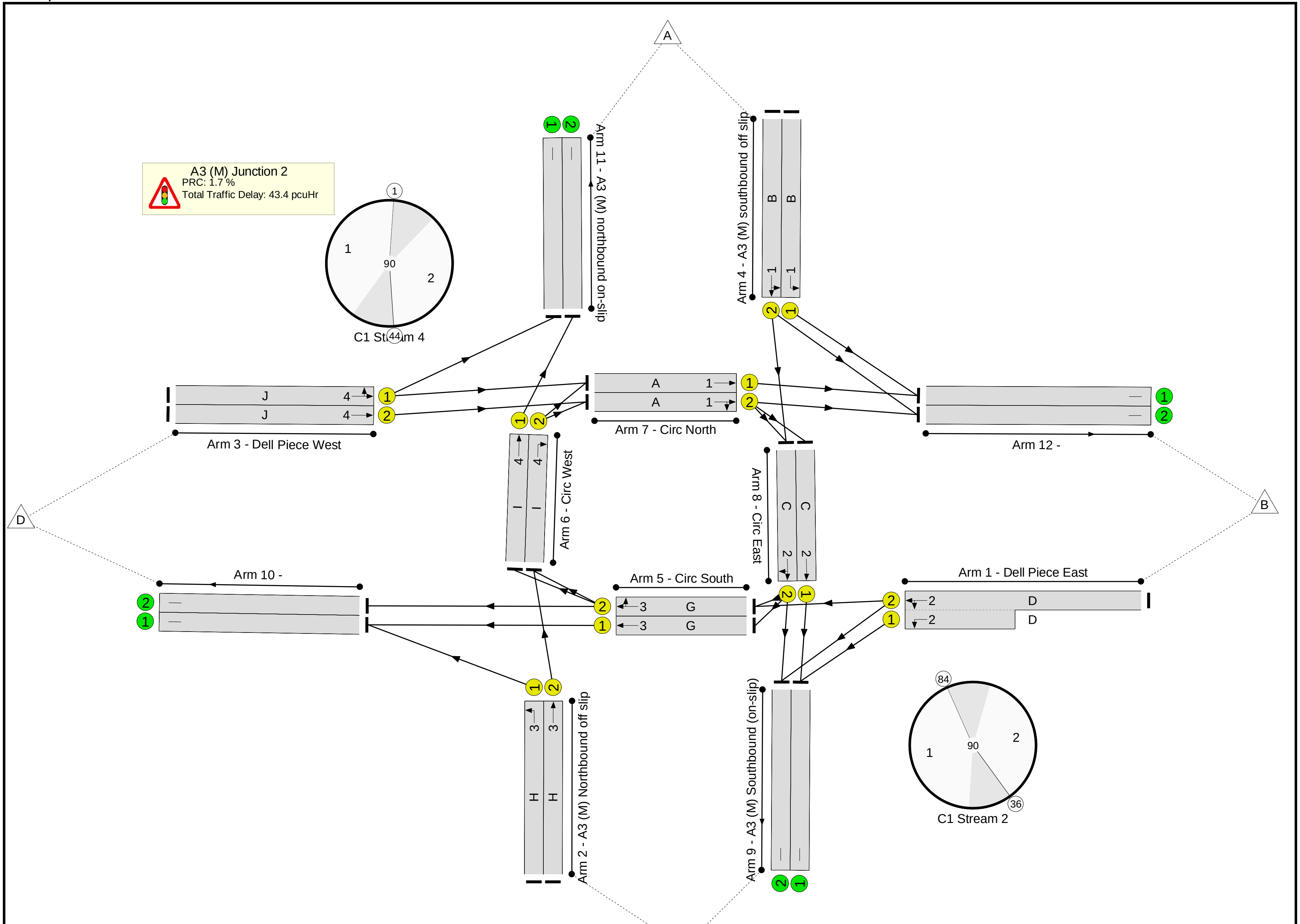
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.5%**
A3 (M) Junction 2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.5%**
1/2+1/1	Dell Piece East Ahead Left	U	2	N/A	D		1	36	-	914	1900:1900	618+418	88.2 : 88.2%
2/1	A3 (M) Northbound off slip Left	U	3	N/A	H		1	41	-	743	1800	840	88.5%
2/2	A3 (M) Northbound off slip Ahead	U	3	N/A	H		1	41	-	418	1800	840	49.8%
3/1	Dell Piece West Ahead Left	U	4	N/A	J		1	37	-	449	1800	760	59.1%
3/2	Dell Piece West Ahead	U	4	N/A	J		1	37	-	450	1800	760	59.2%
4/1	A3 (M) southbound off slip Left	U	1	N/A	B		1	28	-	307	1800	580	52.9%
4/2	A3 (M) southbound off slip Ahead Left	U	1	N/A	B		1	28	-	307	1800	580	52.9%
5/1	Circ South Ahead	U	3	N/A	G		1	37	-	105	1900	802	13.1%
5/2	Circ South Right Ahead	U	3	N/A	G		1	37	-	651	1900	802	81.1%
6/1	Circ West Ahead	U	4	N/A	I		1	41	-	227	1800	840	27.0%
6/2	Circ West Right	U	4	N/A	I		1	41	-	418	1800	840	49.8%
7/1	Circ North Ahead	U	1	N/A	A		1	50	-	434	1800	1020	42.5%
7/2	Circ North Right Ahead	U	1	N/A	A		1	50	-	659	1800	1020	64.6%
8/1	Circ East Ahead	U	2	N/A	C		1	42	-	211	1900	908	23.2%
8/2	Circ East Right Ahead	U	2	N/A	C		1	42	-	424	1900	908	46.7%

Full Input Data And Results

9/1	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	580	Inf	Inf	0.0%
9/2	A3 (M) Southbound (on-slip)	U	N/A	N/A	-		-	-	-	213	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	848	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	424	Inf	Inf	0.0%
11/1	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	224	Inf	Inf	0.0%
11/2	A3 (M) northbound on-slip	U	N/A	N/A	-		-	-	-	227	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	741	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	331	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**0**	**0**	**0**	**28.5**	**14.9**	**0.0**	**43.4**	**-**	**-**	**-**	**-**
A3 (M) Junction 2	**-**	**-**	**0**	**0**	**0**	**28.5**	**14.9**	**0.0**	**43.4**	**-**	**-**	**-**	**-**
1/2+1/1	914	914	-	-	-	5.4	3.5	-	9.0	35.4	13.9	3.5	17.5
2/1	743	743	-	-	-	4.5	3.6	-	8.1	39.1	16.7	3.6	20.3
2/2	418	418	-	-	-	1.9	0.5	-	2.4	20.9	7.2	0.5	7.7
3/1	449	449	-	-	-	2.5	0.7	-	3.2	25.8	8.6	0.7	9.3
3/2	450	450	-	-	-	2.5	0.7	-	3.2	25.8	8.6	0.7	9.3
4/1	307	307	-	-	-	2.1	0.6	-	2.7	31.5	6.2	0.6	6.8
4/2	307	307	-	-	-	2.1	0.6	-	2.7	31.5	6.2	0.6	6.8
5/1	105	105	-	-	-	0.4	0.1	-	0.5	17.5	2.6	0.1	2.6
5/2	651	651	-	-	-	1.1	2.1	-	3.2	17.7	4.8	2.1	6.9
6/1	227	227	-	-	-	1.5	0.2	-	1.6	26.1	5.7	0.2	5.9
6/2	418	418	-	-	-	0.4	0.5	-	0.9	7.6	0.8	0.5	1.3
7/1	434	434	-	-	-	1.2	0.4	-	1.6	13.2	5.3	0.4	5.7
7/2	659	659	-	-	-	1.3	0.9	-	2.2	12.1	5.5	0.9	6.4
8/1	211	211	-	-	-	0.5	0.2	-	0.6	10.6	4.4	0.2	4.5
8/2	424	424	-	-	-	1.0	0.4	-	1.4	11.8	5.4	0.4	5.8
9/1	580	580	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	213	213	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	848	848	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	424	424	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	224	224	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	227	227	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	741	741	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	331	331	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

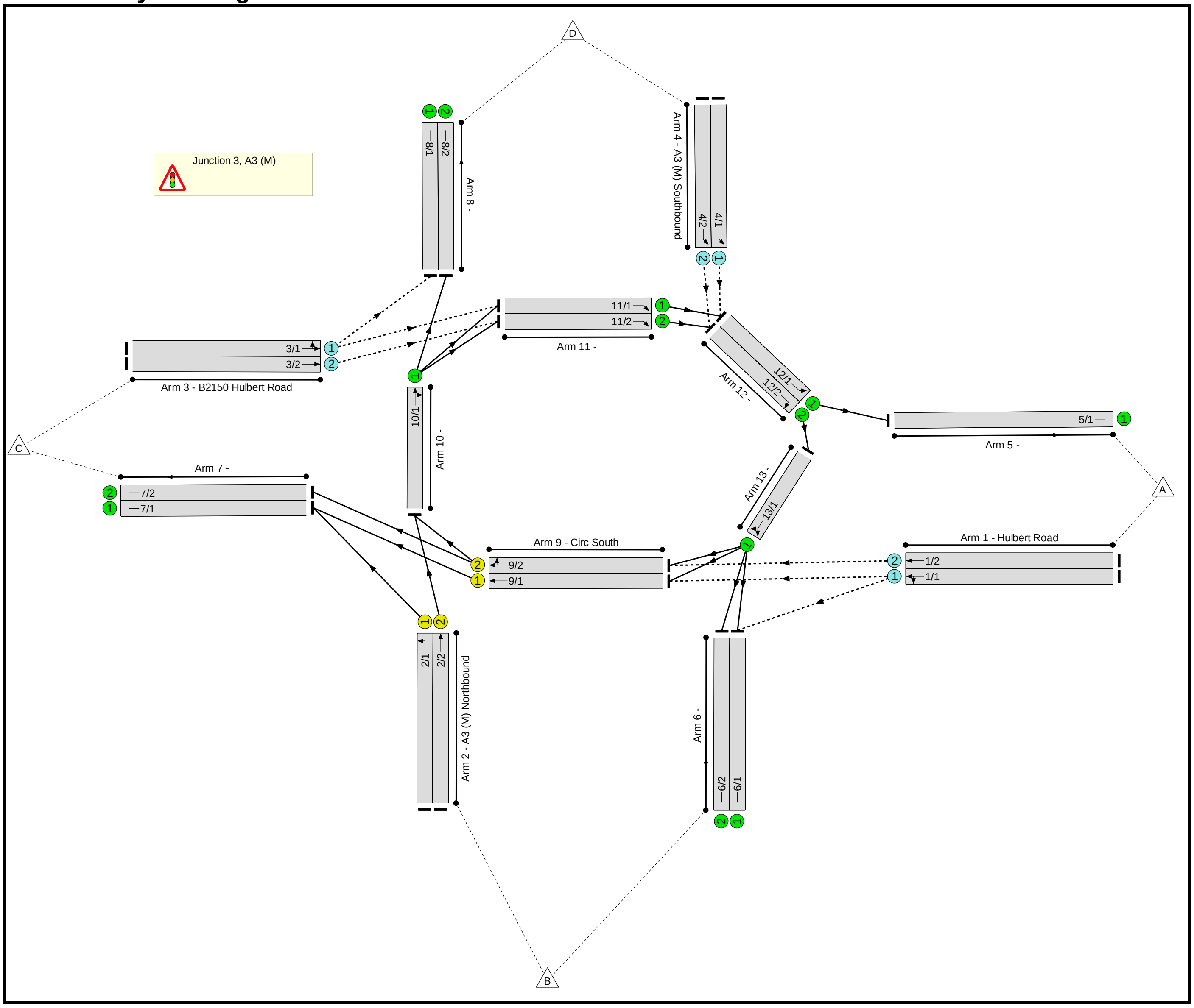
C1	Stream: 1	PRC for Signalled Lanes (%):	39.3	Total Delay for Signalled Lanes (pcuHr):	9.18	Cycle Time (s):	90
C1	Stream: 2	PRC for Signalled Lanes (%):	2.0	Total Delay for Signalled Lanes (pcuHr):	10.99	Cycle Time (s):	90
C1	Stream: 3	PRC for Signalled Lanes (%):	1.7	Total Delay for Signalled Lanes (pcuHr):	14.20	Cycle Time (s):	90
C1	Stream: 4	PRC for Signalled Lanes (%):	52.0	Total Delay for Signalled Lanes (pcuHr):	8.98	Cycle Time (s):	90
		PRC Over All Lanes (%):	1.7	Total Delay Over All Lanes(pcuHr):	43.35		

Full Input Data And Results
Full Input Data And Results

User and Project Details

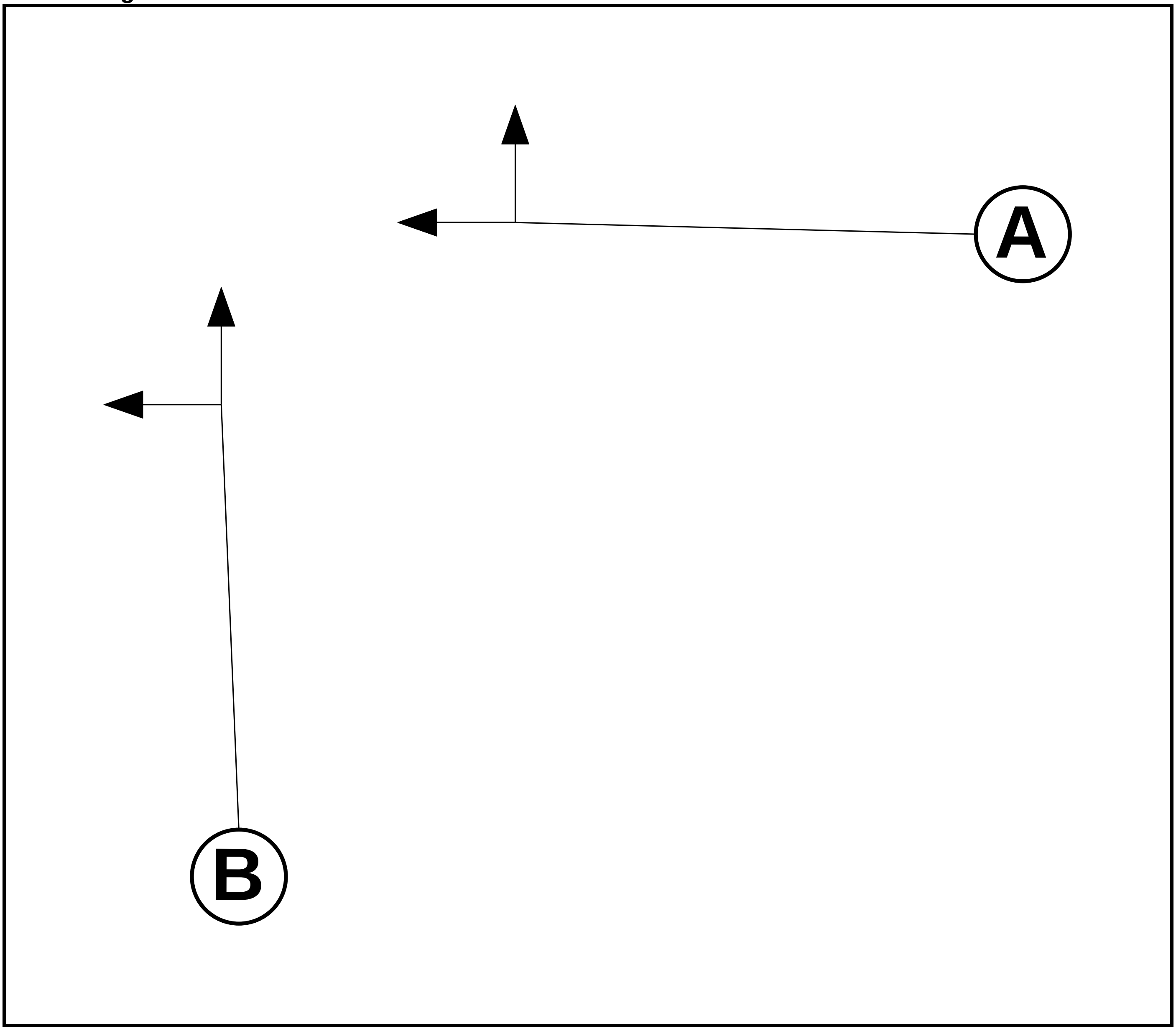
Project:	
Title:	
Location:	
Additional detail:	
File name:	A3 (M) J3 - Prohibited left turn from offside lane of A3 (south) approach.lsg3x
Author:	
Company:	
Address:	

Network Layout Diagram



Full Input Data And Results

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

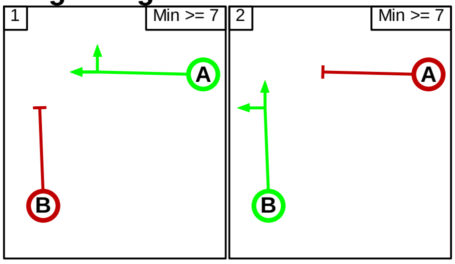
	Starting Phase		
		A	B
Terminating Phase	A		5
	B	5	

Phases in Stage

Stage No.	Phases in Stage
1	A
2	B

Full Input Data And Results

Stage Diagram



Phase Delays

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

Prohibited Stage Change

	To Stage		
From Stage		1	2
	1		5
	2	5	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Junction 3, A3 (M)											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/1 (Hulbert Road)	6/1 (Left)	1000	0	13/1	0.33	All	-	-	-	-	-
	9/1 (Ahead)	1000	0	13/1	0.33	All					
1/2 (Hulbert Road)	9/2 (Ahead)	1000	0	13/1	0.33	All	-	-	-	-	-
3/1 (B2150 Hulbert Road)	8/1 (Left)	1000	0	10/1	0.33	To 8/2 (Ahead)	-	-	-	-	-
	11/1 (Ahead)	1000	0	10/1	1.09	To 8/2 (Ahead) To 11/1 (Right)					
3/2 (B2150 Hulbert Road)	11/2 (Ahead)	1000	0	10/1	0.33	All	-	-	-	-	-
4/1 (A3 (M) Southbound)	12/1 (Left)	1000	0	11/1	0.33	All	-	-	-	-	-
4/2 (A3 (M) Southbound)	12/2 (Left)	1000	0	11/2	0.33	All	-	-	-	-	-
				11/1	0.33	All					

Full Input Data And Results

Lane Input Data

Junction: Junction 3, A3 (M)

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 (Hulbert Road)	O		2	3	60.0	Geom	-	3.75	0.00	Y	Arm 6 Left	Inf
											Arm 9 Ahead	Inf
1/2 (Hulbert Road)	O		2	3	60.0	Geom	-	3.75	0.00	N	Arm 9 Ahead	Inf
2/1 (A3 (M) Northbound)	U	B	2	3	60.0	Geom	-	3.83	0.00	Y	Arm 7 Left	5431.00
2/2 (A3 (M) Northbound)	U	B	2	3	60.0	Geom	-	3.61	0.00	N	Arm 10 Ahead	126.00
3/1 (B2150 Hulbert Road)	O		2	3	60.0	Geom	-	3.81	0.00	Y	Arm 8 Left	645.00
											Arm 11 Ahead	Inf
3/2 (B2150 Hulbert Road)	O		2	3	60.0	Geom	-	3.90	0.00	N	Arm 11 Ahead	122.00
4/1 (A3 (M) Southbound)	O		2	3	60.0	Geom	-	3.48	0.00	Y	Arm 12 Left	122.00
4/2 (A3 (M) Southbound)	O		2	3	60.0	Geom	-	3.58	0.00	N	Arm 12 Left	164.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/2	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/2	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1 (Circ South)	U	A	2	3	20.9	Geom	-	4.04	0.00	Y	Arm 7 Ahead	111.00
9/2 (Circ South)	U	A	2	3	20.9	Geom	-	4.00	0.00	N	Arm 7 Ahead	127.00
											Arm 10 Right	70.00
10/1	U		2	3	19.1	Inf	-	-	-	-	-	-
11/1	U		2	3	27.0	Inf	-	-	-	-	-	-
11/2	U		2	3	27.0	Inf	-	-	-	-	-	-
12/1	U		2	3	15.7	Inf	-	-	-	-	-	-
12/2	U		2	3	15.7	Inf	-	-	-	-	-	-
13/1	U		2	3	7.0	Inf	-	-	-	-	-	-

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Alternative DM AM'	08:00	09:00	01:00	
2: 'Alternative DM PM'	17:00	18:00	01:00	
3: 'Alternative DS AM'	08:00	09:00	01:00	
4: 'Alternative DS PM'	17:00	18:00	01:00	

Scenario 1: 'Alternative DM AM' (FG1: 'Alternative DM AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	15	459	195	669
	B	40	3	917	2	962
	C	325	1410	6	387	2128
	D	212	3	309	0	524
	Tot.	577	1431	1691	584	4283

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: Alternative DM AM
Junction: Junction 3, A3 (M)	
1/1	329
1/2	340
2/1	917
2/2	42
3/1	712
3/2	1410
4/1	212
4/2	312
5/1	577
6/1	722
6/2	706
7/1	1381
7/2	304
8/1	387
8/2	197
9/1	464
9/2	499
10/1	237
11/1	365
11/2	1410
12/1	577
12/2	1722
13/1	1722

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	4.6 %	1990	1990
				Arm 9 Ahead	Inf	95.4 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 10 Ahead	126.00	100.0 %	2091	2091
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	54.4 %	1993	1993
				Arm 11 Ahead	Inf	45.6 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1 (Circ South)	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2 (Circ South)	4.00	0.00	N	Arm 7 Ahead	127.00	60.9 %	2122	2122
				Arm 10 Right	70.00	39.1 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 2: 'Alternative DM PM' (FG2: 'Alternative DM PM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Desired
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	45	487	163	695
	B	18	0	1183	0	1201
	C	291	736	26	263	1316
	D	326	0	524	0	850
	Tot.	635	781	2220	426	4062

Traffic Lane Flows

Lane	Scenario 2: Alternative DM PM
Junction: Junction 3, A3 (M)	
1/1	322
1/2	373
2/1	1183
2/2	18
3/1	554
3/2	736
4/1	326
4/2	524
5/1	635
6/1	413
6/2	368
7/1	1750
7/2	444
8/1	263
8/2	163
9/1	567
9/2	607
10/1	181
11/1	309
11/2	736
12/1	635
12/2	1260
13/1	1260

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	14.0 %	1990	1990
				Arm 9 Ahead	Inf	86.0 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 10 Ahead	126.00	100.0 %	2091	2091
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	47.5 %	1994	1994
				Arm 11 Ahead	Inf	52.5 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1 (Circ South)	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2 (Circ South)	4.00	0.00	N	Arm 7 Ahead	127.00	73.1 %	2124	2124
				Arm 10 Right	70.00	26.9 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'Alternative DS AM' (FG3: 'Alternative DS AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	15	491	205	711
	B	40	3	1011	2	1056
	C	322	1370	6	416	2114
	D	219	3	280	0	502
	Tot.	581	1391	1788	623	4383

Traffic Lane Flows

Lane	Scenario 3: Alternative DS AM
Junction: Junction 3, A3 (M)	
1/1	348
1/2	363
2/1	1011
2/2	42
3/1	738
3/2	1370
4/1	219
4/2	283
5/1	581
6/1	702
6/2	686
7/1	1482
7/2	300
8/1	416
8/2	207
9/1	471
9/2	505
10/1	247
11/1	362
11/2	1370
12/1	581
12/2	1653
13/1	1653

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	4.3 %	1990	1990
				Arm 9 Ahead	Inf	95.7 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 10 Ahead	126.00	100.0 %	2091	2091
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	56.4 %	1993	1993
				Arm 11 Ahead	Inf	43.6 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1 (Circ South)	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2 (Circ South)	4.00	0.00	N	Arm 7 Ahead	127.00	59.4 %	2122	2122
				Arm 10 Right	70.00	40.6 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'Alternative DS PM' (FG4: 'Alternative DS PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	45	476	233	754
	B	18	0	1272	0	1290
	C	296	736	26	87	1145
	D	333	0	501	0	834
	Tot.	647	781	2275	320	4023

Traffic Lane Flows

Lane	Scenario 4: Alternative DS PM
Junction: Junction 3, A3 (M)	
1/1	337
1/2	417
2/1	1272
2/2	18
3/1	383
3/2	736
4/1	333
4/2	501
5/1	647
6/1	413
6/2	368
7/1	1858
7/2	391
8/1	87
8/2	233
9/1	586
9/2	624
10/1	251
11/1	314
11/2	736
12/1	647
12/2	1237
13/1	1237

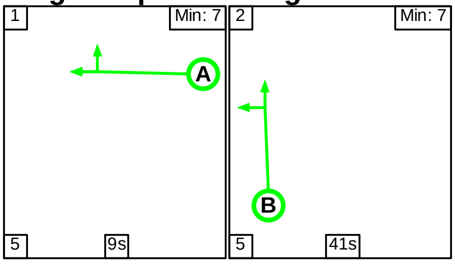
Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	13.4 %	1990	1990
				Arm 9 Ahead	Inf	86.6 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 10 Ahead	126.00	100.0 %	2091	2091
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	22.7 %	1995	1995
				Arm 11 Ahead	Inf	77.3 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1 (Circ South)	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2 (Circ South)	4.00	0.00	N	Arm 7 Ahead	127.00	62.7 %	2122	2122
				Arm 10 Right	70.00	37.3 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 1: 'Alternative DM AM' (FG1: 'Alternative DM AM', Plan 1: 'Network Control Plan 1')

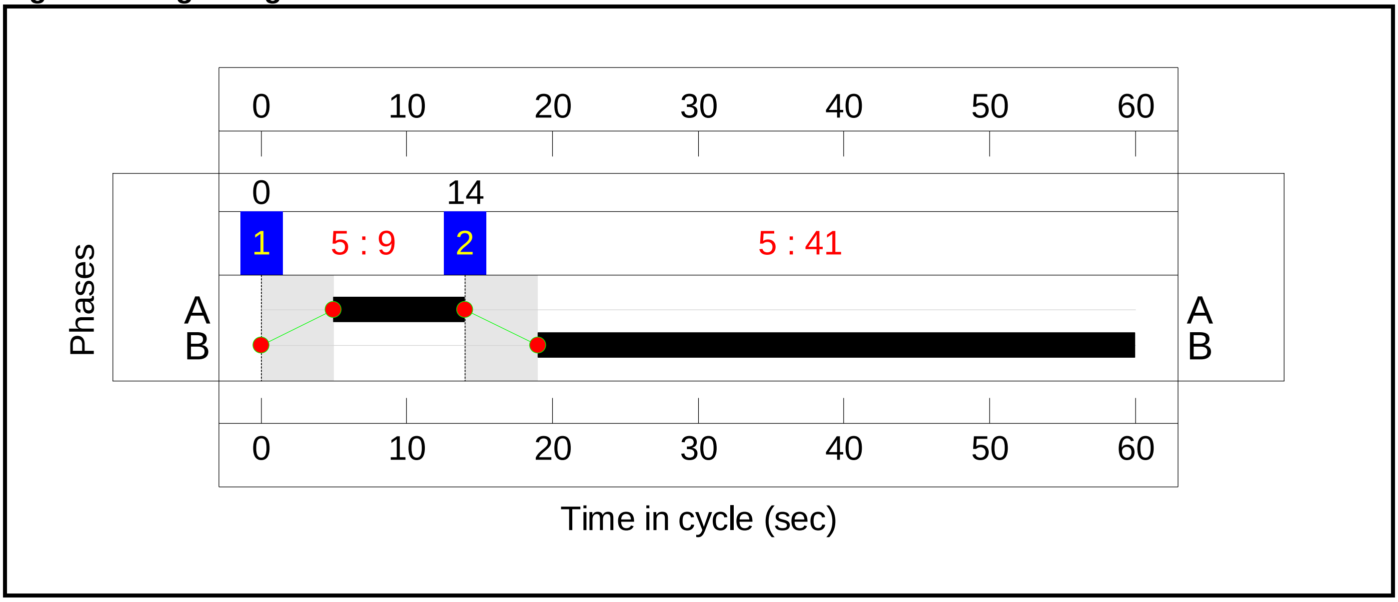
Stage Sequence Diagram



Stage Timings

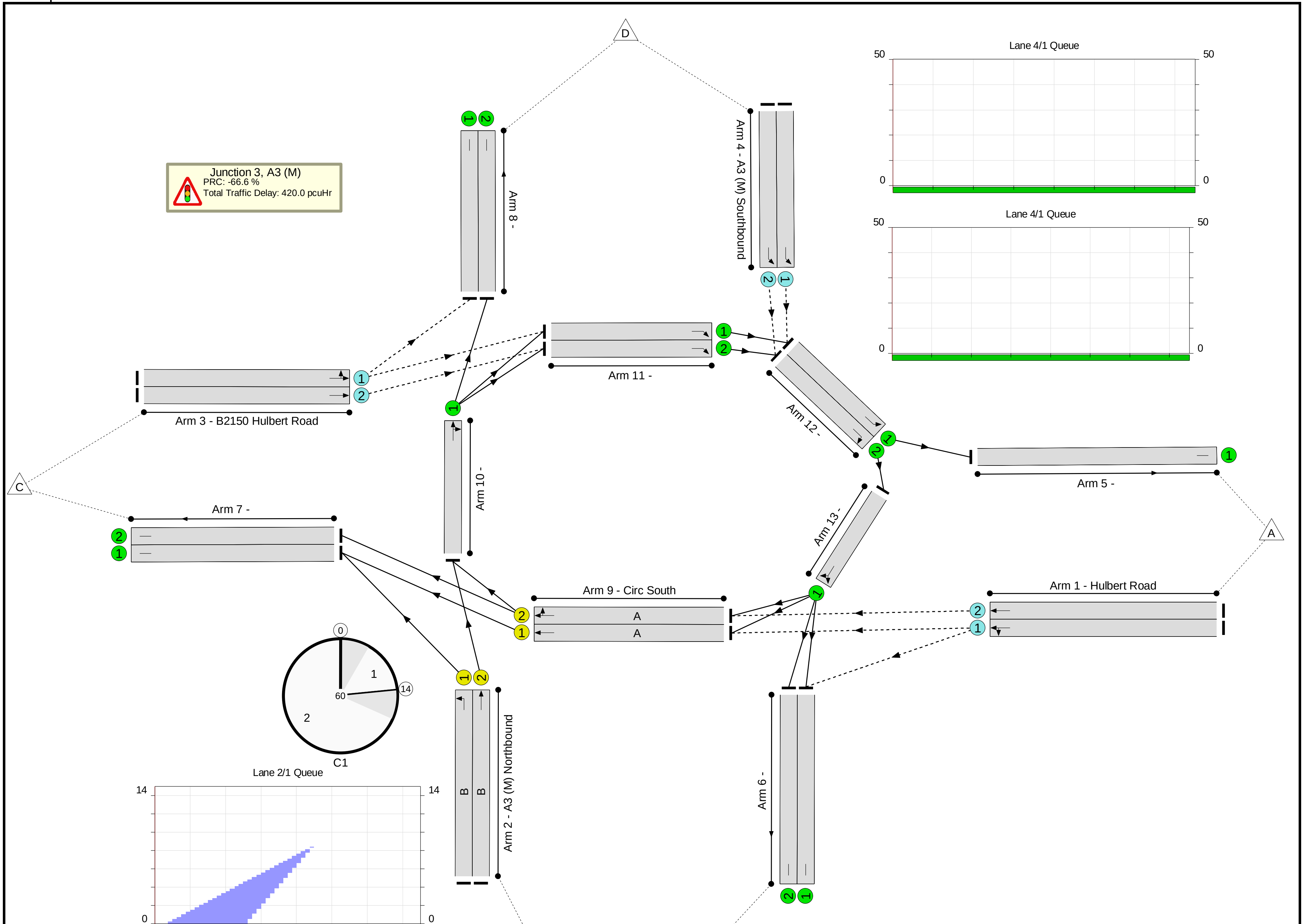
Stage	1	2
Duration	9	41
Change Point	0	14

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**150.0%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**150.0%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	329	1990	586	56.1%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	340	2130	586	58.0%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	41	-	917	1997	1398	65.6%
2/2	A3 (M) Northbound Ahead	U	N/A	N/A	B		1	41	-	42	2091	1464	2.9%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	712	1993	860	82.8%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	1410	2119	940	150.0%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	212	1939	879	24.1%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	312	2094	569	54.8%
5/1		U	N/A	N/A	-		-	-	-	577	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	722	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	706	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1381	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	304	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	387	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	197	Inf	Inf	0.0%
9/1	Circ South Ahead	U	N/A	N/A	A		1	9	-	464	1992	332	139.8%
9/2	Circ South Ahead Right	U	N/A	N/A	A		1	9	-	499	2122	354	141.1%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	237	Inf	Inf	0.0%

Full Input Data And Results

11/1	Ahead	U	N/A	N/A	-		-	-	-	365	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	1410	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	577	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	1722	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	1722	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**2845**	**0**	**0**	**36.2**	**383.8**	**0.0**	**420.0**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**2845**	**0**	**0**	**36.2**	**383.8**	**0.0**	**420.0**	**-**	**-**	**-**	**-**
1/1	329	329	329	0	0	0.0	0.6	-	0.6	7.0	0.0	0.6	0.6
1/2	340	340	340	0	0	0.0	0.7	-	0.7	7.3	0.0	0.7	0.7
2/1	917	917	-	-	-	1.3	0.9	-	2.2	8.7	8.4	0.9	9.4
2/2	42	42	-	-	-	0.0	0.0	-	0.0	4.1	0.2	0.0	0.2
3/1	712	712	712	0	0	0.2	2.3	-	2.5	12.7	5.1	2.3	7.5
3/2	1410	940	940	0	0	19.7	236.4	-	256.1	653.8	70.5	236.4	306.9
4/1	212	212	212	0	0	0.0	0.2	-	0.2	2.7	0.0	0.2	0.2
4/2	312	312	312	0	0	0.0	0.6	-	0.6	7.0	0.0	0.6	0.6
5/1	577	577	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	487	487	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	471	471	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1249	1249	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	215	215	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	387	387	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	140	140	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	464	332	-	-	-	7.2	67.7	-	74.9	581.2	9.9	67.7	77.7
9/2	499	354	-	-	-	7.8	74.3	-	82.2	593.0	10.8	74.3	85.1
10/1	180	180	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	365	365	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	940	940	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	577	577	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	1252	1252	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	1252	1252	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

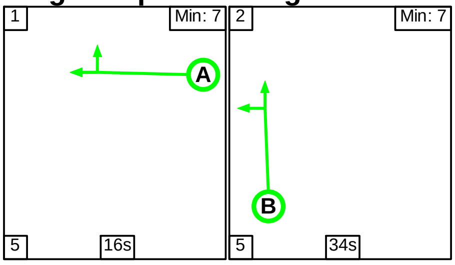
C1 PRC for Signalled Lanes (%): -56.8 Total Delay for Signalled Lanes (pcuHr): 159.37 Cycle Time (s): 60
PRC Over All Lanes (%): -66.6 Total Delay Over All Lanes(pcuHr): 420.04

Full Input Data And Results

Full Input Data And Results

Scenario 2: 'Alternative DM PM' (FG2: 'Alternative DM PM', Plan 1: 'Network Control Plan 1')

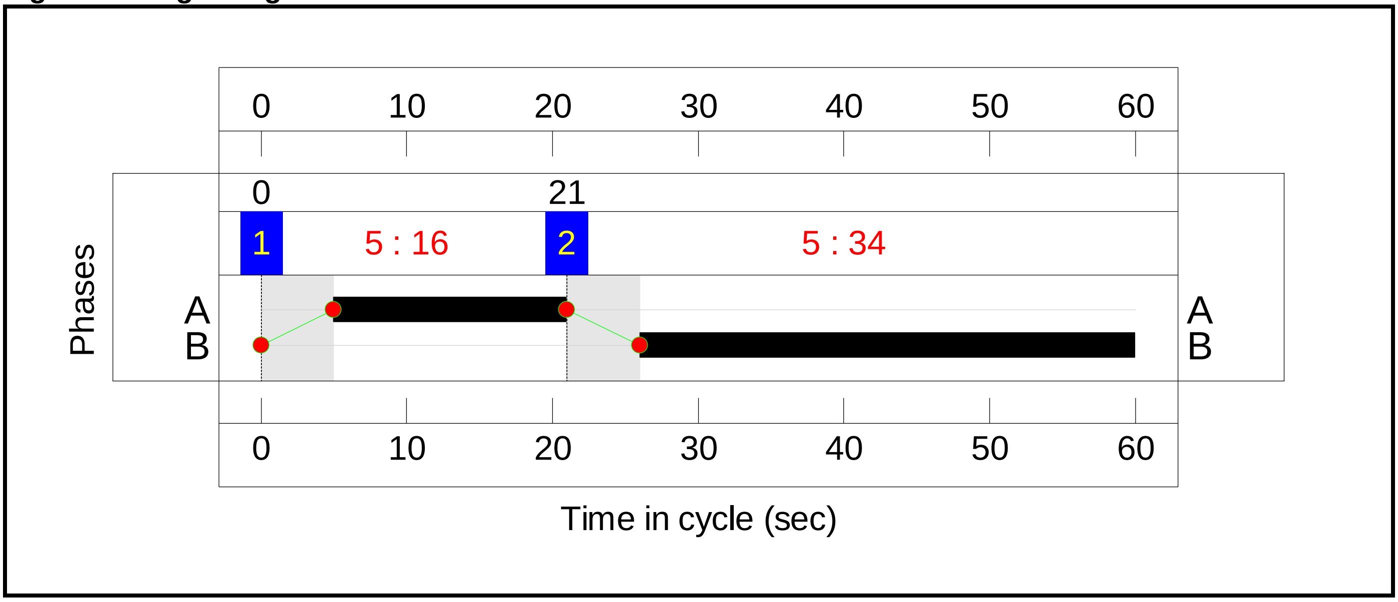
Stage Sequence Diagram



Stage Timings

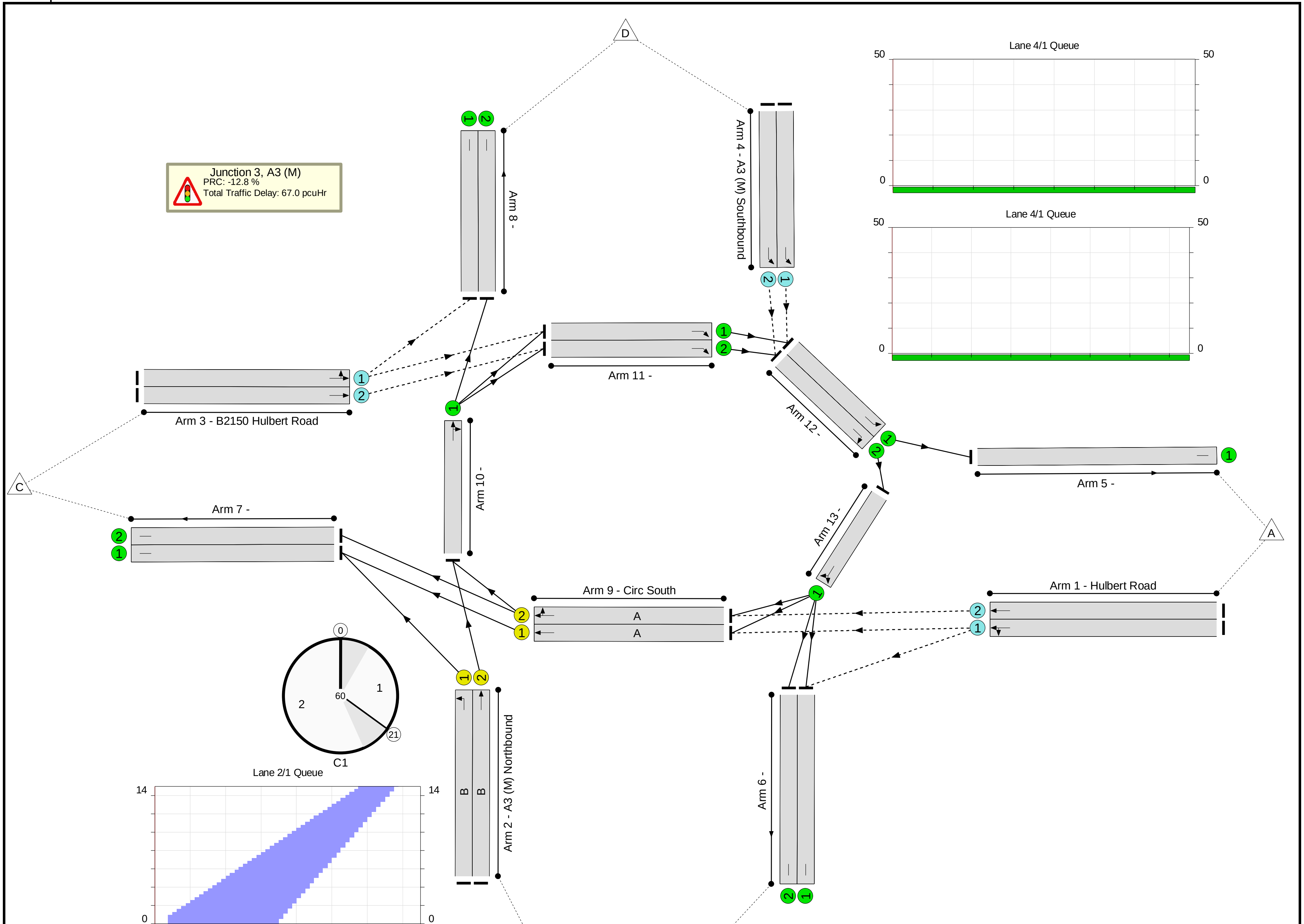
Stage	1	2
Duration	16	34
Change Point	0	21

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**101.6%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**101.6%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	322	1990	584	55.1%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	373	2130	584	63.9%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	34	-	1183	1997	1165	101.6%
2/2	A3 (M) Northbound Ahead	U	N/A	N/A	B		1	34	-	18	2091	1220	1.5%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	554	1994	854	64.8%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	736	2119	940	78.3%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	326	1939	898	36.3%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	524	2094	655	80.0%
5/1		U	N/A	N/A	-		-	-	-	635	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	413	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	368	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1750	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	444	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	263	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	163	Inf	Inf	0.0%
9/1	Circ South Ahead	U	N/A	N/A	A		1	16	-	567	1992	564	100.5%
9/2	Circ South Ahead Right	U	N/A	N/A	A		1	16	-	607	2124	602	100.9%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	181	Inf	Inf	0.0%

Full Input Data And Results

11/1	Ahead	U	N/A	N/A	-		-	-	-	309	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	736	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	635	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	1260	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	1260	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**2835**	**0**	**0**	**12.1**	**55.0**	**0.0**	**67.0**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**2835**	**0**	**0**	**12.1**	**55.0**	**0.0**	**67.0**	**-**	**-**	**-**	**-**
1/1	322	322	322	0	0	0.0	0.6	-	0.6	6.8	0.0	0.6	0.6
1/2	373	373	373	0	0	0.0	0.9	-	0.9	8.5	0.0	0.9	0.9
2/1	1183	1165	-	-	-	4.8	22.3	-	27.1	82.4	20.0	22.3	42.3
2/2	18	18	-	-	-	0.0	0.0	-	0.0	6.9	0.1	0.0	0.1
3/1	554	554	554	0	0	0.0	0.9	-	0.9	6.0	1.5	0.9	2.5
3/2	736	736	736	0	0	0.0	1.8	-	1.8	8.7	0.0	1.8	1.8
4/1	326	326	326	0	0	0.0	0.3	-	0.3	3.1	0.0	0.3	0.3
4/2	524	524	524	0	0	0.0	1.9	-	1.9	13.4	0.0	1.9	1.9
5/1	635	635	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	413	413	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	368	368	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1729	1729	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	440	440	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	263	263	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	162	162	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	567	564	-	-	-	3.5	12.6	-	16.0	101.8	9.5	12.6	22.1
9/2	607	602	-	-	-	3.8	13.7	-	17.5	103.6	10.2	13.7	23.9
10/1	180	180	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	309	309	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	736	736	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	635	635	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	1260	1260	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	1260	1260	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

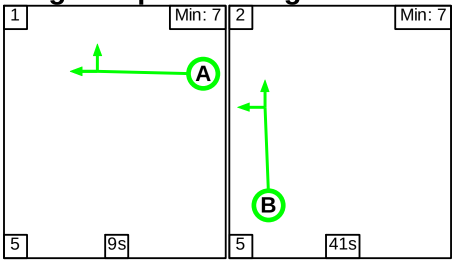
C1 PRC for Signalled Lanes (%): -12.8 Total Delay for Signalled Lanes (pcuHr): 60.62 Cycle Time (s): 60
PRC Over All Lanes (%): -12.8 Total Delay Over All Lanes(pcuHr): 67.03

Full Input Data And Results

Full Input Data And Results

Scenario 3: 'Alternative DS AM' (FG3: 'Alternative DS AM', Plan 1: 'Network Control Plan 1')

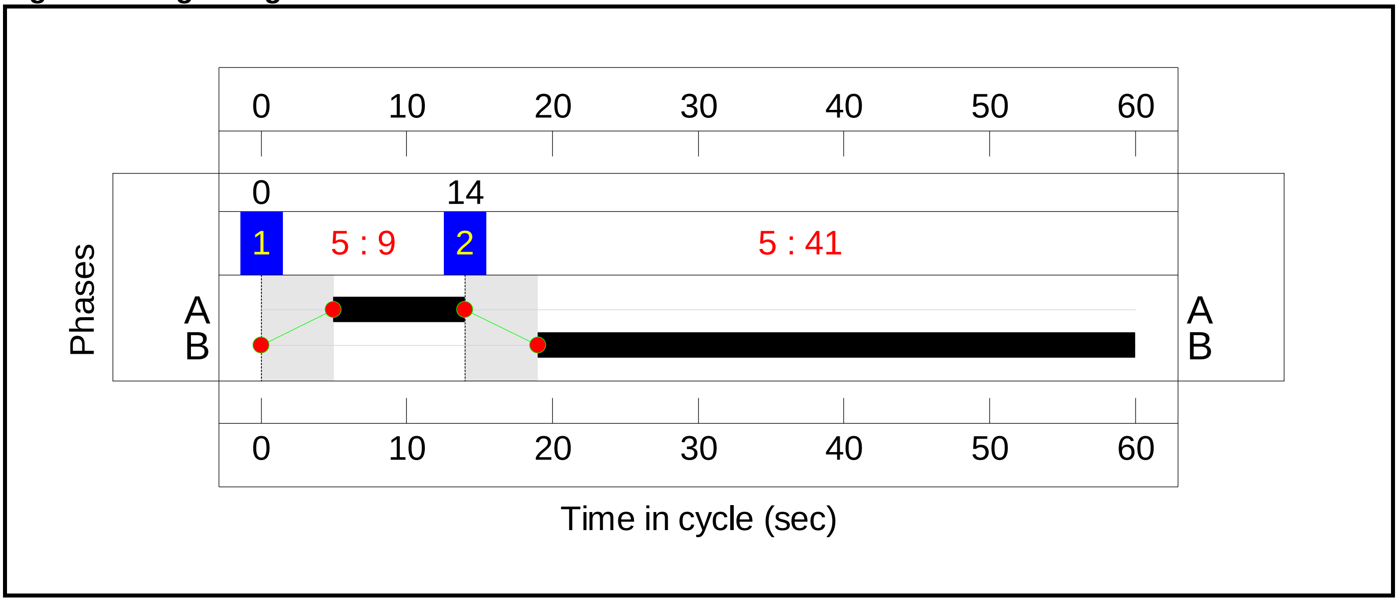
Stage Sequence Diagram



Stage Timings

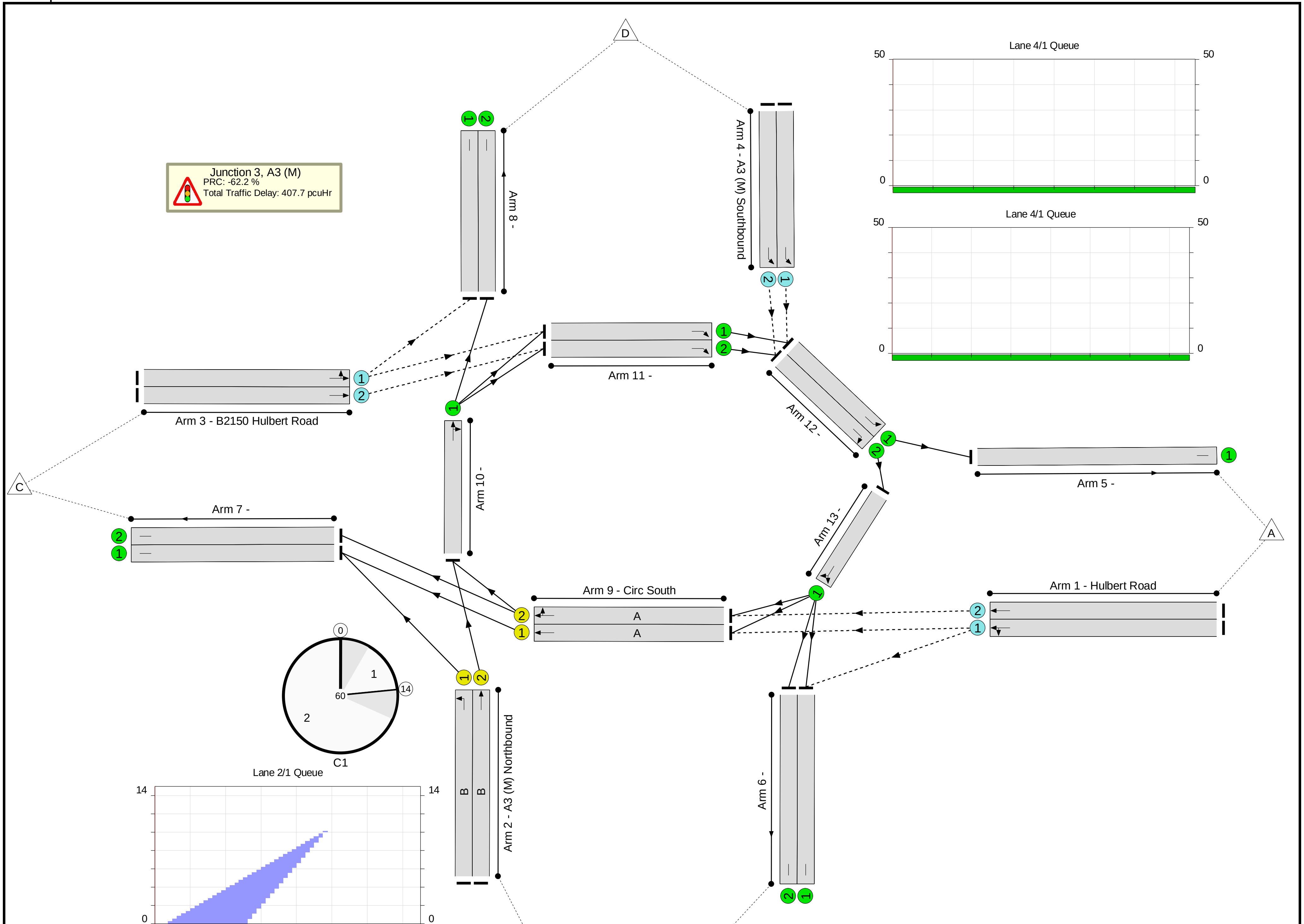
Stage	1	2
Duration	9	41
Change Point	0	14

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**146.0%**
Junction 3, A3 (M)	-	-	**N/A**	-	-		-	-	-	-	-	-	**146.0%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	348	1990	597	58.3%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	363	2130	597	60.8%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	41	-	1011	1997	1398	72.3%
2/2	A3 (M) Northbound Ahead	U	N/A	N/A	B		1	41	-	42	2091	1464	2.9%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	738	1993	856	86.2%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	1370	2119	938	146.0%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	219	1939	880	24.9%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	283	2094	571	49.6%
5/1		U	N/A	N/A	-		-	-	-	581	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	702	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	686	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1482	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	300	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	416	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	207	Inf	Inf	0.0%
9/1	Circ South Ahead	U	N/A	N/A	A		1	9	-	471	1992	332	141.9%
9/2	Circ South Ahead Right	U	N/A	N/A	A		1	9	-	505	2122	354	142.8%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	247	Inf	Inf	0.0%

Full Input Data And Results

11/1	Ahead	U	N/A	N/A	-		-	-	-	362	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	1370	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	581	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	1653	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	1653	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**2889**	**0**	**0**	**35.5**	**372.2**	**0.0**	**407.7**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**2889**	**0**	**0**	**35.5**	**372.2**	**0.0**	**407.7**	**-**	**-**	**-**	**-**
1/1	348	348	348	0	0	0.0	0.7	-	0.7	7.2	0.0	0.7	0.7
1/2	363	363	363	0	0	0.0	0.8	-	0.8	7.7	0.0	0.8	0.8
2/1	1011	1011	-	-	-	1.5	1.3	-	2.8	10.1	10.1	1.3	11.4
2/2	42	42	-	-	-	0.0	0.0	-	0.0	4.1	0.2	0.0	0.2
3/1	738	738	738	0	0	0.3	3.0	-	3.2	15.8	6.2	3.0	9.1
3/2	1370	938	938	0	0	18.1	217.3	-	235.4	618.7	68.5	217.3	285.8
4/1	219	219	219	0	0	0.0	0.2	-	0.2	2.7	0.0	0.2	0.2
4/2	283	283	283	0	0	0.0	0.5	-	0.5	6.2	0.0	0.5	0.5
5/1	581	581	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	486	486	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	470	470	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1343	1343	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	210	210	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	416	416	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	146	146	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	471	332	-	-	-	7.5	71.2	-	78.6	600.9	10.3	71.2	81.4
9/2	505	354	-	-	-	8.1	77.3	-	85.4	608.6	11.1	77.3	88.4
10/1	186	186	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	362	362	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	938	938	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	581	581	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	1221	1221	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	1221	1221	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

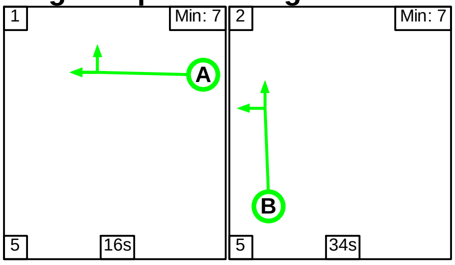
C1 PRC for Signalled Lanes (%): -58.7 Total Delay for Signalled Lanes (pcuHr): 166.87 Cycle Time (s): 60
PRC Over All Lanes (%): -62.2 Total Delay Over All Lanes(pcuHr): 407.66

Full Input Data And Results

Full Input Data And Results

Scenario 4: 'Alternative DS PM' (FG4: 'Alternative DS PM', Plan 1: 'Network Control Plan 1')

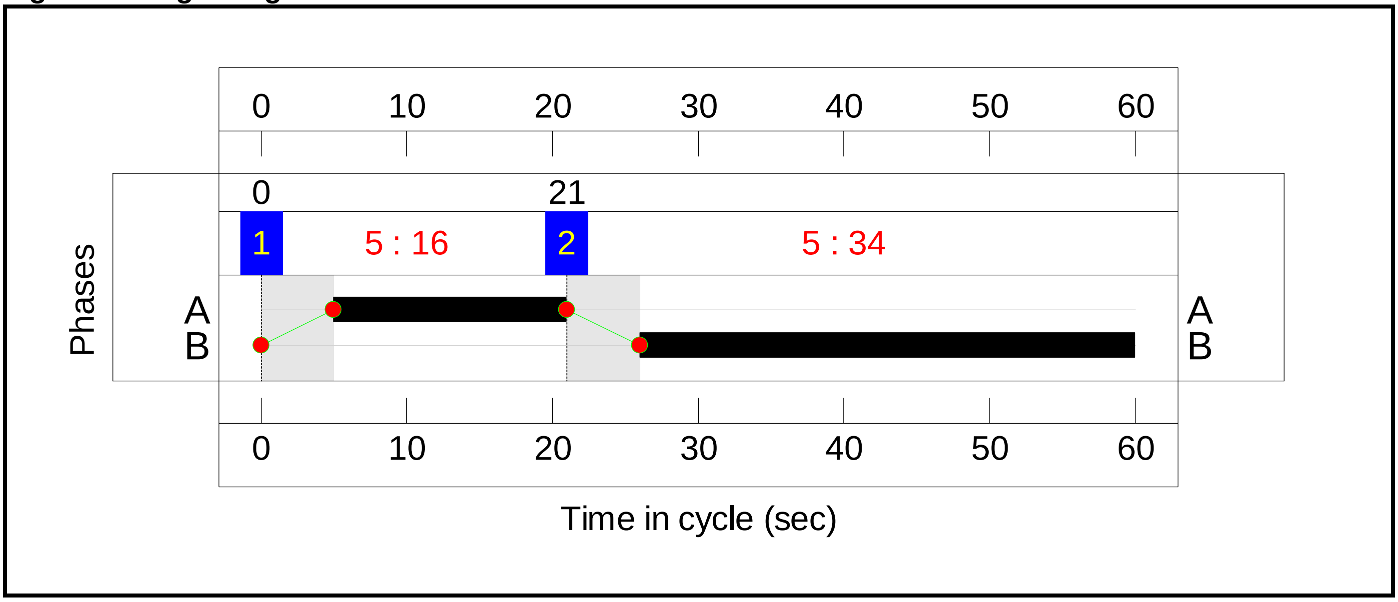
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	16	34
Change Point	0	21

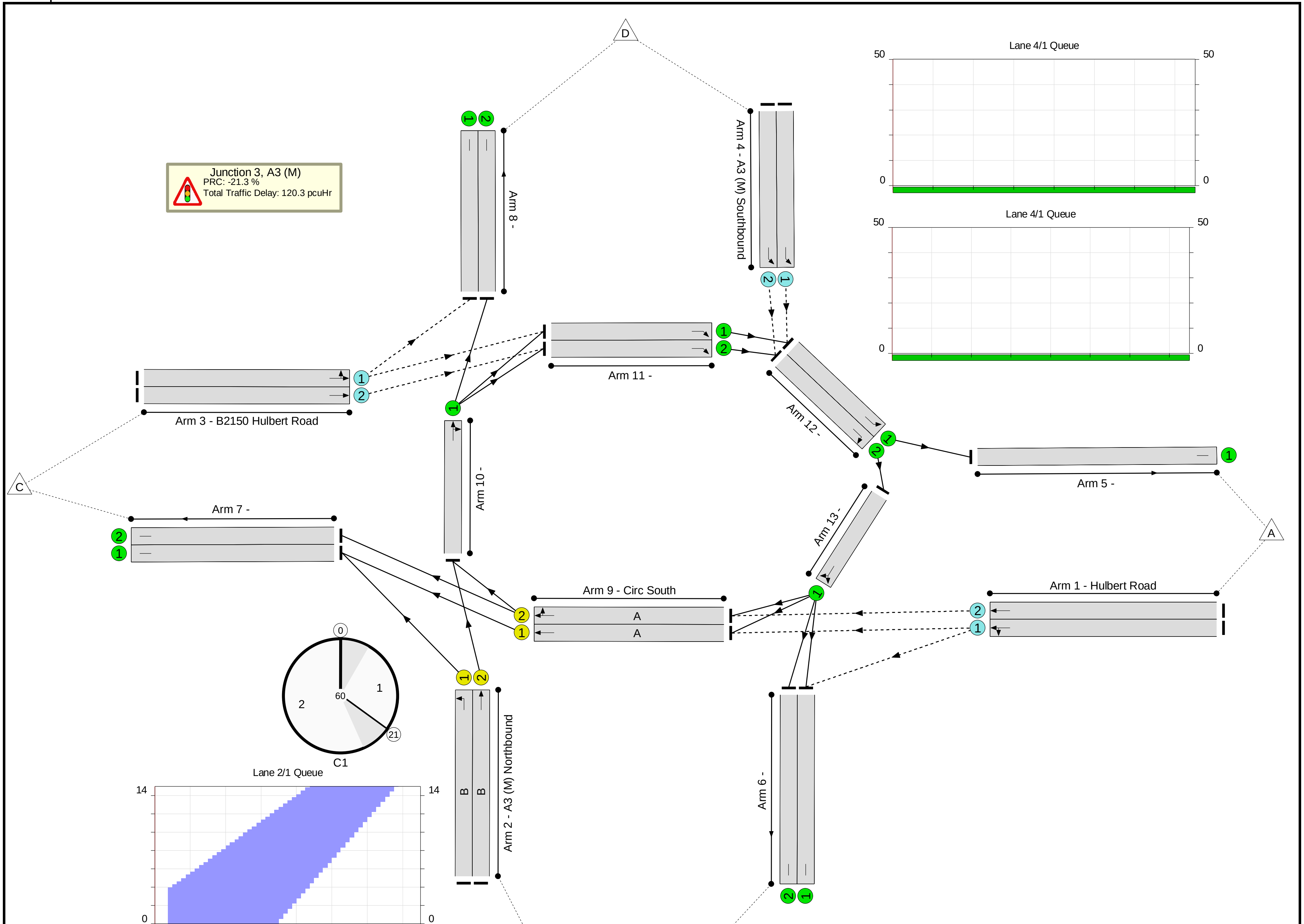
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**109.2%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**109.2%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	337	1990	592	57.0%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	417	2130	592	70.5%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	34	-	1272	1997	1165	109.2%
2/2	A3 (M) Northbound Ahead	U	N/A	N/A	B		1	34	-	18	2091	1220	1.5%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	383	1995	755	50.7%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	736	2119	920	80.0%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	333	1939	896	37.2%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	501	2094	653	76.7%
5/1		U	N/A	N/A	-		-	-	-	647	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	413	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	368	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1858	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	391	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	87	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	233	Inf	Inf	0.0%
9/1	Circ South Ahead	U	N/A	N/A	A		1	16	-	586	1992	564	103.8%
9/2	Circ South Ahead Right	U	N/A	N/A	A		1	16	-	624	2122	601	103.8%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	251	Inf	Inf	0.0%

Full Input Data And Results

11/1	Ahead	U	N/A	N/A	-		-	-	-	314	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	736	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	647	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	1237	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	1237	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**2707**	**0**	**0**	**17.1**	**103.2**	**0.0**	**120.3**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**2707**	**0**	**0**	**17.1**	**103.2**	**0.0**	**120.3**	**-**	**-**	**-**	**-**
1/1	337	337	337	0	0	0.0	0.7	-	0.7	7.0	0.0	0.7	0.7
1/2	417	417	417	0	0	0.0	1.2	-	1.2	10.2	0.0	1.2	1.2
2/1	1272	1165	-	-	-	8.4	58.9	-	67.4	190.7	23.7	58.9	82.6
2/2	18	18	-	-	-	0.0	0.0	-	0.0	6.9	0.1	0.0	0.1
3/1	383	383	383	0	0	0.1	0.5	-	0.6	5.6	2.0	0.5	2.5
3/2	736	736	736	0	0	0.0	2.0	-	2.0	9.6	0.0	2.0	2.0
4/1	333	333	333	0	0	0.0	0.3	-	0.3	3.2	0.0	0.3	0.3
4/2	501	501	501	0	0	0.0	1.6	-	1.6	11.6	0.0	1.6	1.6
5/1	647	647	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	413	413	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	368	368	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1729	1729	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	377	377	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	87	87	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	224	224	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	586	564	-	-	-	4.1	18.7	-	22.8	140.0	10.1	18.7	28.8
9/2	624	601	-	-	-	4.4	19.4	-	23.8	137.4	10.8	19.4	30.2
10/1	242	242	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	314	314	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	736	736	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	647	647	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	1237	1237	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	1237	1237	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -21.3 Total Delay for Signalled Lanes (pcuHr): 114.00 Cycle Time (s): 60
PRC Over All Lanes (%): -21.3 Total Delay Over All Lanes(pcuHr): 120.30

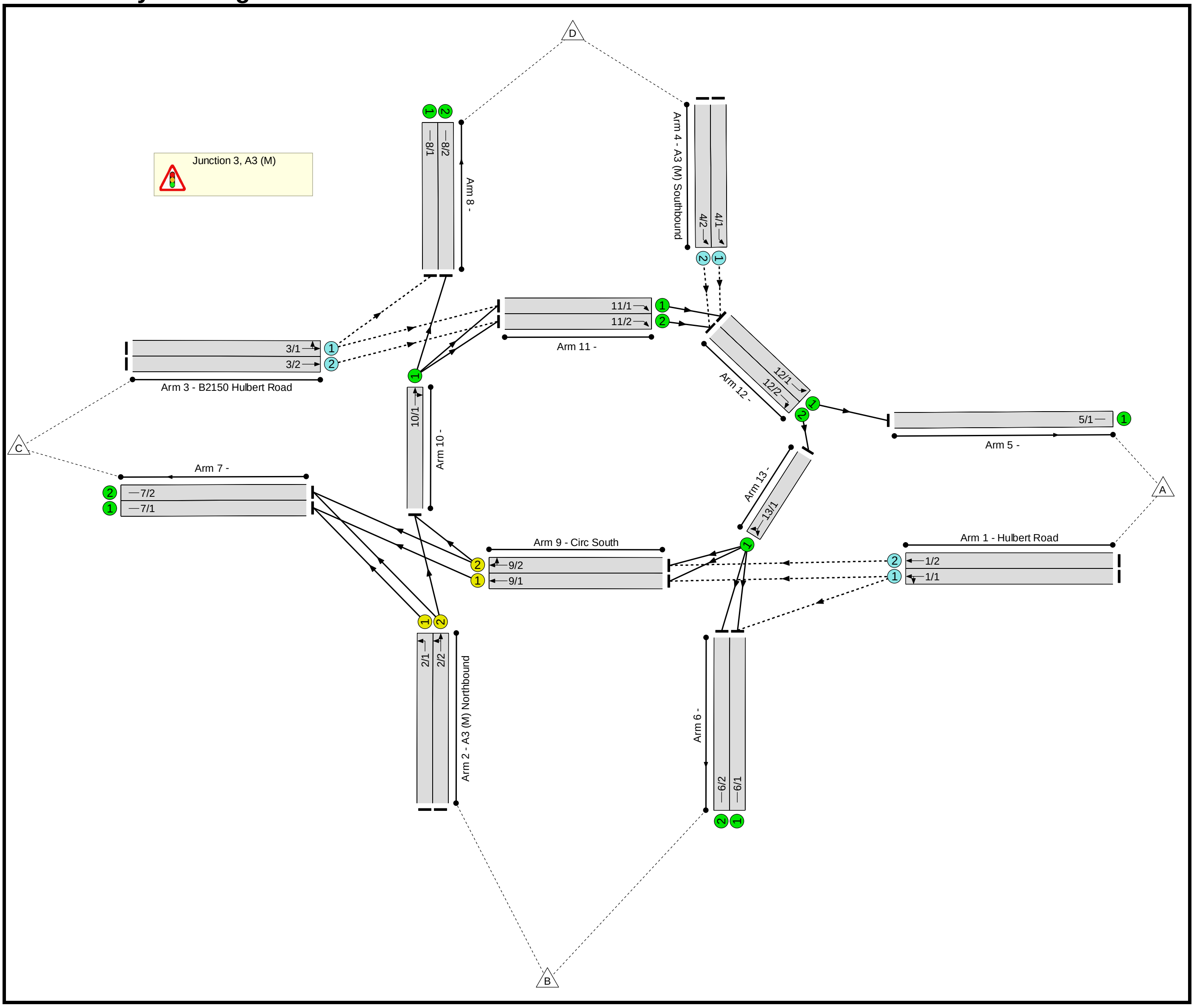
Full Input Data And Results

Full Input Data And Results

User and Project Details

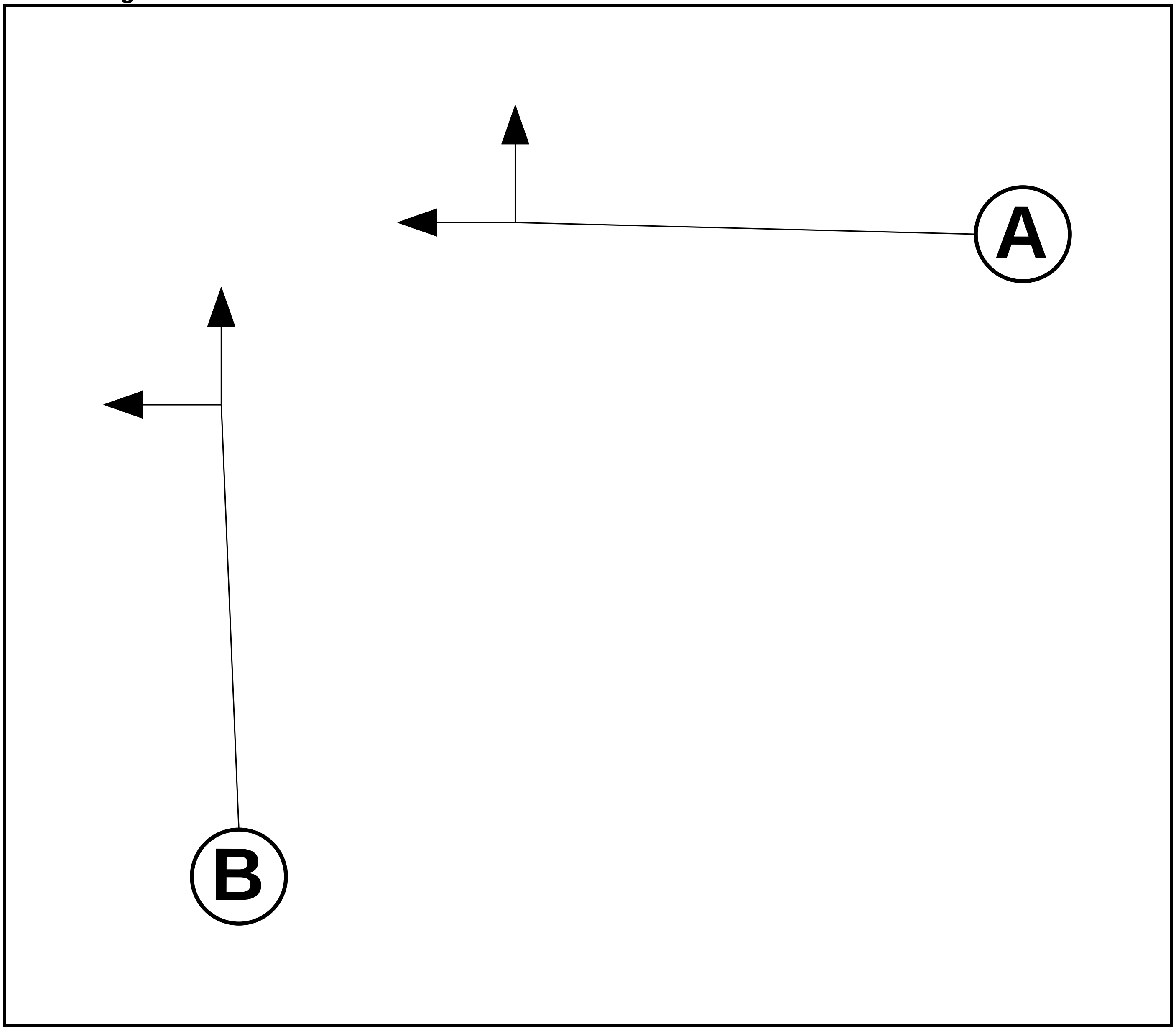
Project:	
Title:	
Location:	
Additional detail:	
File name:	A3 (M) J3 - Permitted left turn from offside lane of A3 (south) approach.lsg3x
Author:	
Company:	
Address:	

Network Layout Diagram



Full Input Data And Results

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

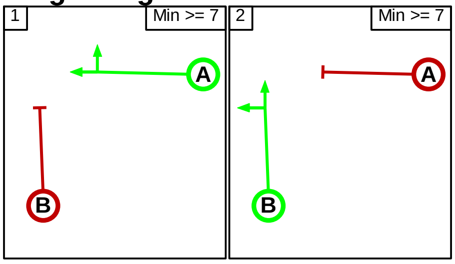
	Starting Phase		
Terminating Phase		A	B
	A		5
	B	5	

Phases in Stage

Stage No.	Phases in Stage
1	A
2	B

Full Input Data And Results

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		5
	2	5	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Junction 3, A3 (M)												
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/1 (Hulbert Road)	6/1 (Left)	1000	0	13/1	0.33	All	-	-	-	-	-
	9/1 (Ahead)	1000	0	13/1	0.33	All					
1/2 (Hulbert Road)	9/2 (Ahead)	1000	0	13/1	0.33	All	-	-	-	-	-
3/1 (B2150 Hulbert Road)	8/1 (Left)	1000	0	10/1	0.33	To 8/2 (Ahead)	-	-	-	-	-
	11/1 (Ahead)	1000	0	10/1	1.09	To 8/2 (Ahead) To 11/1 (Right)					
3/2 (B2150 Hulbert Road)	11/2 (Ahead)	1000	0	10/1	0.33	All	-	-	-	-	-
4/1 (A3 (M) Southbound)	12/1 (Left)	1000	0	11/1	0.33	All	-	-	-	-	-
4/2 (A3 (M) Southbound)	12/2 (Left)	1000	0	11/2	0.33	All	-	-	-	-	-
				11/1	0.33	All					

Lane Input Data

Junction: Junction 3, A3 (M)												
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 (Hulbert Road)	O		2	3	60.0	Geom	-	3.75	0.00	Y	Arm 6 Left Arm 9 Ahead	Inf Inf
1/2 (Hulbert Road)	O		2	3	60.0	Geom	-	3.75	0.00	N	Arm 9 Ahead	Inf
2/1 (A3 (M) Northbound)	U	B	2	3	60.0	Geom	-	3.83	0.00	Y	Arm 7 Left	5431.00
2/2 (A3 (M) Northbound)	U	B	2	3	60.0	Geom	-	3.61	0.00	N	Arm 7 Left Arm 10 Ahead	Inf 126.00
3/1 (B2150 Hulbert Road)	O		2	3	60.0	Geom	-	3.81	0.00	Y	Arm 8 Left Arm 11 Ahead	645.00 Inf
3/2 (B2150 Hulbert Road)	O		2	3	60.0	Geom	-	3.90	0.00	N	Arm 11 Ahead	122.00
4/1 (A3 (M) Southbound)	O		2	3	60.0	Geom	-	3.48	0.00	Y	Arm 12 Left	122.00
4/2 (A3 (M) Southbound)	O		2	3	60.0	Geom	-	3.58	0.00	N	Arm 12 Left	164.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/2	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/2	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1 (Circ South)	U	A	2	3	20.9	Geom	-	4.04	0.00	Y	Arm 7 Ahead	111.00
9/2 (Circ South)	U	A	2	3	20.9	Geom	-	4.00	0.00	N	Arm 7 Ahead Arm 10 Right	127.00 70.00
10/1	U		2	3	19.1	Inf	-	-	-	-	-	-
11/1	U		2	3	27.0	Inf	-	-	-	-	-	-
11/2	U		2	3	27.0	Inf	-	-	-	-	-	-
12/1	U		2	3	15.7	Inf	-	-	-	-	-	-
12/2	U		2	3	15.7	Inf	-	-	-	-	-	-

13/1	U		2	3	7.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Alternative DM AM'	08:00	09:00	01:00	
2: 'Alternative DM PM'	17:00	18:00	01:00	
3: 'Alternative DS AM'	08:00	09:00	01:00	
4: 'Alternative DS PM'	17:00	18:00	01:00	

Scenario 1: 'Alternative DM AM' (FG1: 'Alternative DM AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	15	459	195	669
	B	40	3	917	2	962
	C	325	1410	6	387	2128
	D	212	3	309	0	524
	Tot.	577	1431	1691	584	4283

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: Alternative DM AM
Junction: Junction 3, A3 (M)	
1/1	335
1/2	334
2/1	466
2/2	493
3/1	712
3/2	1410
4/1	212
4/2	312
5/1	577
6/1	722
6/2	706
7/1	919
7/2	766
8/1	387
8/2	197
9/1	453
9/2	510
10/1	237
11/1	365
11/2	1410
12/1	577
12/2	1722
13/1	1722

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	4.5 %	1990	1990
				Arm 9 Ahead	Inf	95.5 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 7 Left	Inf	91.5 %	2114	2114
				Arm 10 Ahead	126.00	8.5 %		
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	54.4 %	1993	1993
				Arm 11 Ahead	Inf	45.6 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1 (Circ South)	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2 (Circ South)	4.00	0.00	N	Arm 7 Ahead	127.00	61.8 %	2122	2122
				Arm 10 Right	70.00	38.2 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'Alternative DM PM' (FG2: 'Alternative DM PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	45	487	163	695
	B	18	0	1183	0	1201
	C	291	736	26	263	1316
	D	326	0	524	0	850
	Tot.	635	781	2220	426	4062

Traffic Lane Flows

Lane	Scenario 2: Alternative DM PM
Junction: Junction 3, A3 (M)	
1/1	347
1/2	348
2/1	577
2/2	624
3/1	554
3/2	736
4/1	326
4/2	524
5/1	635
6/1	413
6/2	368
7/1	1138
7/2	1056
8/1	263
8/2	163
9/1	561
9/2	613
10/1	181
11/1	309
11/2	736
12/1	635
12/2	1260
13/1	1260

Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	13.0 %	1990	1990
				Arm 9 Ahead	Inf	87.0 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 7 Left	Inf	97.1 %	2115	2115
				Arm 10 Ahead	126.00	2.9 %		
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	47.5 %	1994	1994
				Arm 11 Ahead	Inf	52.5 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1 (Circ South)	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2 (Circ South)	4.00	0.00	N	Arm 7 Ahead	127.00	73.4 %	2124	2124
				Arm 10 Right	70.00	26.6 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'Alternative DS AM' (FG3: 'Alternative DS AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	15	491	205	711
	B	40	3	1011	2	1056
	C	322	1370	6	416	2114
	D	219	3	280	0	502
	Tot.	581	1391	1788	623	4383

Traffic Lane Flows

Lane	Scenario 3: Alternative DS AM
Junction: Junction 3, A3 (M)	
1/1	324
1/2	387
2/1	500
2/2	553
3/1	738
3/2	1370
4/1	219
4/2	283
5/1	581
6/1	702
6/2	686
7/1	973
7/2	809
8/1	416
8/2	207
9/1	473
9/2	503
10/1	247
11/1	362
11/2	1370
12/1	581
12/2	1653
13/1	1653

Lane Saturation Flows

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Junction 3, A3 (M)								
1/1 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	4.6 %	1990	1990
				Arm 9 Ahead	Inf	95.4 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 7 Left	Inf	92.4 %	2114	2114
				Arm 10 Ahead	126.00	7.6 %		
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	56.4 %	1993	1993
				Arm 11 Ahead	Inf	43.6 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1 (Circ South)	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2 (Circ South)	4.00	0.00	N	Arm 7 Ahead	127.00	59.2 %	2122	2122
				Arm 10 Right	70.00	40.8 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'Alternative DS PM' (FG4: 'Alternative DS PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	45	476	233	754
	B	18	0	1272	0	1290
	C	296	736	26	87	1145
	D	333	0	501	0	834
	Tot.	647	781	2275	320	4023

Traffic Lane Flows

Lane	Scenario 4: Alternative DS PM
Junction: Junction 3, A3 (M)	
1/1	377
1/2	377
2/1	621
2/2	669
3/1	383
3/2	736
4/1	333
4/2	501
5/1	647
6/1	413
6/2	368
7/1	1201
7/2	1048
8/1	87
8/2	233
9/1	580
9/2	630
10/1	251
11/1	314
11/2	736
12/1	647
12/2	1237
13/1	1237

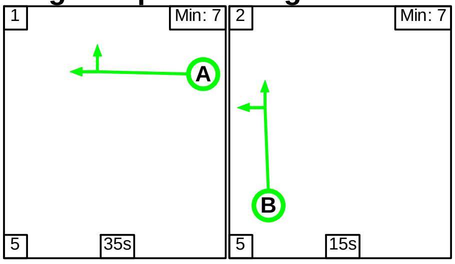
Lane Saturation Flows

Junction: Junction 3, A3 (M)								
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 (Hulbert Road)	3.75	0.00	Y	Arm 6 Left	Inf	11.9 %	1990	1990
				Arm 9 Ahead	Inf	88.1 %		
1/2 (Hulbert Road)	3.75	0.00	N	Arm 9 Ahead	Inf	100.0 %	2130	2130
2/1 (A3 (M) Northbound)	3.83	0.00	Y	Arm 7 Left	5431.00	100.0 %	1997	1997
2/2 (A3 (M) Northbound)	3.61	0.00	N	Arm 7 Left	Inf	97.3 %	2115	2115
				Arm 10 Ahead	126.00	2.7 %		
3/1 (B2150 Hulbert Road)	3.81	0.00	Y	Arm 8 Left	645.00	22.7 %	1995	1995
				Arm 11 Ahead	Inf	77.3 %		
3/2 (B2150 Hulbert Road)	3.90	0.00	N	Arm 11 Ahead	122.00	100.0 %	2119	2119
4/1 (A3 (M) Southbound)	3.48	0.00	Y	Arm 12 Left	122.00	100.0 %	1939	1939
4/2 (A3 (M) Southbound)	3.58	0.00	N	Arm 12 Left	164.00	100.0 %	2094	2094
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1 (Circ South)	4.04	0.00	Y	Arm 7 Ahead	111.00	100.0 %	1992	1992
9/2 (Circ South)	4.00	0.00	N	Arm 7 Ahead	127.00	63.0 %	2122	2122
				Arm 10 Right	70.00	37.0 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 1: 'Alternative DM AM' (FG1: 'Alternative DM AM', Plan 1: 'Network Control Plan 1')

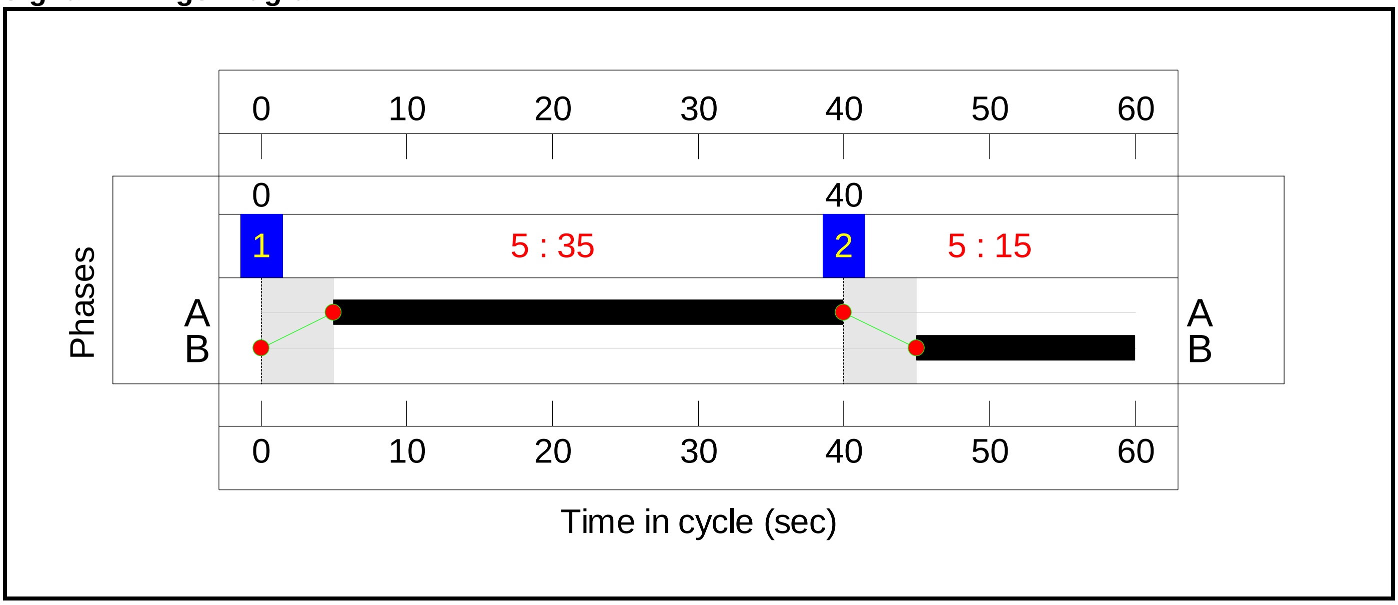
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	35	15
Change Point	0	40

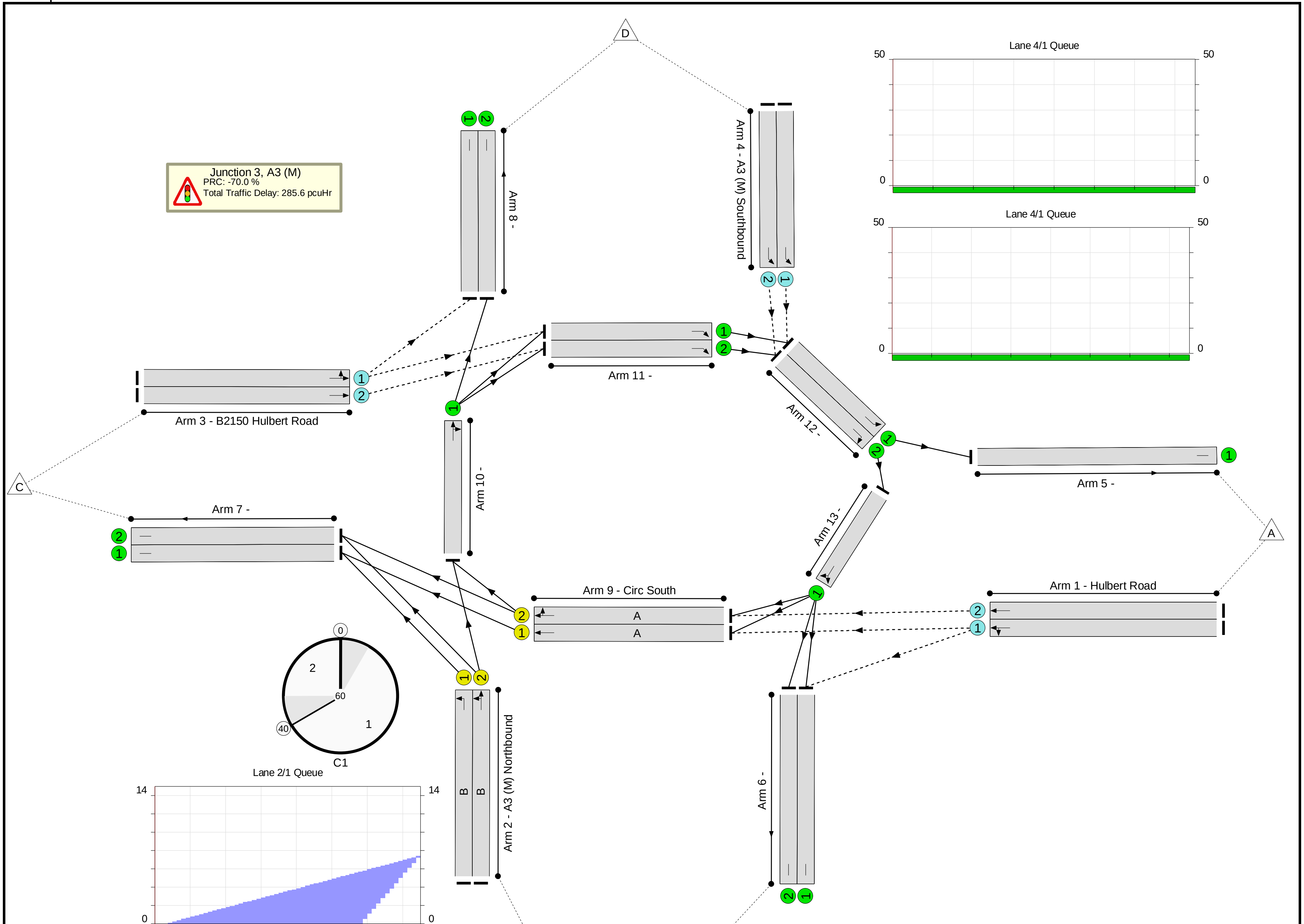
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**153.0%**
Junction 3, A3 (M)	-	-	**N/A**	-	-		-	-	-	-	-	-	**153.0%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	335	1990	593	56.5%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	334	2130	593	56.4%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	15	-	466	1997	533	87.5%
2/2	A3 (M) Northbound Left Ahead	U	N/A	N/A	B		1	15	-	493	2114	564	87.5%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	712	1993	826	86.2%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	1410	2119	922	153.0%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	212	1939	879	24.1%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	312	2094	575	54.2%
5/1		U	N/A	N/A	-		-	-	-	577	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	722	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	706	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	919	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	766	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	387	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	197	Inf	Inf	0.0%
9/1	Circ South Ahead	U	N/A	N/A	A		1	35	-	453	1992	1195	37.9%
9/2	Circ South Ahead Right	U	N/A	N/A	A		1	35	-	510	2122	1273	40.1%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	237	Inf	Inf	0.0%

Full Input Data And Results

11/1	Ahead	U	N/A	N/A	-		-	-	-	365	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	1410	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	577	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	1722	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	1722	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**2827**	**0**	**0**	**27.9**	**257.7**	**0.0**	**285.6**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**2827**	**0**	**0**	**27.9**	**257.7**	**0.0**	**285.6**	**-**	**-**	**-**	**-**
1/1	335	335	335	0	0	0.0	0.6	-	0.6	7.0	0.0	0.6	0.6
1/2	334	334	334	0	0	0.0	0.6	-	0.6	6.9	0.0	0.6	0.6
2/1	466	466	-	-	-	2.7	3.2	-	5.9	45.7	7.4	3.2	10.6
2/2	493	493	-	-	-	2.9	3.2	-	6.1	44.4	7.8	3.2	11.0
3/1	712	712	712	0	0	0.1	3.0	-	3.1	15.5	4.7	3.0	7.7
3/2	1410	922	922	0	0	20.5	245.7	-	266.1	679.5	70.5	245.7	316.2
4/1	212	212	212	0	0	0.0	0.2	-	0.2	2.7	0.0	0.2	0.2
4/2	312	312	312	0	0	0.0	0.6	-	0.6	6.8	0.0	0.6	0.6
5/1	577	577	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	478	478	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	462	462	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	919	919	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	766	766	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	387	387	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	197	197	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	453	453	-	-	-	0.8	0.3	-	1.1	8.6	3.9	0.3	4.2
9/2	510	510	-	-	-	0.9	0.3	-	1.2	8.7	4.4	0.3	4.7
10/1	237	237	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	365	365	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	922	922	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	577	577	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	1234	1234	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	1234	1234	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

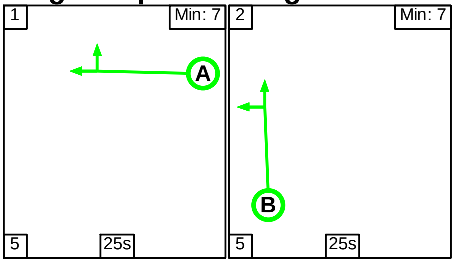
C1 PRC for Signalled Lanes (%): 2.8 Total Delay for Signalled Lanes (pcuHr): 14.32 Cycle Time (s): 60
PRC Over All Lanes (%): -70.0 Total Delay Over All Lanes(pcuHr): 285.56

Full Input Data And Results

Full Input Data And Results

Scenario 2: 'Alternative DM PM' (FG2: 'Alternative DM PM', Plan 1: 'Network Control Plan 1')

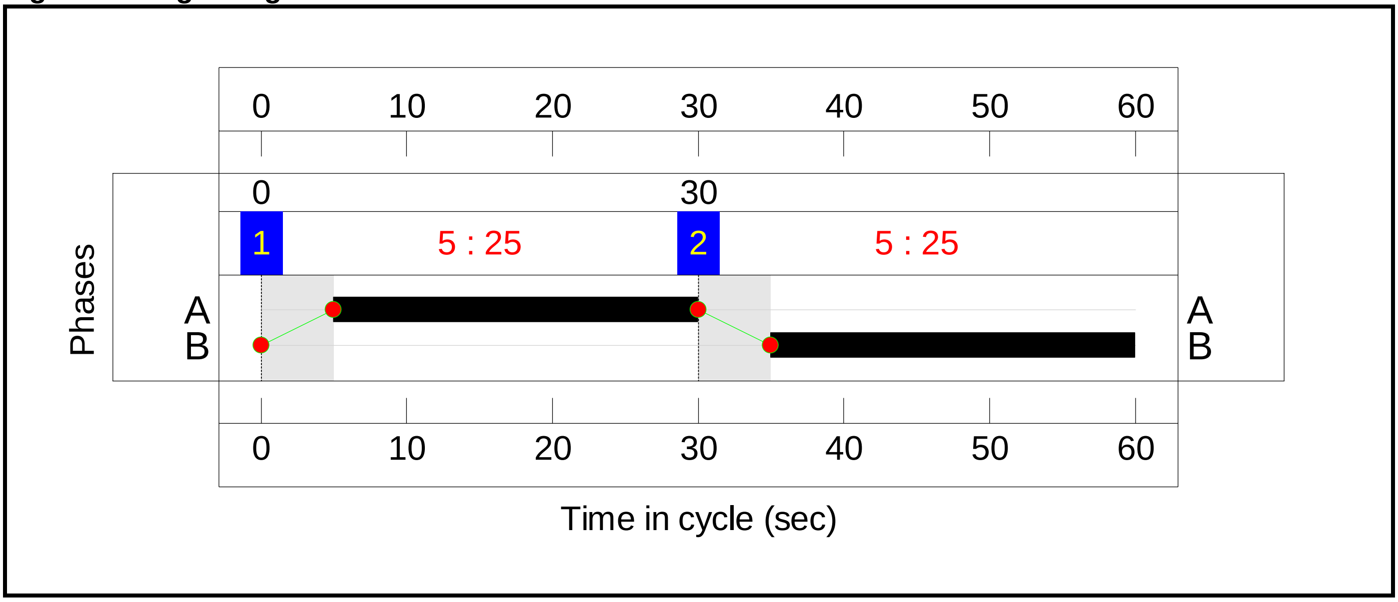
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	25	25
Change Point	0	30

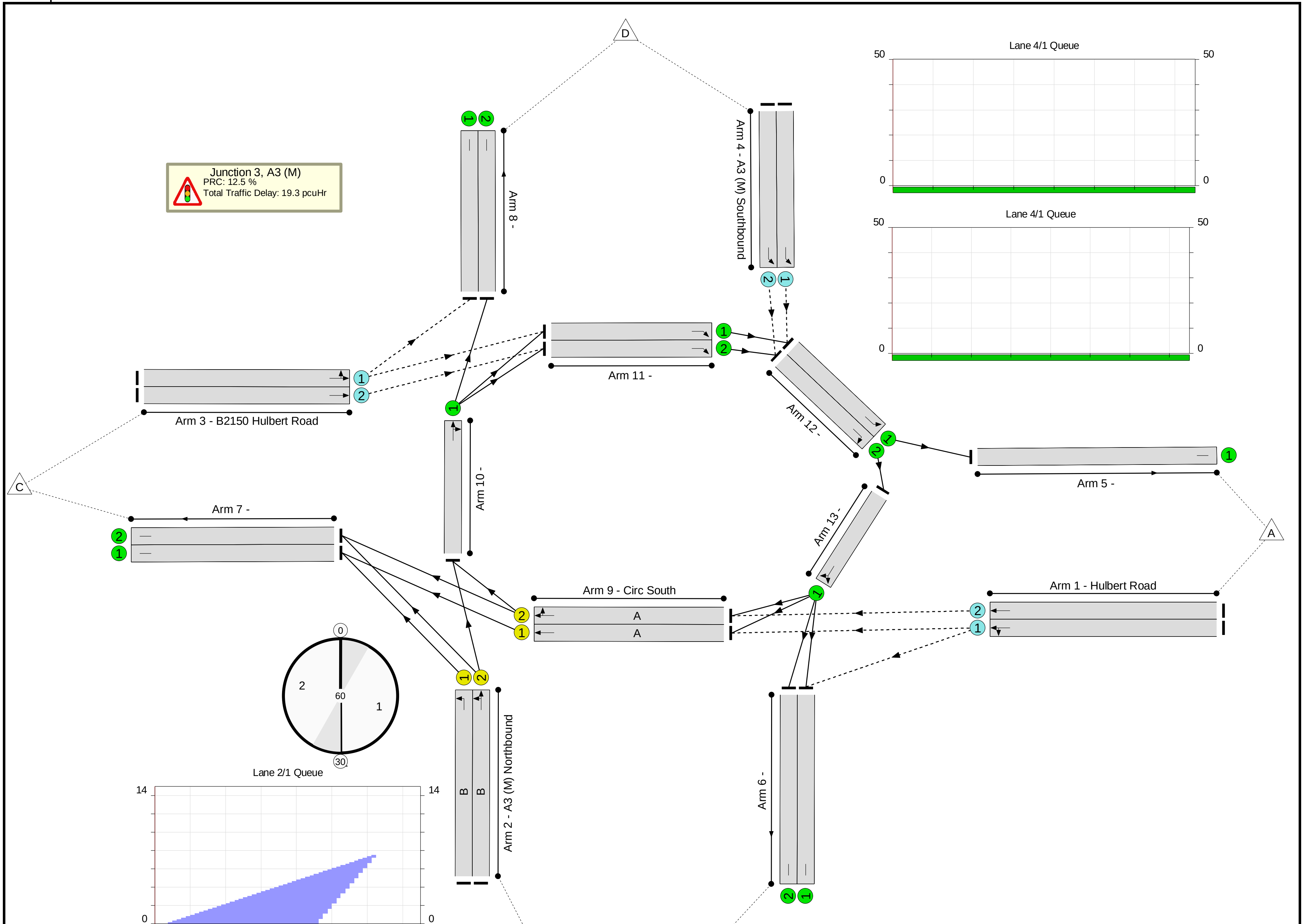
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**80.0%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**80.0%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	347	1990	584	59.4%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	348	2130	584	59.6%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	25	-	577	1997	865	66.7%
2/2	A3 (M) Northbound Left Ahead	U	N/A	N/A	B		1	25	-	624	2115	916	68.1%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	554	1994	856	64.7%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	736	2119	940	78.3%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	326	1939	898	36.3%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	524	2094	655	80.0%
5/1		U	N/A	N/A	-		-	-	-	635	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	413	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	368	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1138	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	1056	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	263	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	163	Inf	Inf	0.0%
9/1	Circ South Ahead	U	N/A	N/A	A		1	25	-	561	1992	863	65.0%
9/2	Circ South Ahead Right	U	N/A	N/A	A		1	25	-	613	2124	920	66.6%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	181	Inf	Inf	0.0%

Full Input Data And Results

11/1	Ahead	U	N/A	N/A	-		-	-	-	309	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	736	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	635	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	1260	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	1260	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**2835**	**0**	**0**	**8.9**	**10.3**	**0.0**	**19.3**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**2835**	**0**	**0**	**8.9**	**10.3**	**0.0**	**19.3**	**-**	**-**	**-**	**-**
1/1	347	347	347	0	0	0.0	0.7	-	0.7	7.6	0.0	0.7	0.7
1/2	348	348	348	0	0	0.0	0.7	-	0.7	7.6	0.0	0.7	0.7
2/1	577	577	-	-	-	2.2	1.0	-	3.2	19.8	7.5	1.0	8.5
2/2	624	624	-	-	-	2.4	1.1	-	3.4	19.8	8.3	1.1	9.4
3/1	554	554	554	0	0	0.0	0.9	-	0.9	5.9	1.1	0.9	2.0
3/2	736	736	736	0	0	0.0	1.8	-	1.8	8.7	0.0	1.8	1.8
4/1	326	326	326	0	0	0.0	0.3	-	0.3	3.1	0.0	0.3	0.3
4/2	524	524	524	0	0	0.0	1.9	-	1.9	13.4	0.0	1.9	1.9
5/1	635	635	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	413	413	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	368	368	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1138	1138	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	1056	1056	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	263	263	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	163	163	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	561	561	-	-	-	2.1	0.9	-	3.0	19.3	7.3	0.9	8.2
9/2	613	613	-	-	-	2.3	1.0	-	3.3	19.4	8.0	1.0	9.0
10/1	181	181	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	309	309	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	736	736	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	635	635	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	1260	1260	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	1260	1260	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

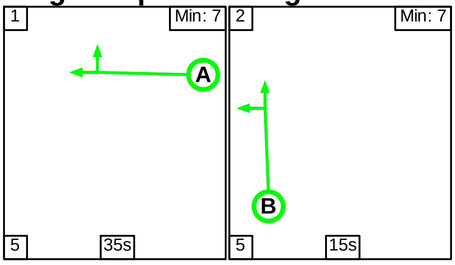
C1 PRC for Signalled Lanes (%): 32.2 Total Delay for Signalled Lanes (pcuHr): 12.90 Cycle Time (s): 60
PRC Over All Lanes (%): 12.5 Total Delay Over All Lanes(pcuHr): 19.28

Full Input Data And Results

Full Input Data And Results

Scenario 3: 'Alternative DS AM' (FG3: 'Alternative DS AM', Plan 1: 'Network Control Plan 1')

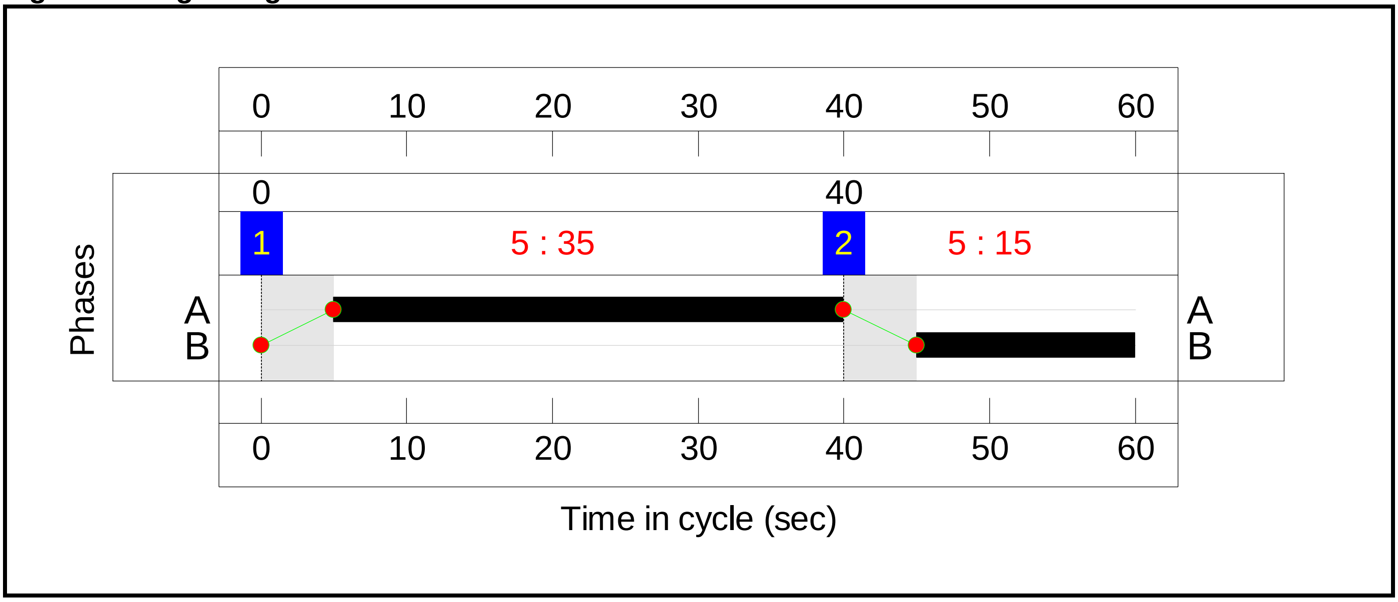
Stage Sequence Diagram



Stage Timings

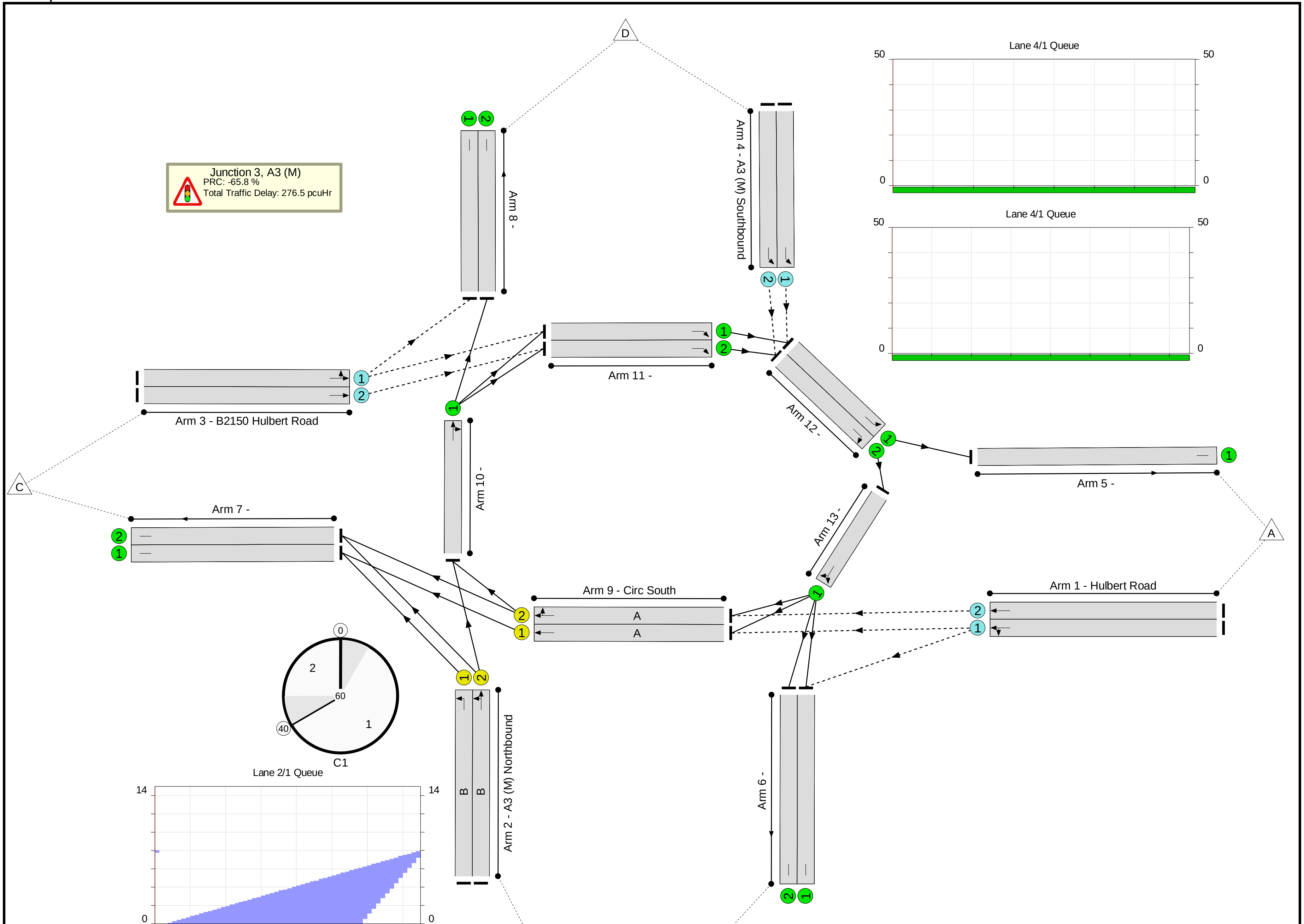
Stage	1	2
Duration	35	15
Change Point	0	40

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**149.2%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**149.2%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	324	1990	603	53.7%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	387	2130	603	64.1%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	15	-	500	1997	533	93.9%
2/2	A3 (M) Northbound Left Ahead	U	N/A	N/A	B		1	15	-	553	2114	564	98.1%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	738	1993	820	90.0%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	1370	2119	918	149.2%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	219	1939	880	24.9%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	283	2094	577	49.0%
5/1		U	N/A	N/A	-		-	-	-	581	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	702	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	686	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	973	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	809	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	416	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	207	Inf	Inf	0.0%
9/1	Circ South Ahead	U	N/A	N/A	A		1	35	-	473	1992	1195	39.6%
9/2	Circ South Ahead Right	U	N/A	N/A	A		1	35	-	503	2122	1273	39.5%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	247	Inf	Inf	0.0%

Full Input Data And Results

11/1	Ahead	U	N/A	N/A	-		-	-	-	362	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	1370	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	581	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	1653	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	1653	Inf	Inf	0.0%

Full Input Data And Results

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)
Network	**-**	**-**	**2869**	**0**	**0**	**27.2**	**249.3**	**0.0**	**276.5**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**2869**	**0**	**0**	**27.2**	**249.3**	**0.0**	**276.5**	**-**	**-**	**-**	**-**
1/1	324	324	324	0	0	0.0	0.6	-	0.6	6.4	0.0	0.6	0.6
1/2	387	387	387	0	0	0.0	0.9	-	0.9	8.3	0.0	0.9	0.9
2/1	500	500	-	-	-	3.0	5.7	-	8.7	62.5	8.1	5.7	13.7
2/2	553	553	-	-	-	3.4	9.4	-	12.7	82.9	9.1	9.4	18.4
3/1	738	738	738	0	0	0.2	4.1	-	4.3	20.8	6.8	4.1	10.8
3/2	1370	918	918	0	0	18.9	227.4	-	246.3	647.3	68.5	227.4	295.9
4/1	219	219	219	0	0	0.0	0.2	-	0.2	2.7	0.0	0.2	0.2
4/2	283	283	283	0	0	0.0	0.5	-	0.5	6.1	0.0	0.5	0.5
5/1	581	581	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	476	476	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	460	460	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	973	973	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	809	809	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	416	416	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	207	207	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	473	473	-	-	-	0.8	0.3	-	1.2	8.8	4.1	0.3	4.4
9/2	503	503	-	-	-	0.9	0.3	-	1.2	8.6	4.3	0.3	4.7
10/1	247	247	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	362	362	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	918	918	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	581	581	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	1201	1201	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	1201	1201	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

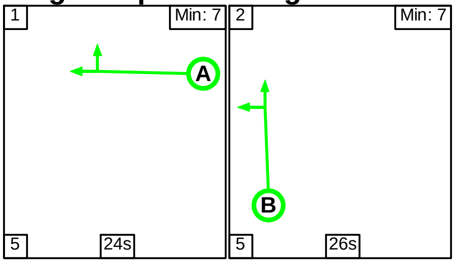
C1 PRC for Signalled Lanes (%): -9.0 Total Delay for Signalled Lanes (pcuHr): 23.78 Cycle Time (s): 60
PRC Over All Lanes (%): -65.8 Total Delay Over All Lanes(pcuHr): 276.48

Full Input Data And Results

Full Input Data And Results

Scenario 4: 'Alternative DS PM' (FG4: 'Alternative DS PM', Plan 1: 'Network Control Plan 1')

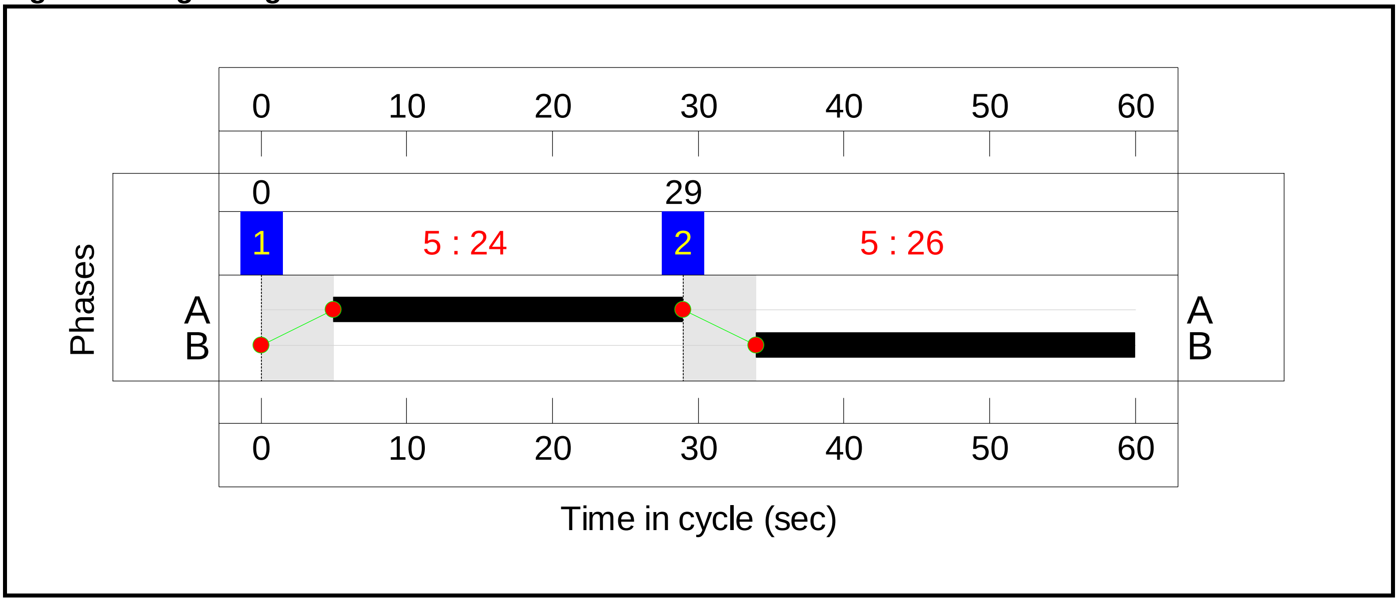
Stage Sequence Diagram



Stage Timings

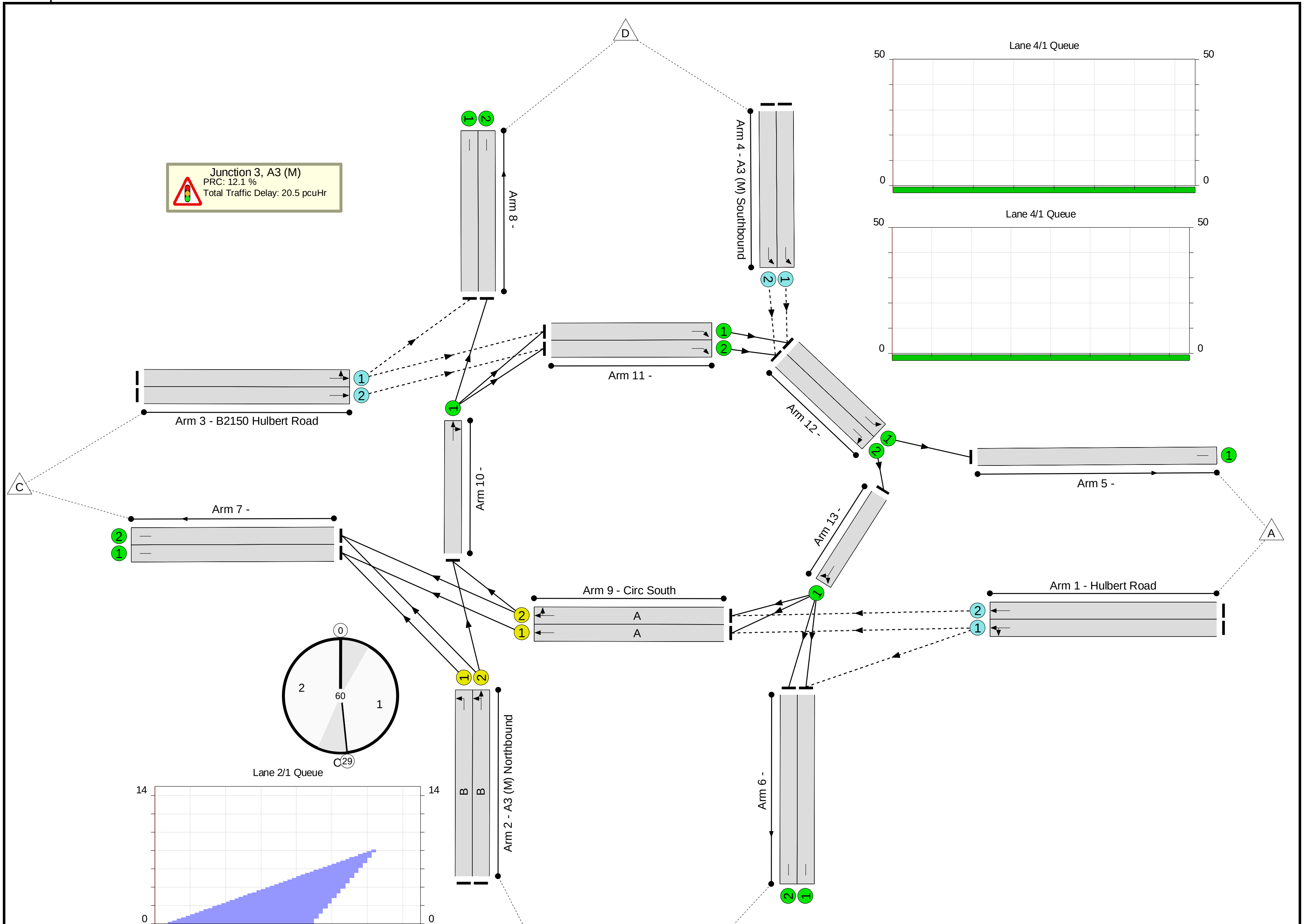
Stage	1	2
Duration	24	26
Change Point	0	29

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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 (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**80.3%**
Junction 3, A3 (M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**80.3%**
1/1	Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	377	1990	592	63.7%
1/2	Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	377	2130	592	63.7%
2/1	A3 (M) Northbound Left	U	N/A	N/A	B		1	26	-	621	1997	899	69.1%
2/2	A3 (M) Northbound Left Ahead	U	N/A	N/A	B		1	26	-	669	2115	952	70.3%
3/1	B2150 Hulbert Road Left Ahead	O	N/A	N/A	-		-	-	-	383	1995	750	51.1%
3/2	B2150 Hulbert Road Ahead	O	N/A	N/A	-		-	-	-	736	2119	917	80.3%
4/1	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	333	1939	896	37.2%
4/2	A3 (M) Southbound Left	O	N/A	N/A	-		-	-	-	501	2094	653	76.7%
5/1		U	N/A	N/A	-		-	-	-	647	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	413	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	368	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1201	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	1048	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	87	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	233	Inf	Inf	0.0%
9/1	Circ South Ahead	U	N/A	N/A	A		1	24	-	580	1992	830	69.9%
9/2	Circ South Ahead Right	U	N/A	N/A	A		1	24	-	630	2122	884	71.3%
10/1	Ahead Right	U	N/A	N/A	-		-	-	-	251	Inf	Inf	0.0%

Full Input Data And Results

11/1	Ahead	U	N/A	N/A	-		-	-	-	314	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	736	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	647	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	1237	Inf	Inf	0.0%
13/1	Ahead Right	U	N/A	N/A	-		-	-	-	1237	Inf	Inf	0.0%

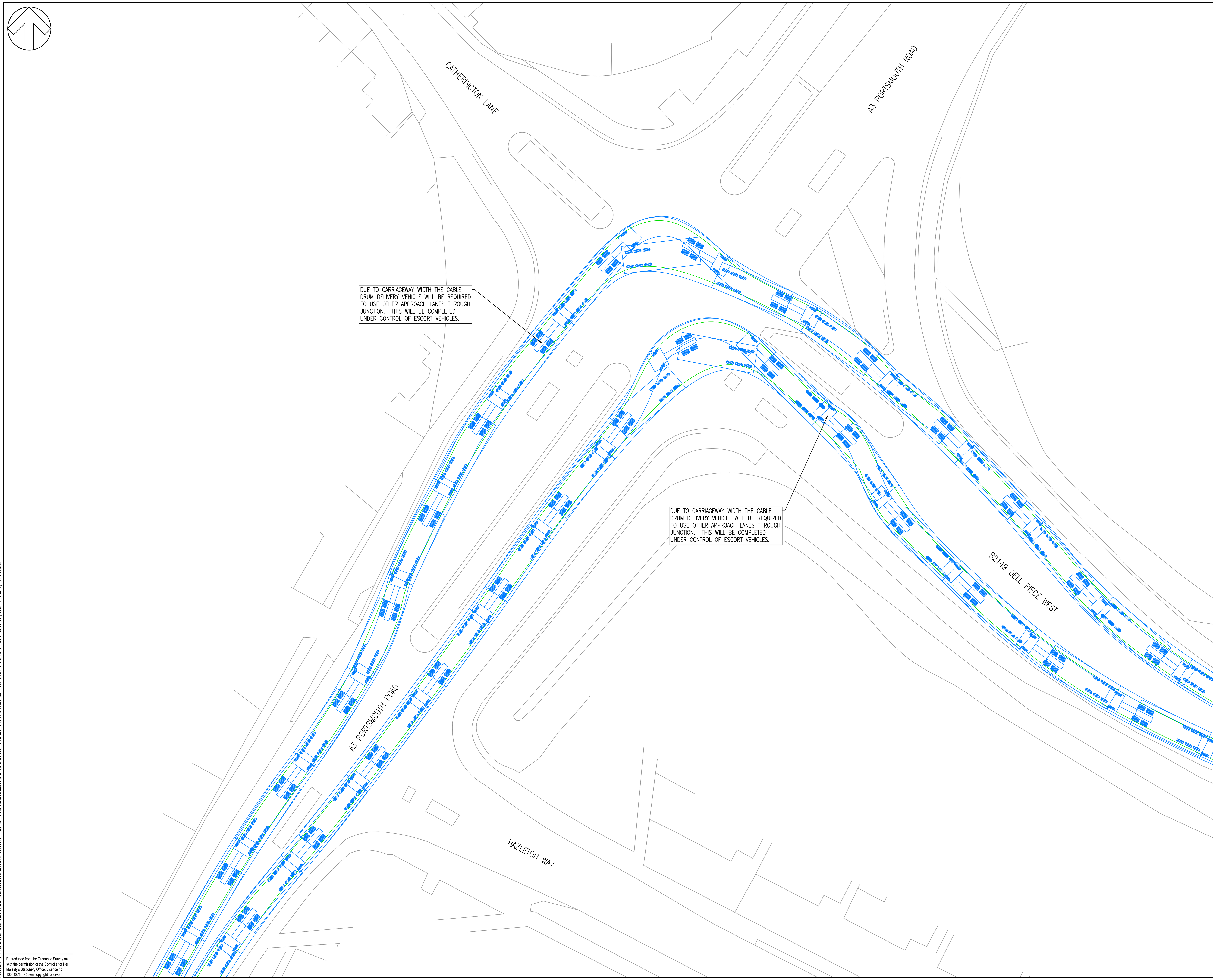
Full Input Data And Results

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)
Network	**-**	**-**	**2707**	**0**	**0**	**9.7**	**10.8**	**0.0**	**20.5**	**-**	**-**	**-**	**-**
Junction 3, A3 (M)	**-**	**-**	**2707**	**0**	**0**	**9.7**	**10.8**	**0.0**	**20.5**	**-**	**-**	**-**	**-**
1/1	377	377	377	0	0	0.0	0.9	-	0.9	8.3	0.0	0.9	0.9
1/2	377	377	377	0	0	0.0	0.9	-	0.9	8.3	0.0	0.9	0.9
2/1	621	621	-	-	-	2.3	1.1	-	3.4	19.6	8.1	1.1	9.2
2/2	669	669	-	-	-	2.5	1.2	-	3.6	19.6	8.9	1.2	10.1
3/1	383	383	383	0	0	0.1	0.5	-	0.6	5.5	1.8	0.5	2.3
3/2	736	736	736	0	0	0.0	2.0	-	2.0	9.7	0.0	2.0	2.0
4/1	333	333	333	0	0	0.0	0.3	-	0.3	3.2	0.0	0.3	0.3
4/2	501	501	501	0	0	0.0	1.6	-	1.6	11.6	0.0	1.6	1.6
5/1	647	647	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	413	413	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	368	368	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1201	1201	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	1048	1048	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	87	87	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	233	233	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	580	580	-	-	-	2.3	1.1	-	3.5	21.5	7.9	1.1	9.0
9/2	630	630	-	-	-	2.5	1.2	-	3.8	21.5	8.6	1.2	9.8
10/1	251	251	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	314	314	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	736	736	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	647	647	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	1237	1237	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	1237	1237	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 26.3 Total Delay for Signalled Lanes (pcuHr): 14.26 Cycle Time (s): 60
PRC Over All Lanes (%): 12.1 Total Delay Over All Lanes(pcuHr): 20.48

Full Input Data And Results

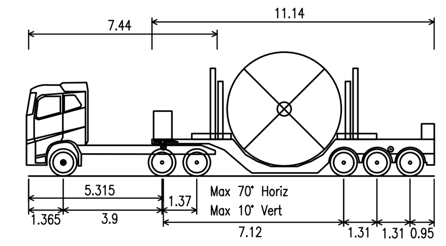
Appendix 3 – Swept Path Analysis of Cable Drum Deliveries



DO NOT SCALE

NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 10mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader

Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

FORWARD MANOEUVRE
VEHICLE WHEELS

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
B	25/01/2021	AVI	UPDATED JOINT BAY DETAILS	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS:
S2 - FOR INFORMATION

wsp
Grosvenor House, 2 Grosvenor Square, Southampton, SO15 2BE, UK
T+ 44 (0) 2380 101 700
wsp.com

CLIENT: AQUIND

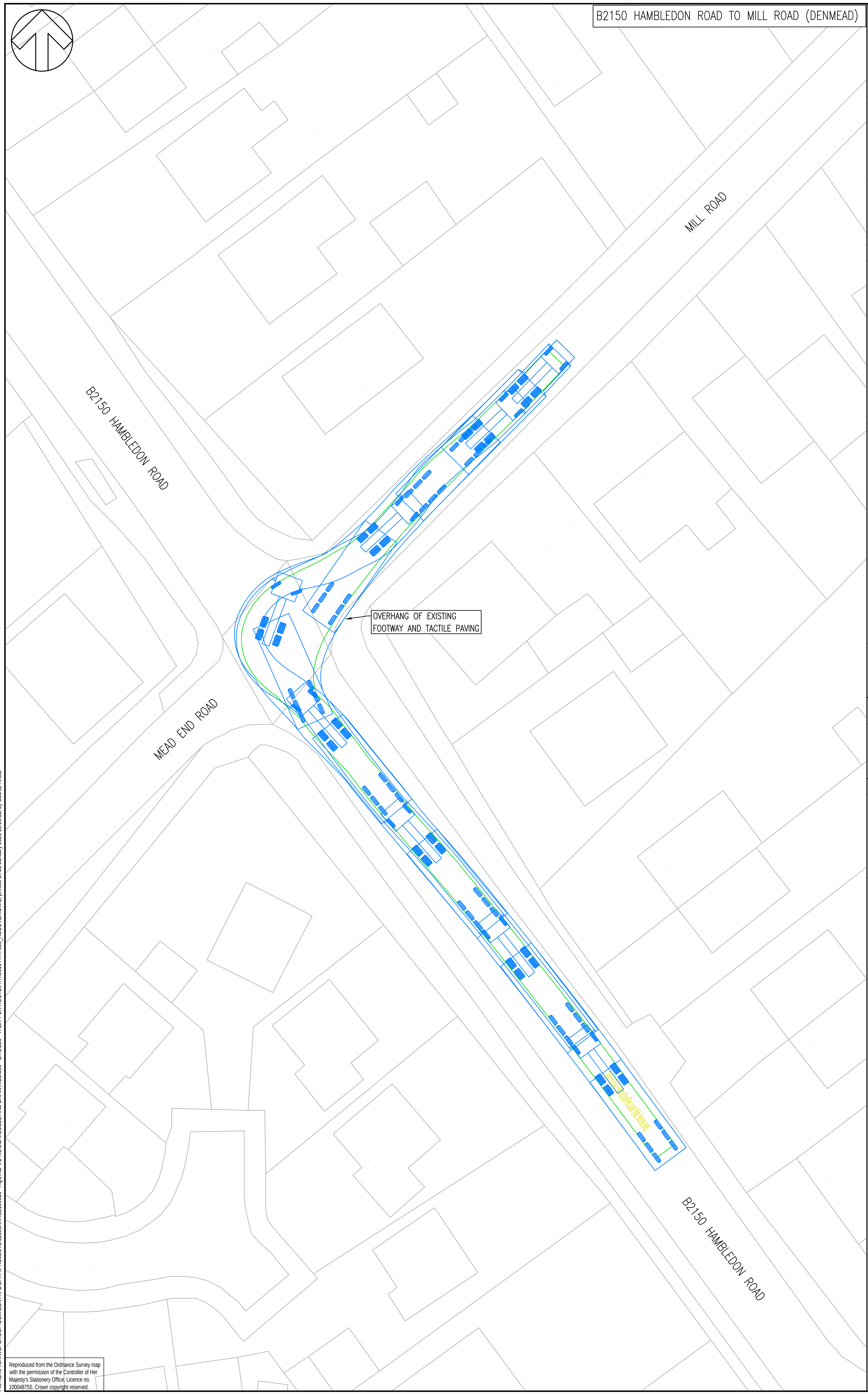
ARCHITECT: -

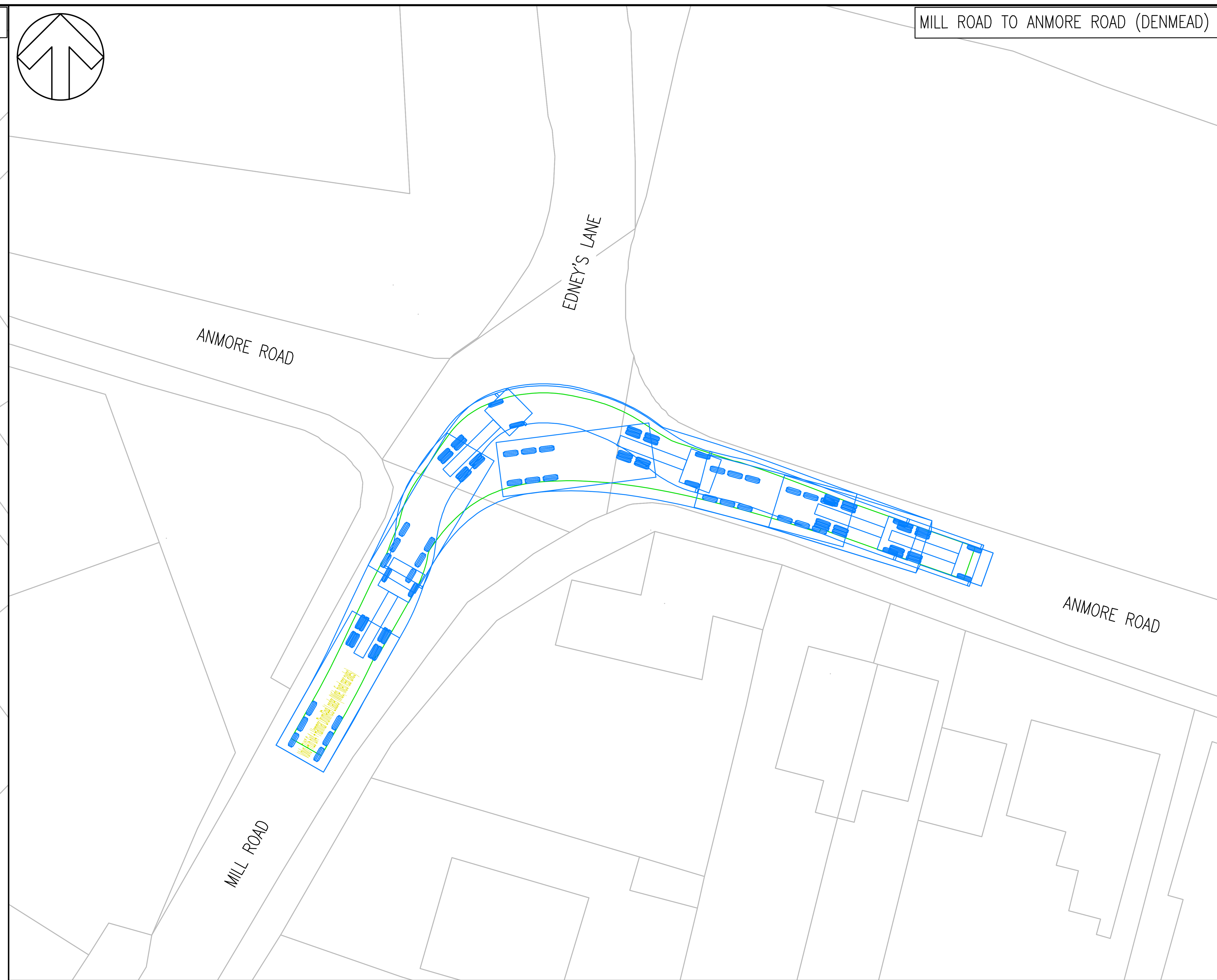
SITE/PROJECT: AQUIND

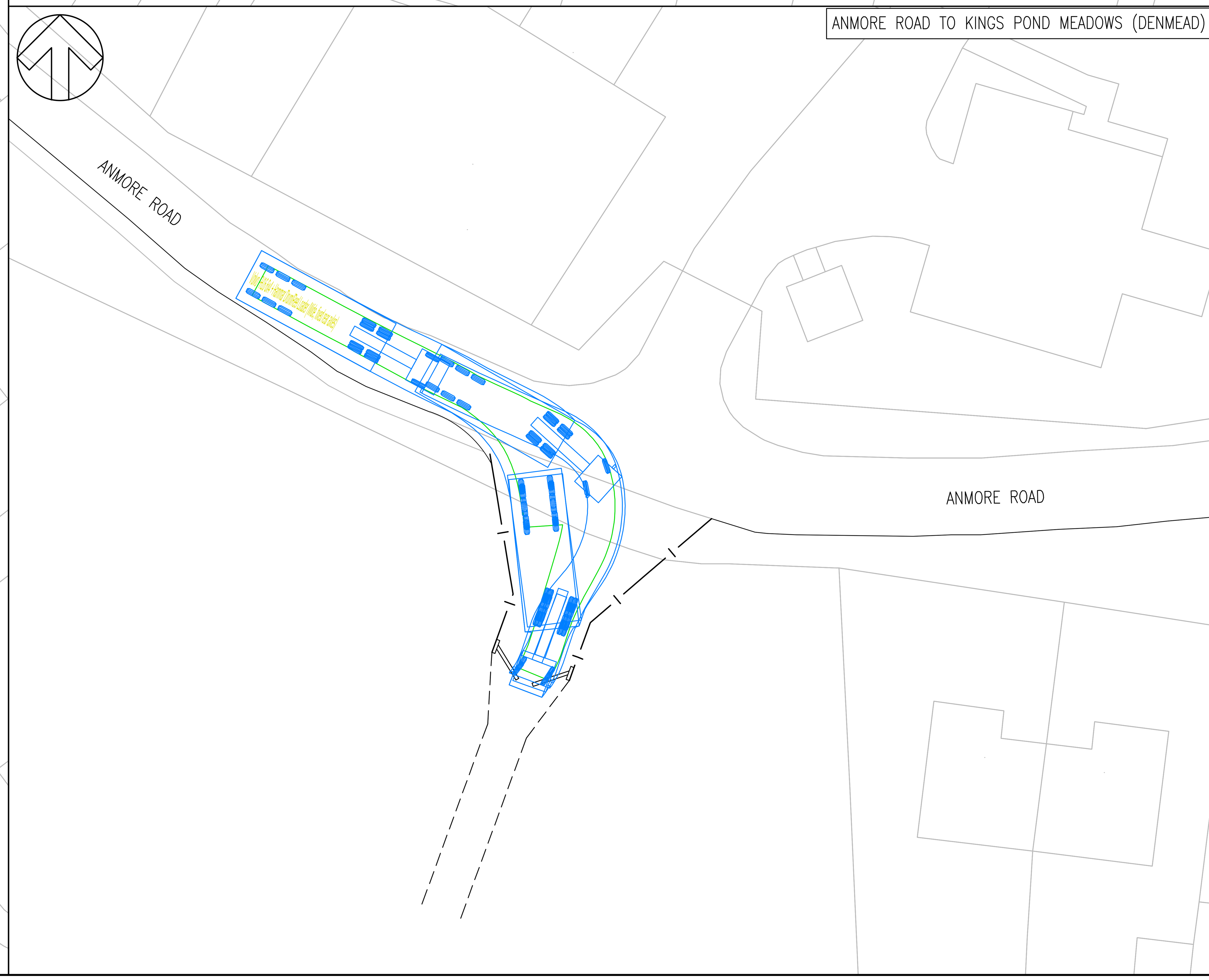
TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 01: WITHIN FIELDS SOUTH OF CONVERTER STATION

SCALE @ A1: 1:250	CHECKED: CW	APPROVED: CW
PROJECT NO: 62100616	DESIGNED: - / DRAWN: AVI	DATE: September 20
DRAWING No: 0616-ATR-010		REV: B

File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\62100XXX\62100616 - AQUIND VO NO.3\E MODELS AND DRAWINGS\300 - SITE\320 - TASK 7 UK ROUTE\ATR\0616-ATR-010.DWG, printed on 25 January 2021 17:10:28, by Irvine, Amber



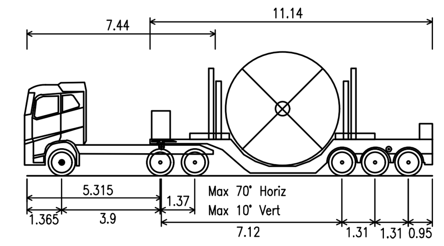




DO NOT SCALE

NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 5mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

FORWARD MANOEUVRE
VEHICLE WHEELS

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
C	25/01/2021	AVI	UPDATED JOINT BAY DETAILS	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS:
S2 - FOR INFORMATION

Grosvenor House, 2 Grosvenor Square, Southampton, SO15 2BE, UK
T+ 44 (0) 2380 101 700
wsp.com

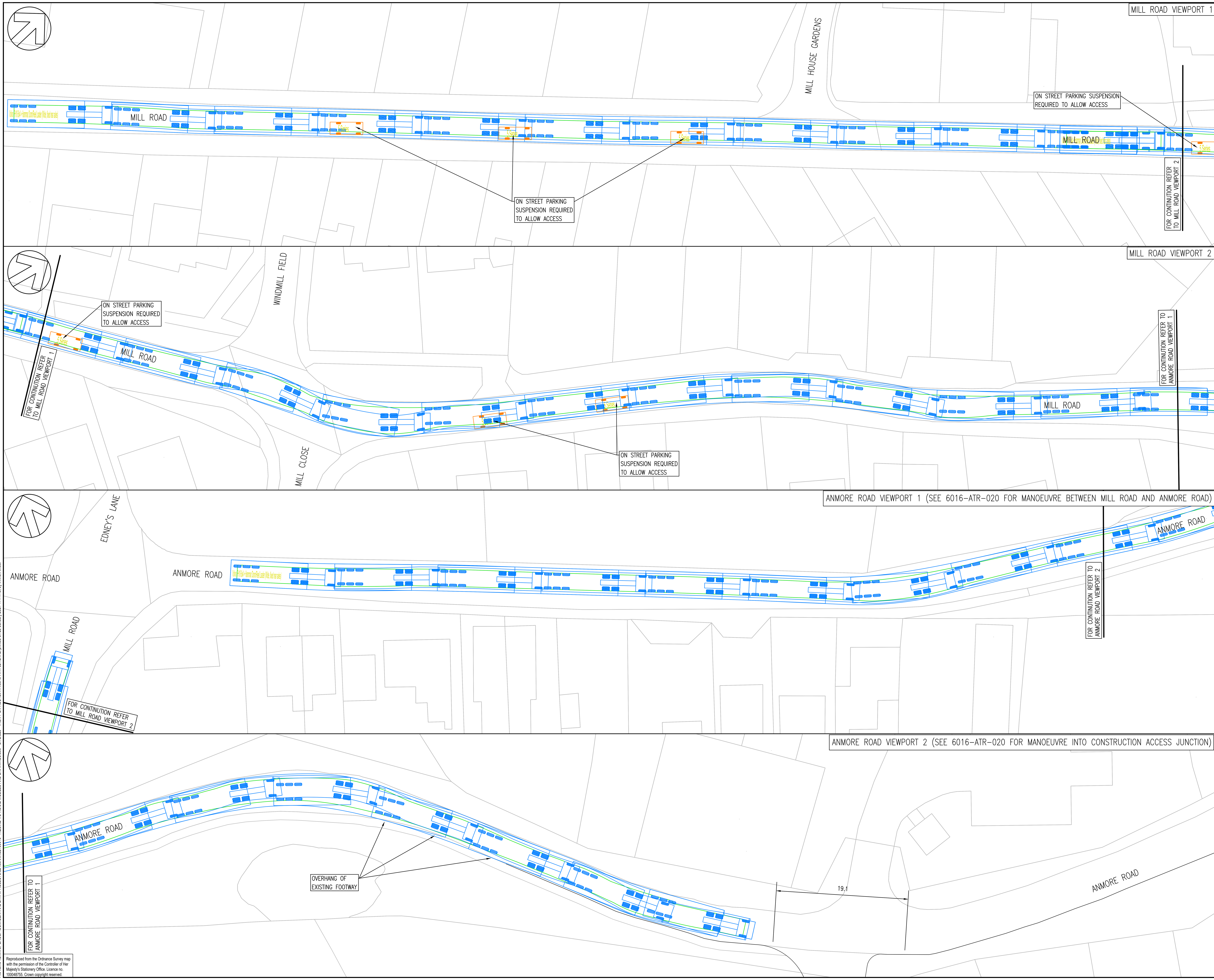
CLIENT: AQUIND

ARCHITECT: -

SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 04: WITHIN FIELDS AT KINGS POND MEADOWS SHEET 1 OF 2

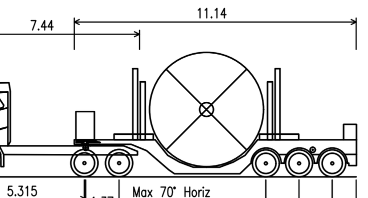
SCALE @ A1: 1:250	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: September 20
DRAWING No: 0616-ATR-020			REV: C



DO NOT SCALE

NOTES:

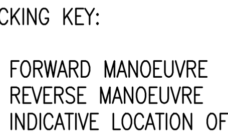
1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 10mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- REVERSE MANOEUVRE
- INDICATIVE LOCATION OF ON-STREET PARKING (PROFILE SHOWN BELOW):



5 Series	
Overall Length	4.750m
Overall Width	1.800m
Overall Body Height	0.325m
Min Body Ground Clearance	0.325m
Track Width	1.700m
Lock to Lock Time	4.00 sec
Kerb to Kerb Turning Radius	6.200m

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
C	25/01/2021	AVI	UPDATED JOINT BAY DETAILS	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS: S2 - FOR INFORMATION

Grosvenor House, 2 Grosvenor Square, Southampton, SO15 2BE, UK
T+ 44 (0) 2380 101 700
wsp.com

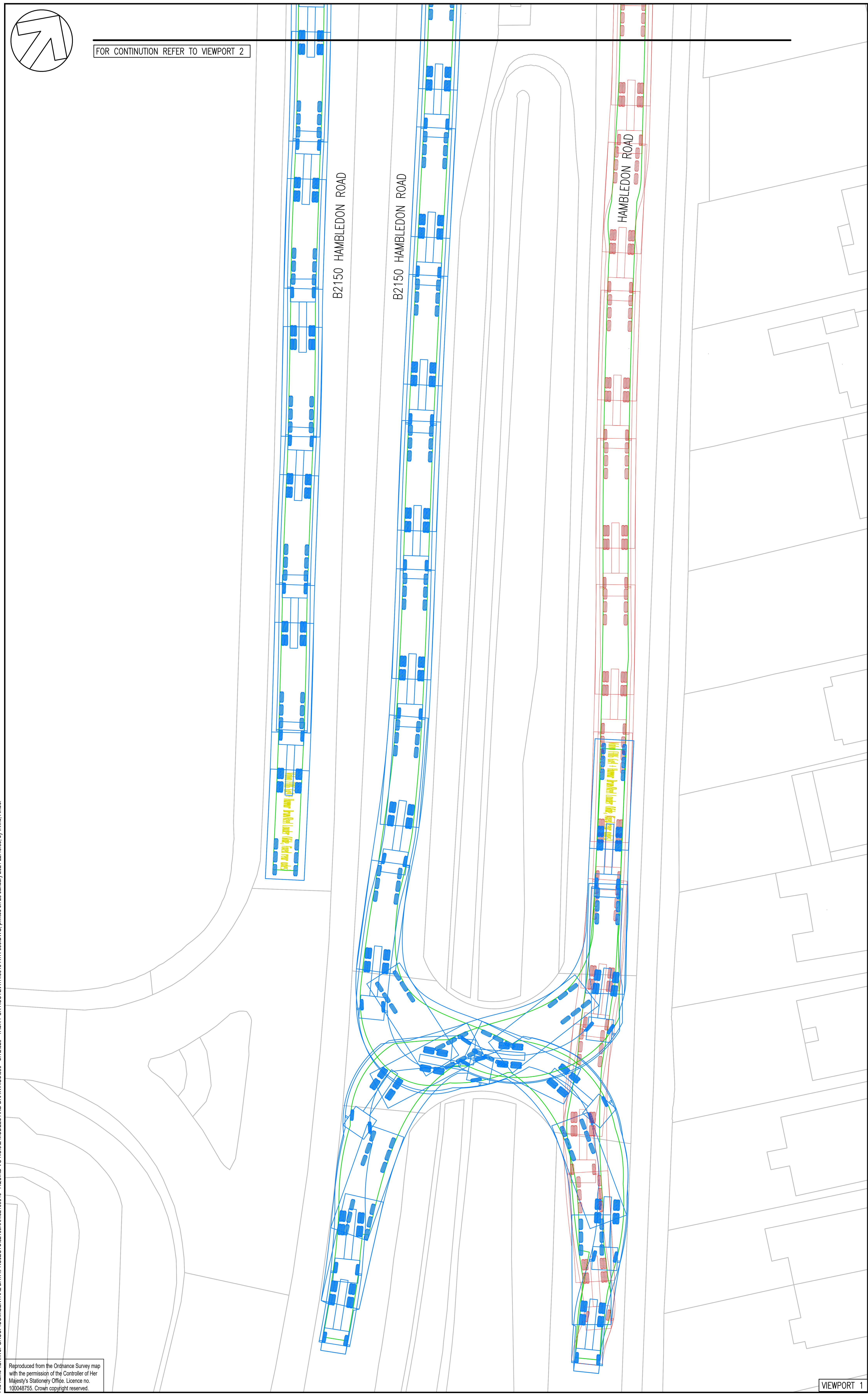
CLIENT: AQUIND

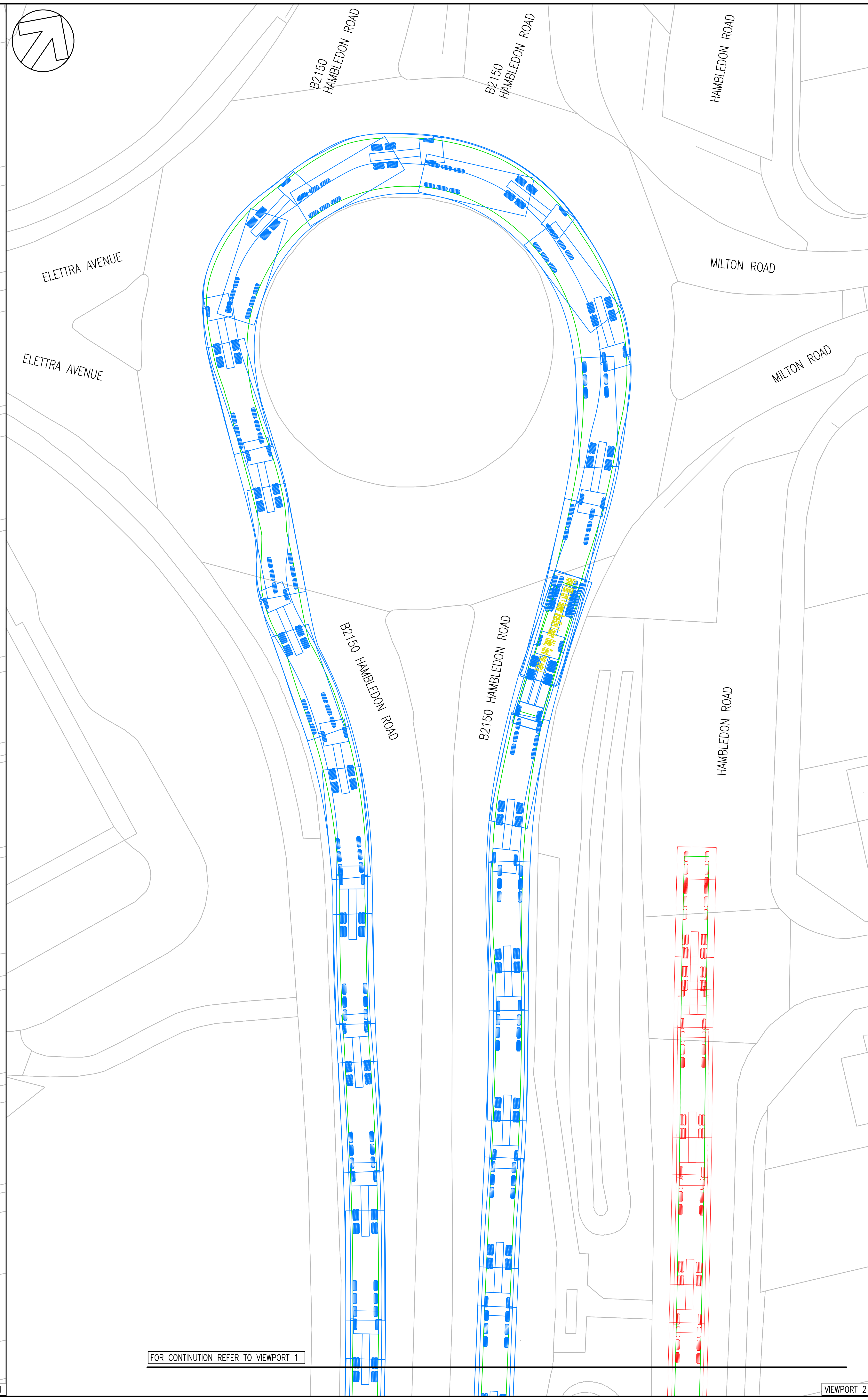
ARCHITECT: -

SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 04: WITHIN FIELDS AT KINGS POND MEADOWS SHEET 2 OF 2

SCALE @ A1: 1:250	CHECKED: CW	APPROVED: CW
PROJECT NO: 62100616	DESIGNED: AVI / DRAWN: AVI	DATE: September 20
DRAWING No: 0616-ATR-021		REV: C

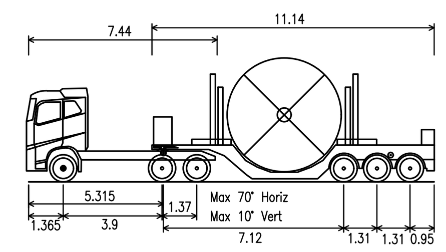




DO NOT SCALE

NOTES:

1. VEHICLE MOVEMENTS ARE TRACKED AT A DESIGN SPEED OF 10mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

FORWARD MANOEUVRE
VEHICLE WHEELS

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C	25/01/2021	AVI	UPDATED JOINT BAY DETAILS	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS:
S0 - WORK IN PROGRESS

wsp
Grosvenor House, 2 Grosvenor Square, Southampton, SO15 2BE, UK
T+ 44 (0) 2380 101 700
wsp.com

CLIENT: AQUIND

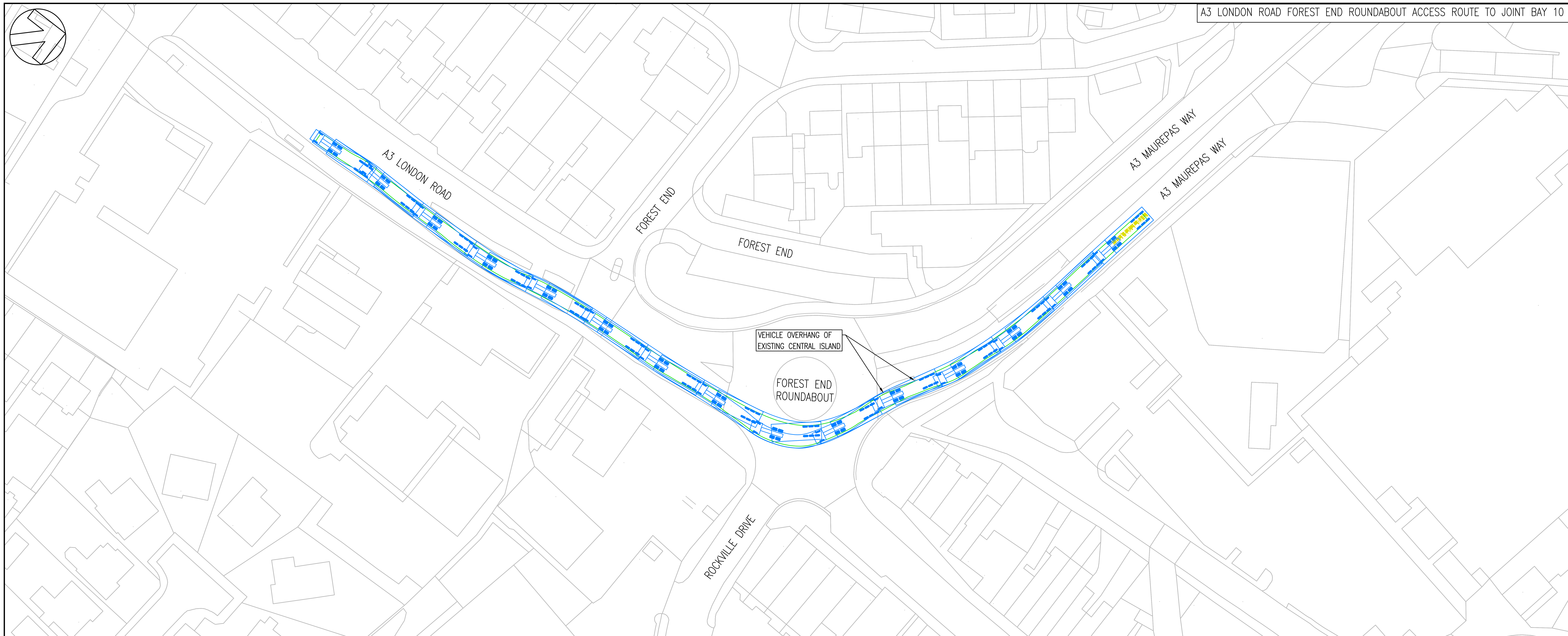
ARCHITECT: -

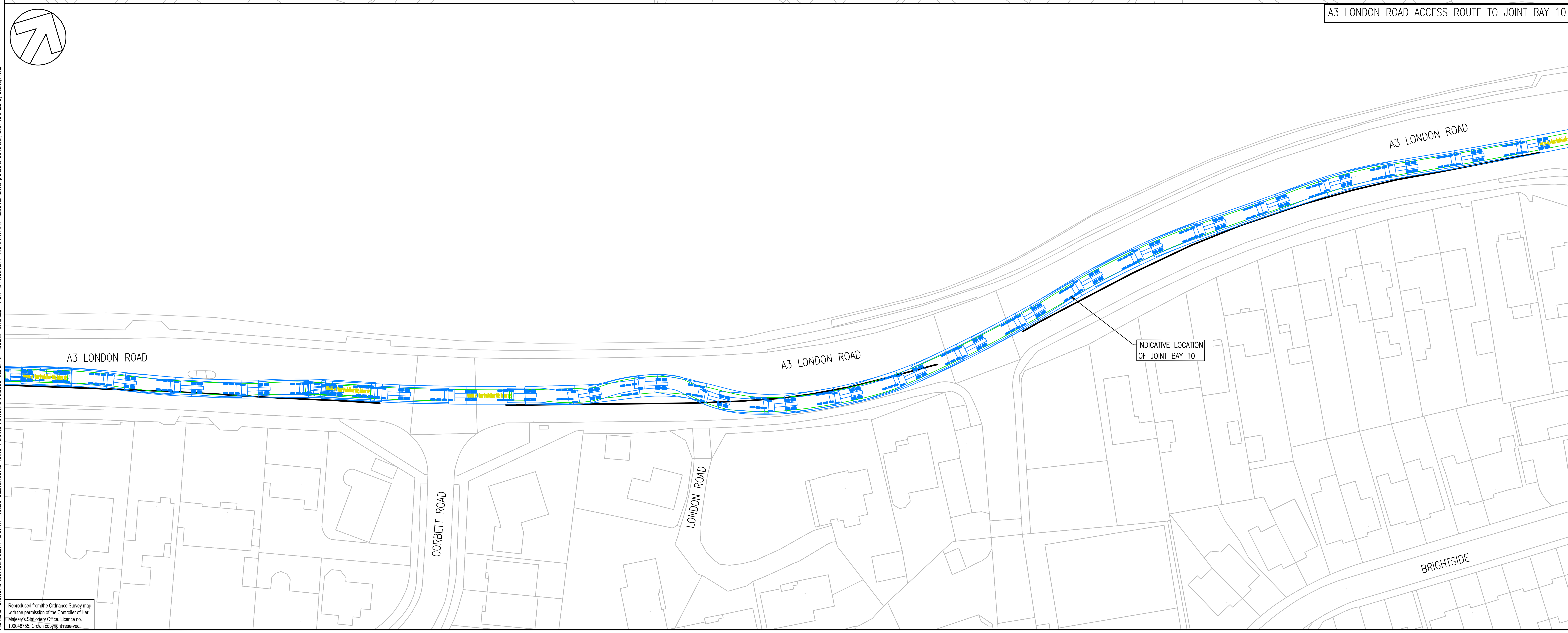
SITE/PROJECT: AQUIND

TITLE:
SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE TO JOINT BAY 07 ON HAMBLEDON ROAD

SCALE @ A1:	CHECKED:		APPROVED:
1:250	CW		CW
PROJECT NO:	DESIGNED:	DRAWN:	DATE:
62100616	-	AVI	September 20

DRAWING No:	REV:
0616-ATR-030	C

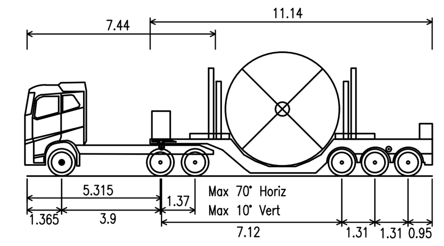




DO NOT SCALE

NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 10mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

FORWARD MANOEUVRE
VEHICLE WHEELS

ADDITIONAL ITEMS:

INDICATIVE WIDTH OF BUS LANE ON SOUTHBOUND CARRIAGEWAY

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
C	25/01/2021	AVI	UPDATED JOINT BAY DETAILS	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS: S2 - FOR INFORMATION

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Grosvenor House, 2 Grosvenor Square, Southampton, SO15 2BE, UK
T+ 44 (0) 2380 101 700
wsp.com

CLIENT: AQUIND

ARCHITECT: -

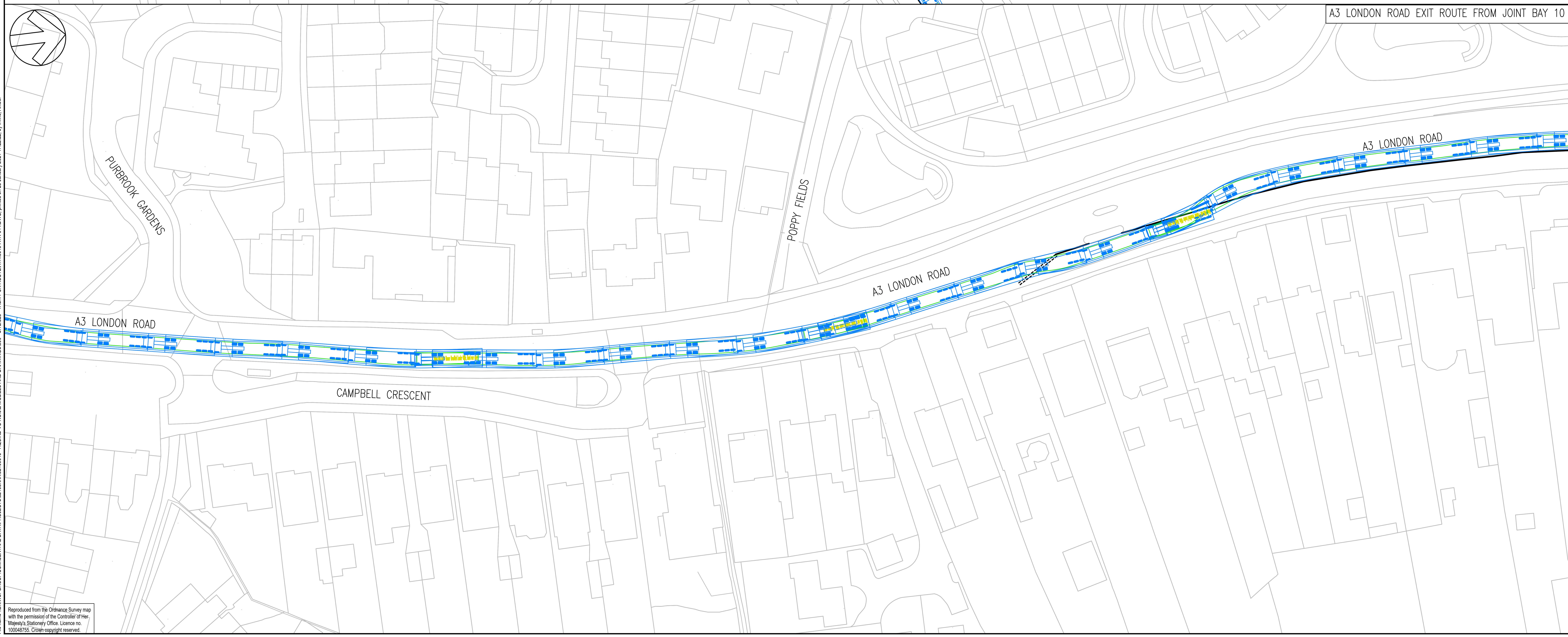
SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 10: A3 LONDON ROAD SOUTH OF MILL ROAD (WITHIN BUS LANE) SHEET 1 OF 3

SCALE @ A1: 1:500	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: September 20
DRAWING No: 0616-ATR-040			REV: C

A3 LONDON ROAD EXIT ROUTE FROM JOINT BAY 10

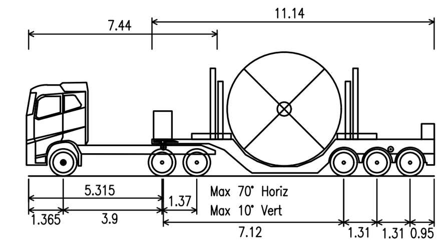
A3 LONDON ROAD EXIT ROUTE FROM JOINT BAY 10



DO NOT SCALE

NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 10mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'.
   VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:

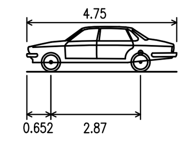


Volvo FH16 6x4 + Hammar Drum/Reel Loader

Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

FORWARD MANOEUVRE
REVERSE MANOEUVRE
INDICATIVE LOCATION OF ON-STREET PARKING (PROFILE SHOWN BELOW):



5 Series

Overall Length	4.750m
Overall Width	1.800m
Overall Body Height	0.325m
Min Body Ground Clearance	0.325m
Track Width	1.700m
Lock to Lock Time	4.00 sec
Kerb to Kerb Turning Radius	6.200m

ADDITIONAL ITEMS:

INDICATIVE WIDTH OF BUS LANE ON SOUTHBOUND CARRIAGEWAY

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
C	25/01/2021	AVI	UPDATED JOINT BAY DETAILS	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS:
S2 - FOR INFORMATION

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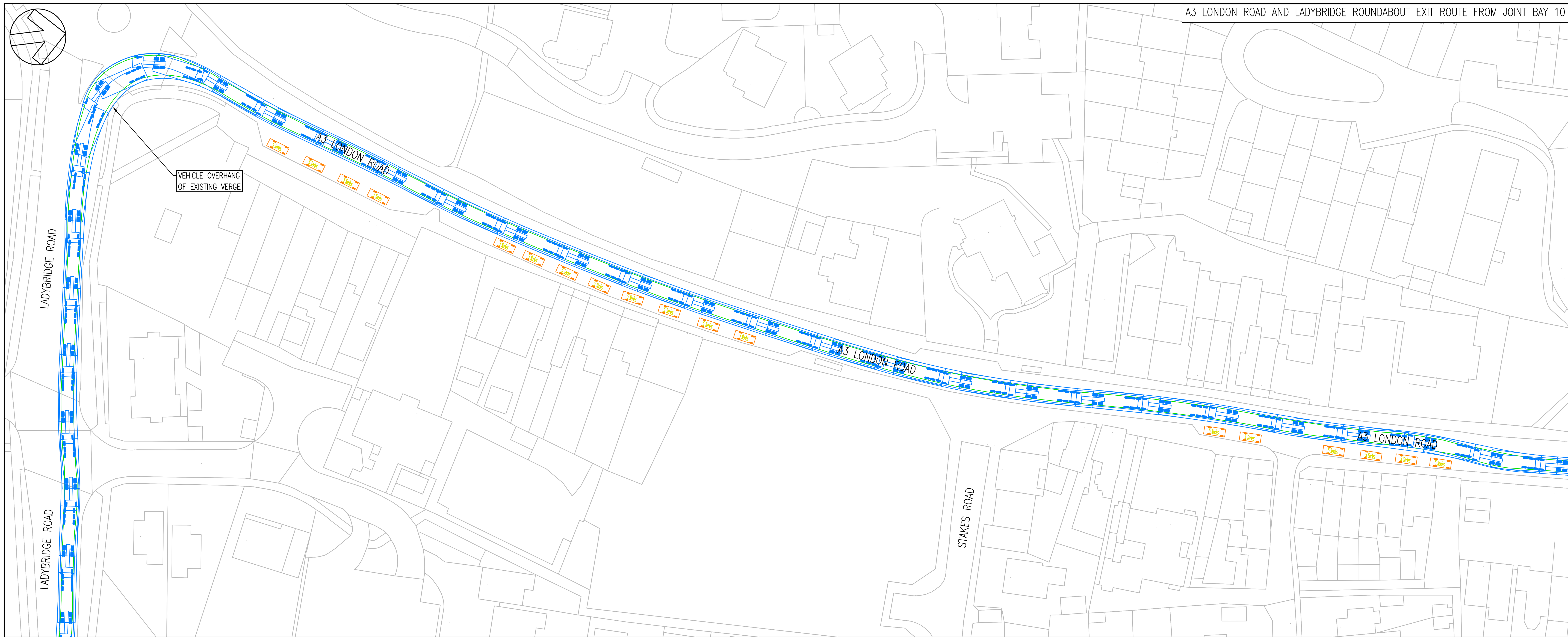
CLIENT: AQUIND

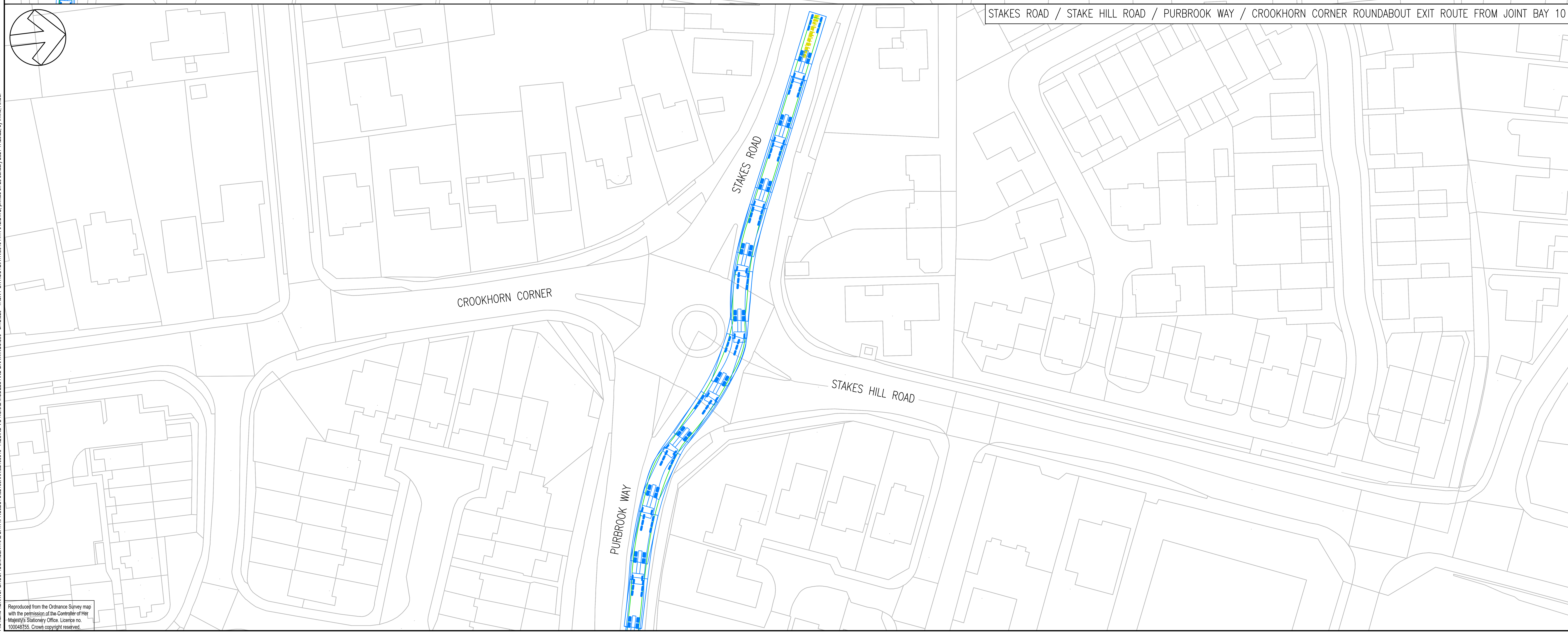
ARCHITECT: -

SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 10: A3 LONDON ROAD SOUTH OF MILL ROAD (WITHIN BUS LANE) SHEET 2 OF 3

SCALE @ A1: 1:500	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: September 20
DRAWING No: 0616-ATR-041			REV: C





DO NOT SCALE

NOTES:

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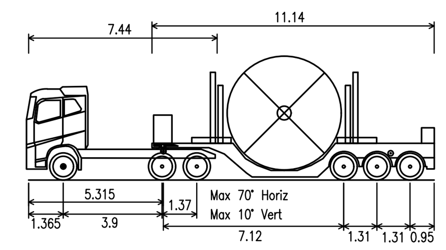
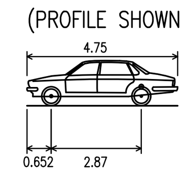
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- REVERSE MANOEUVRE
- INDICATIVE LOCATION OF ON-STREET PARKING (PROFILE SHOWN BELOW):



5 Series	
Overall Length	4.750m
Overall Width	1.800m
Overall Body Height	0.325m
Min Body Ground Clearance	0.325m
Track Width	1.700m
Lock to Lock Time	4.00 sec
Kerb to Kerb Turning Radius	6.200m

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
C	25/01/2021	AVI	UPDATED JOINT BAY DETAILS	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS: S2 - FOR INFORMATION

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CLIENT: AQUIND

ARCHITECT: -

SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 10: A3 LONDON ROAD SOUTH OF MILL ROAD (WITHIN BUS LANE) SHEET 3 OF 3

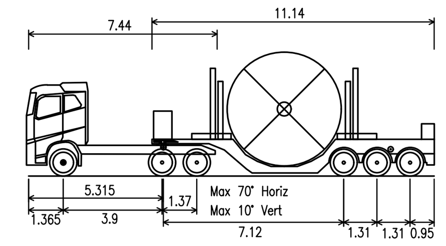
SCALE @ A1: 1:500	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: September 20

DRAWING No: 0616-ATR-042 REV: C

DO NOT SCALE

NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 10mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader

Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- VEHICLE WHEELS

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK.

REV	DATE	BY	DESCRIPTION	CHK	APP
B	25/01/2021	AVI	UPDATED JOINT BAY DETAILS	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS: S2 - FOR INFORMATION

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CLIENT: AQUIND

ARCHITECT: -

SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 14 / 15: A3 LONDON ROAD SOUTH OF LADYBRIDGE ROUNDABOUT (WITHIN BUS LANE) SHEET 1 OF 2

SCALE @ A1: 1:500	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: September 20
DRAWING No: 0616-ATR-050			REV: B

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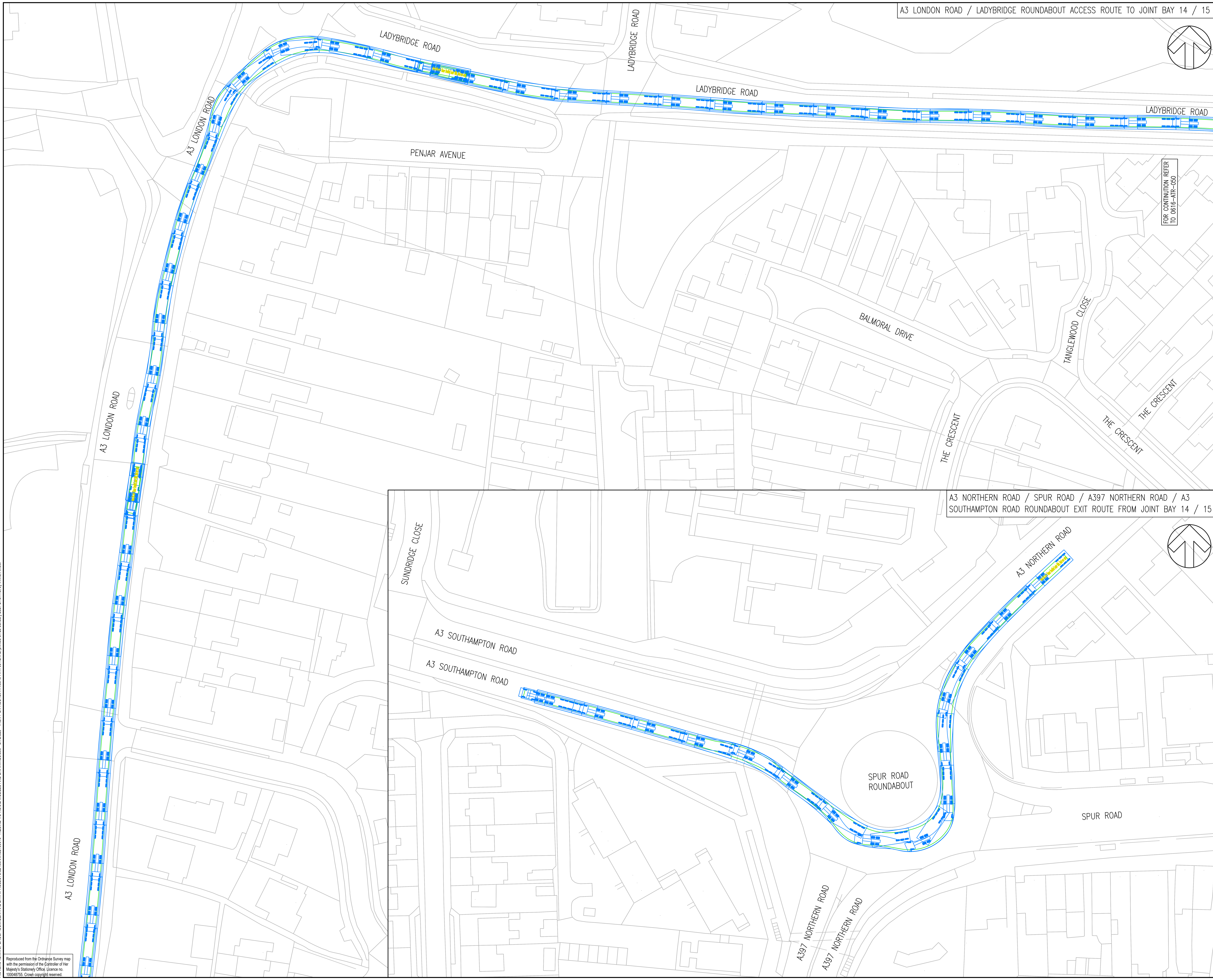

DO NOT SCALE

NOTES:

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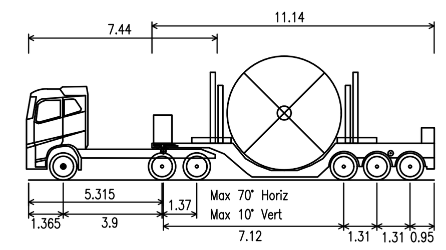
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- VEHICLE WHEELS

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

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C	25/01/2021	AVI	UPDATED JOINT BAY DETAILS	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS: S2 - FOR INFORMATION

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CLIENT: AQUIND

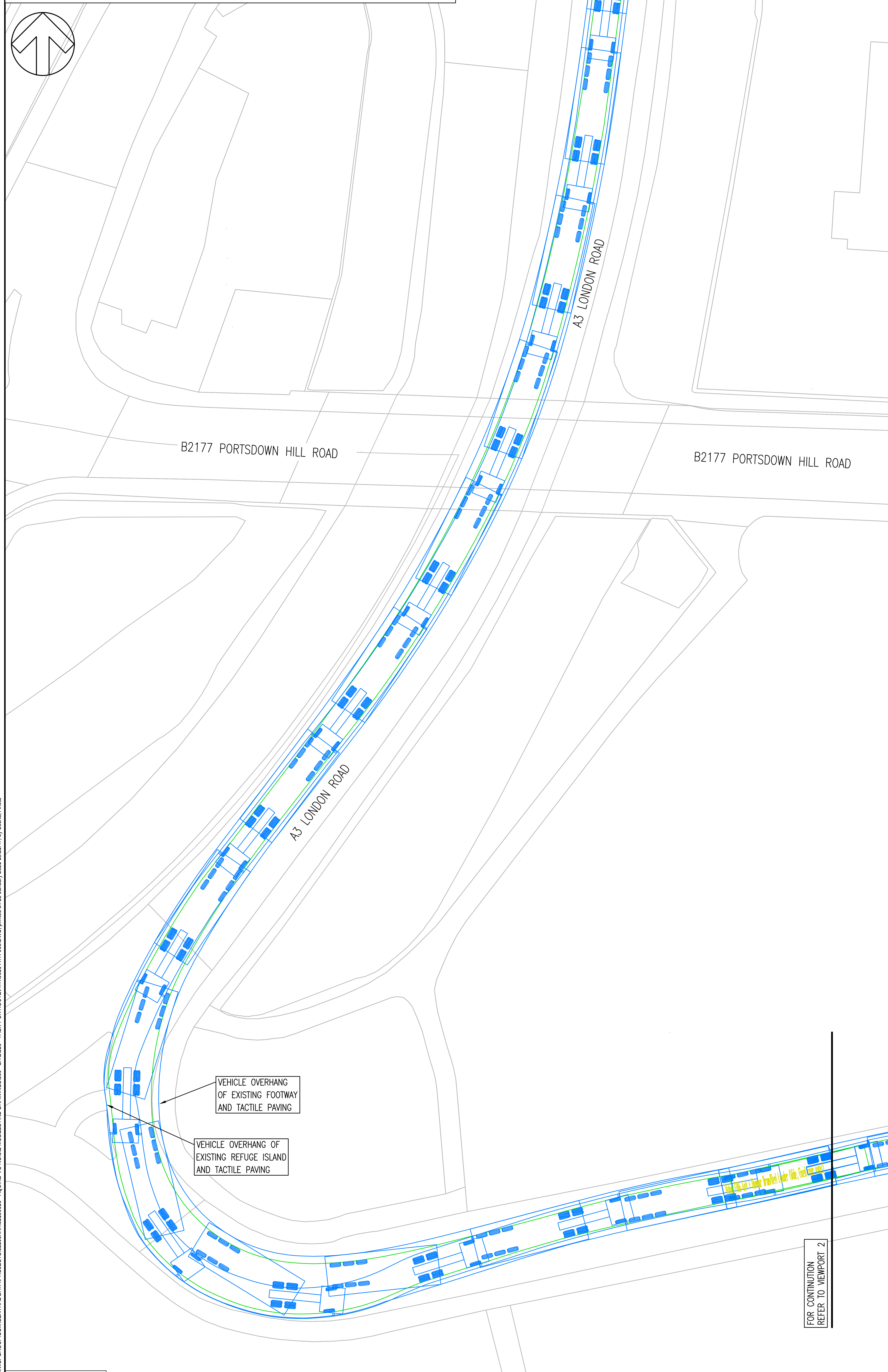
ARCHITECT: -

SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 14/15: A3 LONDON ROAD SOUTH OF LADYBRIDGE ROUNDABOUT (WITHIN BUS LANE) SHEET 2 OF 2

SCALE @ A1: 1:500	CHECKED: CW	APPROVED: CW
PROJECT NO: 62100616	DESIGNED: - / DRAWN: AVI	DATE: September 20
DRAWING No: 0616-ATR-051		REV: C

A3 LONDON ROAD TO PORTSDOWN HILL ROAD ACCESS ROUTE TO JOINT BAY 17



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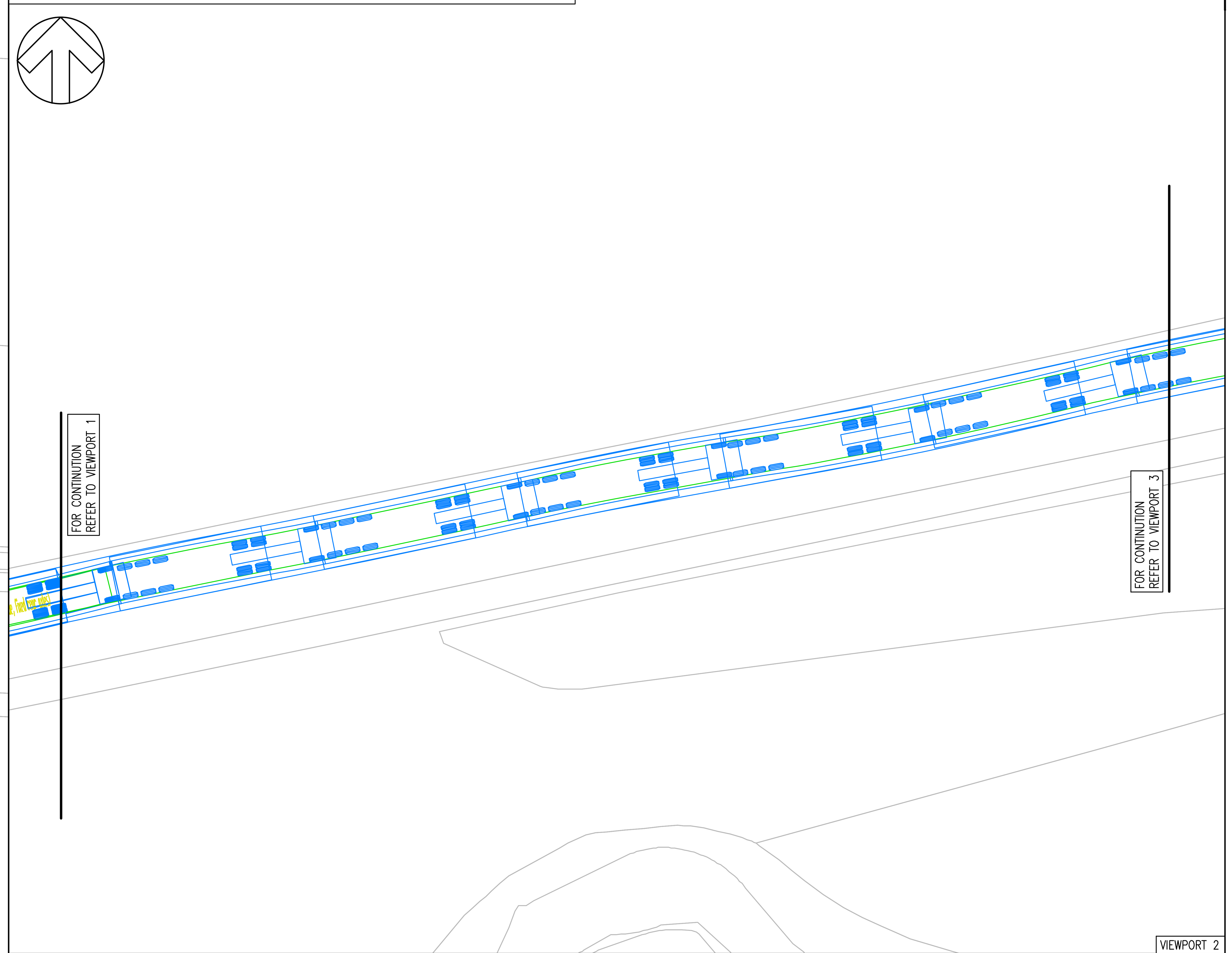
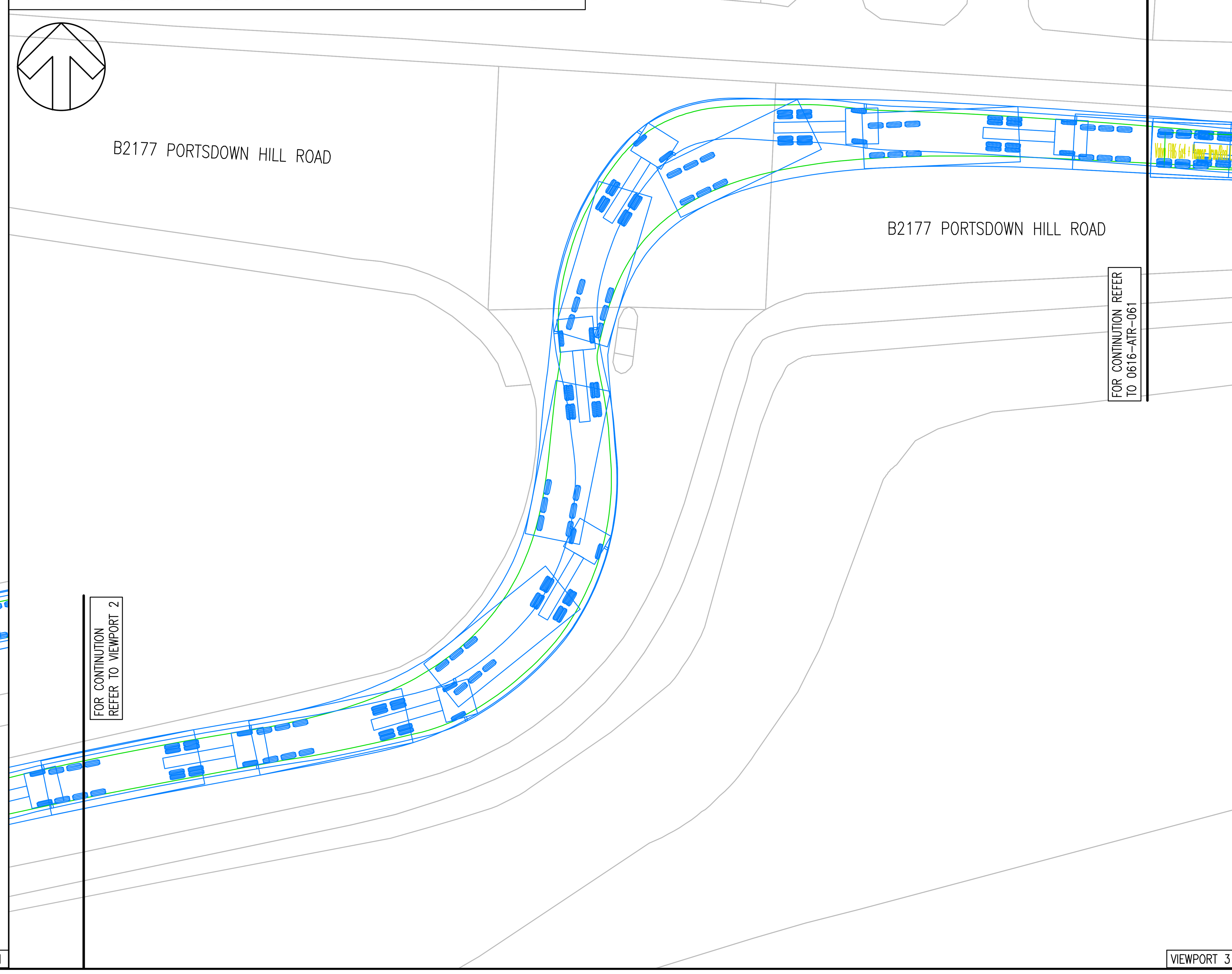
VIEWPORT 1

PORTSDOWN HILL ROAD ACCESS ROUTE TO JOINT BAY 17 – VIEWPORT 1



VIEWPORT 2

PORTSDOWN HILL ROAD ACCESS ROUTE TO JOINT BAY 17 – VIEWPORT 2

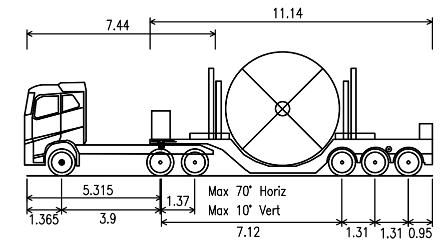


VIEWPORT 3

DO NOT SCALE

NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 10mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

FORWARD MANOEUVRE
VEHICLE WHEELS

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
C	25/01/2021	AMS	UPDATED JOINT BAY DETAIL.	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS:
S2 - FOR INFORMATION

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T+ 44 (0) 2380 101 700
wsp.com

CLIENT: AQUIND

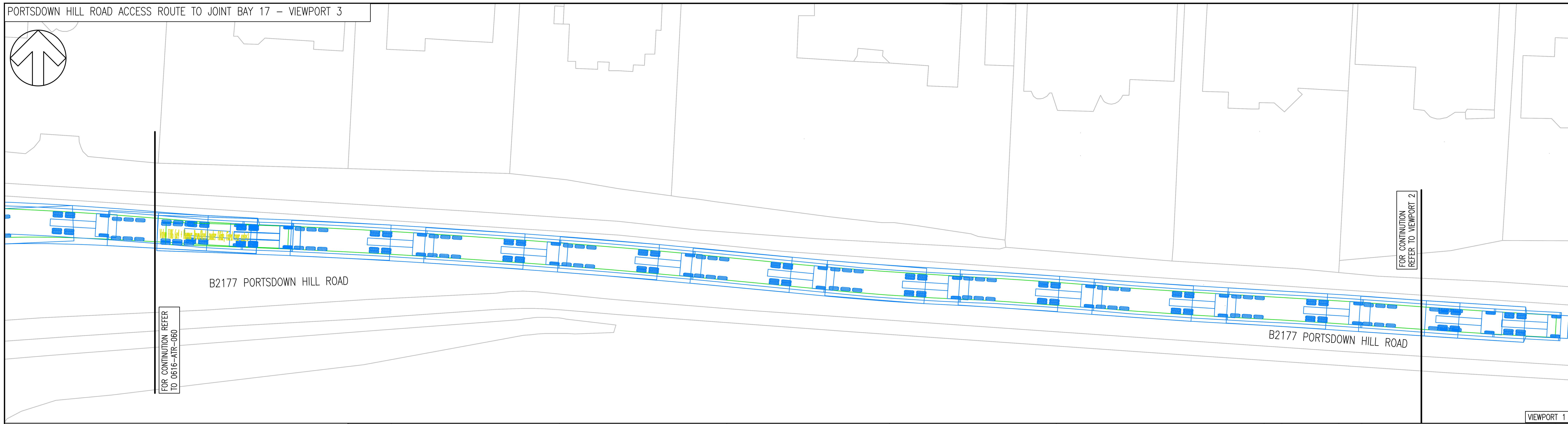
ARCHITECT: -

SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 17: WITHIN PORTSDOWN HILL CAR PARK SHEET 1 OF 3

SCALE @ A1: 1:250	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: October 20

DRAWING No: 0616-ATR-060 | REV: C

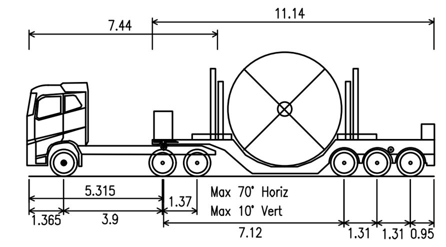


DO NOT SCALE

NOTES:

1. ALL VEHICLE MOVEMENTS ARE TRACKED AT A DESIGN SPEED OF 5mph. EXCLUDING IN VIEWPORT 1 WHERE THE MOVEMENT IS TRACKED AT 10mph.

2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- REVERSE MANOEUVRE
- VEHICLE WHEELS

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
C	25/01/2021	AMS	UPDATED JOINT BAY DETAIL.	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS: S2 - FOR INFORMATION

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T+ 44 (0) 2380 101 700
wsp.com

CLIENT: AQUIND

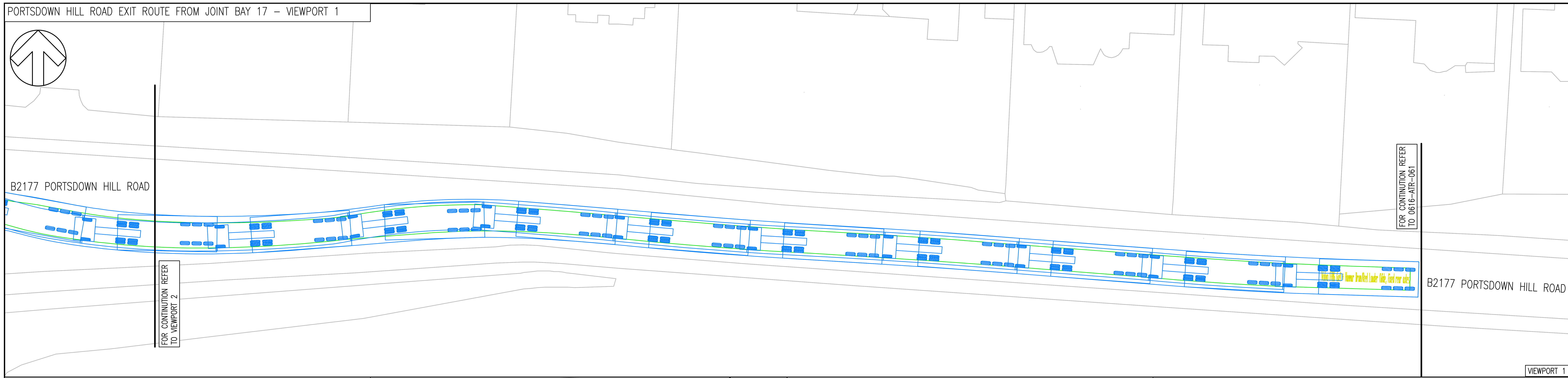
ARCHITECT: -

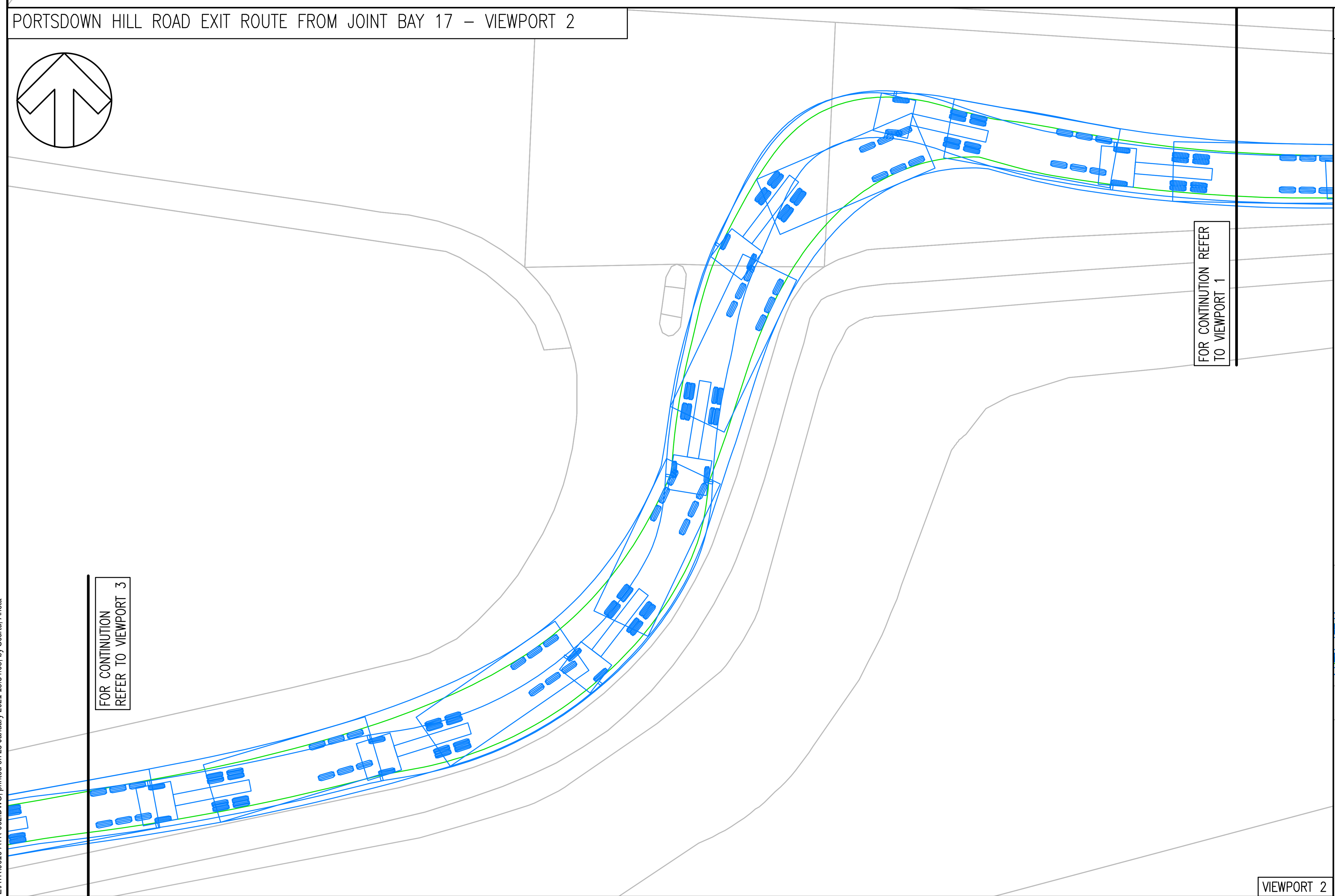
SITE/PROJECT: AQUIND

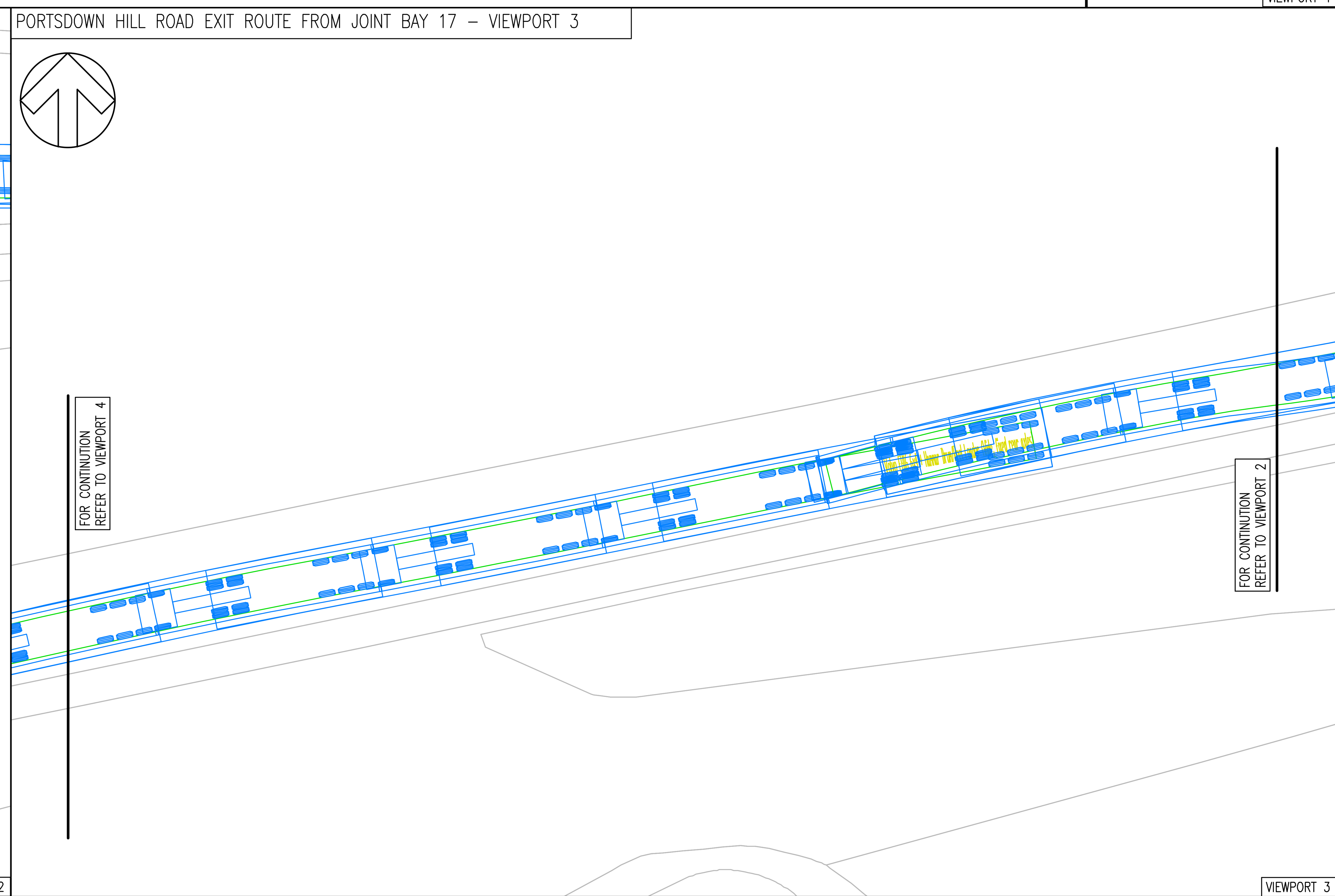
TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 17: WITHIN PORTSDOWN HILL CAR PARK SHEET 2 OF 3

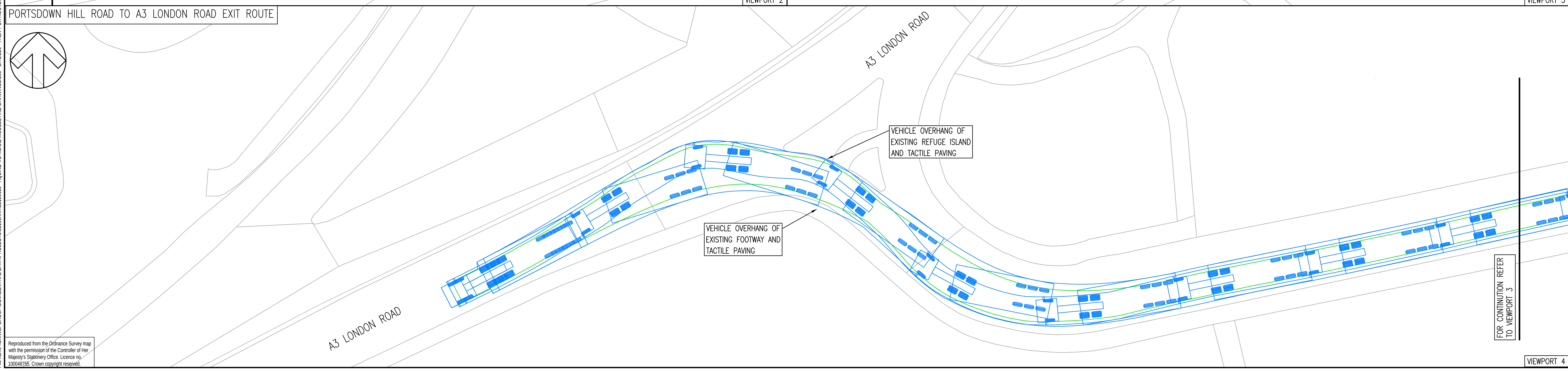
SCALE @ A1: 1:250	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: October 20

DRAWING No: 0616-ATR-061 REV: C









DO NOT SCALE

NOTES:

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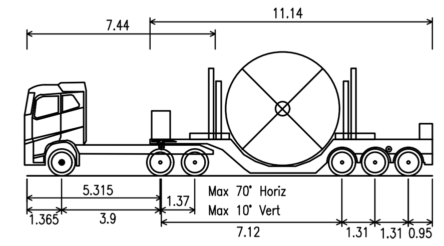

Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

FORWARD MANOEUVRE
VEHICLE WHEELS

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

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C	25/01/2021	AMS	UPDATED JOINT BAY DETAIL.	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS:
S2 - FOR INFORMATION

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T+ 44 (0) 2380 101 700
wsp.com

CLIENT:
AQUIND

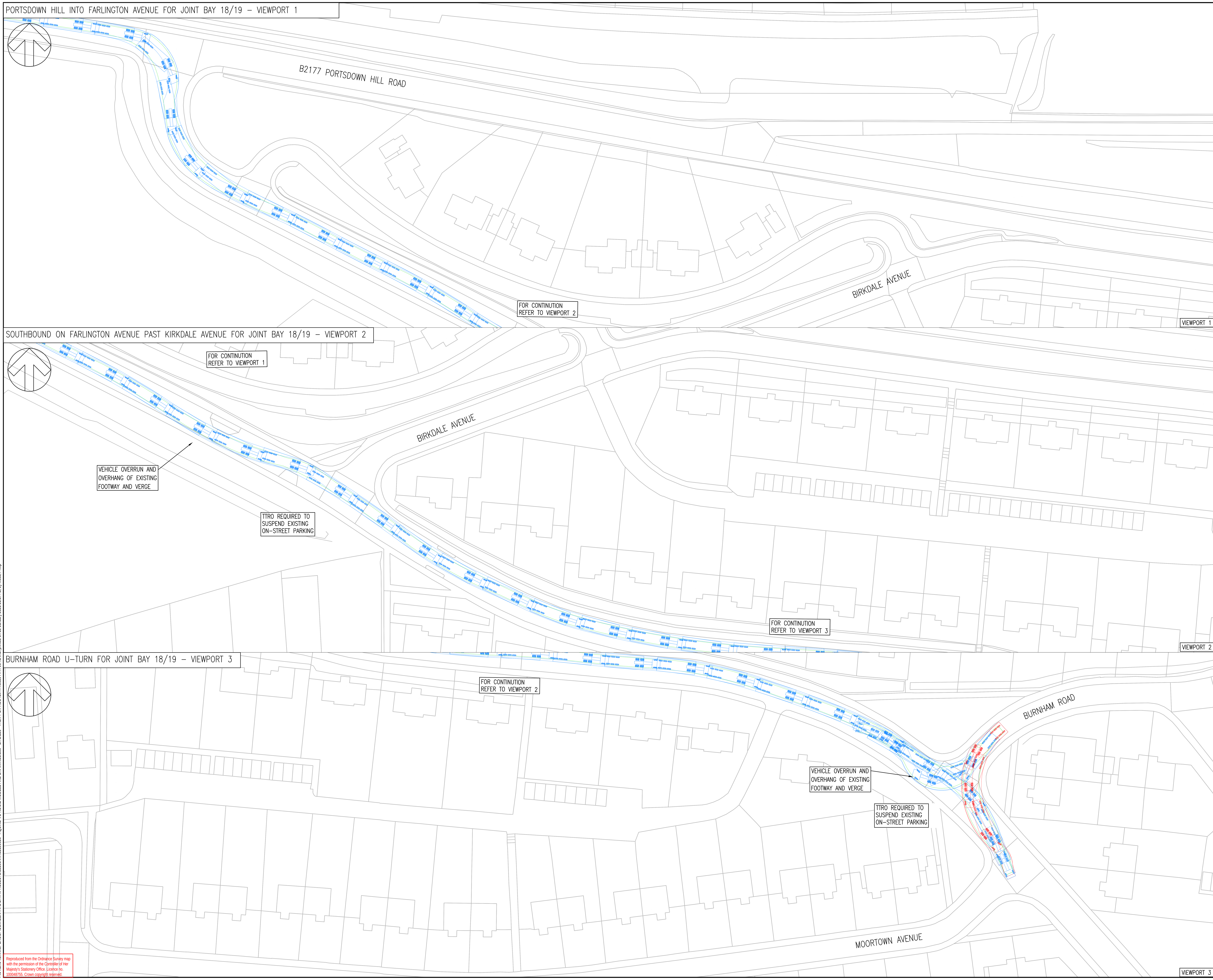
ARCHITECT:
-

SITE/PROJECT:
AQUIND

TITLE:
SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE
JOINT BAY 17: WITHIN PORTSDOWN HILL CAR PARK
SHEET 3 OF 3

SCALE @ A1:	CHECKED:		APPROVED:
1:250	CW		CW
PROJECT NO:	DESIGNED:	DRAWN:	DATE:
62100616	-	AVI	October 20

DRAWING No: 0616-ATR-062
REV: C

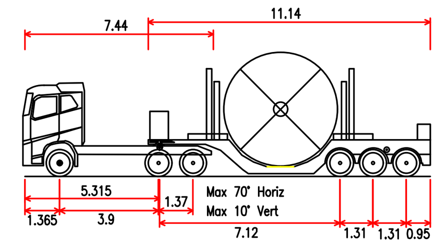


DO NOT SCALE

NOTES:

1. ALL VEHICLE MOVEMENTS ARE TRACKED AT A DESIGN SPEED OF 5mph. EXCLUDING IN VIEWPORT 1 WHERE THE MOVEMENT IS TRACKED AT 10mph.

2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
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Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- REVERSE MANOEUVRE
- VEHICLE WHEELS

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
A	25/01/2021	PM	FIRST ISSUE	CW	CW

DRAWING STATUS: S2 - FOR INFORMATION

Grosvenor House, 2 Grosvenor Square, Southampton, SO15 2BE, UK
T+ 44 (0) 2380 101 700
wsp.com

CLIENT:

ARCHITECT: -

SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 18/19: FARLINGTON AVENUE SOUTHBOUND

SCALE @ A1: 1:500	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: PM	DATE: January 21

DRAWING No: 0616-ATR-064 — REV: A

FARLINGTON AVENUE INTO PORTSDOWN HILL FOR JOINT BAY 18/19 – VIEWPORT 1

NORTHBOUND ON FARLINGTON AVENUE PAST KIRKDALE AVENUE FOR JOINT BAY 18/19 – VIEWPORT 2

MOORTOWN AVENUE U–TURN FOR JOINT BAY 18/19 – VIEWPORT 3

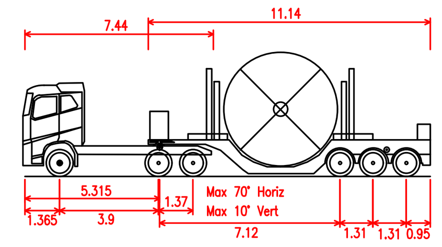
File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\62100XXX\62100616 - AQUIND VO NO.3\E MODELS AND DRAWINGS\300 - SITE\320 - TASK 7 UK ROUTE\ATR\0616-ATR-065.DWG, printed on 25 January 2021 21:26:49, by Moss, Philip

DO NOT SCALE

NOTES:

1. ALL VEHICLE MOVEMENTS ARE TRACKED AT A DESIGN SPEED OF 5mph. EXCLUDING IN VIEWPORT 1 WHERE THE MOVEMENT IS TRACKED AT 10mph.

2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- REVERSE MANOEUVRE
- VEHICLE WHEELS

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
A	25/01/2021	PM	FIRST ISSUE	CW	CW

DRAWING STATUS: S2 - FOR INFORMATION

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T+ 44 (0) 2380 101 700
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CLIENT:

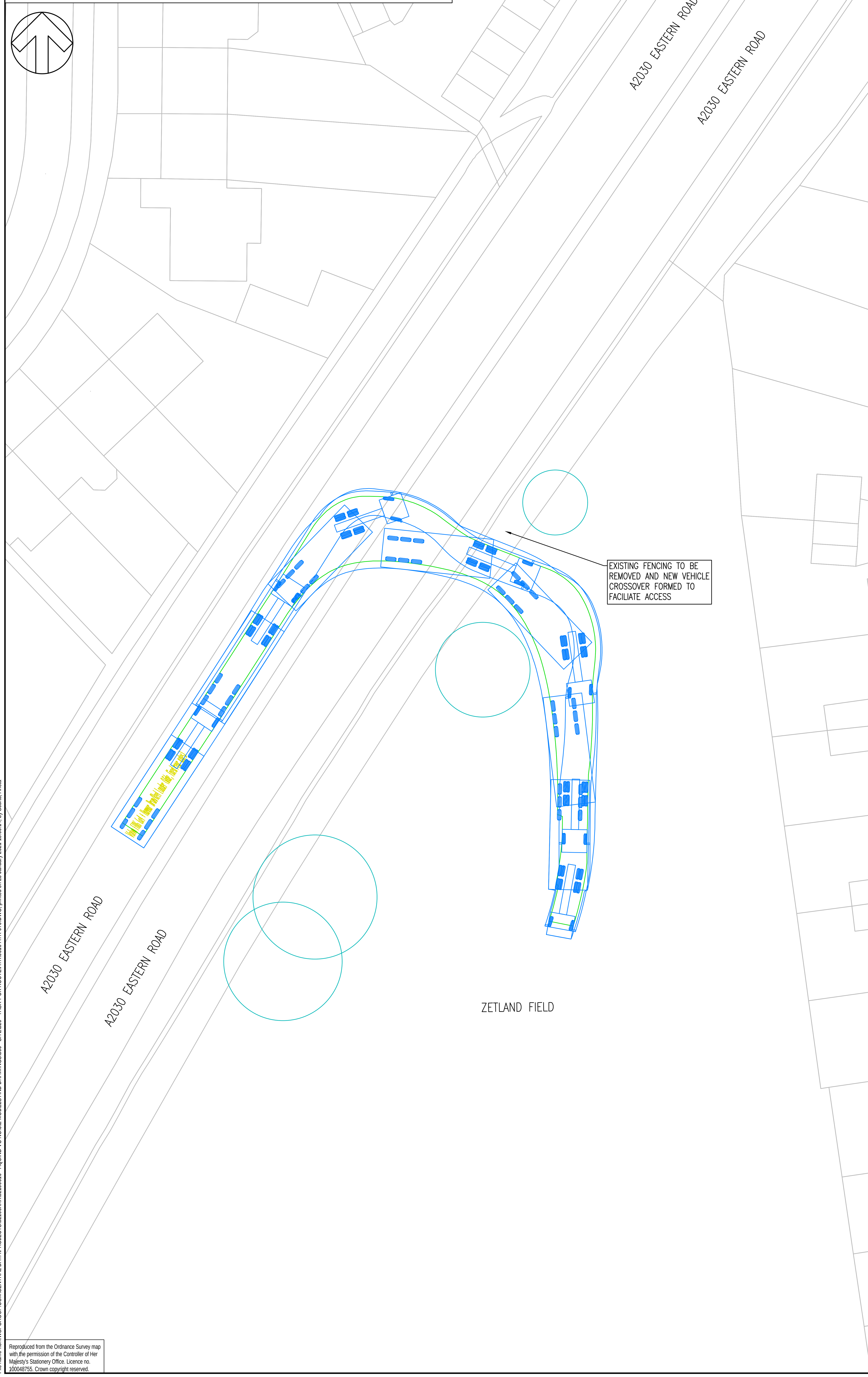
ARCHITECT: -

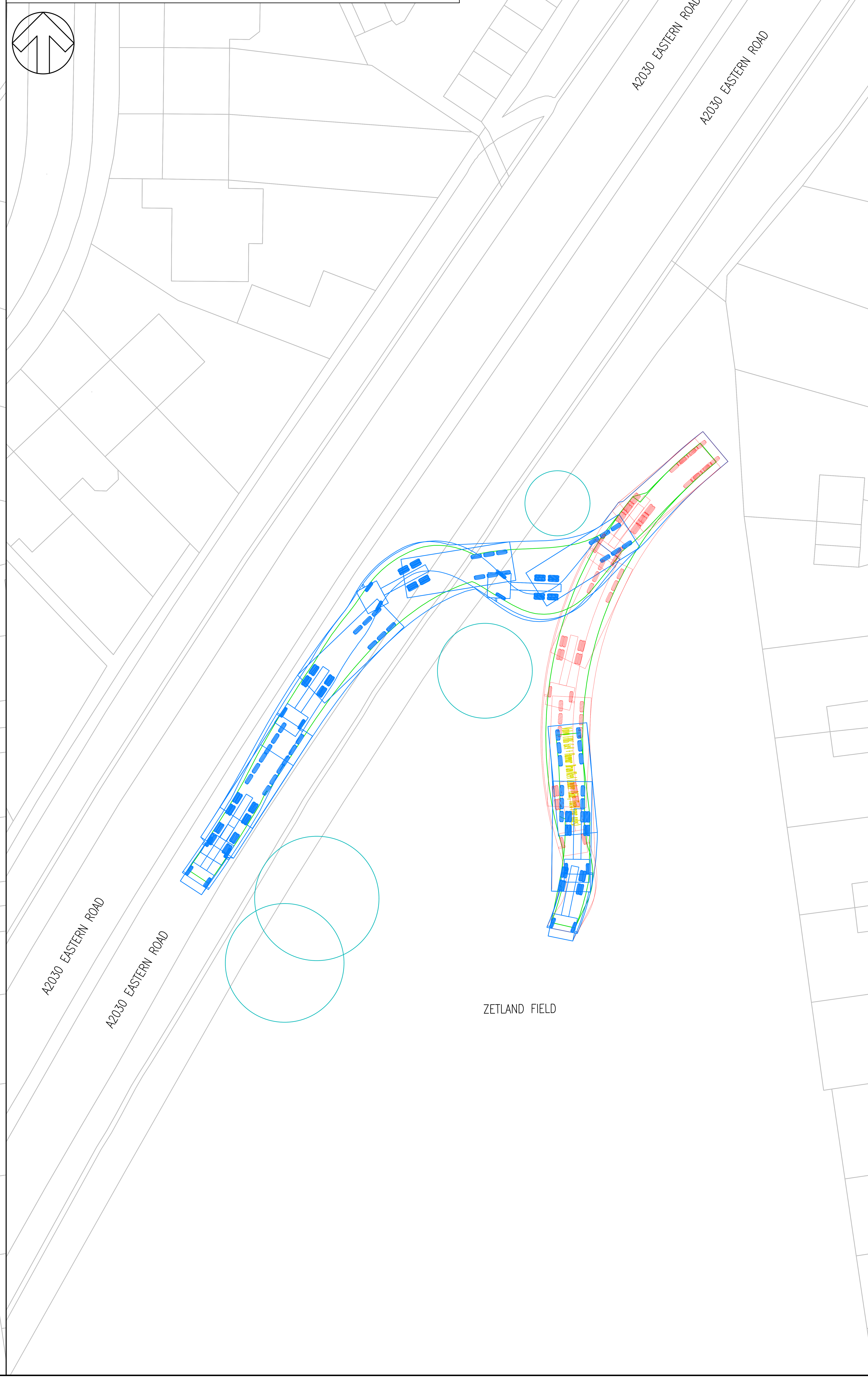
SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 18/19: FARLINGTON AVENUE NORTHBOUND

SCALE @ A1: 1:500	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: PM	DATE: January 21

DRAWING No:	REV:
0616-ATR-065	A

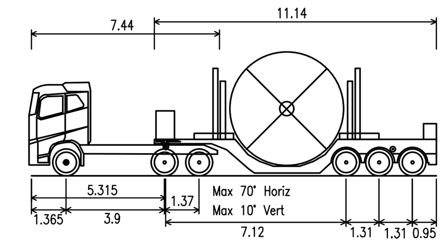




DO NOT SCALE

NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 5mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- REVERSE MANOEUVRE
- VEHICLE WHEELS

ADDITIONAL ITEMS:

- EXISTING TREES

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
C	25/01/2021	AMS	UPDATED JOINT BAY DETAIL.	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS:

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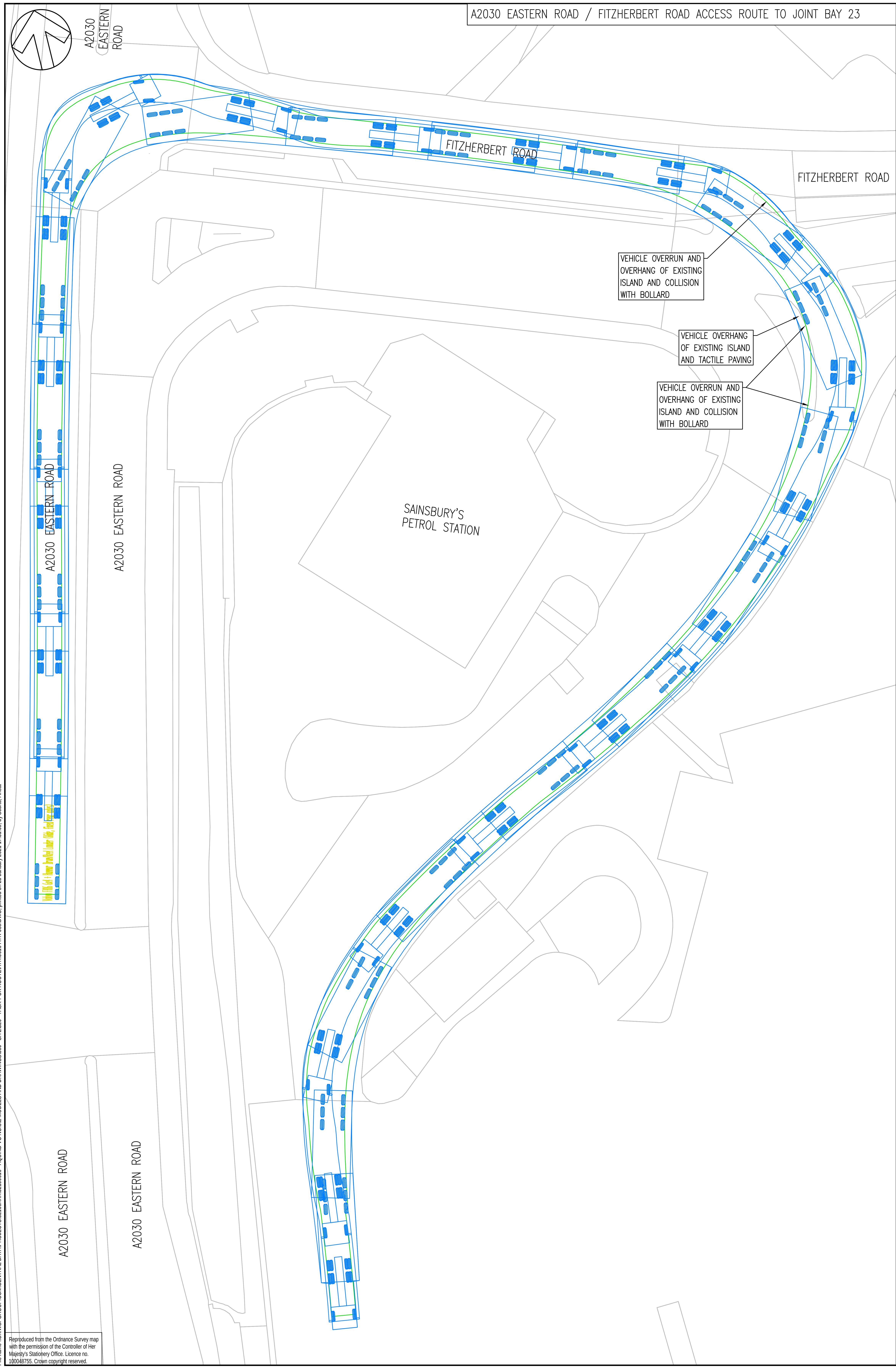
CLIENT: AQUIND

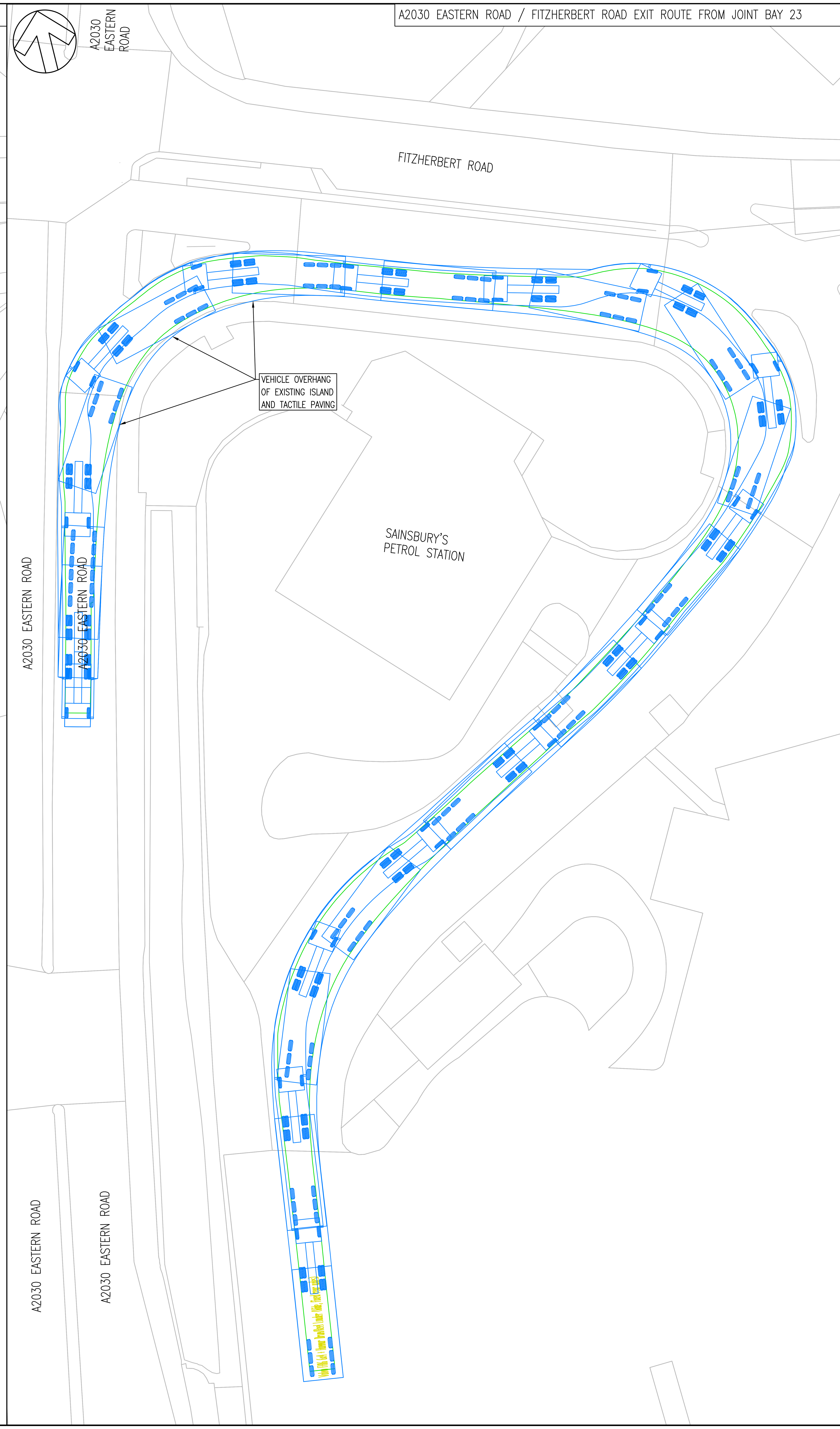
ARCHITECT: -

SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 22: WITHIN ZETLAND FIELDS ADJACENT TO A2030 EASTERN ROAD

SCALE @ A1: 1:250	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: October 20
DRAWING No: 0616-ATR-070			REV: C

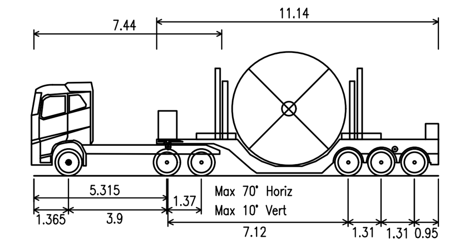




DO NOT SCALE

NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 5mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

FORWARD MANOEUVRE
VEHICLE WHEELS

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
C	25/01/2021	AMS	UPDATED JOINT BAY DETAIL.	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS:
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CLIENT:

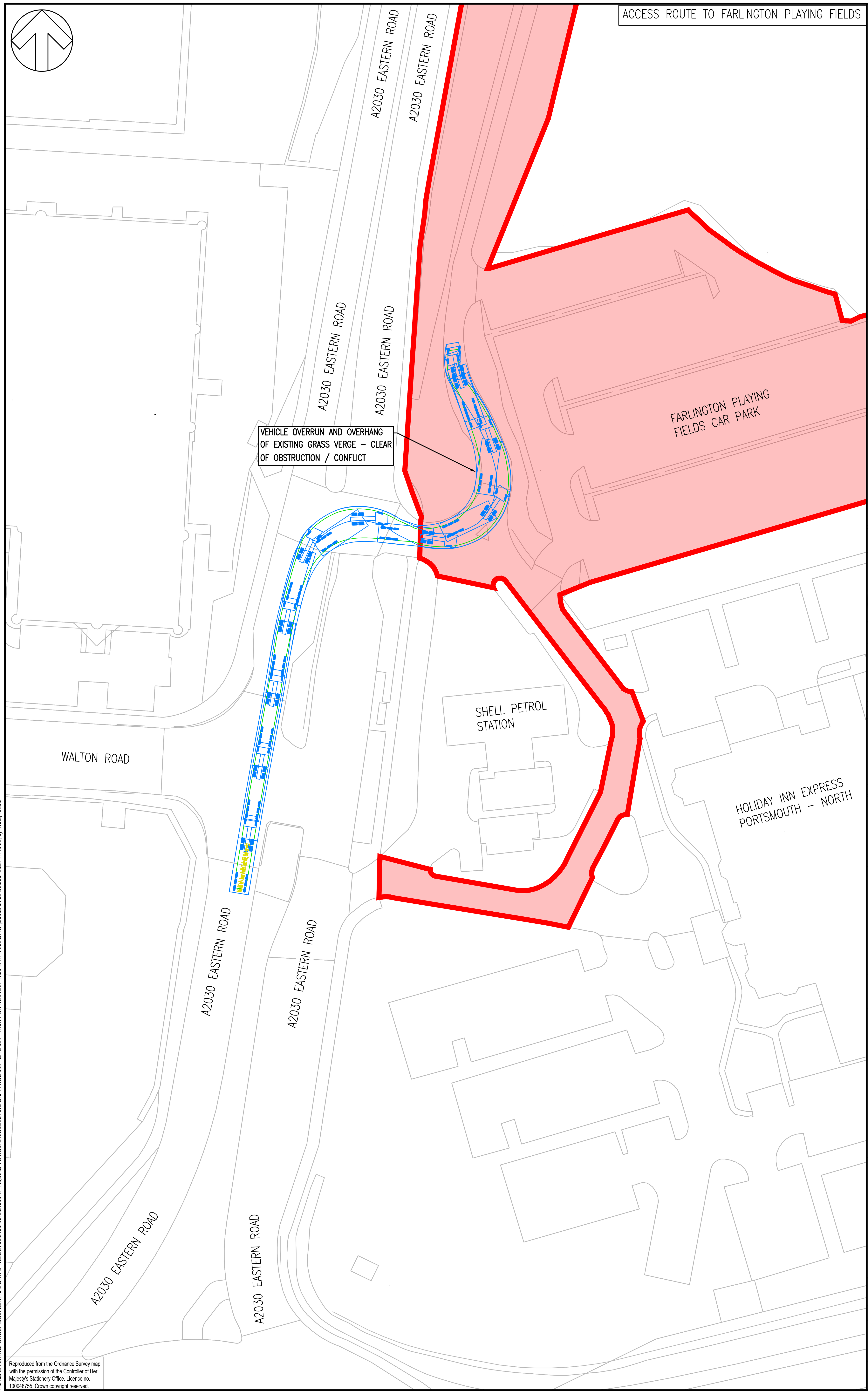
ARCHITECT:
-

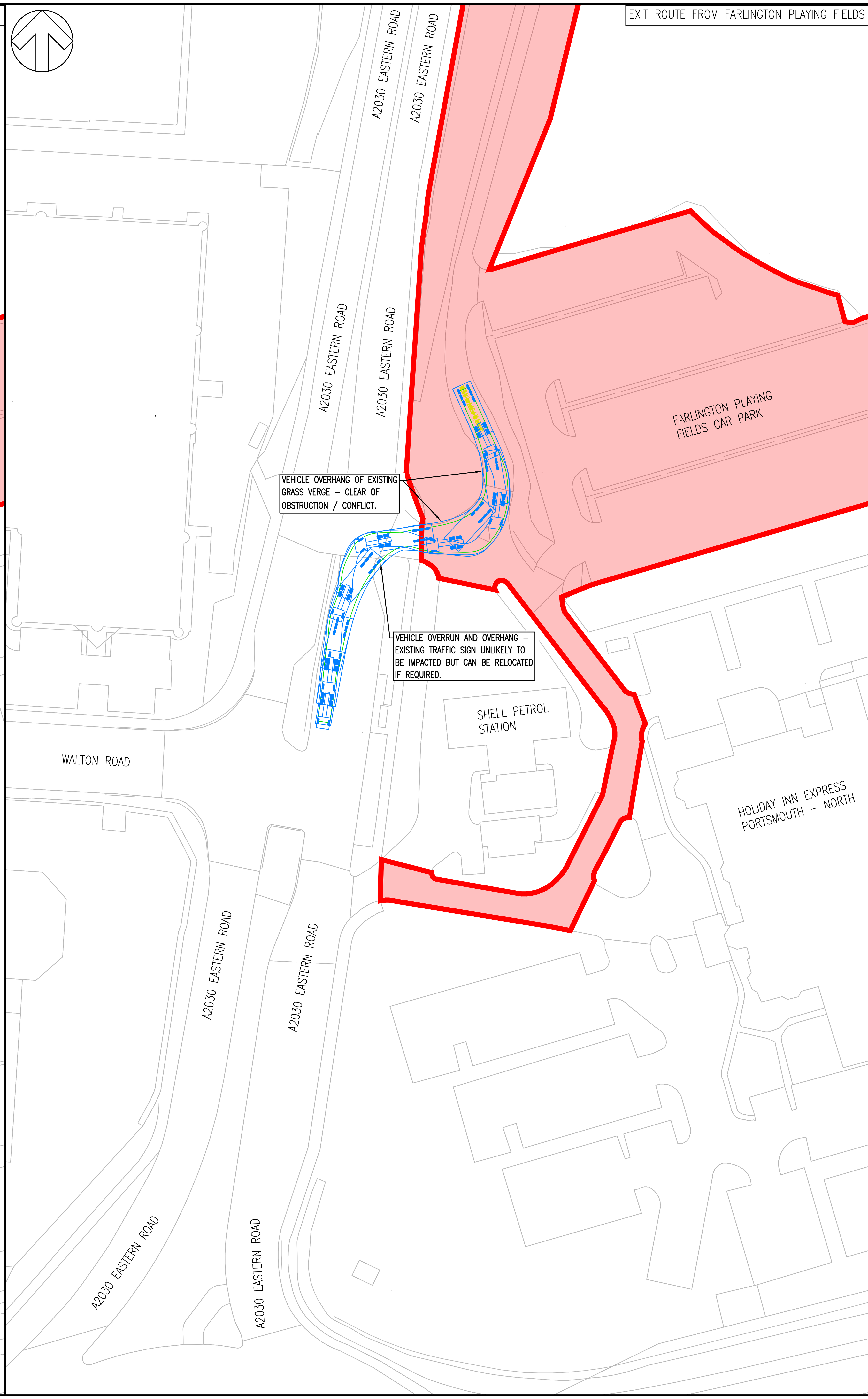
SITE/PROJECT:
AQUIND

TITLE:
SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE
JOINT BAY 23: WITHIN SAINSBURY'S CAR PARK

SCALE @ A1:	CHECKED:		APPROVED:
1:250	CW		CW
PROJECT No: 62100616	DESIGNED: -	DRAWN: AVI	DATE: October 20

DRAWING No: 0616-ATR-080
REV: C

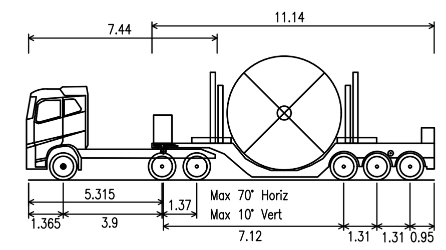




DO NOT SCALE

NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 5mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader

Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- VEHICLE WHEELS

ADDITIONAL ITEMS:

- ORDER LIMIT

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REV	DATE	BY	DESCRIPTION	CHK	APP
D	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
C	14/09/2020	AVI	UPDATE TO LABELS	CW	CW
B	26/05/2020	AVI	UPDATED VEHICLE	GCB	CW
A	18/03/2020	AVI	FIRST ISSUE	GCB	CW

DRAWING STATUS:
S0 - WORK IN PROGRESS

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wsp.com

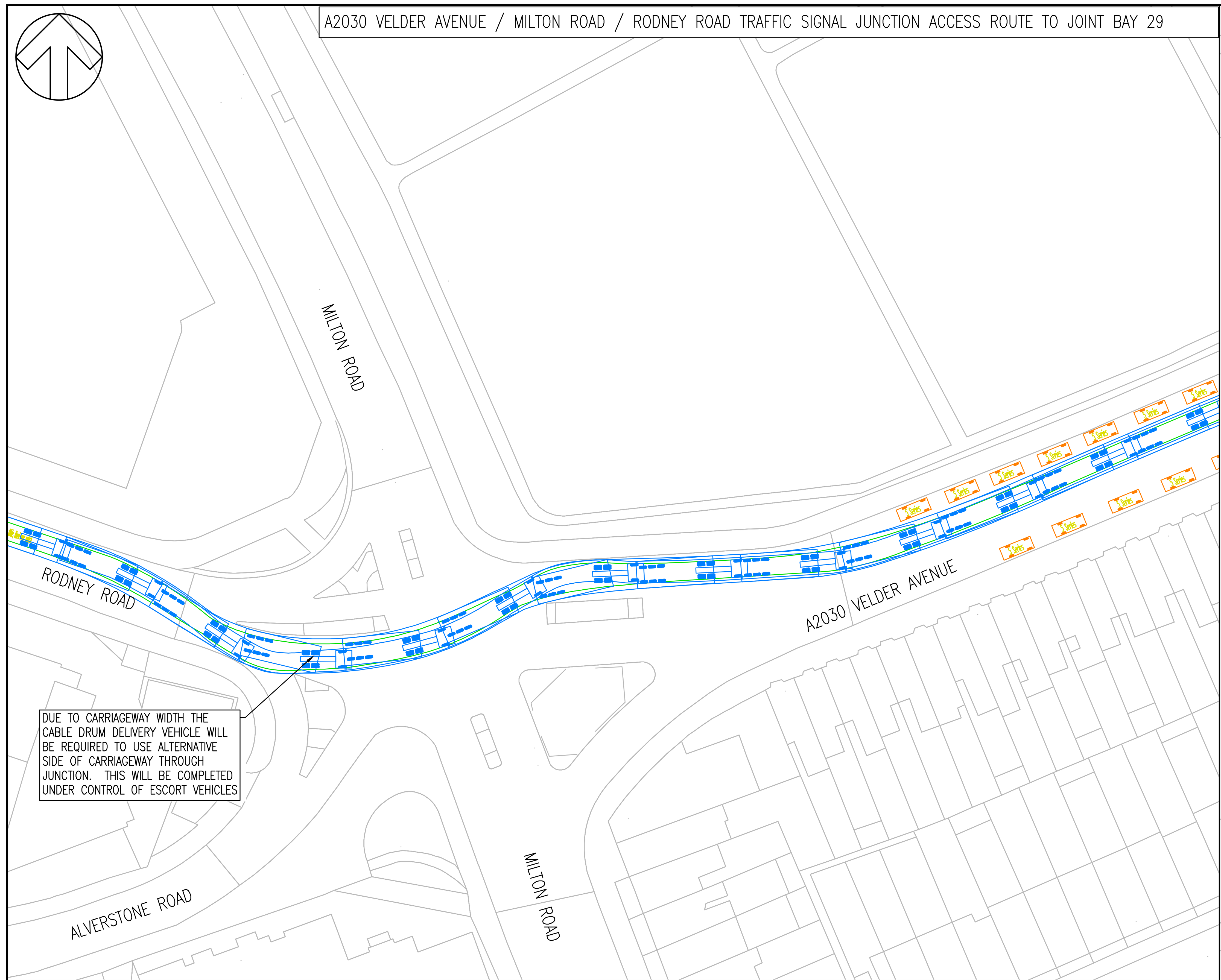
CLIENT: AQUIND

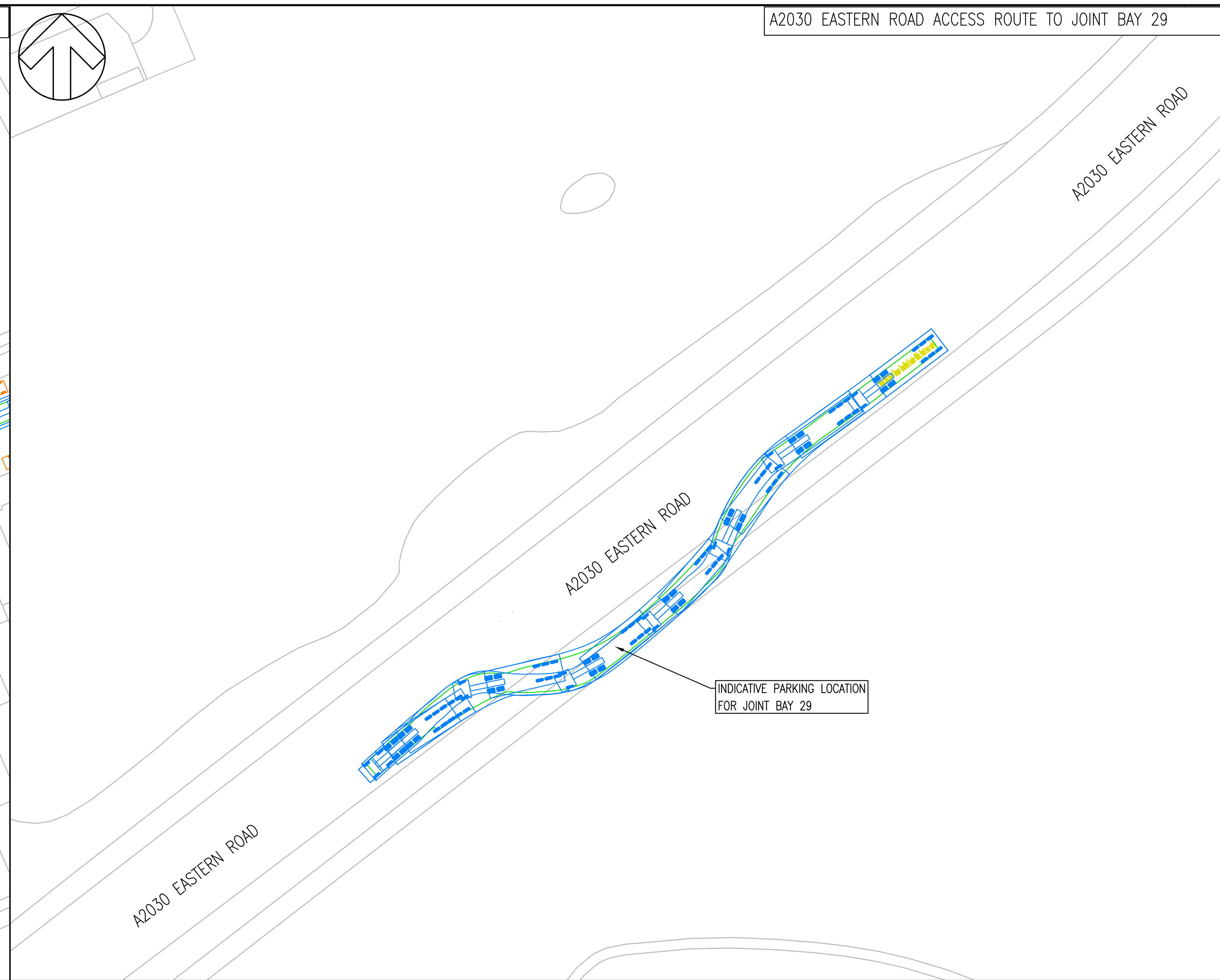
ARCHITECT: -

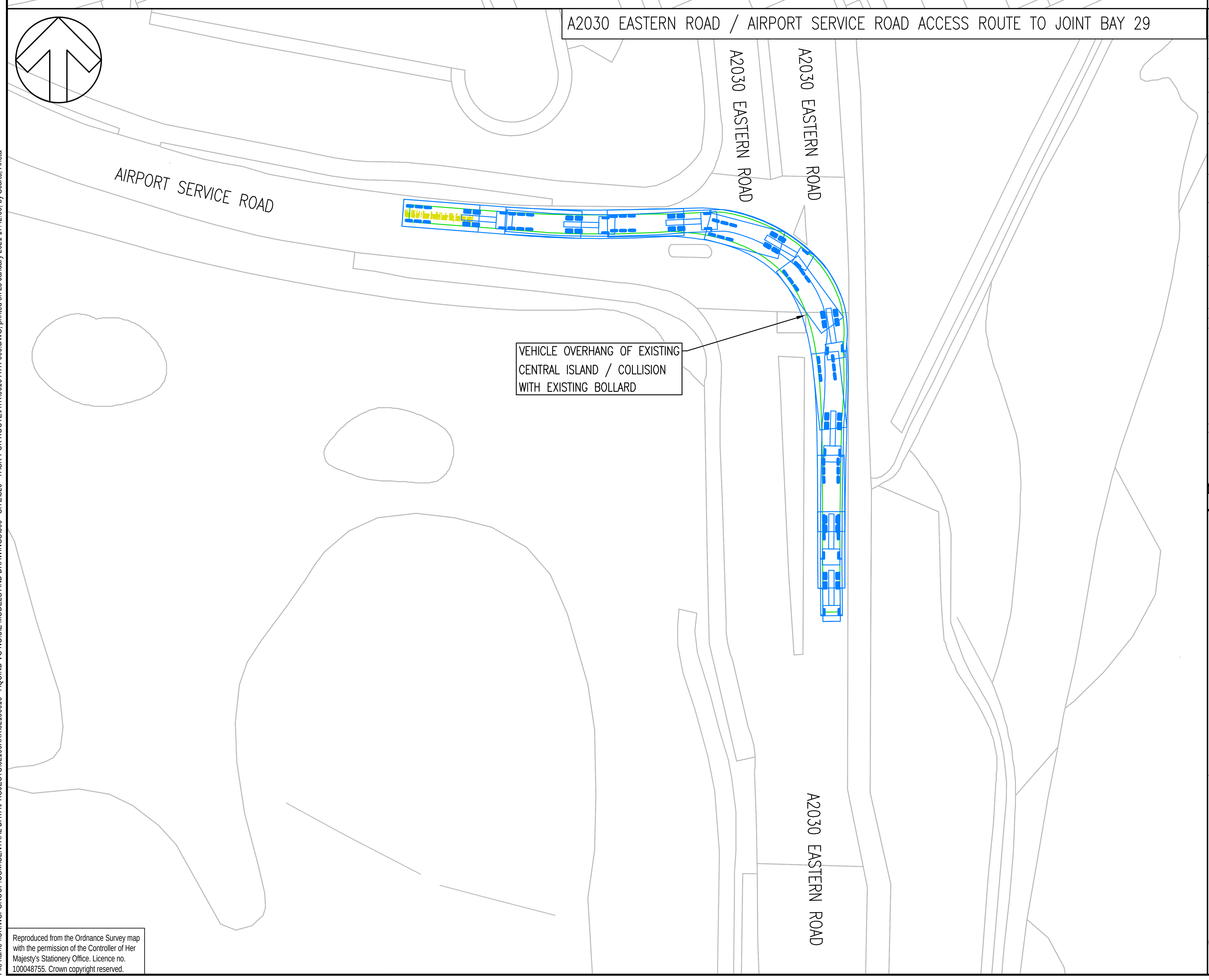
SITE/PROJECT: AQUIND

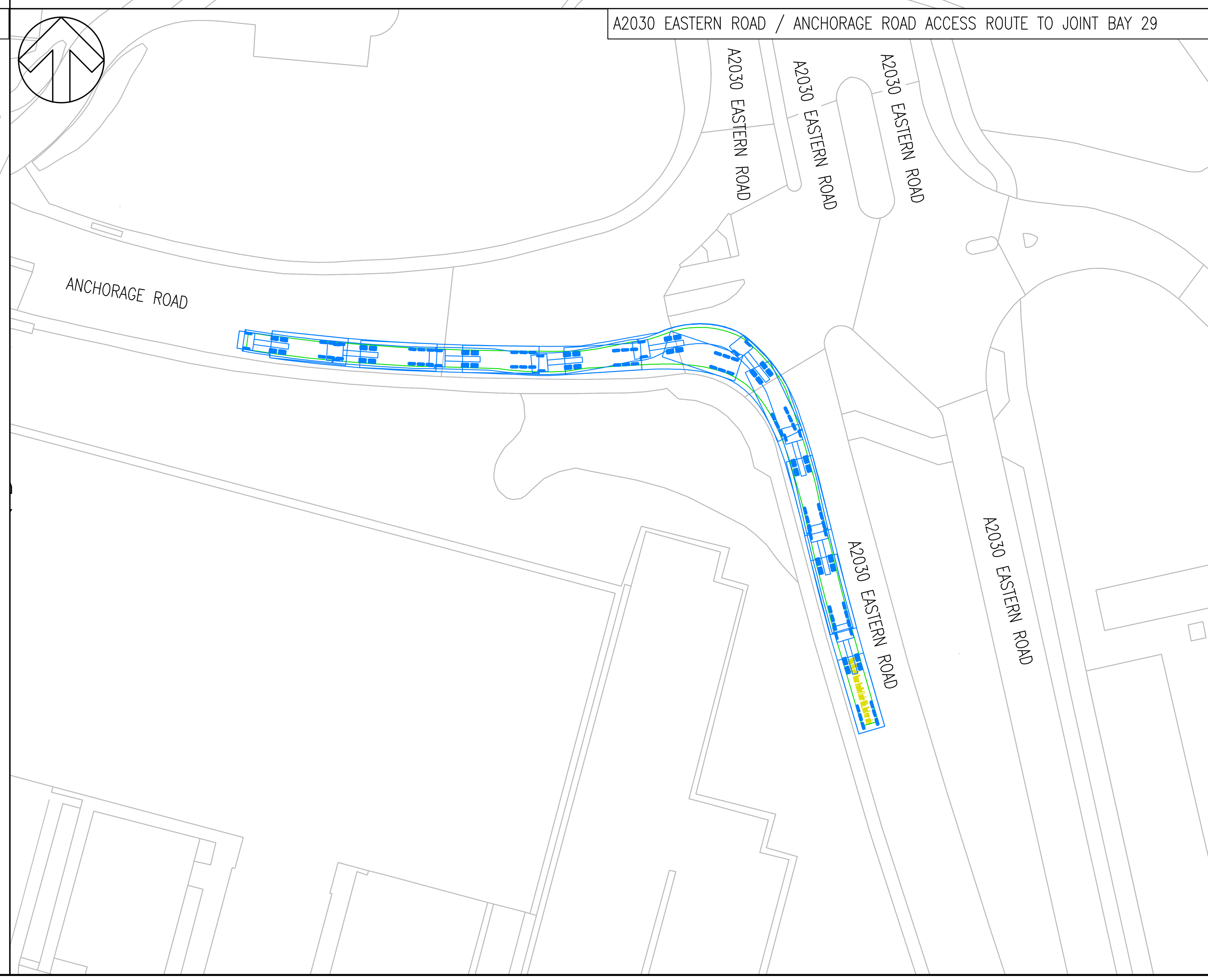
TITLE: SWEPT PATHS OF CONSTRUCTION VEHICLE ACCESS TO FARLINGTON PLAYING FIELDS FOR HDD-3 INSTALLATION

SCALE @ A1: 1:500	CHECKED: GCB	APPROVED: CW
PROJECT NO: 62100616	DESIGNED: - / DRAWN: AVI	DATE: March 20
DRAWING No: 0616-ATR-002		REV: D





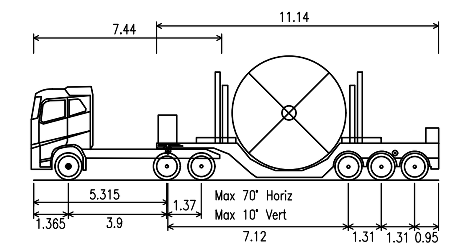




DO NOT SCALE

NOTES:

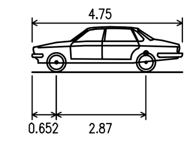
1. VEHICLE MOVEMENTS ARE TRACKED AT A DESIGN SPEED OF 5mph. EXCLUDING IN VIEWPORT 1 WHERE THE MOVEMENT IS TRACKED AT A DESIGN SPEED OF 10mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- REVERSE MANOEUVRE
- INDICATIVE LOCATION OF ON-STREET PARKING (PROFILE SHOWN BELOW):



5 Series	
Overall Length	4.750m
Overall Width	1.800m
Overall Body Height	0.325m
Min Body Ground Clearance	0.325m
Track Width	1.700m
Lock to Lock Time	4.00 sec
Kerb to Kerb Turning Radius	6.200m

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
C	25/01/2021	AMS	UPDATED JOINT BAY DETAIL.	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS: S2 - FOR INFORMATION

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T+ 44 (0) 2380 101 700
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CLIENT: AQUIND

ARCHITECT: -

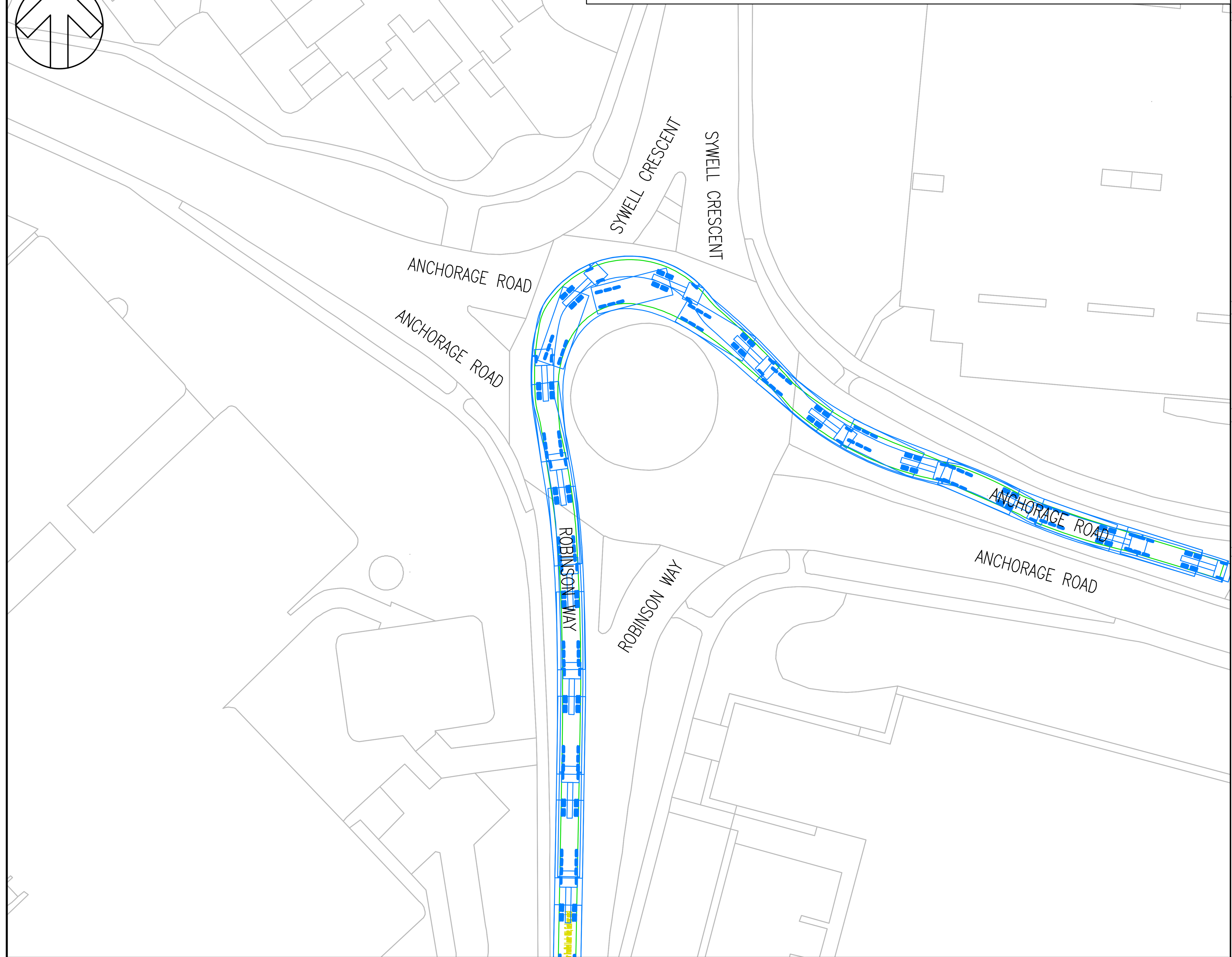
SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 29: ADJACENT TO THE A2030 EASTERN ROAD NORTH OF MILTON COMMON

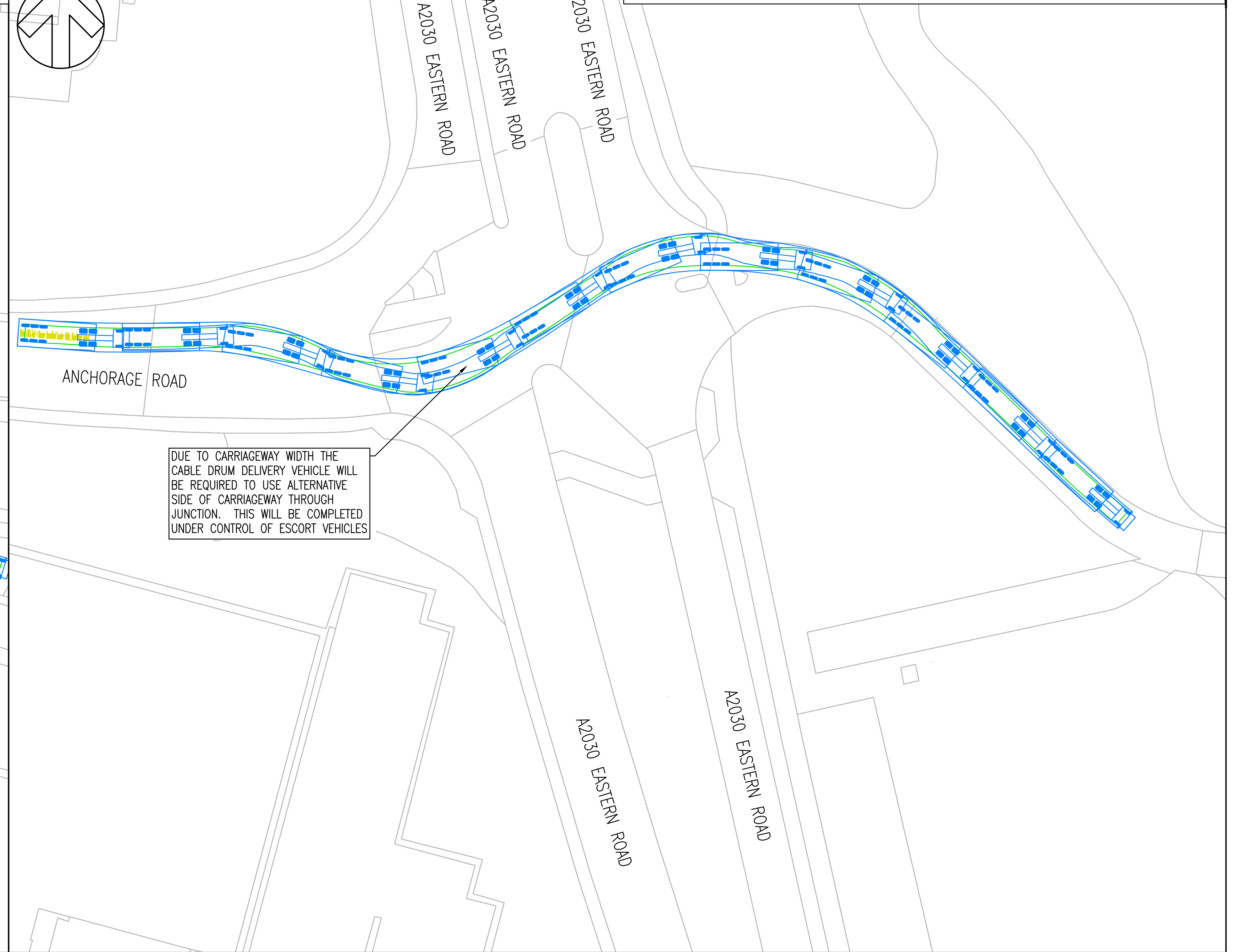
SCALE @ A1: 1:500	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: October 20

DRAWING No: 0616-ATR-090 REV: C

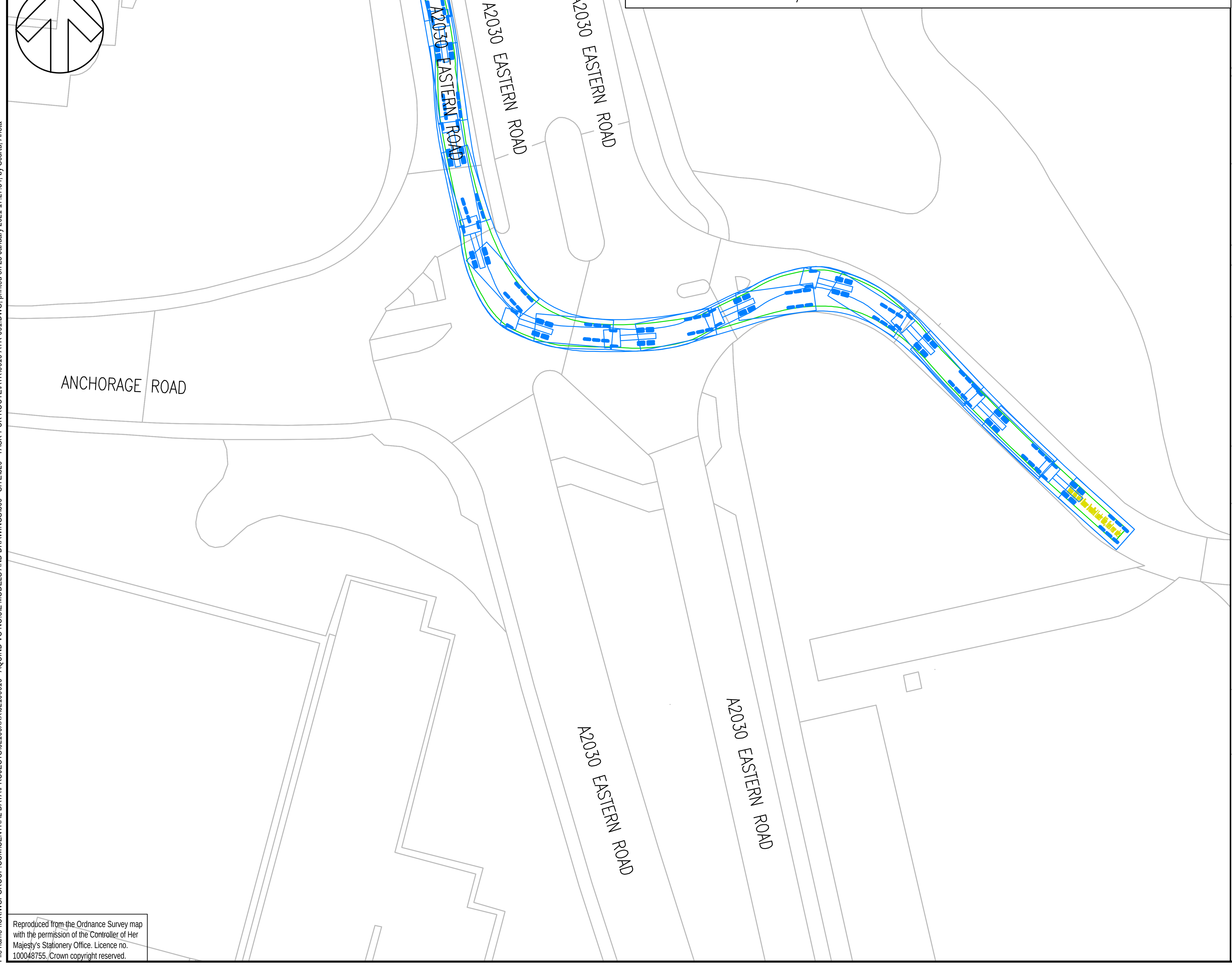
ROBINSON WAY / ANCHORAGE ROAD ROUNDABOUT ACCESS ROUTE TO JOINT BAY 25



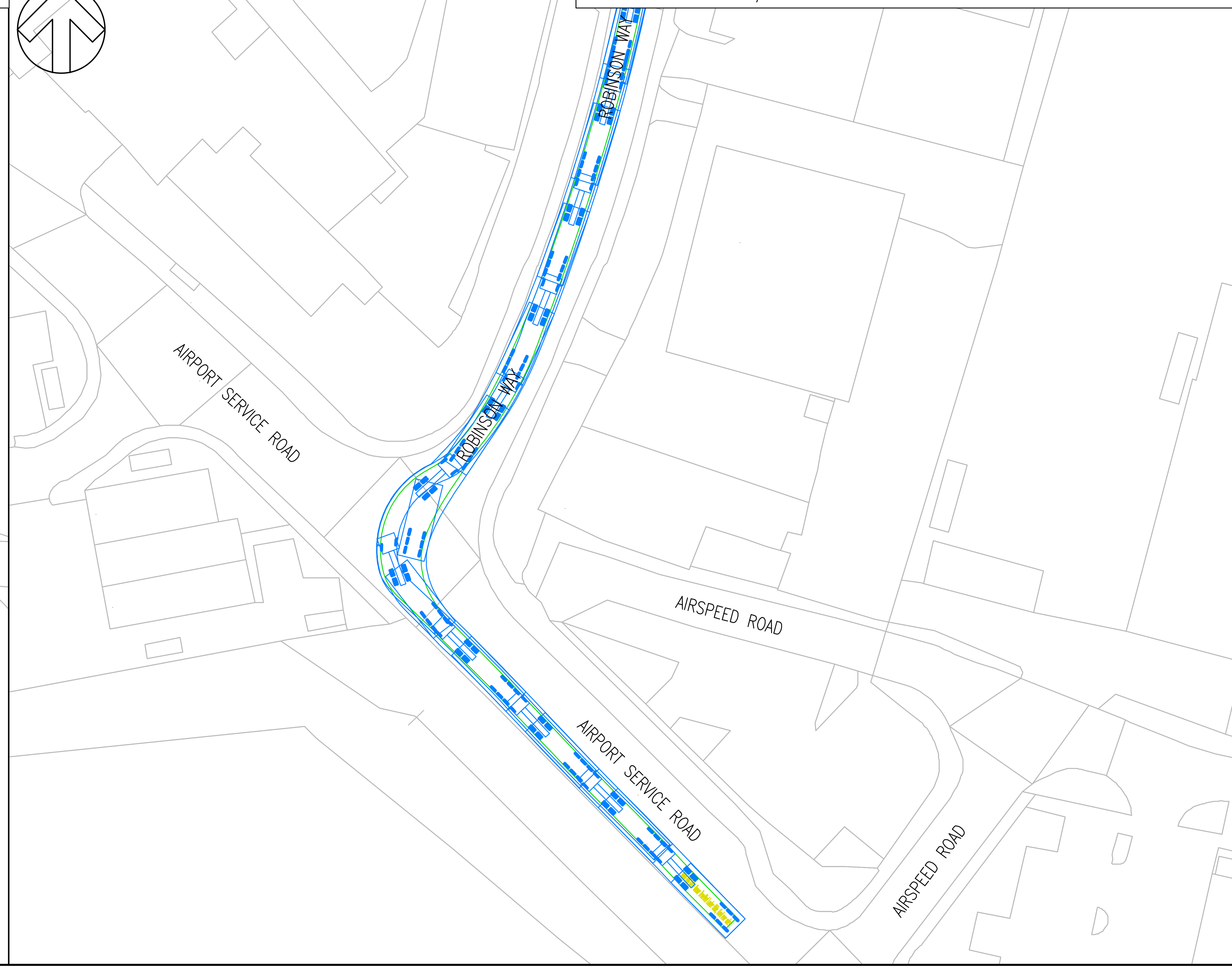
A2030 EASTERN ROAD / ANCHORAGE ROAD TRAFFIC SIGNAL JUNCTION VIEWPORT 1



A2030 EASTERN ROAD / ANCHORAGE ROAD TRAFFIC SIGNAL JUNCTION VIEWPORT 2



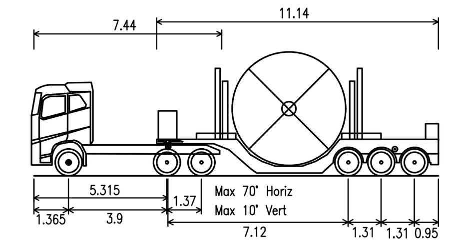
AIRPORT SERVICE ROAD / ROBINSON WAY JUNCTION ACCESS ROUTE TO JOINT BAY 25



DO NOT SCALE

NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 5mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

FORWARD MANOEUVRE
VEHICLE WHEELS

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
C	25/01/2021	AMS	UPDATED JOINT BAY DETAIL.	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS: S2 - FOR INFORMATION

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CLIENT: AQUIND

ARCHITECT: -

SITE/PROJECT: AQUIND

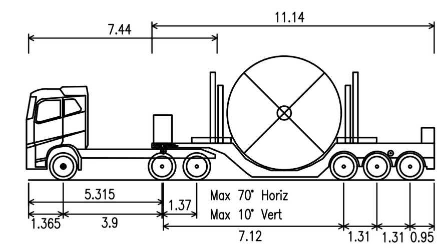
TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 25: WITHIN KENDALLS WHARF

SCALE @ A1: 1:500	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: HL / AVI	DATE: October 20
DRAWING No: 0616-ATR-091			REV: C

DO NOT SCALE

NOTES:

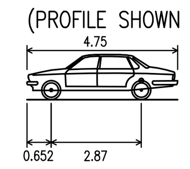
1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 10mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'.
   VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- REVERSE MANOEUVRE
- VEHICLE WHEELS
- 5 Series — INDICATIVE LOCATION OF ON-STREET PARKING (PROFILE SHOWN BELOW):



5 Series	
Overall Length	4.750m
Overall Width	1.800m
Overall Body Height	0.325m
Min Body Ground Clearance	0.325m
Track Width	1.700m
Lock to Lock Time	4.00 sec
Kerb to Kerb Turning Radius	6.200m

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
A	25/01/2021	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS: S2 - FOR INFORMATION

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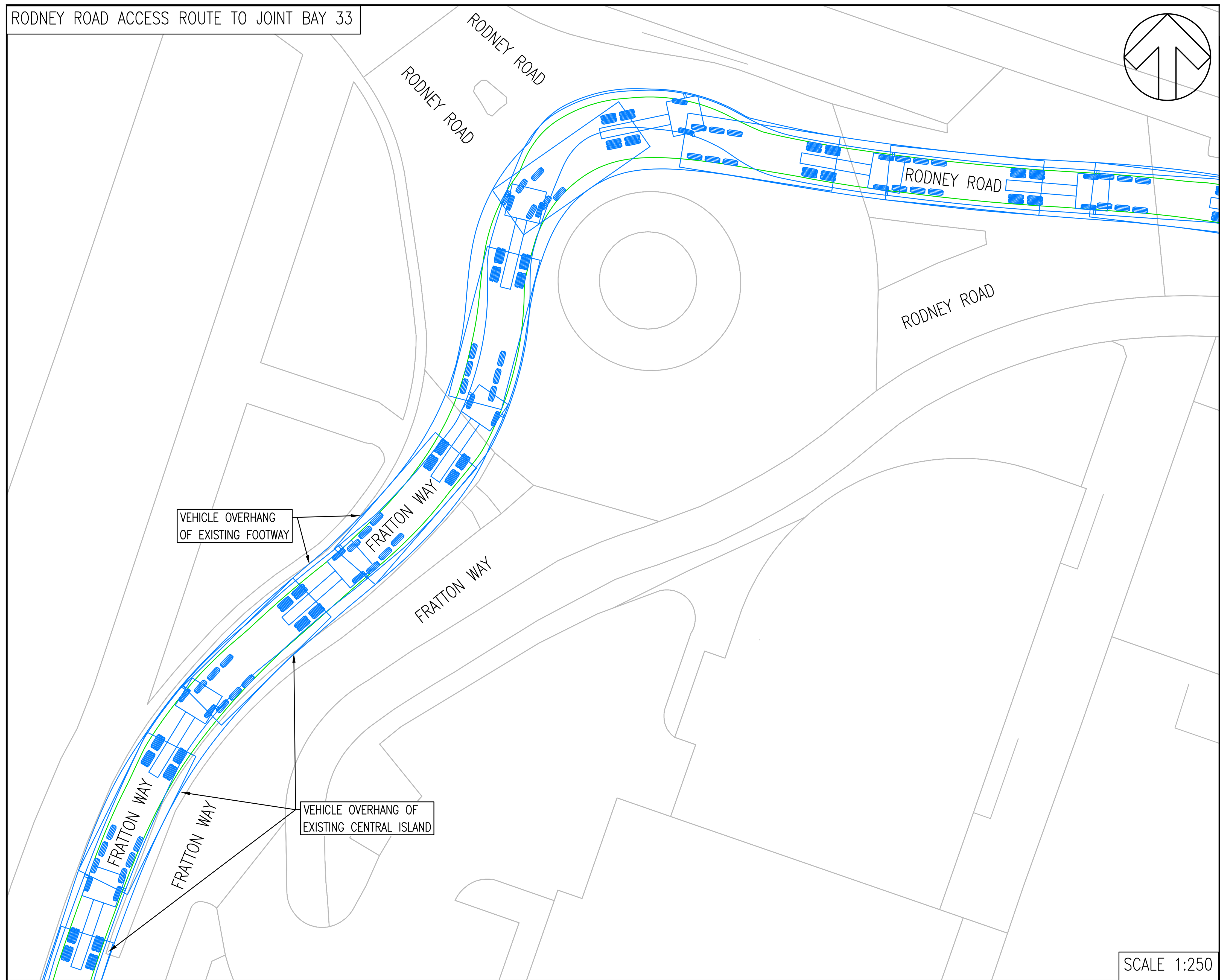
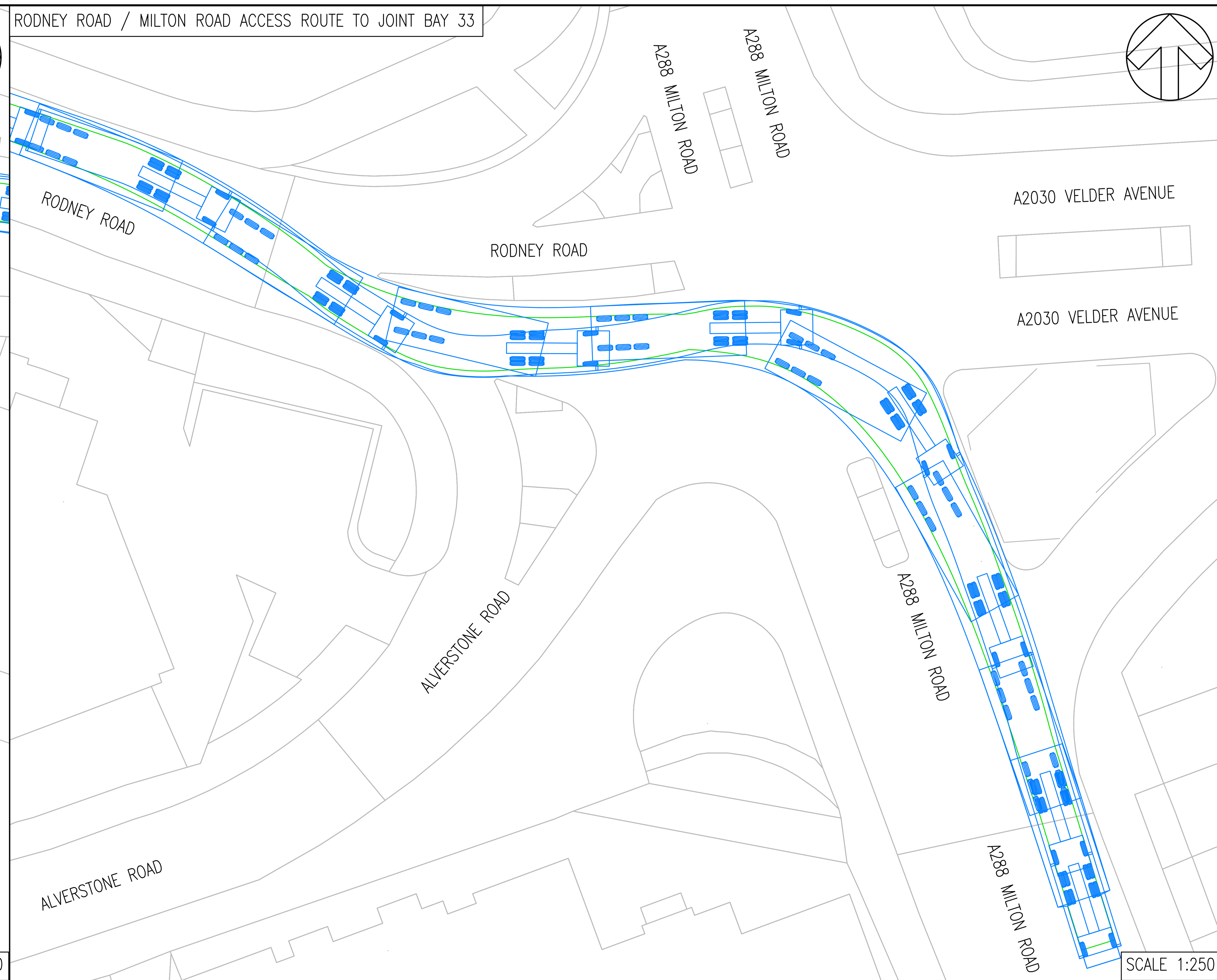
ARCHITECT: -

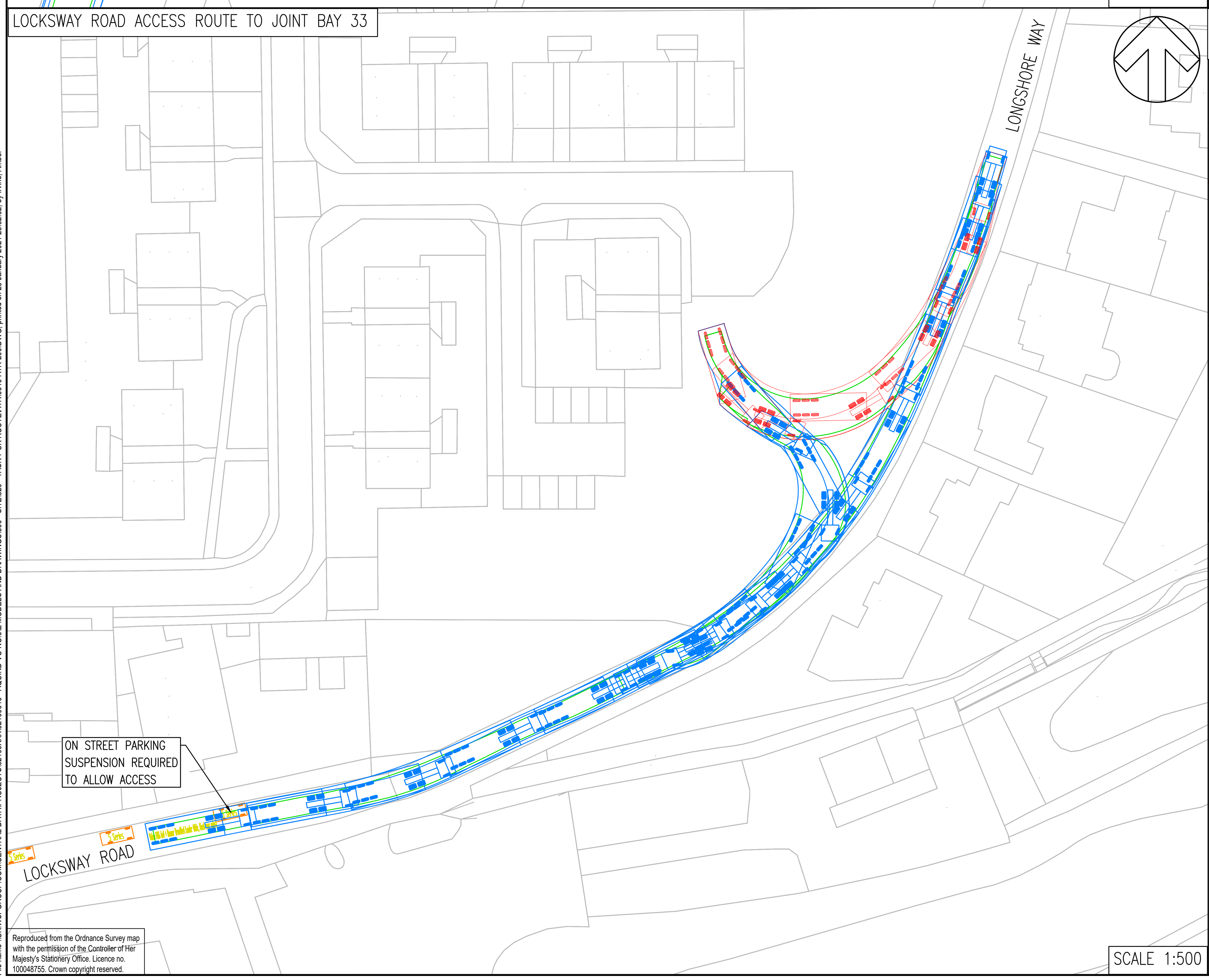
SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE JOINT BAY 31: SOUTH OF MILTON COMMON, ADJACENT TO MOORINGS WAY

SCALE @ A1: 1:250	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: January 21
DRAWING No: 0616-ATR-100			REV: A







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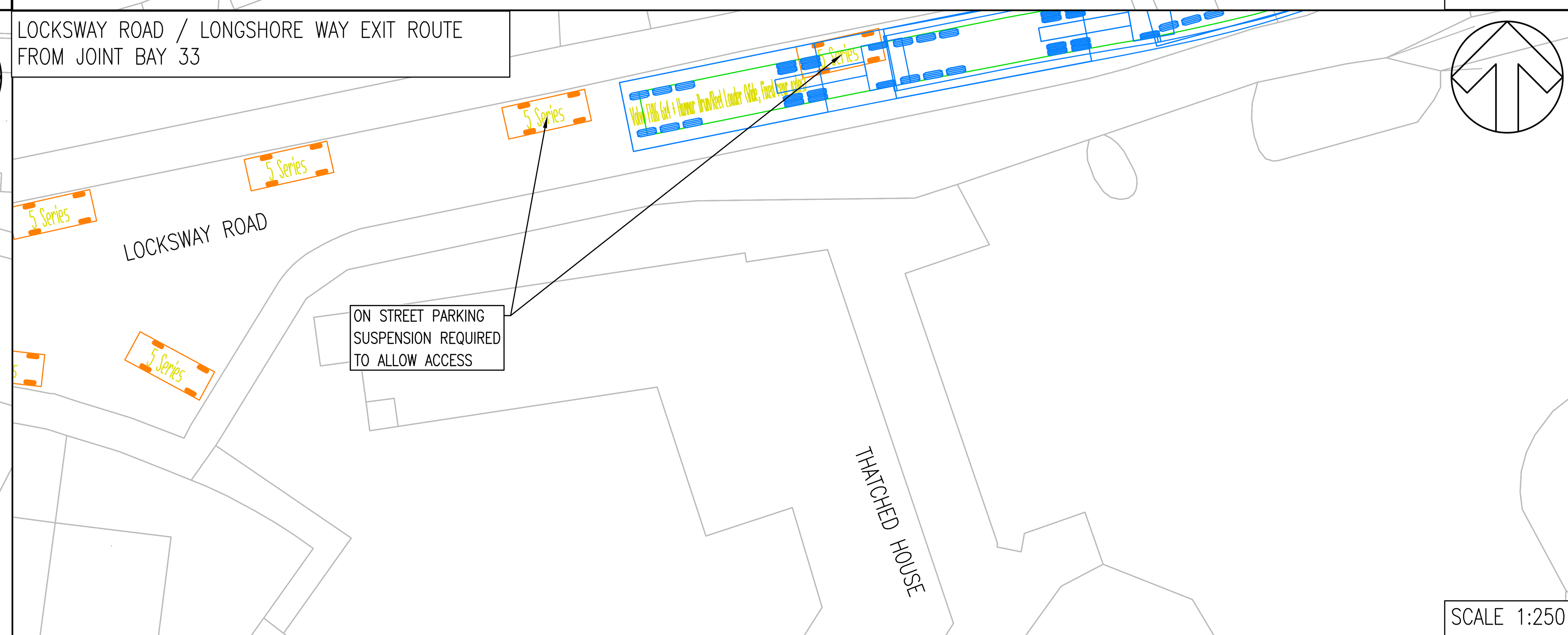
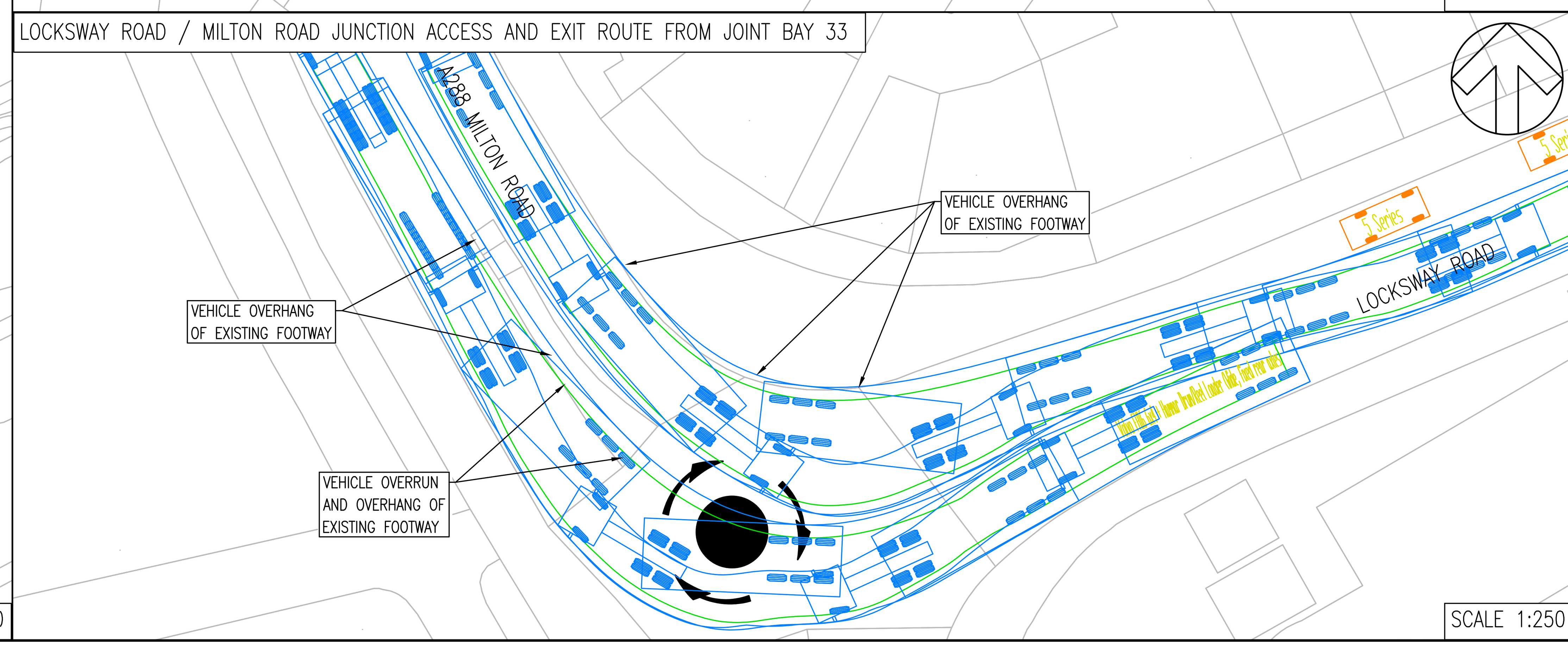


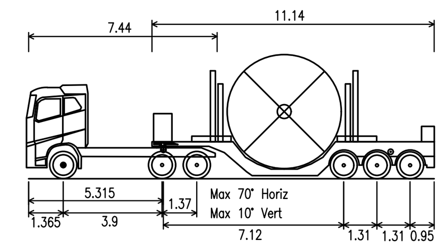


DO NOT SCALE

NOTES:

ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 5mph. EXCLUDING THE RODNEY ROAD / MILTON ROAD ACCESS ROUTE MOVEMENT WHICH IS TRACKED AT A SPEED OF 10mph.

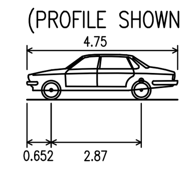
1. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- REVERSE MANOEUVRE
- VEHICLE WHEELS
- INDICATIVE LOCATION OF ON-STREET PARKING (PROFILE SHOWN BELOW):



5 Series	
Overall Length	4.750m
Overall Width	1.800m
Overall Body Height	0.325m
Min Body Ground Clearance	0.325m
Track Width	1.700m
Lock to Lock Time	4.00 sec
Kerb to Kerb Turning Radius	6.200m

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
C	25/01/2021	AVI	UPDATED JOINT BAY DETAILS	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS: S2 - FOR INFORMATION

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Grosvenor House, 2 Grosvenor Square, Southampton, SO15 2BE, UK
T+ 44 (0) 2380 101 700
wsp.com

CLIENT: AQUIND

ARCHITECT: -

SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE ACCESS TO JOINT BAY 33: VIA LOCKSWAY ROAD SHEET 1 OF 3

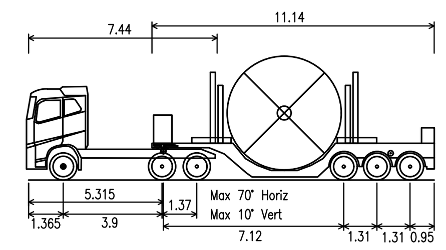
SCALE @ A1: AS SHOWN	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: September 20

DRAWING No: 0616-ATR-200 REV: C

DO NOT SCALE

NOTES:

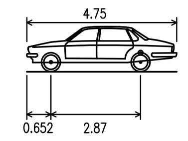
1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 10mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

FORWARD MANOEUVRE
REVERSE MANOEUVRE
INDICATIVE LOCATION OF ON-STREET PARKING (PROFILE SHOWN BELOW):



5 Series	
Overall Length	4.750m
Overall Width	1.800m
Overall Body Height	0.325m
Min Body Ground Clearance	0.325m
Track Width	1.700m
Lock to Lock Time	4.00 sec
Kerb to Kerb Turning Radius	6.200m

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
B	25/01/2021	AVI	UPDATED JOINT BAY DETAILS	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS: S2 - FOR INFORMATION

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wsp.com

CLIENT: AQUIND

ARCHITECT: -

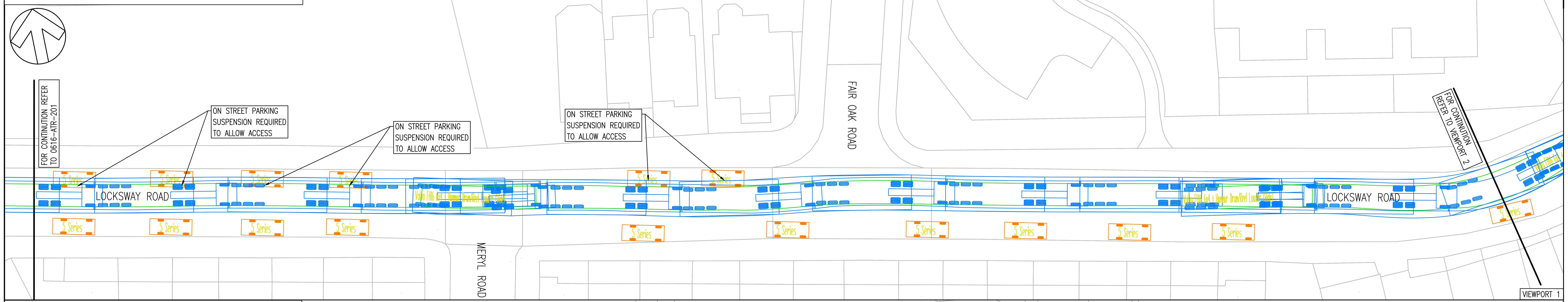
SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE ACCESS TO JOINT BAY 33: VIA LOCKSWAY ROAD SHEET 2 OF 3

SCALE @ A1: 1:250	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: September 20
DRAWING No: 0616-ATR-201			REV: B

File name: \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\62100XXX\62100616 - AQUIND\03 WIP\TP TRANSPORT PLANNING\03 DESIGN\MODELS AND DRAWINGS\300 - SITE\320 - TASK 7 UK ROUTE\ATR\0616-ATR-201.DWG, printed on 25 January 2021 23:52:54, by Irvine, Amber

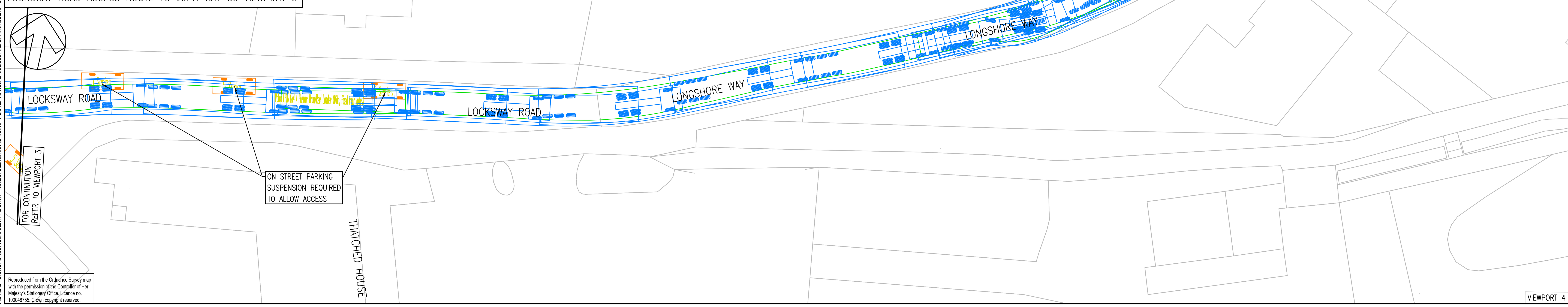
LOCKSWAY ROAD ACCESS ROUTE TO JOINT BAY 33 VIEWPORT 5



LOCKSWAY ROAD ACCESS ROUTE TO JOINT BAY 33 VIEWPORT 6

LOCKSWAY ROAD ACCESS ROUTE TO JOINT BAY 33 VIEWPORT 7

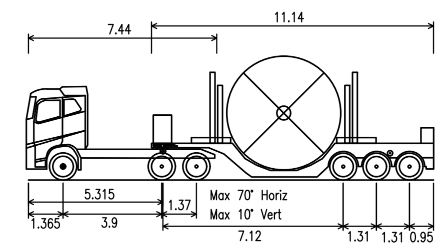
LOCKSWAY ROAD ACCESS ROUTE TO JOINT BAY 33 VIEWPORT 8



DO NOT SCALE

NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 10mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:

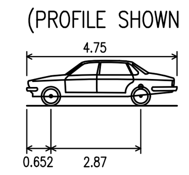


Volvo FH16 6x4 + Hammar Drum/Reel Loader

Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- REVERSE MANOEUVRE
- INDICATIVE LOCATION OF ON-STREET PARKING (PROFILE SHOWN BELOW):



5 Series

Overall Length	4.750m
Overall Width	1.800m
Overall Body Height	0.325m
Min Body Ground Clearance	0.325m
Track Width	1.700m
Lock to Lock Time	4.00 sec
Kerb to Kerb Turning Radius	6.200m

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REV	DATE	BY	DESCRIPTION	CHK	APP
C	25/01/2021	AVI	UPDATED JOINT BAY DETAILS	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS: S2 - FOR INFORMATION

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T+ 44 (0) 2380 101 700
wsp.com

CLIENT: AQUIND

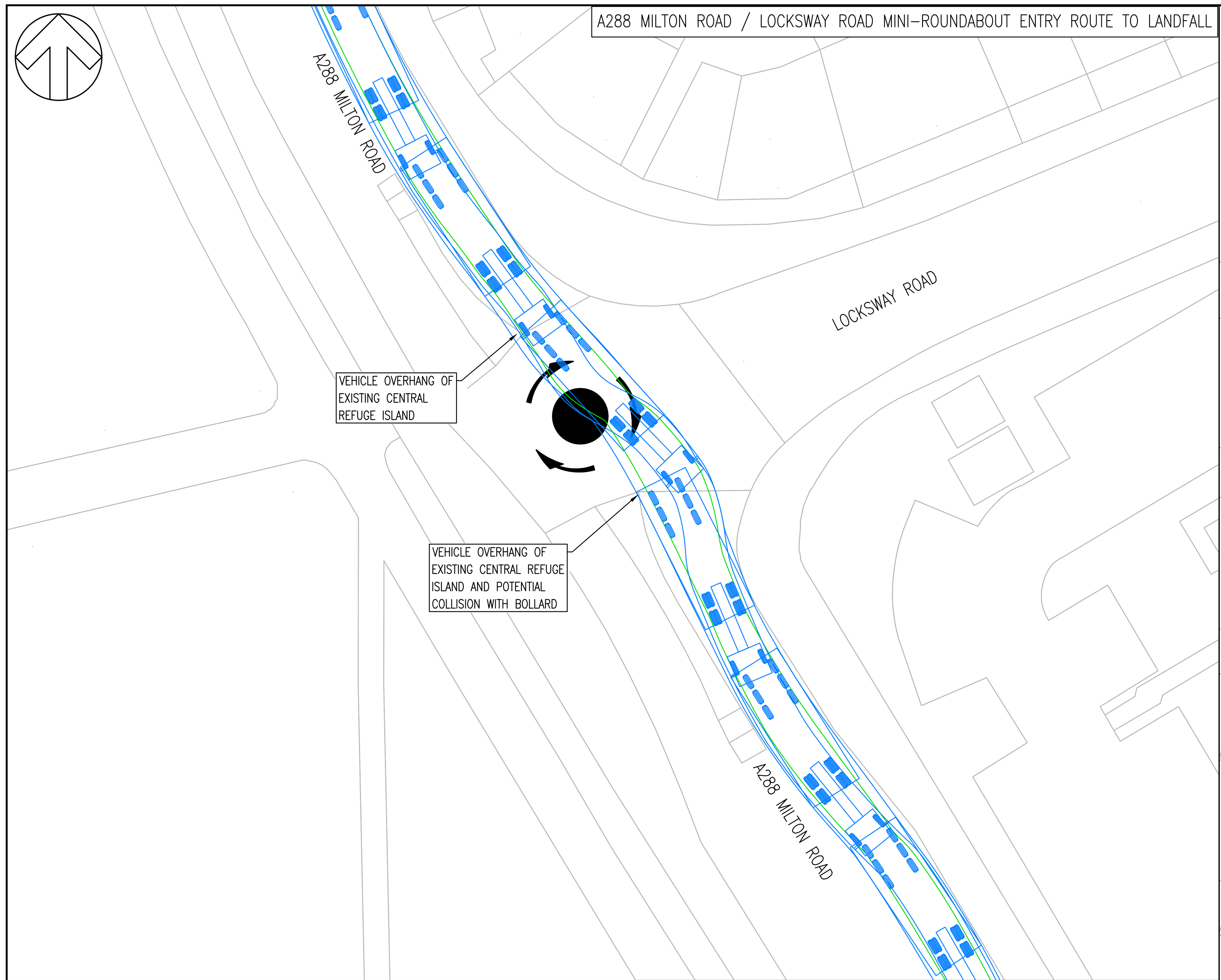
ARCHITECT: -

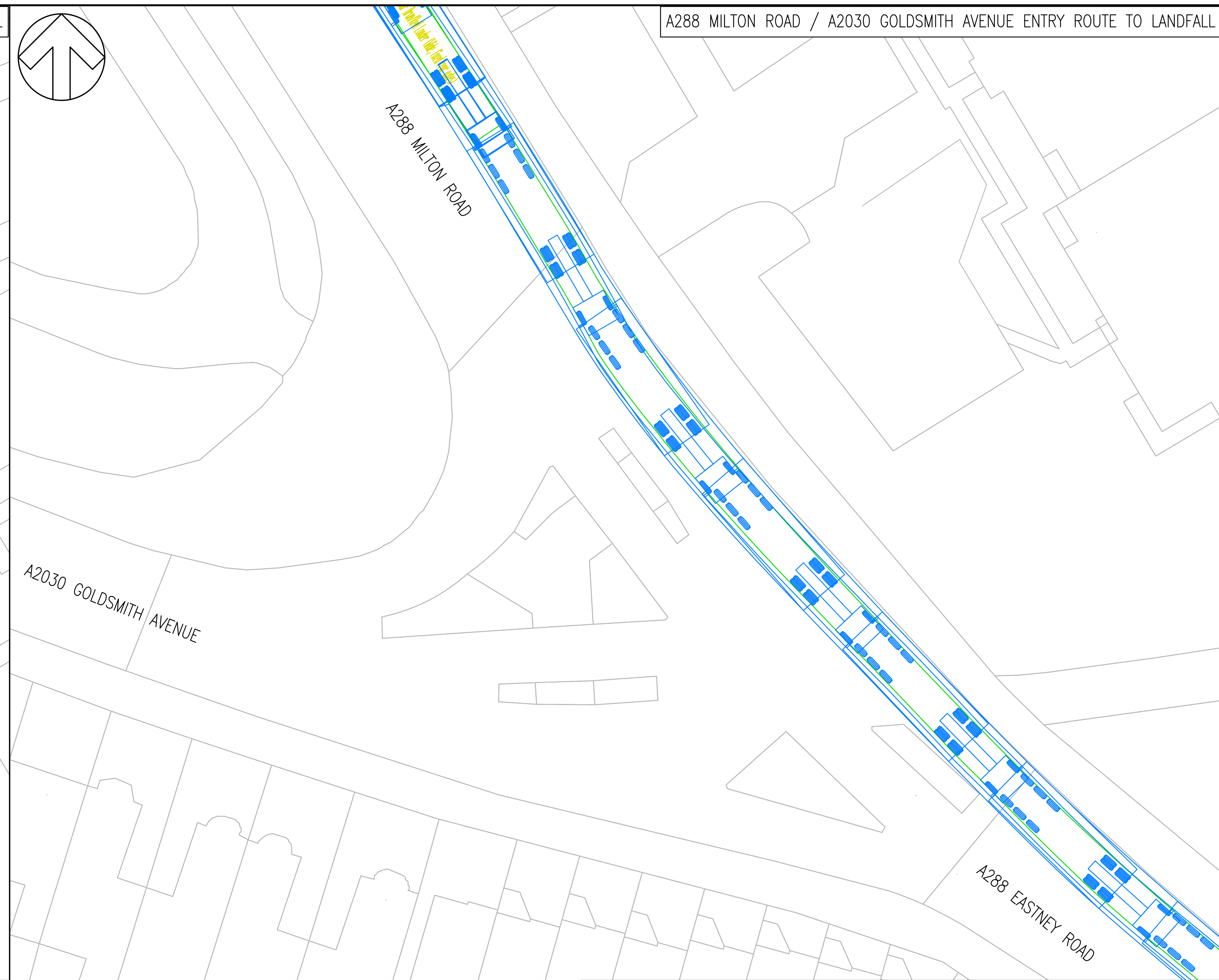
SITE/PROJECT: AQUIND

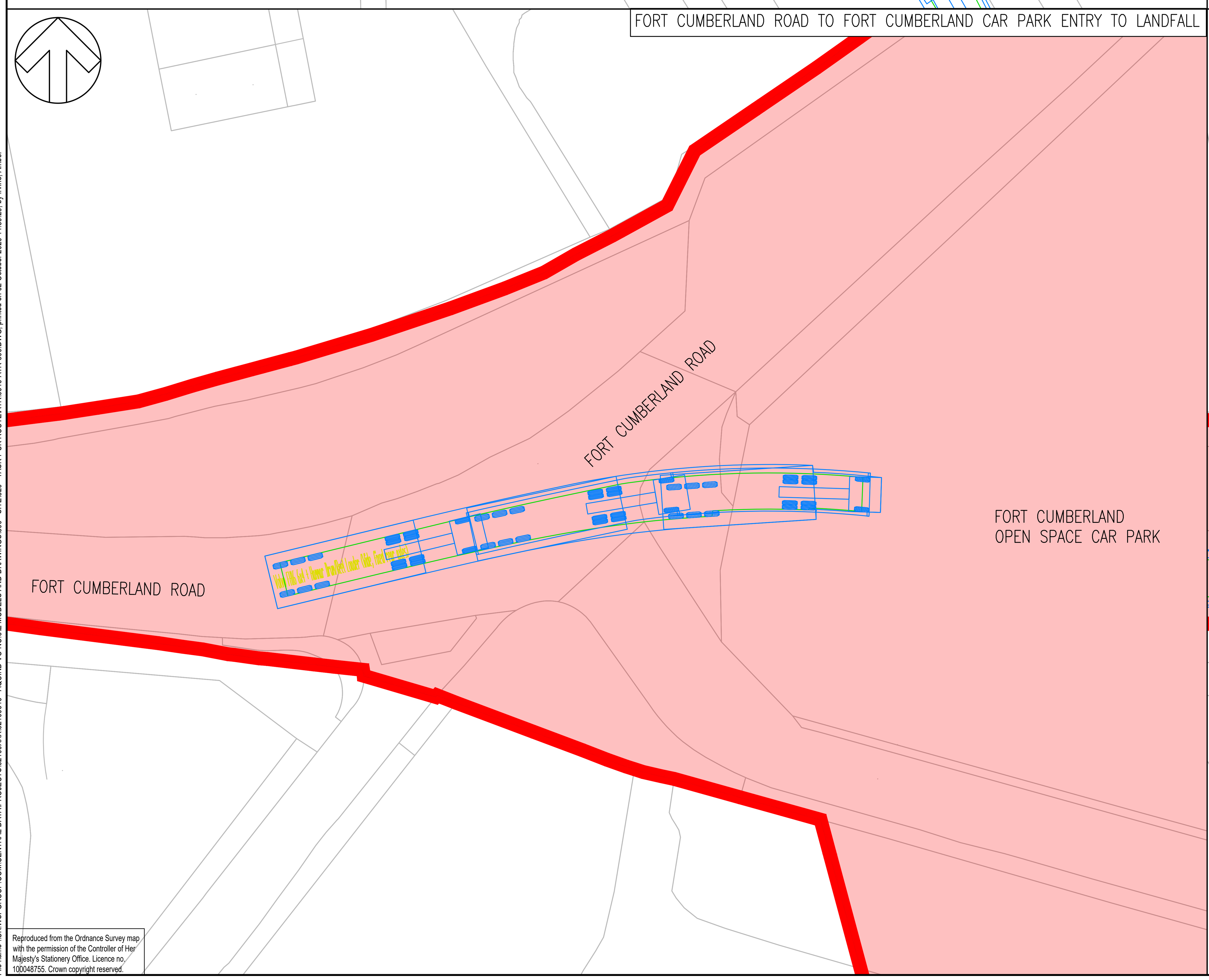
TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE ACCESS TO JOINT BAY 33: VIA LOCKSWAY ROAD SHEET 3 OF 3

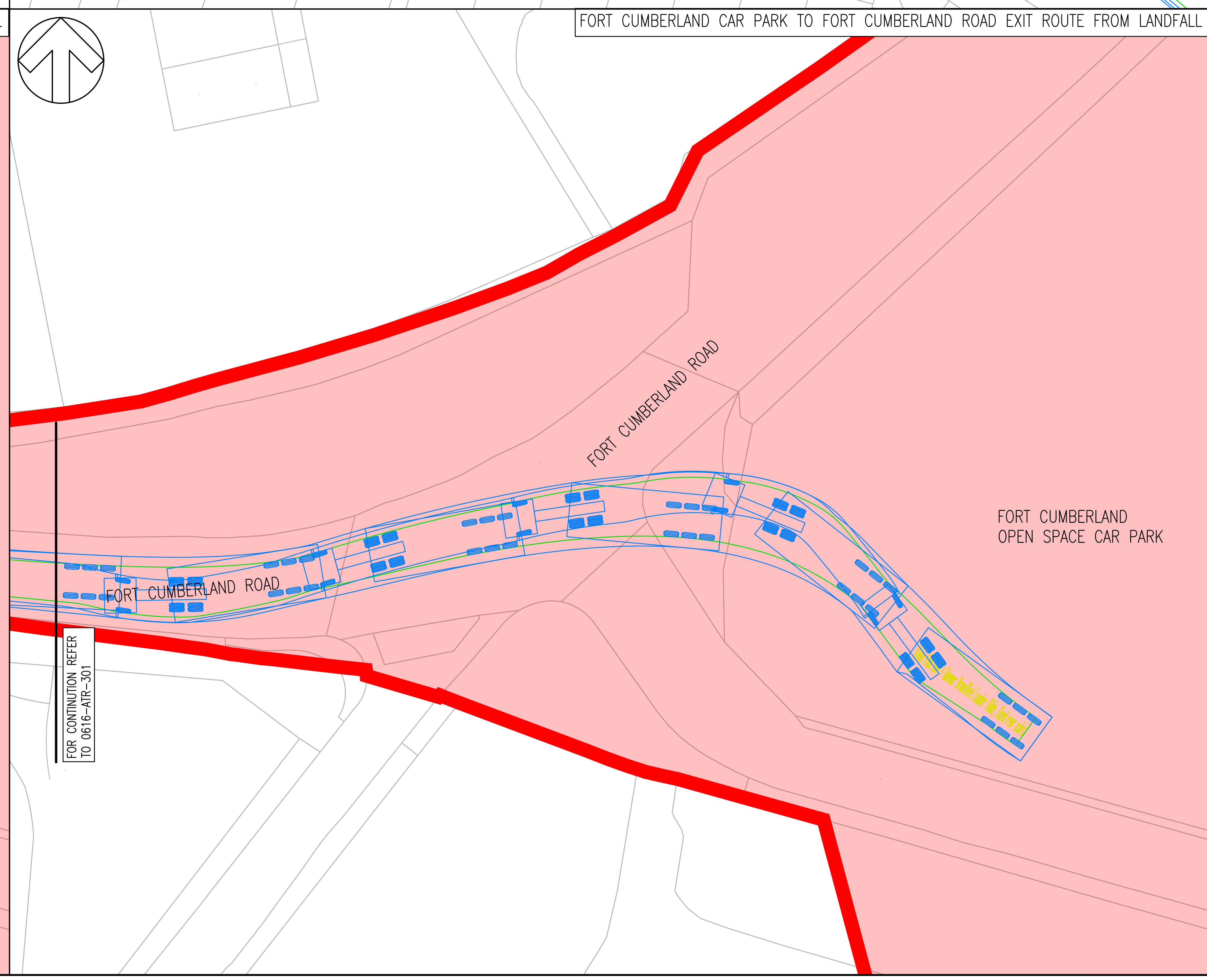
SCALE @ A1: 1:250	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: September 20

DRAWING No: 0616-ATR-202 REV: C





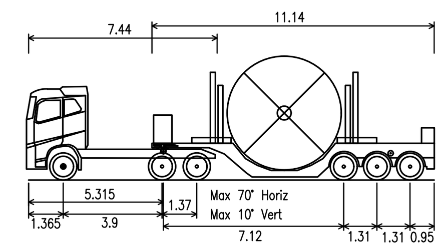




DO NOT SCALE

NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 5mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

FORWARD MANOEUVRE
VEHICLE WHEELS

ADDITIONAL ITEMS:

ORDER LIMIT

REV	DATE	BY	DESCRIPTION	CHK	APP
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS:
S0 - WORK IN PROGRESS

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wsp.com

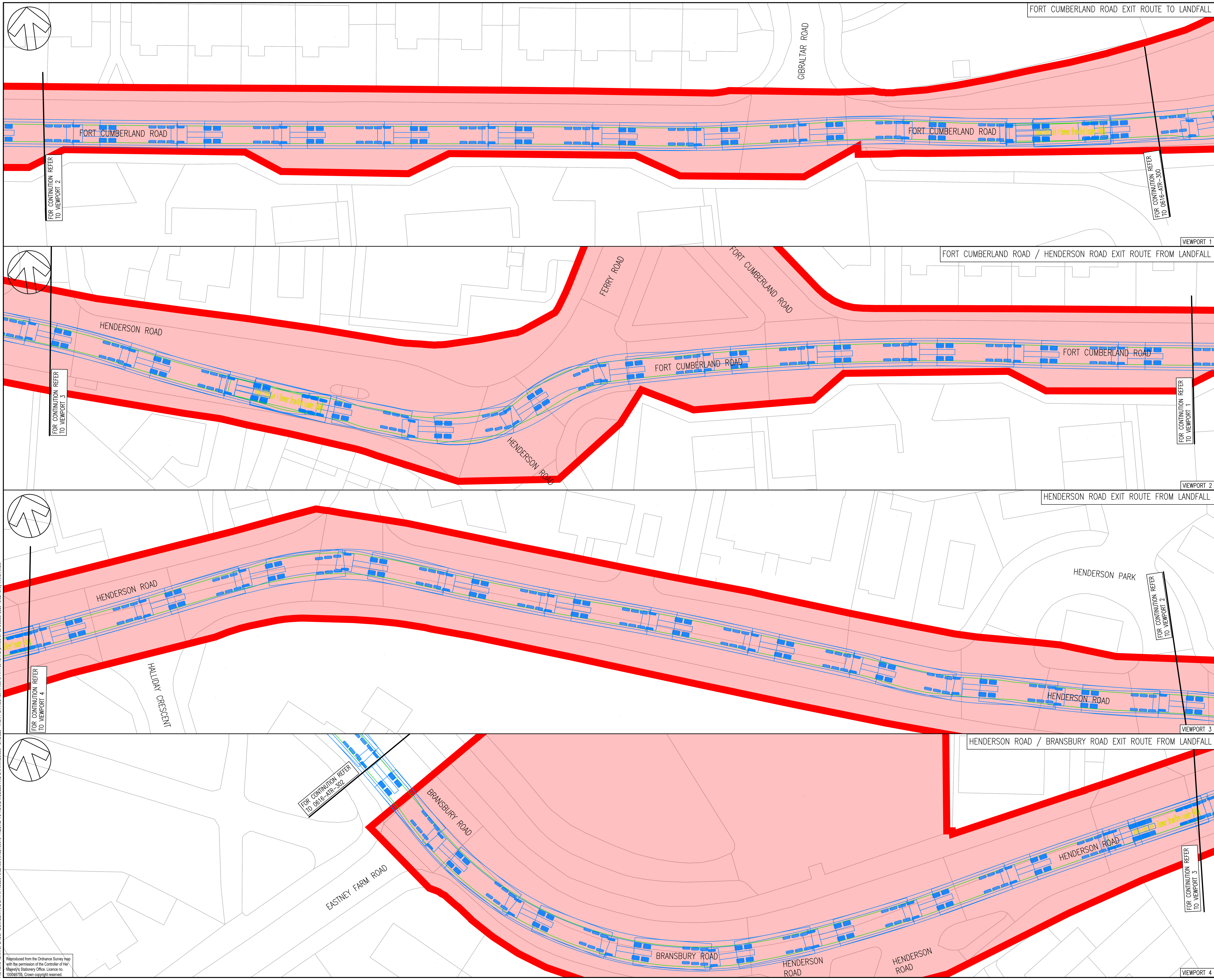
CLIENT: AQUIND

ARCHITECT: -

SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE LANDFALL AT FORT CUMBERLAND OPEN SPACE CAR PARK (TRANSITION JOINT BAY) SHEET 1 OF 4

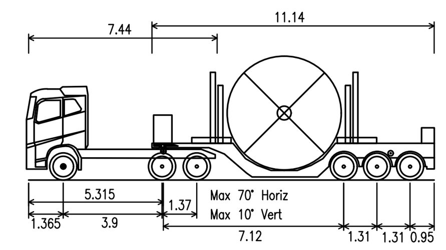
SCALE @ A1: 1:250	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: October 20
DRAWING No: 0616-ATR-300			REV: B



DO NOT SCALE

NOTES:

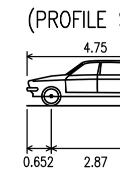
1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 10mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- REVERSE MANOEUVRE
- INDICATIVE LOCATION OF ON-STREET PARKING (PROFILE SHOWN BELOW):



5 Series	
Overall Length	4.750m
Overall Width	1.800m
Overall Body Height	0.325m
Min Body Ground Clearance	0.325m
Track Width	1.700m
Lock to Lock Time	4.00 sec
Kerb to Kerb Turning Radius	6.200m

ADDITIONAL ITEMS:

- ORDER LIMIT

REV	DATE	BY	DESCRIPTION	CHK	APP
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS:
S0 - WORK IN PROGRESS

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T+ 44 (0) 2380 101 700
wsp.com

CLIENT: AQUIND

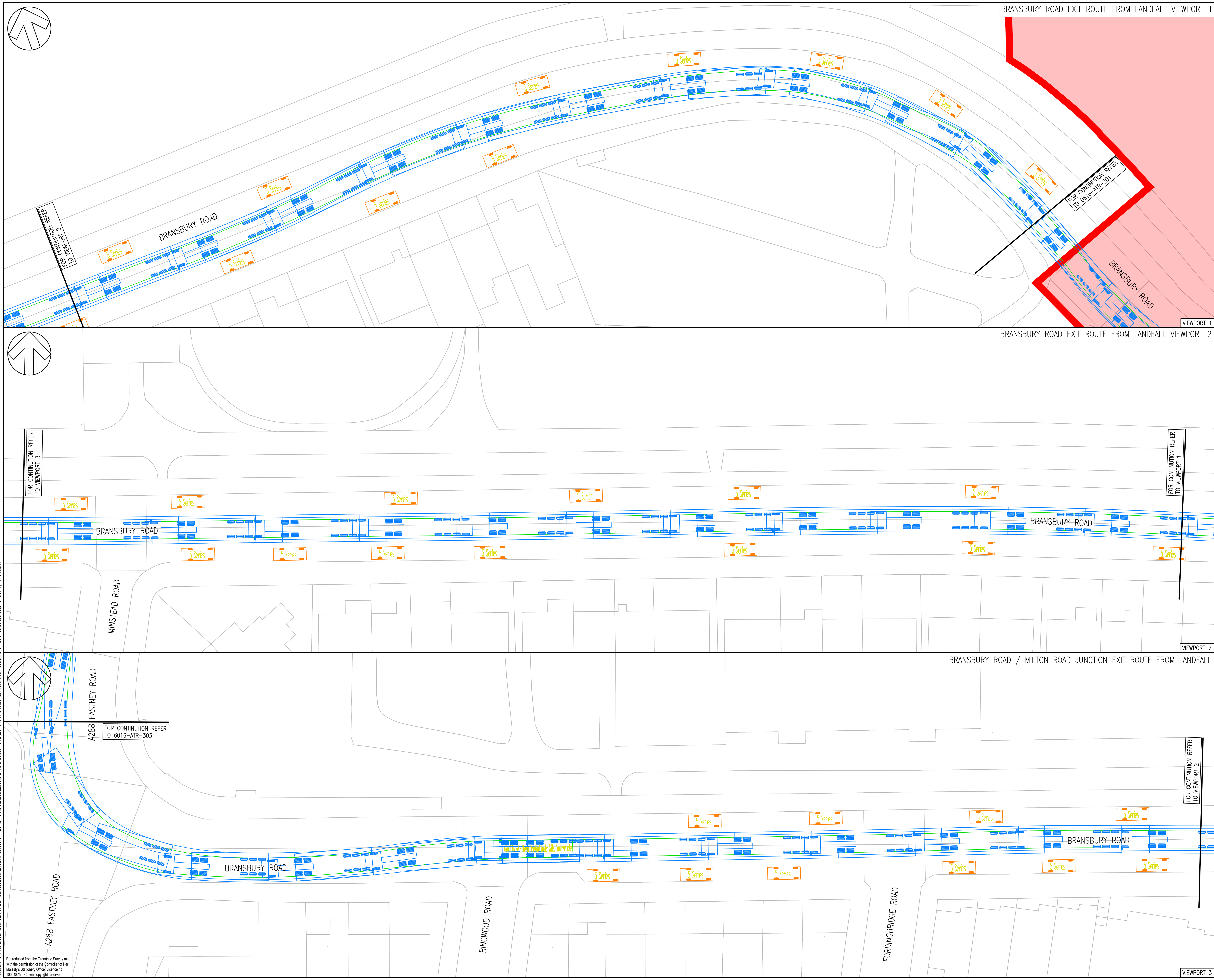
ARCHITECT: -

SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE LANDFALL AT FORT CUMBERLAND OPEN SPACE CAR PARK (TRANSITION JOINT BAY) SHEET 2 OF 4

SCALE @ A1:	CHECKED:		APPROVED:
1:250	CW		CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: October 20

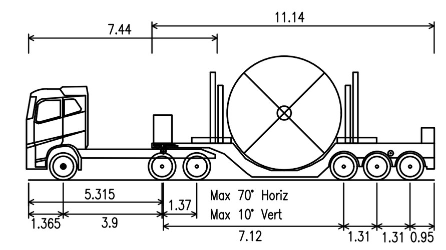
DRAWING No: 0616-ATR-301 | REV: B



DO NOT SCALE

NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 10mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:

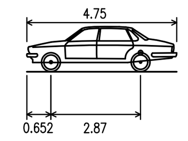


Volvo FH16 6x4 + Hammar Drum/Reel Loader

Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

FORWARD MANOEUVRE
REVERSE MANOEUVRE
INDICATIVE LOCATION OF ON-STREET PARKING (PROFILE SHOWN BELOW):



5 Series

Overall Length	4.750m
Overall Width	1.800m
Overall Body Height	0.325m
Min Body Ground Clearance	0.325m
Track Width	1.700m
Lock to Lock Time	4.00 sec
Kerb to Kerb Turning Radius	6.200m

ADDITIONAL ITEMS:

ORDER LIMIT

THIS PROVISIONAL PRELIMINARY DESIGN IS FOR GUIDANCE PURPOSES ONLY. WSP ACCEPTS NO LIABILITY FOR ANY DAMAGE, LOSS, EXPENSES OR COST INCURRED AS A RESULT OF RELYING ON THE INFORMATION PROVIDED IN THE DESIGN APPRAISAL ESTIMATE. THE APPRAISAL ESTIMATE WAS DERIVED FROM A MIXTURE OF THIRD PARTY INFORMATION AND THE APPLICATION OF WSP'S REASONABLE SKILL AND CARE, BUT MAY BE SUBJECT TO OTHER SUCH INFORMATION AND VARIATIONS OF WHICH WSP IS UNAWARE. THE DESIGN APPRAISAL ESTIMATE SHOULD NOT BE RELIED UPON FOR TENDER OR PROCUREMENT PURPOSES. FOR ACCURATE ADVICE A DETAILED DESIGN SHOULD BE CARRIED OUT AT THE APPROPRIATE DESIGN STAGE, THEREFORE, USE OF THE INFORMATION IS ENTIRELY AT YOUR OWN RISK.

REV	DATE	BY	DESCRIPTION	CHK	APP
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS:
S0 - WORK IN PROGRESS

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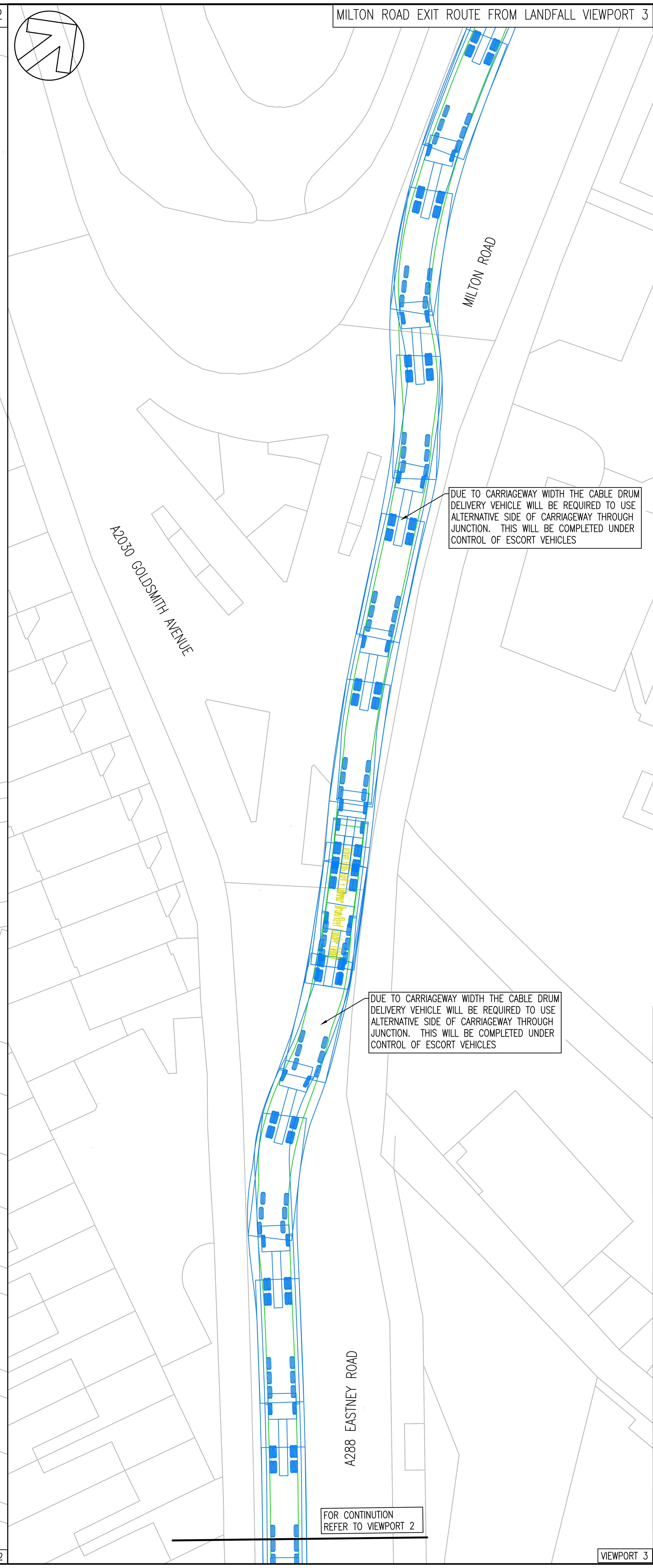
CLIENT: AQUIND

ARCHITECT: -

SITE/PROJECT: AQUIND

TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE LANDFALL AT FORT CUMBERLAND OPEN SPACE CAR PARK (TRANSITION JOINT BAY) SHEET 3 OF 4

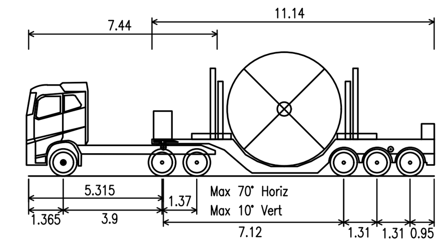
SCALE @ A1: 1:250	CHECKED: CW	APPROVED: CW
PROJECT NO: 62100616	DESIGNED: - / DRAWN: AVI	DATE: October 20
DRAWING No: 0616-ATR-302		REV: B



DO NOT SCALE

NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 10mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:

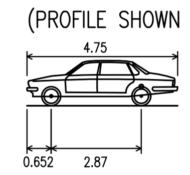


Volvo FH16 6x4 + Hammar Drum/Reel Loader

Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- REVERSE MANOEUVRE
- INDICATIVE LOCATION OF ON-STREET PARKING (PROFILE SHOWN BELOW):



5 Series

Overall Length	4.750m
Overall Width	1.800m
Overall Body Height	0.325m
Min Body Ground Clearance	0.325m
Track Width	1.700m
Lock to Lock Time	4.00 sec
Kerb to Kerb Turning Radius	6.200m

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REV	DATE	BY	DESCRIPTION	CHK	APP
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS:
S0 - WORK IN PROGRESS

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wsp.com

CLIENT: AQUIND

ARCHITECT: -

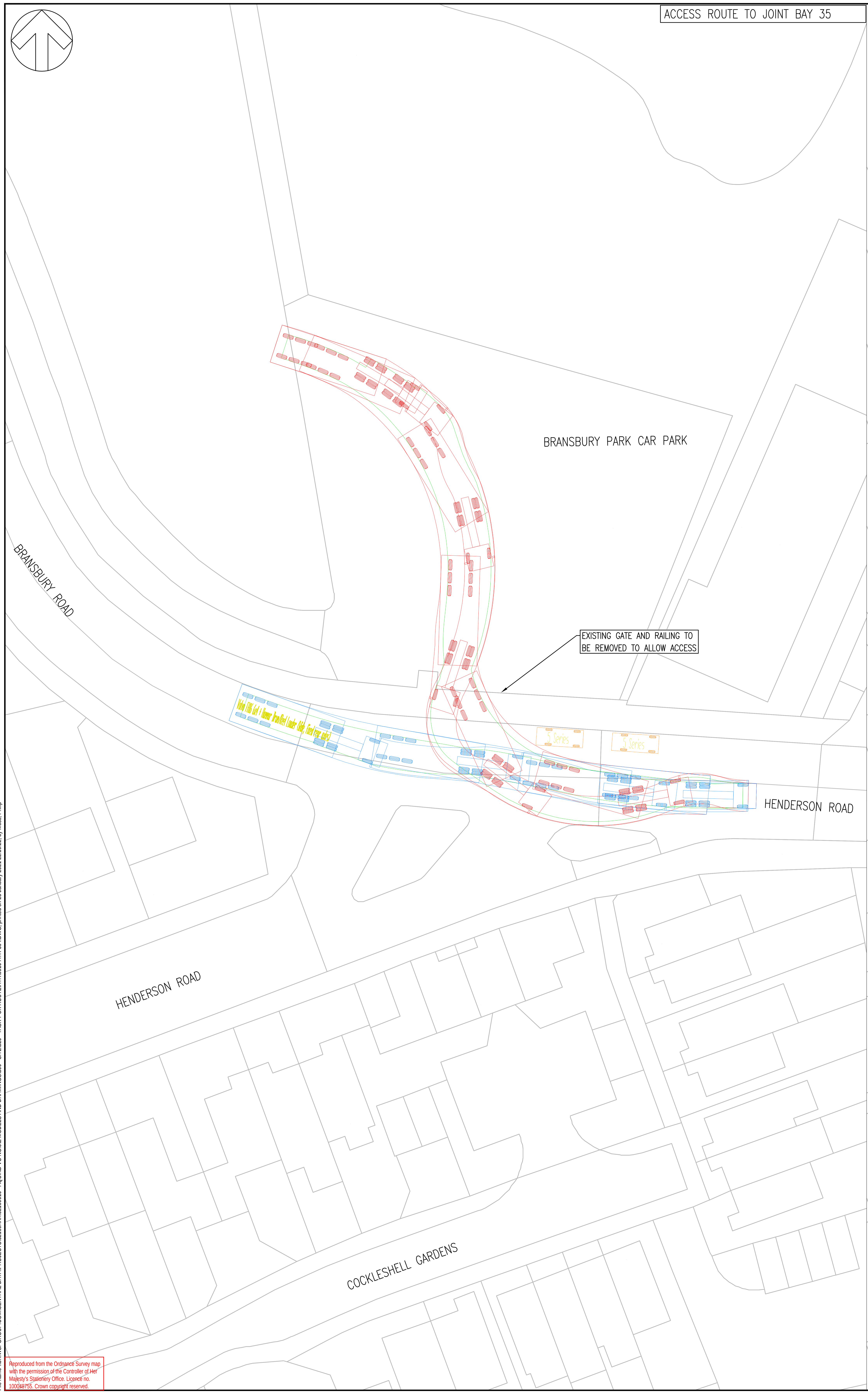
SITE/PROJECT: AQUIND

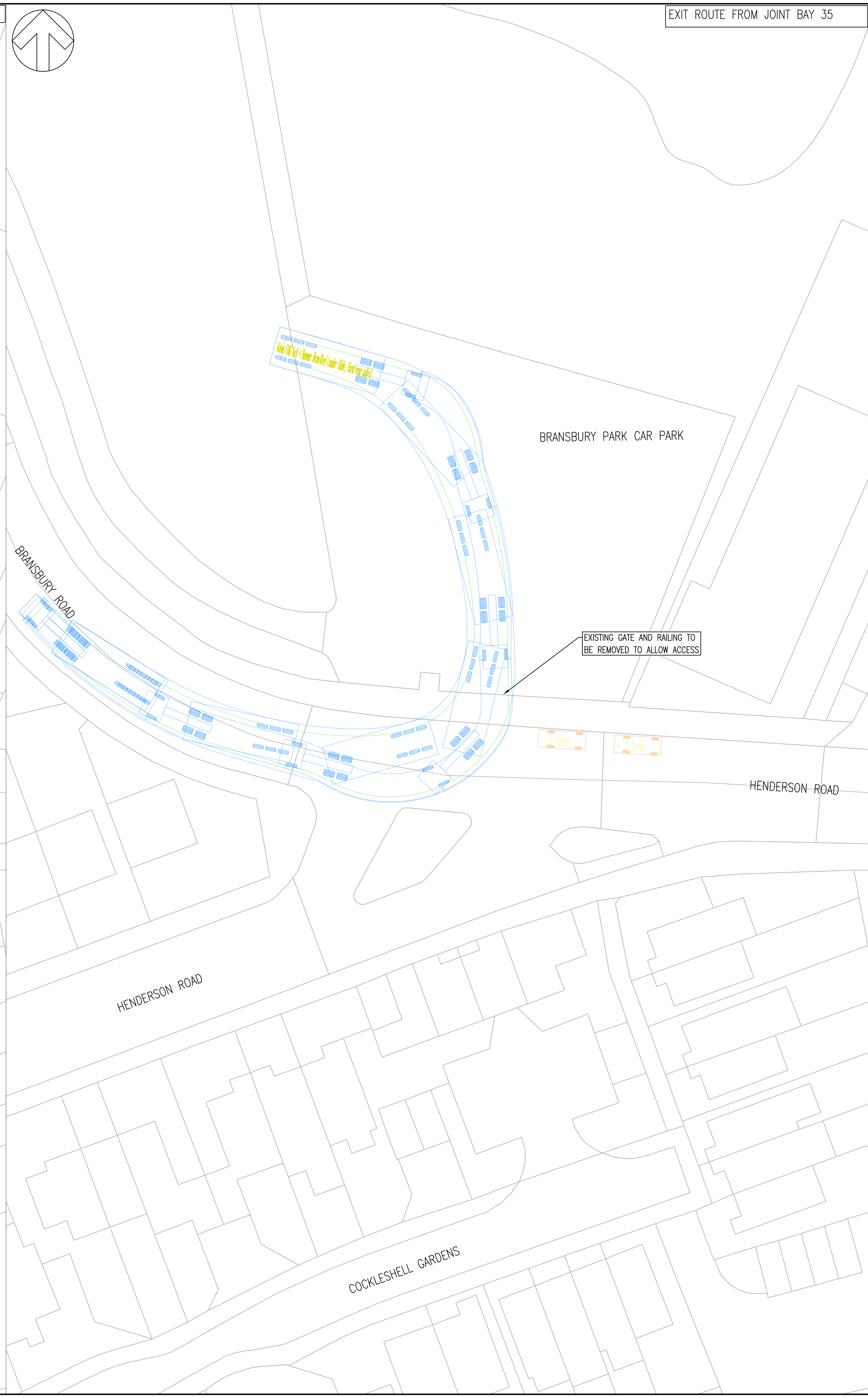
TITLE: SWEPT PATHS OF CABLE DRUM DELIVERY VEHICLE LANDFALL AT FORT CUMBERLAND OPEN SPACE CAR PARK (TRANSITION JOINT BAY) SHEET 4 OF 4

SCALE @ A1:	CHECKED:	APPROVED:
1:250	CW	CW

PROJECT NO:	DESIGNED:	DRAWN:	DATE:
62100616	-	AVI	September 20

DRAWING No:	REV:
0616-ATR-303	A

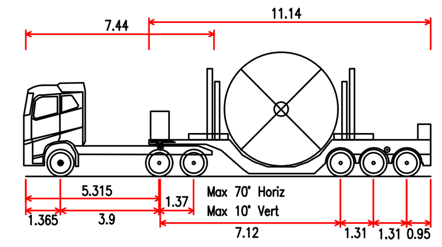




DO NOT SCALE

NOTES:

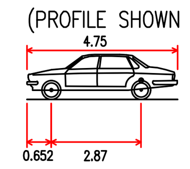
1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 5mph.
2. A CUSTOM VEHICLE WAS CREATED TO REPRESENT THE SIZE OF PROPOSED VEHICLE 'HAMMAR 155'. VEHICLE PROFILE SHOWN BELOW FOR REFERENCE:



Volvo FH16 6x4 + Hammar Drum/Reel Loader	
Overall Length	16.005m
Overall Width	3.950m
Overall Body Height	4.902m
Min Body Ground Clearance	0.122m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	8.520m

VEHICLE TRACKING KEY:

- FORWARD MANOEUVRE
- REVERSE MANOEUVRE
- VEHICLE WHEELS
- 5 Series — INDICATIVE LOCATION OF ON-STREET PARKING (PROFILE SHOWN BELOW):



5 Series	
Overall Length	4.750m
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Min Body Ground Clearance	0.325m
Track Width	1.700m
Lock to Lock Time	4.00 sec
Kerb to Kerb Turning Radius	6.200m

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
C	25/01/2021	AMS	UPDATED JOINT BAY DETAIL.	CW	CW
B	02/10/2020	AVI	ORDER LIMIT ADDED	CW	CW
A	14/09/2020	AVI	FIRST ISSUE	CW	CW

DRAWING STATUS: S2 - FOR INFORMATION

wsp
Grosvenor House, 2 Grosvenor Square, Southampton, SO15 2BE, UK
T+ 44 (0) 2380 101 700
wsp.com

CLIENT: AQUIND

ARCHITECT: -

SITE/PROJECT: AQUIND

TITLE: SWEPT PATH OF CABLE DRUM DELIVERY VEHICLES JOINT BAY 35: WITHIN BRANSBURY PARK CAR PARK EXIT MOVEMENTS

SCALE @ A1: 1:250	CHECKED: CW		APPROVED: CW
PROJECT NO: 62100616	DESIGNED: -	DRAWN: AVI	DATE: January 21

DRAWING No: 0616-ATR-304 REV: C