AQUIND Limited

AQUIND INTERCONNECTOR

Day Lane Technical Note

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Aquind Interconnector - Revised HGV Construction Management Strategy for Day Lane

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PROJECT:	Aquind Interconnector	**AUTHOR:**	Stacey Gander
CHECKED:	Chris Williams	**APPROVED:**	Chris Williams

INTRODUCTION

This Technical Note sets out a revised management strategy for the movement of Heavy Goods Vehicles (HGVs) on Day Lane as part of the Construction Stage of the Aquind Interconnector proposals. This revised strategy replaces that which was previously included in Section 3.4 of the Supplementary Transport Assessment (STA) (REP1-142).

The revised strategy has been produced in response to comments set out in Appendix 1 of Hampshire County Council's (HCC) Deadline 3 submission entitled "*Further submission including highways comments on matters raised at Deadline 2 and other matters*" (REP3-023) and on-going discussions between the Applicant and HCC. The topic of HGV management on Day Lane was also included in Question 3D on the Agenda for Issue Specific Hearing 2 (ISH2) (EV-012(a)) put forward by the Examining Authority (ExA), and was consequently discussed in ISH2 (EV-032, EV-033, EV-034, EV-035).

Hampshire County Council (HCC) also included additional comments regarding traffic management on Day Lane in the Deadline 5 submission entitled "*Deadline 5 Submission - Submission with updates from the Highway Authority and Lead Local Flood Authority*" (REP5-080) and in their Deadline 6 submission "*Written Summary of Oral Submission" (REP6-078) which provided a specific review of the proposed approach to the management of traffic associated with the construction of the Converter Station*.

The document has been updated to reflect discussions held with HCC as highway authority responsible for Day Lane together with comments received at Deadline 7 and 7c and Issue Specific Hearing 5 (ISH5) (Environmental Matters and Highways) held on Thursday 18th February 2021. In relation to the proposed passing bays to be located on Day Lane, Question 7.7 of ISH5 was as follows:

> *What evidence is before the Examination that the passing bays on Day Lane can be delivered without causing significant effects on biodiversity, landscape and views?*
>
> *What root area protection measures would be required to ensure tree and hedgerow integrity, and how would these be secured through any DCO?*

The updates included within this Technical Note therefore reflect the response provided by the Applicant to this question.

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The revised strategy has also been included within an updated version of the Framework Construction Traffic Management Plan (CTMP) (AS-074), submitted at Deadline 8, and therefore is secured via Requirement 17 of the Development Consent Order (DCO) (REP7-013).

A Stage 1 Road Safety Audit (RSA) has been completed for the proposed access junction that will serve the Converter Station during construction and operation as well as the proposed amendments to Day Lane. This RSA and subsequent Designer's Response has been submitted to HCC in draft for their review in order to allow the RSA Decision Log to be completed, who have confirmed to the Applicant their acceptance of the approach to deal with the issues identified. This approach is incorporated into the strategy detailed below and has been incorporated in the Framework CTMP where appropriate. The RSA Designer's Response is appended to this note for reference.

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CONSTRUCTION TRAFFIC NUMBERS ON DAY LANE

All construction vehicles travelling to the Converter Station Area will travel via Day Lane and will gain access via the junction of Day Lane / Broadway Lane. The Applicant is proposing to complete upgrades to this junction to facilitate construction traffic, and the proposals are set out in full in Section 3.3. of the STA (REP1-142).

The anticipated number of construction vehicles travelling to and from the Converter Station Area via Day Lane has been set out in Section 22.4.6. of Chapter 22 of the Environmental Statement (APP-137), as well as in Table 10 of the STA (REP1-142), and Chapter 15 of the ES Addendum (REP1-138). The anticipated number of HGV and LGV movements, as set out by associated construction activity, have been replicated below for ease of reference.

Table 1: Estimated construction related traffic accessing the Converter Station Area via Day Lane per day at peak construction

Construction Activity	Estimated HGVs		Estimated LGVs	
	Two-way	Total	Two-way	Total
Converter Station Area	43	86	0	0
Cable Route (for 6 gangs all using Converter Station Area as main compound)	24	48	12	24
Landfall (using Converter Station Area as main compound)	4	8	2	4
TOTAL	**71**	**142**	**14**	**28**

The construction traffic numbers set out in Table 1 are maximum values for daily traffic at peak construction. These maximum peak daily traffic flows have been fully assessed in Chapter 22 of the Environmental Statement (APP-137), and Chapter 15 of the Environmental Statement Addendum (REP1-139). The maximum number of HGV movements per day is referenced within Section 3.1 of the updated Framework CTMP (AS-074) which has been submitted prior Deadline 8

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and an amendment will be made to Requirement 17 of the draft Development Consent Order (REP7-013) to clearly secure this.

The timing of construction vehicle movements is dependent upon which construction activity the vehicle is associated with, and their respective working hours. Timing of movements are set out in Section 3.2. of the STA (REP1-142) and have been summarised below In Table 2 for reference.

Table 2: Estimated construction traffic movement timings to and from the Converter Station Area via Day Lane

Construction Activity	Estimated HGV timings		Estimated LGV timings	
	Arrivals	Departures	Arrivals	Departures
Converter Station Area	09:00 – 17:00	09:00 – 17:00	N/A	N/A
Cable Route (for 6 gangs all using Converter Station Area as main compound)	09:00 – 17:00	07:00 – 08:00, 09:00 – 16:00	16:00 – 17:00	07:00 – 08:00
Landfall (using Converter Station Area as main compound)	07:00 – 08:00, 09:00 – 17:00, 18:00 – 19:00	07:00 – 08:00, 09:00 – 17:00	18:00 – 19:00	07:00 – 08:00

Using the traffic movement numbers set out in Table 1 and the movement timings set out in Table 2, the daily profile of estimated construction related traffic movements using Day Lane at peak construction has been derived. This daily profile is set out in Figure 1.

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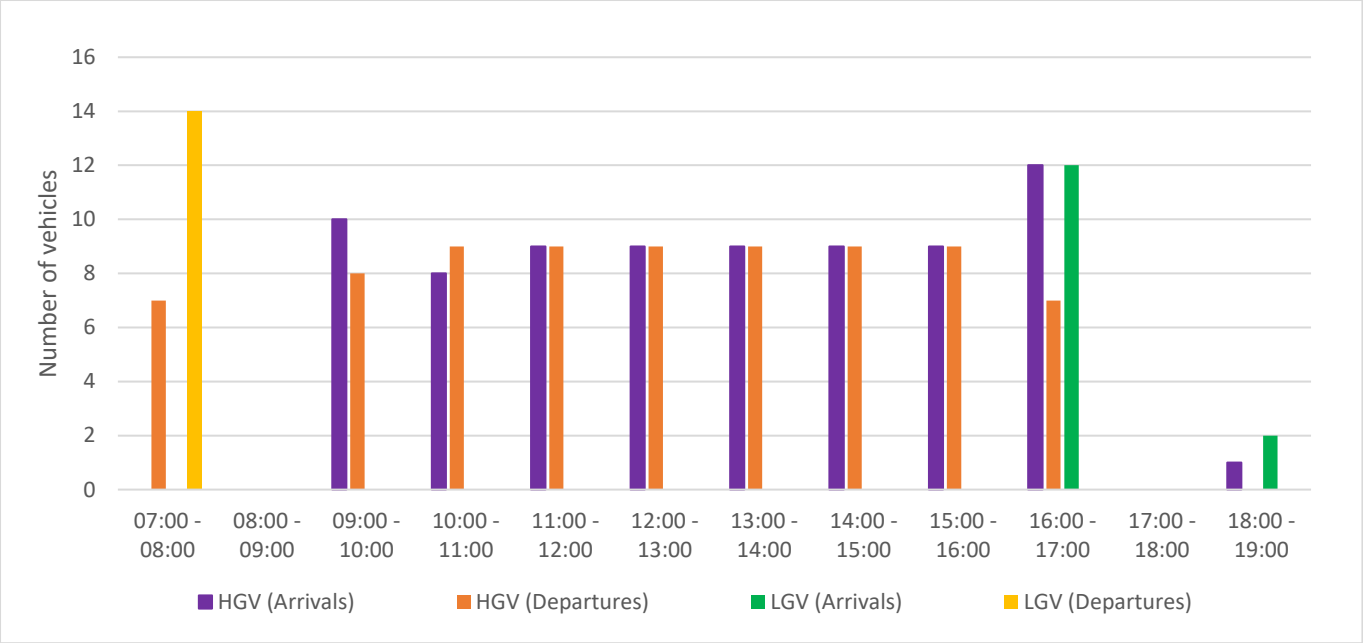
Figure 1: Typical daily profile of maximum construction vehicle arrivals and departures at Converter Station Area during peak construction



Both Table 2 and Figure 1 show no construction traffic movements in the AM or PM peak hours of 08:00 – 09:00 and 17:00 – 18:00 in reflection of the HGV management strategy set-out in the Framework CTMP (AS-074_). As is noted in paragraph 3.2.1.8. of the STA (REP1-142), there is a possibility that up to 12 LGV movements will occur in the PM peak as a result of construction workers travelling back to the Converter Station Area from the Onshore Cable Corridor (2 LGV's per cable gang). For the purpose of the worst-case assessment undertaken in the STA (REP1-142) and ES Addendum (REP1-139), all 12 LGVs travelling back to the Converter Station Area were added to the PM peak assessments. However, for the specific assessment of Day Lane undertaken in this Technical Note, the worst-case scenario is not additional movements in the peak hours, but concentration of movement numbers during a shorter time span. As such, for the purpose of this assessment, it is assumed that the 12 LGV's arriving at the Converter Station Area from the Onshore Cable Corridor at the end of the working day arrive between 16:00 and 17:00.

The daily profile set out in Figure 1 suggests a maximum of 18 HGV movements on Day Lane in any one hour prior to the implementation of any further management.

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Reduction in HGV Flows

All construction traffic numbers set out in this section represent a worst-case scenario in peak construction and provides an estimate of the number of vehicle movements should no further management efficiencies or logistical measures likely to be introduced by the Contractor as identified in Section 3.7 of the Framework CTMP (AS-074). These measures include the maximising of loads to reduce vehicle trips, reusing aggregate delivery HGVs and waste removal and consolidation of deliveries. In relation to HGVs associated with the Onshore Cable Route, the potential for a reduction in HGV numbers is noted through the following:

- For assessment purposes it has been assumed that each Onshore Cable Route construction location generates four individual two-way HGV movements in relation to the delivery of materials and removal of waste from each site. It is envisaged however that HGVs would in reality deliver materials to multiple construction locations at the start of each day through consolidation of deliveries as part of the journey. This will also apply to the collection of waste, given it is unlikely for an HGV to return to the Converter Station only partly laden if other construction locations need collections to be made.
- As noted by the Applicant, as part of the Framework CTMP (AS-074) and the Applicant's Transcript for Oral Submissions for Compulsory Acquisition Hearing 1 (REP5-034), temporary laydown areas will be provided within the Order limits to facilitate construction of the Onshore Cable Route. In relation to this:
  - The working corridors to be located within the Order limits have been appropriately sized taking into account the need to accommodate sufficient space for the storage of ducts and other materials which are to be used for the purpose of installing the cables, effectively providing laydown areas within the construction working corridor;
  - For Onshore Cable Route construction activities in more constrained locations, for instance within the highway, or on open space land where the working corridor is narrower to minimise impacts, the area required for plant and materials will all be contained within the working corridor, and construction will proceed on a linear basis with laydown and storage areas moving along with the work front;
  - More specifically, this will involve delivery of cement bound sand (CBS), ducts and protective tiles to the areas of construction, which will then be set aside at a lay-down and drop-off area contained within the working corridor. Material would then be transferred from the lay-down location within the working corridor to the point of work within the corridor using smaller plant on-site within the working corridor. This would not involve any additional vehicle movements, with the smaller plant remaining inside the confines of the working corridor as the linier route progresses;
  - The materials will be replenished from the main compound on a daily basis or as and when required for such items as CBS and removal of spoil.

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- The estimated number of HGV movements provided within this note reflects the peak period of construction, during the first 6-9 months of the construction programme. After this point, HGV construction traffic associated with the Converter Station will reduce, therefore reducing the overall HGV traffic flow on Day Lane further.

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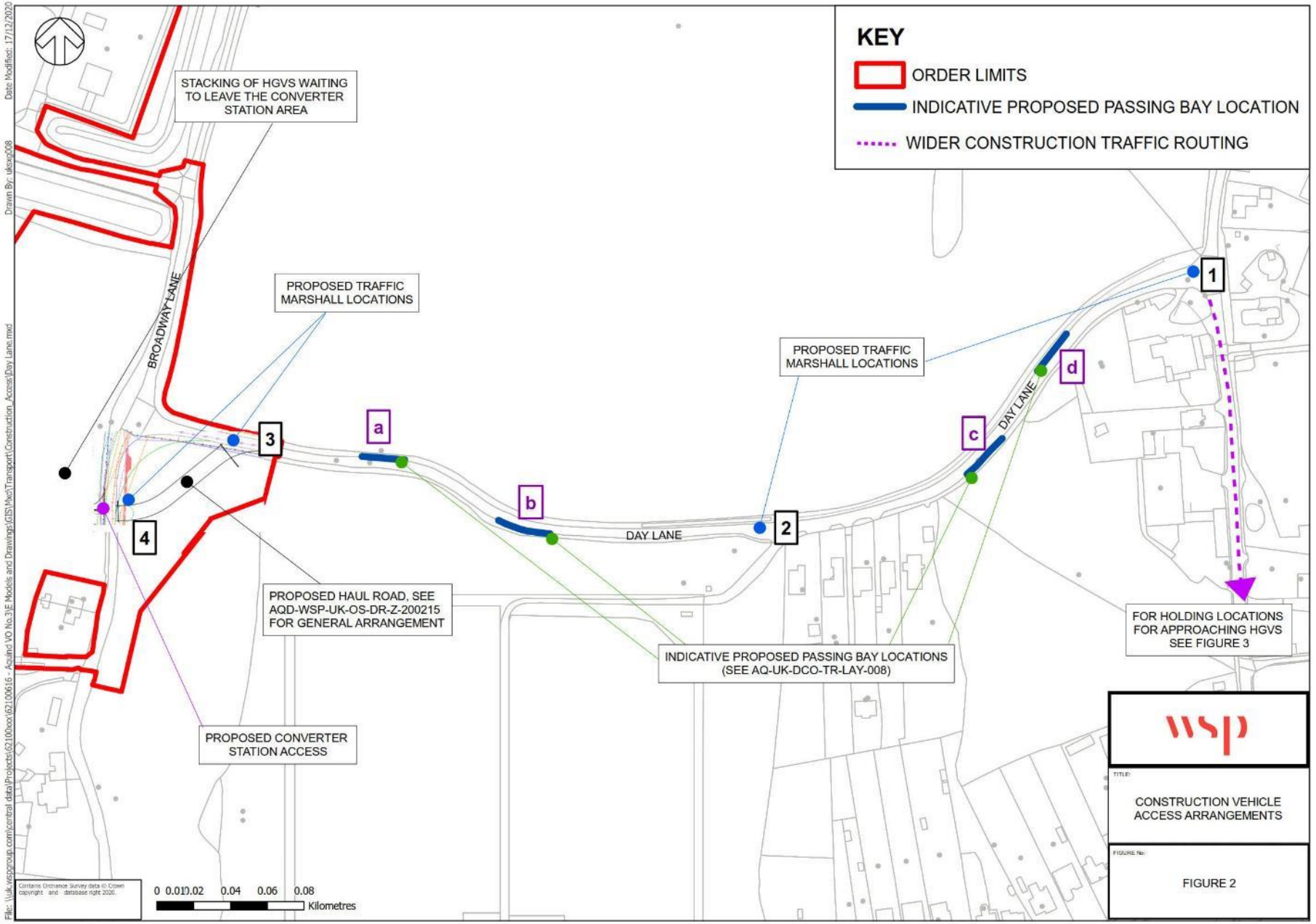
REVISED MANAGEMENT STRATEGY FOR HGV TRAFFIC DURING THE CONSTRUCTION PERIOD

Following discussions with HCC, the Applicant is proposing an amended strategy for the management of construction traffic on Day Lane. 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;
- Strategic management of arrivals and departures of HGVs; and
- Use of banksmen and traffic marshals to control traffic on Day Lane.

A plan contextualising these three methods of construction traffic management on Day Lane has been included in Figure 2 for reference, and each is discussed further in turn.

Figure 2: Construction vehicle access arrangements



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Passing Bays

As can be seen in Figure 2, four passing bays are proposed to be implemented on Day Lane to ensure the safe passing of vehicles on this link. The indicative locations of these passing bays are set out in drawing No. AQ-UK-DCO-TR-LAY-008 which is attached to this Technical Note.

The passing bays have been designed as 0.5 m wide by 20 m long and will be accommodated within the highway boundary. The works will result in very minor road widenings of the existing carriageway. The works may be carried out on either side of the highway, however the maximum widening would remain 0.5 m. Details of carriageway edging, load line and how the passing bays will tie into the existing carriageway will be confirmed during detailed design.

The siting of the proposed passing bays was informed by a site visit which was undertaken to Day Lane on 24th November 2020 and 16th February 2021, which reviewed the width of existing verges, proximity of trees and hedgerows and their associated Root Protection Areas (RPA) in relation to the edge of the existing carriageway. Photos of proposed passing bay locations A/1, B/2, C/3 and D/4 have been included below for reference.

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- **Proposed passing bay A/1**

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- **Proposed passing bay B/2**

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- **Proposed passing bay C/3**

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- **Proposed passing bay D/4**

As can be seen in the images included above, there is sufficient verge space in each location to allow for provision of passing bays without the need to undertake clearance of hedgerows or trees, which would be confirmed through the detailed design process. In relation to this, it was been agreed with HCC that the passing bays can be micro-sited, if necessary, during detailed design to ensure that RPAs are not compromised, so long as sufficient width is provided to allow a car and HGV to pass one another, with this potentially including the widening of both sides of the carriageway by 0.25 m as an alternative to one 0.5 m wide passing bay.

In relation to this, the site survey completed on the 16th February 2021 noted the following in relation to the location of each passing bay:

- Passing bay 1/A can be micro-sited further east or west along Day Lane if necessary, to avoid impacting on trees and where the verge is wider;
- Passing bay 2/ B can be micro-sited further east along Day Lane to avoid mature trees in proximity to the current proposed location;

- Passing bay 3/C and 4/D can accommodate the minor widenings within the existing carriageway whilst avoiding impacts on adjacent trees / hedgerows;
- For passing bay 4/D it appears that the carriageway continues under the verge in some locations, which may reduce the requirement for new highway construction; and
- The presence of a ditch was recorded along the northern side of Day Lane which will be considered in relation to Passing bay 1/A and 4/D, noting that the ditch is located at least 1.5-2m from the edge of the existing carriageway.

A swept path analysis has been undertaken for all four of the proposed passing bays on Day Lane and can be seen in drawing No. AQ-UK-DCO-TR-LAY-009, which is also attached to this Technical Note. The swept path analysis was undertaken using two 10.2m tipper HGVs travelling in opposing directions on Day Lane at the same time. The swept path analysis undertaken demonstrates that through the use of the proposed passing bays, the two 10.2m tippers HGVs can pass one another without conflict. Whilst the proposed management strategy prevents any two project-related HGV's meeting one another on Day Lane, the proposed passing bays ensure any construction related HGV's do not conflict with any other general traffic travelling on Day Lane. This includes the prevention of a conflict in an instance in which a construction related HGV is travelling on Day Lane at the same time a non-project related HGV. For the purposes of completeness, swept path analysis has also been undertaken to assess potential conflicts between a 10.2m tipper and a large car. This analysis is included in drawing No. AQ-UK-DCO-TR-LAY-010, which is also attached to this Technical Note, and demonstrates that through the use of the proposed passing bays conflicts between the two vehicle types in question can be successfully avoided.

As with the proposed upgrades to the junction of Day Lane / Broadway Lane, a Stage 1 RSA has been undertaken for the proposed passing bays on Day Lane. The outcome of the RSA is summarised below: -

- Use of traffic marshals to prevent the risk of rear shunts between HGVs entering the haul road and general traffic using Day Lane or Broadway Lane;
- Suitable profiling of any land required for visibility purposes will be required and dealt with at the detailed design stage; and
- Prevent left turning into the Converter Station, to be enforced by a Traffic Regulation Order.

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A Designer's Response to the RSA has been prepared and agreed with HCC. Drawing AQD-WSP-UK-OS-DR-Z-200215 has been revised to reflect the outcomes of the RSA as appended to this Technical Note.

It should also be noted that HCC have requested that the speed limit of Day Lane be amended to 30 mph during the construction period, the extent of which can be seen in drawing AQ-UK-DCO-TR-LAY-011, which is attached to this document. This has been included a necessary highway intervention within the updated FCTMP (AS-074) and is therefore secured via Requirement 17 of the draft Development Consent Order.

ECOLOGICAL AND ARBORICULTURAL CONSIDERATIONS

Given that no trees or hedgerows will be removed in order to establish the passing bays, there will be no impact on ecological features such as bats and dormouse. Potential removal of non-hedgerow habitat based on a 0.5 m widening will be negligible and not lead to significant effects on other ecological features.

In any event, standard precautionary measures included in the Onshore Outline CEMP for ecological features will be applied (REP7-032). These include measures to ensure legal compliance for breeding birds whereby clearance of suitable habitat will be timed to avoid the breeding season of March to August. If scheduled within this period, a suitably experienced ornithologist will be present to advise on any necessary protective measures and confirm that the works are not likely to cause disturbance to nesting birds.

To avoid killing or injury to hedgehogs that may be present, scrub and other dense vegetation where suitable habitat is present will be hand searched for hedgehogs prior to its clearance. Piles of cut vegetation such as brash piles will also be searched as they can harbour sheltering hedgehogs.

To avoid killing or injury to reptiles that may be present, a Precautionary Method of Works ('PMoW') will precede vegetation clearance and earthworks in habitats which could support these animals which will detail how working methods during the Construction Stage of the Proposed Development can minimise the risk of killing or injury to reptiles.

Root protection measures will be secured through compliance with the principles outlined in the Onshore Outline CEMP (REP7-032) and ES Appendix 16.3 Arboriculture Report (APP-411 and REP7-066). The principles to be applied include the identification of Root Protection Areas

(RPAs), the avoidance of RPAs where practicable and, where encroachment is unavoidable, the implementation of an Arboricultural Method Statement (AMS) sufficient to ensure the sustainable retention of trees and hedges.

Micro-siting will assist in the avoidance of RPAs whilst the ability to widen the carriageway on both sides by a lesser amount (0.25 m) will enable root disturbance to be minimised in instances where avoidance cannot be achieved. Where work within an RPA cannot be avoided, then a task-specific AMS will be produced (the requirement for which is to be included in the updates to the Onshore Outline CEMP issued at Deadline 8). This document will identify the working practices and tree protection measures necessary to minimise the likelihood of damage to acceptable levels and will accord with best practice guidance as identified in British Standard BS 5837:2012. As with all works with the potential to impact highway trees, the AMS will be produced by a competent arboriculturist and further subject to approval by HCC Highways Arboriculture prior to commencement of any construction work.

LANDSCAPE AND VISUAL AMENITY CONSIDERATIONS

Significant effects on landscape and visual amenity generated through the loss of trees, hedgerows will be avoided through micro-siting and detailed design, informed by site surveys. This judgement has been informed by site survey undertaken on 16th February 2021, photographs presented above, and the Proposed Passing Bay Swept Path Analysis shown on Drawing AQ-UK-DCO-TR-LAY-009.

In terms of tree pruning since Day Lane is already used by HGVs on a regular basis it is unlikely that any management measures are required.

When designing the proposed passing bays, measures will be taken to retain Day Lane's rural character by not introducing additional signage, road markings, kerbs and lighting. This will be reflected as a new design principle within the updated Design and Access Statement (REP7-022) to be submitted at Deadline 8.

RETENTION OF PASSING BAYS POST-CONSTRUCTION

The Applicant understands that discussions have been held between HCC, South Downs National Park Authority (SNDPA) and East Hampshire District Council (EHDC) regarding the reinstatement of Day Lane following completion of construction. HCC, SDNPA and EHDC have agreed that:

1. The requirement to retain the passing bays on a permanent basis will be assessed based on actual experience and any relevant data after the completion of construction works for the Proposed Development.
2. After construction works have completed HCC will consult with both SDNPA and EHDC (as Local Planning Authority) to determine whether the passing bays should be retained on a permanent basis or not.
3. The Section 278 agreement includes a clause within it that requires Day Lane to be returned to its pre-construction state (i.e. the passing bays are removed) if this is determined through the consultation with SDNPA and EHDC to be necessary or desirable.

The Section 278 agreement including this necessary clause is to be submitted into the Examination at D8 as an Appendix to the S106 Agreement (REP7-058).

Strategic Management of Arrivals and Departures

This section describes the management strategy for the arrival and departures of HGVs to the Converter Station Area. This will be in place throughout the construction period unless agreed with Hampshire County Council that an alternative approach can be implemented.

MANAGEMENT OF ALL HGVS EXITING THE CONVERTER STATION AREA

HGVs exiting the Converter Station Area will be controlled, with vehicles only permitted to leave the site at 20 minute intervals in order to reduce the potential for conflicts with general traffic and arriving HGVs. It is proposed that this will be controlled by banksman / traffic marshal located at the exit of the Converter Station Area. At peak construction, this will involve the stacking of HGVs and them exiting the site in convoy as described below.

In order to ensure the exiting convoy does not conflict with the arrival of HGVs, all banksmen and traffic marshals will be made aware by radio contact when a convoy is to be released.

Peak Construction Period

As is stated in the traffic flow section of this Technical Note, 71 HGVs will depart from the Converter Station Area via Day Lane during a typical working day in peak construction (including HGV's associated with construction activities associated with the Converter Station Area, the Onshore Cable Corridor and Landfall). This equates to approximately nine HGV movements travelling eastbound on Day Lane every hour. It is proposed that during peak construction, the

banksman / traffic marshal located at the exit of the Converter Station Area manage HGV exits from the site, allowing vehicles to leave only in a convoy of three HGVs. Once three HGVs are ready to leave, all three vehicles are released together in a convoy travelling eastbound on Day Lane.

This methodology would mean the time in which Day Lane is occupied by HGV movements exiting the site would reduce from approximately one instance every seven minutes, to one instance every twenty minutes.

Non-Peak Construction

Whilst the stacking of HGVs and use of three vehicle convoys will not be required after the peak of construction it is proposed that HGVs would still be held on-site and allowed to depart the Converter Station Area at 20-minute intervals. This will ensure that potential conflict with arriving HGVs and other traffic is controlled throughout the construction period.

MANAGEMENT OF HGVS ARRIVING AT THE CONVERTER STATION AREA ASSOCIATED WITH CONSTRUCTION OF THE CONVERTER STATION

In terms of HGV arrivals, their management will be dealt with by way of a requirement to pre-book an arrival time at the Converter Station Area and 'check-in' on approach to confirm that availability. This will allow HGV arrivals to be coordinated in order to avoid times when HGVs will be departing.

As has been agreed with HCC, any HGVs which are travelling to the Converter Station Area will be permitted to wait on the northern Layby on Hulbert Road, to the immediate east of Junction 3, A3 (M). This layby forms part of the local road network and therefore is under the jurisdiction of HCC as the relevant Local Highway Authority and is located an approximately 11 minute drive from the Converter Station Area via the permitted HGV routing in Waterlooville. The use of the layby for the management of inbound HGVs will require a temporary parking suspension notice to be applied in order to ensure this area is available for relevant construction traffic and would be secured by Article 16 of the draft Development Consent Order and would apply for the duration of the construction programme of the Proposed Development.

It has been requested by HCC that it will be necessary for the layby at Hulbert Road to be barriered off to physically enforce the suspension and for the area to be manned during hours of operation.

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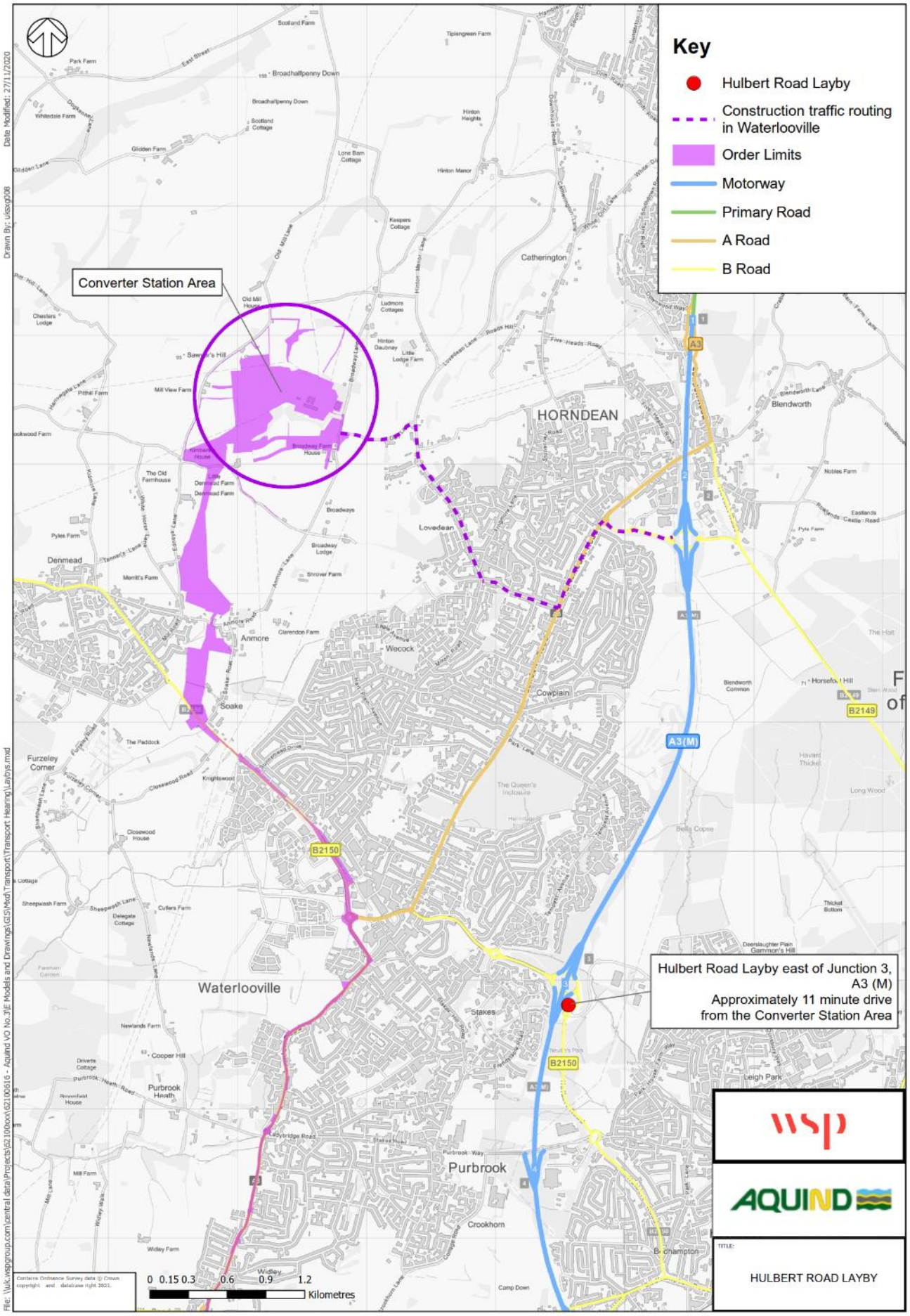
It would be the responsibility of the Applicant to enforce the parking suspension of the Hulbert Road laybys; compliance of the suspension of the laybys will be monitored through the Travel Plan.

The location of the Hulbert Road layby in relation to the Converter Station Area is set out in Figure 3.

Figure 3: Identified HGV Check In Areas



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The waiting layby on Hulbert Road can accommodate up to four waiting HGVs at any one time. As with departures from the Converter Station Area, it is anticipated that at peak construction there will be 43 HGV movements travelling westbound on Day Lane associated with construction of the Converter Station. It is proposed that HGVs will pull into the pre-identified layby shown in Figure 3 in order to 'check-in' with the banksmen at the Converter Station Area ahead of their arrival slot. This process will be monitored and enforced through measures contained within Sections 8.5, 8.6 and 8.7 of the Framework CTMP (AS-074).

At peak construction arriving vehicles will travel from the Hulbert Road layby to the Converter Station Area in convoys of three, accompanied by escort vehicles. The convoys of HGVs will be given authorisation by the traffic marshals / banksman to leave the layby on Hulbert Road and access the Converter Station Area via the authorised route only if vehicles are not due to exit the Converter Station Area. Once this authorisation has been given, no HGVs will be permitted to leave the Converter Station Area until the dispatched HGVs have arrived. Should the arriving HGVs be likely to conflict with a departing convoy, the approaching HGVs will be held at their check-in point until the departing HGVs have cleared the banksman at the eastern end of Day Lane. This will eliminate the potential for conflicting HGV movements to occur on Day Lane.

At non-peak construction periods, whilst it may not be practicable for HGVs to travel in three vehicle convoys due to the lower number of arrivals per day, all HGVs will still be subject to the same check-in procedure and will be accompanied to the Converter Station Area by an escort vehicle. This management strategy will ensure that HGVs arriving at the Converter Station can be scheduled to avoid times when departing HGVs are leaving. At the same time, if HGVs are known to be arriving at the Converter Station Area, departing HGVs can be held on site until such as the incoming HGVs have arrived.

Whilst HGVs are travelling to/from the Converter Station Area along Day Lane, general background traffic will be held at the access, using "Stop/Go" boards. This strategy can also be used on Lovedean Lane at the junction of Day Lane / Lovedean Lane. Adopting this strategy will ensure that the free flow of traffic is maintained for the travelling public, whilst allowing for a flexible approach to traffic management when there is the need to control movement and allowing a procedure to be able to deal with any unforeseen circumstances that may arise.

As requested by HCC, whilst travelling along Day Lane under escort, HGV's would be limited to a speed of 15 mph.

Aquind Interconnector - Revised HGV Construction Management Strategy for Day Lane

DATE:	01 March 2021	**CONFIDENTIALITY:**	Public
SUBJECT:	Revised HGV management strategy for Day Lane		
PROJECT:	Aquind Interconnector	**AUTHOR:**	Stacey Gander
CHECKED:	Chris Williams	**APPROVED:**	Chris Williams

MANAGEMENT OF HGVS ARRIVING AT THE CONVERTER STATION AREA ASSOCIATED WITH CONSTRUCTION OF THE ONSHORE CABLE ROUTE

Alongside the HGV's approaching the Converter Station Area which are discussed above and are associated with construction in the Area itself, HGV's will also be arriving at the Converter Station Area from both the Onshore Cable Corridor (24 HGV's daily), and Landfall (4 HGV's daily). The travel of these HGV's will be also be actively manged through contact with the Converter Station Area and will be required to visit the Hulbert Road layby in order to travel to the compound under escort. Once reaching the Hulbert Road layby, these vehicles may form part of the three vehicle convoy with other HGVs associated with construction of the Converter Station. This approach has been agreed with HCC and their arrival in this way will ensure such vehicles do not conflict with other HGVs exiting or arriving as well as with general traffic. These vehicles will also travel along Day Lane at a speed limited to 15 mph.
It should be noted that it will not be necessary for LGV's associated with the construction of the Onshore Cable Route to travel along Day Lane under escort.

Use of Banksmen and Traffic Marshals

The proposed location of banksmen and traffic marshals on Day Lane is set out in Figure 2, this has remained largely unaltered from that which was proposed within the STA (REP1-142). Minor amendments have been made to the positioning of the banksman / traffic marshal location number 2 from the Day Lane arm of the junction of Day Lane / Lovedean Lane, to the Lovedean Lane arm of this junction. Whilst the locations of the banksmen / traffic marshals on Day Lane remains mostly unchanged, the implementation of the proposed passing bays, as well as further discussions with HCC and the implementation of further strategic management of HGV arrivals and departures has resulted in updated proposal for their roles. The proposals for the roles of the banksmen / traffic marshals on Day Lane set out in this TN supersede that which is included in Section 3.4. of the STA submitted at Deadline 1.

- **Location 1**: Will use STOP/GO boards to halt general traffic on Lovedean Lane at the Day Lane / Lovedean Lane junction for the time period between a convoy of HGV's being released from the Converter Station Area and when these vehicles exit Day Lane at this junction;
- **Location 2**: Will coordinate with Locations 3 and 4 to prevent the release of a convoy of HGV's from the Converter Station Area when a resident of the private properties on Day Lane has left their property and is travelling westbound on Day Lane with the potential to collide with such convoy. Banksman 2 will also warn residents wishing to exit should a convoy of HGV's already have been released from the haul road which has yet to have passed the property in question. Preference will always be given to residents wishing to leave their properties over the exit of an HGV convoy, with residents only being held should a convoy already have been released when they wish to depart;

- **Location 3**: Will use STOP/GO boards to temporarily halt vehicles travelling eastbound on Day Lane prior to the proposed haul road access in order to allow a convoy of HGV's to exit safely; and
- **Location 4**: Is to be located at the Broadway Lane entrance of the proposed haul road and will temporarily halt traffic on Broadway Lane when a construction vehicle (or convoy of such vehicles) is travelling across the highway between the Converter Station Area entrance and the haul road.

All banksmen / traffic marshals will remain in contact with one another at all times via telecommunication devices as to ensure a coordinated approach to HGV management on Day Lane.

It will be required that the gate at the western end of the haul road used to access the Converter Station must be opened first in order to allow unimpeded access. This will prevent any HGVs from queuing back from the haul road onto Day Lane.

Capacity Assessment: Lovedean Lane

In Post Meeting Note Agenda Item 3d (point 4) of HCC's Deadline 6 submission entitled *'Written Summary of Oral Submission'* (REP6-078), the LHA expressed concerns regarding the overall delays that could impact upon other road users at that junction of Lovedean Lane / Day Lane as a result of the proposed traffic management. In order to address these concerns, the Applicant has undertaken a capacity assessment for this junction, accounting for the proposed traffic management measures.

In order to simulate the proposed use of STOP/GO boards, the junction of Lovedean Lane / Day Lane has been modelled with all three arms operating under signal control within LinSig junction modelling software.

As is set out above, it is proposed that STOP boards will be used to halt traffic on Lovedean Lane in both directions of travel in order to prevent conflicts occurring with HGVs exiting the site via Day Lane. The STOP boards will prevent vehicles entering Day Lane and travelling westbound along the link at the same time as an HGV convoy has been released and is travelling eastbound.

As is set out above, given the proposed convoying of the nine HGV's forecast per hour in groups of three means that general traffic on Lovedean Lane will only be halted once every 20 minutes. Vehicles will be held on Lovedean Lane for a typical maximum duration of approximately 90 seconds, whilst the convoy of departing HGVs travel along Day Lane. This reflects the likely time it would take for the group of HGV's to travel from the Converter Station to Lovedean Lane. Given

the length of Day Lane between the Converter Station and Lovedean Lane of 600 metres and assuming a conservative average speed of 20 mph, the journey time for HGV's would amount to marginally over one minute. As such, the junction has been assessed using a cycle time of 20 minutes (1,200 seconds), with a fixed green time on the Day Lane approach of 90 seconds.

In order to undertake this capacity assessment, traffic flows for Lovedean Lane were taken for the Interpeak period from an average of the two Do Something (DS) scenarios of the SRTM outputs. As the proposed construction traffic management strategy prevents other construction vehicles approaching Day Lane when a convoy of HGV's has been released from the Converter Station Area, no construction traffic has been added to the Lovedean Lane approaches. The modelled traffic flows for Lovedean Lane are set out in Table 3.

Table 3: Modelled traffic flows - Lovedean Lane, 2026

	Hourly Interpeak Traffic Flow (vehicles) (Average DS)
Lovedean Lane (northbound)	144
Lovedean Lane (southbound)	173

The traffic flows set out in Table 3 suggest a typical arrival rate of approximately 2-3 vehicles a minute in both directions on Lovedean Lane at the junction with Day Lane. The results of the capacity modelling undertaken for this junction are set out in Table 4, the full LinSig outputs have been attached to this Technical Note.

DATE:	01 March 2021	**CONFIDENTIALITY:**	Public
SUBJECT:	Revised HGV management strategy for Day Lane		
PROJECT:	Aquind Interconnector	**AUTHOR:**	Stacey Gander
CHECKED:	Chris Williams	**APPROVED:**	Chris Williams

Table 4: Capacity assessment output - Lovedean Lane / Day Lane

Approach	Interpeak (Average DS)		
	Degree of Saturation (%)	Mean Maximum Queue (PCU)	Delay (seconds / PCU)
Lovedean Lane (northbound)	8.0	4	5
Lovedean Lane (southbound)	10.0	5	5
	Cycle Time: 1,200s Overall PRC: 799.8%		

As can been seen from the results set out in Table 4, it is forecast that there will be maximum queues of between 4-5 PCU shown on Lovedean Lane during the 90 seconds that traffic is halted on these arms. This broadly aligns with the vehicle arrival rate for these approaches which is discussed above. The junction modelling outputs forecast a delay of five seconds per vehicle during the interpeak hour modelled. This level of delay is minor and would not cause material inconvenience for general traffic travelling through the junction, particularly as this circumstance would only take place up to three times per hour.

RSA RESPONSE

AQUIND Interconnector

PROPOSED CONVERTER STATION ACCESS ARRANGEMENTS

Road Safety Audit Designer's Response

RSADR1
FEBRUARY 2021

PUBLIC

AQUIND Interconnector

PROPOSED CONVERTER STATION ACCESS ARRANGEMENTS

Road Safety Audit Designer's Response

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DATE: FEBRUARY 2021

AQUIND Interconnector

PROPOSED CONVERTER STATION ACCESS ARRANGEMENTS

Road Safety Audit Designer's Response

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CONTENTS

APPENDICES

1 INTRODUCTION

1.1.1. WSP have been commissioned by AQUIND Interconnector Ltd to provide highways and transport support throughout the application for the AQUIND Interconnector Development Consent Order (DCO).

1.1.2. This report provides a Designer's Response to the Stage 1 Road Safety Audit (RSA) completed by Acorns Projects Limited for the proposed Converter Station Access Arrangements. The scheme proposals seek to provide permanent highway access to a new Converter Station, which will include an upgrade of the junction of Day Lane and Broadway Lane Lovedean, Hampshire, together with the construction of a haul road and temporary holding area, passing bays and traffic management proposals to facilitate movement of construction vehicles on this link. The RSA report is included in Appendix A of this document and was based upon Appendix C of the Supplementary Transport Assessment (STA) (REP1-142) which includes drawings AQD-WSP-UK-OS-DR-Z-200215, AQD-WSP-UK-OS-DR-Z-200223, AQD-WSP-UK-OS-DR-Z-200224, AQD-WSP-UK-OS-DR-Z-200219, AQD-WSP-UK-OS-DR-Z-200220 and AQD-WSP-UK-OS-DR-Z-200215.

1.1.3. Section 2 of this report sets out the issues raised by the RSA and WSP's response as Design Organisation. Included within Appendix B is a completed Table F4 of the DMRB GG119, which also includes comments from Hampshire County Council (HCC) in their role as Overseeing Organisation. An electronic version of this document has also been sent to HCC.

1.1.4. Included in Appendix C of this document are the following updated drawings, taking into account the recommendations of the RSA, discussions with HCC on these points and this Designer's Response:

- Drawing AQD-WSP-UK-OS-DR-Z-200215: Broadway Lane Site Access Junction – Option B General Arrangement;
- Drawing AQ-UK-DCO-TR-LAY-008: Day Lane Proposed Passing Bays; and
- Drawing: AQ-UK-DCO-TR-LAY-011: Extent of Proposed Temporary 30mph Speed Limit Zone on Day Land and Broadway Lane.

1.1.5. This Designer's Response should be read in conjunction with the updated Day Lane Technical Note, to which this document is appended.

2 DESIGNER'S RESPONSE

2.1 LOCAL ALIGNMENT

PROBLEM 2.1.1

Location

2.1.1. The proposed highway link road (Drawing No. AQD-WSP-UK-OS-DR-Z-200215 Rev 04).

Summary

The overall length of the proposed link road could result in HGV's and the accompanying convoy vehicles being exposed to a potential increased risk of nose to tail shunt type collisions occurring with west bound Day Lane vehicular traffic, whereby vehicle occupants could sustain personal injury.

Recommendation

2.1.2. It is Recommended that the linear length of the highway link should be sufficient to accommodate the complete convoy of vehicles arriving at the Converter Station site, such that no detrimental impact results upon the free flow of west bound Day Lane vehicular traffic.

2.1.3. If this cannot be achieved, the roles and responsibilities of the banksmen marshalling traffic will be quite critical, in order to ensure that both of the highway link access gates are open in a timely manner for inbound convoys, but also for outbound convoys of HGV's.

2.1.4. It will also be essential that coordination takes place with site operatives who will control the access gates within the Converter Station access road (shown indicatively on an associated landscape drawing), located some 12 metres away from the junction with Broadway Lane.

WSP Designer's Response

2.1.5. Problem accepted. Whilst the gated haul road provides adequate space for three 10m HGVs to stop off carriageway there will be close coordination between traffic marshals to open the western gate of the haul road first to allow unimpeded access for HGV's when travelling in their groups of three directly into the Converter station, such that queuing back onto Day Lane does not occur. For convoys exiting the Converter Station, the traffic marshals on Broadway Lane will hold general traffic until HGVs are clear of the site access junction, either through the convoy moving onto and waiting in the haul road area or being released through the eastern gate and on to Day Lane.

2.1.6. This approach is set out within an updated version of the Framework Construction Traffic Management Plan (FCTMP), which governs the management of construction traffic associated with the Proposed Development.

PROBLEM 2.1.2

Location

2.1.7. On the corner of the Day lane and Broadway Lane junction and the Converter Station access road junction with Broadway Lane (Drawing No. AQD-WSP-UK-OS-DR-Z-200215 Rev 04).

Summary

2.1.8. Lack of detail regarding finished levels of the area which is currently an agricultural field could lead to a potential increased risk of side impact and nose to tail shunt type collisions occurring, whereby vehicle occupants could sustain personal injury.

Recommendation

2.1.9. It is Recommended that as well as clearing vegetation away from the area of the proposed visibility splay, the finished levels of the area on the corner of the existing agricultural should be reduced accordingly.

2.1.10. In addition, suitable and adequate forward visibility and stopping sight distance should be provided for drivers turning left from Day Lane into Broadway Lane, such that drivers will be able to clearly see any vehicular activity taking place at the western limits of the link road and also any vehicle activity taking place at the Converter Station access road junction.

WSP Designer's Response

2.1.11. Problem accepted. Suitable profiling of any land required for visibility purposes will be required and dealt with at the detailed design stage. A note to this effect has been added to drawing AQD-WSP-UK-OS-DR-Z-200215 included in Appendix C.

2.2 GENERAL PROBLEMS

2.2.1. No Problems identified in this category at this Stage 1 Road Safety Audit.

2.3 JUNCTIONS

PROBLEM 2.3.1

Location

2.3.1. The Broadway Lane north bound approach to the Converter Station access road junction (Drawing No. AQD-WSP-UK-OS-DR-Z-200215 Rev 04).

Summary

2.3.2. Reminding drivers not to attempt to turn left, so as to minimise the potential for collisions to occur with vehicular traffic within or exiting the Converter Station access road.

Recommendation

2.3.3. It is Recommended that to further discourage all vehicle types from attempting to turn left into the Converter Station site from Broadway Lane, No Left Turn signing should be introduced into the overall scheme proposals, supported by a traffic regulation order.

WSP Designer's Response

2.3.4. Problem accepted. Signage indicating No Left Turning can be provided for, enforced by a Traffic Regulation Order which can be included for within the dDCO. Details of the location of the No Left Turning sign are shown on drawing AQD-WSP-UK-OS-DR-Z-200215 included in Appendix C.

2.4 WALKING, CYCLING AND HORSE RIDING

2.4.1. No Problems identified in this category at this Stage 1 Road Safety Audit.

2.5 TRAFFIC SIGNS, CARRIAGEWAY MARKINGS AND LIGHTING

2.5.1. No Problems identified in this category at this Stage 1 Road Safety Audit.

2.6 OTHER MATTERS

2.6.1. It has been agreed with the Highway Authority that the final arrangements of the Day Lane passing bays (shown on Drawing AQ-UK-DCO-TR-LAY-008 included in Appendix C) can be confirmed at the detailed design stage, albeit that the works to be delivered must be capable of allowing a car and an HGV to pass satisfactorily. This may necessitate that widening be provided on both sides of Day Lane in order to avoid any implications on tree and hedgerow root protection zones.

2.6.2. In addition, the Highway Authority have confirmed that Day Lane should be subject to a 30 mph speed limit during the course of the construction of the Converter Station. The extents to which this 30mph speed limit would apply is shown on Drawing AQ-UK-DCO-TR-LAY-011 included in Appendix C.

Appendix A

ROAD SAFETY AUDIT

ACORNS PROJECTS LIMITED

Day Lane & Broadway Lane, Denmead, Hampshire

Proposed Converter Station Access Arrangements

Stage 1 Road Safety Audit

For WSP

Prepared by Acorns Projects Limited

Safety Traffic Project Management & Highway Engineering Consultants

JANUARY 2021

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Approvals

This document requires the following approvals:

Name	Title
Adriano B. Cappella	Audit Team Leader
Lisa Allen	Audit Team Member

Distribution

This document has also been distributed to:

Name	Title & Organisation
Stacey Gander	Transport Planner - WSP
Ian Fielding	Technical Director - WSP
Chris Williams	Associate - WSP

1.0 INTRODUCTION

1.1 This report results from a Stage 1 Road Safety Audit carried out on the Day Lane and Broadway Lane, Denmead, Hampshire, Proposed Converter Station Access Arrangements Project, at the request of the Overseeing Organisation, i.e. the Highway Authority, Hampshire County Council, Economy Transport and Environment, EII Court West, The Castle, Winchester, Hampshire, SO23 8UD. The Design Organisation is WSP, Suite 1, Grosvenor House, Grosvenor Square, Southampton, Hampshire, SO15 2BE. The Third Party Organisation is AQUIND Limited, OGN House, Hadrian Way, Wallsend, NE28 6HL.

1.2 The scheme proposals seek to provide permanent highway access to a new Converter Station, which will include an upgrade of the junction of Day Lane and Broadway Lane in Denmead, Hampshire, together with the construction of a haul road and temporary holding area.

The proposed haul road and temporary holding area comprises a new highway link to be provided between Day Lane, east of the existing bend, and at Broadway Lane, south of the existing bend. This will provide a managed facility for vehicles entering the site during the Construction Stage, with vehicle movements across Broadway Lane being under the control of traffic marshalls. This link will also accommodate HGV/abnormal load movements and would be retained as a permanent feature (unadopted) to allow future access for such vehicles should this be required.

General verge/vegetation cutting back will be required on all sides of Broadway Lane within the bounds of the highway to ensure that adequate visibility splay requirements are met. The proposed haul road will be gated at both the junction with Day Lane and the junction with Broadway Lane, with construction vehicles only being able to gain access to the site under the control of dedicated banksmen. The temporary holding area will provide sufficient set back from the gate such that HGV's needing to enter the Converter Station Area can wait clear off the public highway, thus preventing obstruction to other traffic.

In order to prevent vehicles from entering and exiting the Converter Station Area from the south in the operational phases of the development (construction traffic movements will not be permitted to make use of this route), the following design alterations have been included:

- A 'no right turn' sign will be placed on the Converter Station access road approximately 10m from the junction with Broadway Lane to inform drivers that this movement is prohibited;
- The radii on the southern side of the access road has been reduced from 10m to 1m to discourage vehicles from turning left into the site from Broadway Lane.

The construction phase of the Converter Station project will take approximately six months to deliver. During the Construction Stage, there will be an estimated daily maximum two way total of 142 HGV movements and, 28 LGV movements. The management of HGV's arriving and leaving the Converter Station area are described in detail within the December 2020 WSP - Day Lane Technical Note.

In addition, an access strategy document will be produced for the Operational Stage that defines how maintenance vehicles should access the Converter Station in the future. This will include an access route plan, which will follow the same principles as the construction traffic route included within the Framework CTMP.

1.3 The Audit Team membership was as follows:

Adriano B. Cappella IEng, FIHE, MCIHT, MSoRSA, HA RSA Certificate of Competency
(Audit Team Leader) Director, Acorns Projects Limited

Lisa Allen MSc, BEng (Hons), MCIHT, MSoRSA, HA RSA Certificate of Competency
(Audit Team Member) Associate Consultant, Acorns Projects Limited

1.4 The Audit took place at the Eaton Bray office of Acorns Projects Limited during January 2021. The Audit was undertaken in accordance with the Road Safety Audit Instruction as contained within the Design Organisation E-Mail to Acorns Projects Limited dated the 15th December 2020. The Audit comprised an examination of the drawings and documents provided by the Design Organisation and, are listed in Appendix A.

1.5 The drawings and documents consisted of a copy of the general arrangement, swept path analysis (6 No. sheets), passing bays details with associated tracking, construction traffic routing, the December 2020 WSP - Day Lane Technical Note and, the October 2020 WSP - Environmental Statement Addendum - Appendix 11 Supplementary Transport Assessment. Copies of the drawings at both A3 and A4 size were provided for the Audit Team's use. Road traffic collision data, vehicular traffic flow data and public transport information is contained within the above referenced documents. Pedestrian and pedal cycle accessibility information has not been provided for the purposes of this Stage 1 Road Safety Audit.

1.6 A visit to the site was undertaken between 14.10 pm and 15.35 pm during the afternoon of the 14th January 2021 by both Audit Team Members. During the afternoon site visit, the weather was chilly, grey and overcast and the existing carriageway surface was wet.

Vehicular traffic conditions at the time of the afternoon site visit were observed to be light. No pedestrians or pedal cyclists were observed during the afternoon site visit.

1.7 The terms of reference of the Audit are as described in DMRB GG 119 Road Safety Audit. The Audit Team has examined and reported only on the road safety implications of the scheme as presented and, has not examined or verified the compliance of the designs to any other criteria. However, to clearly explain a safety problem or the recommendation made to resolve the identified problem, the Audit Team may, on occasion, have referred to a Design Standard without touching on technical audit.

1.8 No Departures from Design Standards have been reported by the Design Organisation.

1.9 All Problems and Recommendations are referenced to the design drawings and the locations have been indicated on the A4 plan supplied for use by the Audit Team in Appendix B.

1.10 Issues identified, and observations made during this Stage 1 Road Safety Audit and site inspection which the Terms of Reference exclude from this report, but which the Audit Team wishes to draw to the attention of the Overseeing Organisation, i.e. the Local Highway Authority, Hampshire County Council, will be set out in a separate letter. These issues could include maintenance items and operational issues. In this regard, the Audit Team have made reference to one issue identified and observation made as referred to in a Covering Letter to the Design Organisation, WSP dated the 12th February 2021. The Covering Letter should be supplied to the Overseeing Organisation, i.e. the Local Highway Authority, Hampshire County Council and, be considered in conjunction with this Stage 1 Road Safety Audit Report.

2.0 ITEMS RAISED AT THIS STAGE 1 ROAD SAFETY AUDIT

2.1 LOCAL ALIGNMENT

2.1.1 PROBLEM

Location 1 - The proposed highway link road (Drawing No. AQD-WSP-UK-OS-DR-Z-200215 Rev 04).

Summary - The overall length of the proposed link road could result in HGV's and the accompanying convoy vehicles being exposed to a potential increased risk of nose to tail shunt type collisions occurring with west bound Day Lane vehicular traffic, whereby vehicle occupants could sustain personal injury.

Detail - The scheme drawings include a new length of link road, which will be utilised by HGV's seeking access to the Converter Station site. Once granted an arrival slot and having travelled from the Strategic Route Network, it is proposed that a maximum of three HGV's (which will be accompanied by convoy vehicles), will be permitted access to the Converter Station site at any one time. At this Stage 1 Road Safety Audit, it is not known whether the overall linear length of the proposed link road will be sufficient to accommodate the compete convoy.

As a result, the tail end of the convoy may still be part waiting/stationary within the Day Lane carriageway whilst access gates are opened in the highway link and banksmen marshalling traffic can move to a location where they can control any vehicular movements in Day Lane and Broadway Lane respectively. Concern arises that this situation could result in a potential increased risk of nose to tail shunt type collisions occurring with west bound Day Lane vehicular traffic, whereby vehicle occupants could sustain personal injury.

RECOMMENDATION

It is Recommended that the linear length of the highway link should be sufficient to accommodate the complete convoy of vehicles arriving at the Converter Station site, such that no detrimental impact results upon the free flow of west bound Day Lane vehicular traffic.

If this cannot be achieved, the roles and responsibilities of the banksmen marshalling traffic will be quite critical, in order to ensure that both of the highway link access gates are open in a timely manner for inbound convoys, but also for outbound convoys of HGV's.

It will also be essential that coordination takes place with site operatives who will control the access gates within the Converter Station access road (shown indicatively on an associated landscape drawing), located some 12 metres away from the junction with Broadway Lane.

2.1.2 PROBLEM

Locations 2 & 3 - On the corner of the Day lane and Broadway Lane junction and the Converter Station access road junction with Broadway Lane (Drawing No. AQD-WSP-UK-OS-DR-Z-200215 Rev 04).

Summary - Lack of detail regarding finished levels of the area which is currently an agricultural field could lead to a potential increased risk of side impact and nose to tail shunt type collisions occurring, whereby vehicle occupants could sustain personal injury.

Detail - The scheme drawing indicates that the new length of link road will bisect the corner of an existing agricultural field. At the western limits of the link road, it is proposed to provide a visibility splay to the right and, that the area within the visibility splay will be cleared of vegetation and dedicated as highway.

The site visit has established that the agricultural field, which is bounded by an embankment, is on a much higher level than the adjacent existing Broadway Lane and Day Lane carriageways. The combination of the height of the embankment and the agricultural field could impact upon not only the proposed visibility splay, but also forward visibility and stopping sight distance for any drivers turning left from Day Lane into Broadway Lane.

As a result, drivers may not be able to clearly see any vehicular activity taking place at the western limits of the link road, but also vehicle activity taking place at the Converter Station access road junction, as indicated at Location 3.

Concern arises that this situation could result in a potential increased risk of side impact vehicular collisions occurring, as well as nose to tail shunt type collisions occurring between a leading and any following vehicles, whereby vehicle occupants could sustain personal injury.

RECOMMENDATION

It is Recommended that as well as clearing vegetation away from the area of the proposed visibility splay, the finished levels of the area on the corner of the existing agricultural should be reduced accordingly.

In addition, suitable and adequate forward visibility and stopping sight distance should be provided for drivers turning left from Day Lane into Broadway Lane, such that drivers will be able to clearly see any vehicular activity taking place at the western limits of the link road and also any vehicle activity taking place at the Converter Station access road junction.

2.2 GENERAL

2.2.1 No Problems identified in this category at this Stage 1 Road Safety Audit.

2.3 JUNCTIONS

2.3.1 PROBLEM

Location 4 - The Broadway Lane north bound approach to the Converter Station access road junction (Drawing No. AQD-WSP-UK-OS-DR-Z-200215 Rev 04).

Summary - Reminding drivers not to attempt to turn left, so as to minimise the potential for collisions to occur with vehicular traffic within or exiting the Converter Station access road.

The scheme proposals confirm that the radius on the southern side of the Converter Station access road has been reduced from 10m to 1m, in order to discourage vehicles from turning left into the site from Broadway Lane. Whilst this might make the left turn manoeuvre difficult, in particular for larger vehicles, drivers of smaller vehicles such as saloon cars or smaller type panel vans could still enter the Converter Station access road by utilising the south bound Broadway Lane carriageway area.

As a result, concern arises that here could be a potential increased risk of head on or side impact collisions occurring between left turning vehicles and vehicles seeking to emerge from the Converter Station access road.

RECOMMENDATION

It is Recommended that to further discourage all vehicle types from attempting to turn left into the Converter Station site from Broadway Lane, No Left Turn signing should be introduced into the overall scheme proposals, supported by a traffic regulation order.

2.4 WALKING, CYCLING AND HORSE RIDING

2.4.1 No Problems identified in this category at this Stage 1 Road Safety Audit.

2.5 TRAFFIC SIGNS, CARRIAGEWAY MARKINGS AND LIGHTING

2.5.1 No Problems identified in this category at this Stage 1 Road Safety Audit.

END OF PROBLEMS IDENTIFIED AND RECOMMENDATIONS OFFERED IN THIS STAGE 1 ROAD SAFETY AUDIT

3.0 AUDIT TEAM STATEMENT

We certify that this Road Safety Audit has been carried out in accordance with DMRB GG 119.

ROAD SAFETY AUDIT TEAM LEADER

Adriano B. Cappella IEng, FIHE, MCIHT, MSoRSA, HA RSA Certificate of Competency

Signed : [redacted]

Associate Consultant

Acorns Projects Limited

Safety Traffic Project Management & Highway Engineering Consultants

Redwood House

3 Eaton Park

Eaton Bray

Bedfordshire

LU6 2SP

Date : 12th February 2021

ROAD SAFETY AUDIT TEAM MEMBER

Lisa Allen MSc, BEng (Hons), MCIHT, MSoRSA, HA RSA Certificate of Competency

Signed : [redacted]

Associate Consultant

Acorns Projects Limited

Safety Traffic Project Management & Highway Engineering Consultants

Redwood House

3 Eaton Park

Eaton Bray

Bedfordshire

LU6 2SP

Date : 12th February 2021

APPENDIX A

APPENDIX A

DAY LANE & BROADWAY LANE, DENMEAD, HAMPSHIRE

PROPOSED CONVERTER STATION ACCESS ARRANGEMENTS

STAGE 1 ROAD SAFETY AUDIT

LIST OF WSP DRAWINGS SUBMITTED FOR AUDITING

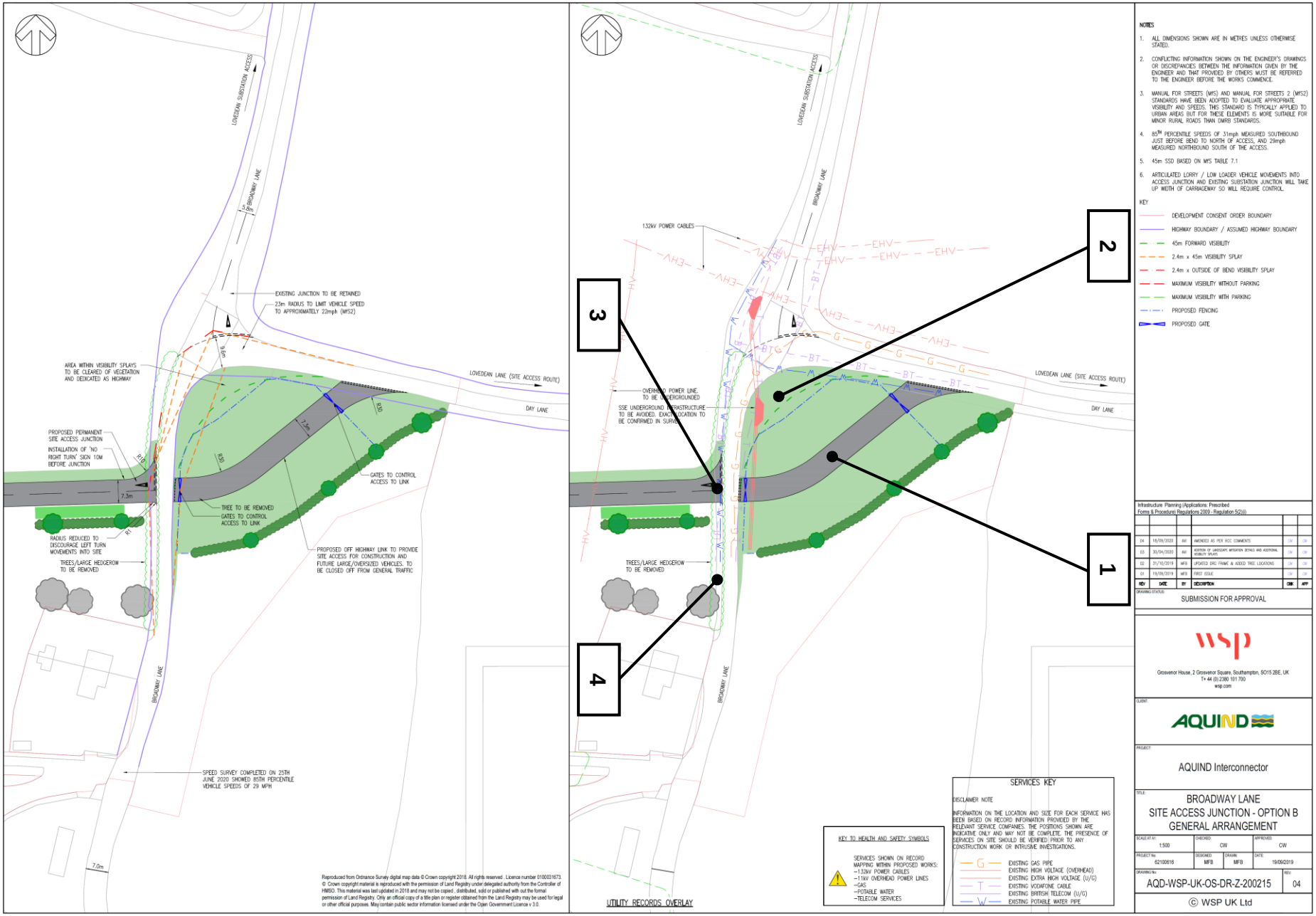
DRAWING NO.	**TITLE**
AQD-WSP-UK-OS-DR-Z-200215 Rev 04	Broadway Lane Site Access Junction - Option B General Arrangement
AQD-WSP-UK-OS-DR-Z-200215 Rev 01	Lovedean Lane Four Axle Tipper Tracking Sheet 1 of 1
AQD-WSP-UK-OS-DR-Z-200215 Rev 01	Lovedean Lane Low Loader Tracking Sheet 1 of 1
AQD-WSP-UK-OS-DR-Z-200219 Rev B	Broadway Lane Site Access Junction Day Lane Access Tracking Sheet 1 of 2
AQD-WSP-UK-OS-DR-Z-200220 Rev B	Broadway Lane Site Access Junction Day Lane Access Tracking Sheet 2 of 2
AQD-WSP-UK-OS-DR-Z-200223 Rev 03	Day Lane Low Loader Tracking Sheet 1 of 1
AQD-WSP-UK-OS-DR-Z-200224 Rev 01	Day Lane Low Loader Tracking Sheet 1 of 1
AQD-UK-DCO-TR-LAY-008 Rev A	Day Lane Proposed Passing Bays
AQD-UK-DCO-TR-LAY-009 Rev A	Day Lane Proposed Passing Bays Swept Path Analysis
AQD-UK-DCO-TR-LAY-010 Rev A	Day Lane Proposed Passing Bays Swept Path Analysis
EN020022-ES-22.3 Rev 01	Figure 22.3 Construction Traffic Routing

LIST OF DOCUMENTS REVIEWED AT THIS STAGE 1 ROAD SAFETY AUDIT

WSP - AQUIND INTERCONNECTOR - Day Lane Technical Note - December 2020
WSP - AQUIND INTERCONNECTOR - Environmental Statement Addendum - Appendix 11 Supplementary Transport Assessment - October 2020

APPENDIX B

APPENDIX B - PROBLEM LOCATION PLAN



Appendix B

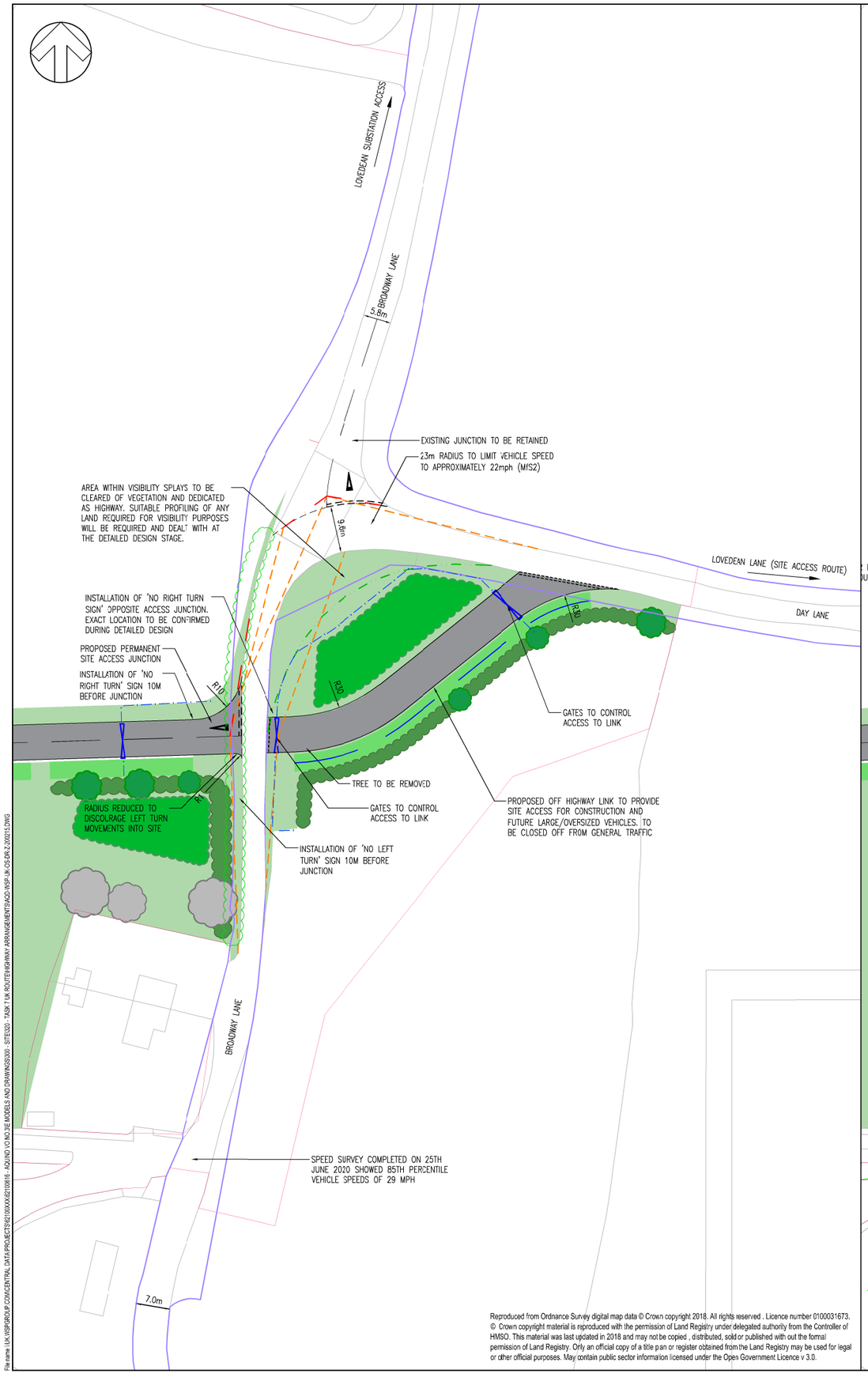
ROAD SAFETY AUDIT DECISION LOG (GG119 TABLE F4)

DMRB GG119 Table F4

RSA Problem	RSA Recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action
2.1.1	It is Recommended that the linear length of the highway link should be sufficient to accommodate the complete convoy of vehicles arriving at the Converter Station site, such that no detrimental impact results upon the free flow of west bound Day Lane vehicular traffic. If this cannot be achieved, the roles and responsibilities of the banksmen marshalling traffic will be quite critical, in order to ensure that both of the highway link access gates are open in a timely manner for inbound convoys, but also for outbound convoys of HGV's.It will also be essential that coordination takes place with site operatives who will control the access gates within the Converter Station access road (shown indicatively on an associated landscape drawing), located some 12 metres away from the junction with Broadway Lane.	Problem accepted. Whilst the gated haul road provides adequate space for three 10m HGVs to stop off carriageway there will be close coordination between traffic marshals to open the western gate of the haul road first to allow unimpeded access for HGV's when travelling in their groups of three directly into the Converter station, such that queuing back onto Day Lane does not occur. For convoys exiting the Converter Station, the traffic marshals on Broadway Lane will hold general traffic until HGVs are clear of the site access junction, either through the convoy moving onto and waiting in the haul road area or being released through the eastern gate and on to Day Lane. This approach is set out within an updated version of the Framework Construction Traffic Management Plan (FCTMP), which governs the management of construction traffic associated with the Proposed Development.	Course of action agreed	Coordination of traffic marshaling to take place to ensure western gate to be opened to allow unimpeded access upon HGV arrival. When HGV convoys depart, general traffic on Broadway Lane will be held until the carriageway is clear of HGVs
2.1.2	It is Recommended that as well as clearing vegetation away from the area of the proposed visibility splay, the finished levels of the area on the corner of the existing agricultural should be reduced accordingly. In addition, suitable and adequate forward visibility and stopping sight distance should be provided for drivers turning left from Day Lane into Broadway Lane, such that drivers will be able to clearly see any vehicular activity taking place at the western limits of the link road and also any vehicle activity taking place at the Converter Station access road junction.	Problem accepted. Suitable profiling of any land required for visibility purposes will be required and dealt with at the detailed design stage. A note to this effect has been added to drawing AQD-WSP-UK-OS-DR-Z-200215.	Course of action agreed, which will be dealt with at the detailed design stage	Appropriate land profiling to be provided
2.3.1	It is Recommended that to further discourage all vehicle types from attempting to turn left into the Converter Station site from Broadway Lane, No Left Turn signing should be introduced into the overall scheme proposals, supported by a traffic regulation order.	Problem accepted. Signage indicating No Left Turning can be provided for, enforced by a Traffic Regulation Order which can be included for within the dDCO. Details of the location of the No Left Turning sign are shown on drawing AQD-WSP-UK-OS-DR-Z-200215.	Course of agreed	Appropriate signage to provided

Appendix C

DRAWINGS



UTILITY RECORDS OVERLAY

NOTES

1. ALL DIMENSIONS SHOWN ARE IN METRES UNLESS OTHERWISE STATED.
2. CONFLICTING INFORMATION SHOWN ON THE ENGINEER'S DRAWINGS OR DISCREPANCIES BETWEEN THE INFORMATION GIVEN BY THE ENGINEER AND THAT PROVIDED BY OTHERS MUST BE REFERRED TO THE ENGINEER BEFORE THE WORKS COMMENCE.
3. MANUAL FOR STREETS (MfS) AND MANUAL FOR STREETS 2 (MfS2) STANDARDS HAVE BEEN ADOPTED TO EVALUATE APPROPRIATE VISIBILITY AND SPEEDS. THIS STANDARD IS TYPICALLY APPLIED TO URBAN AREAS BUT FOR THESE ELEMENTS IS MORE SUITABLE FOR MINOR RURAL ROADS THAN DMRB STANDARDS.
4. 85TH PERCENTILE SPEEDS OF 31mph MEASURED SOUTHBOUND JUST BEFORE BEND TO NORTH OF ACCESS, AND 29mph MEASURED NORTHBOUND SOUTH OF THE ACCESS.
5. 45m SSD BASED ON MfS TABLE 7.1
6. ARTICULATED LORRY / LOW LOADER VEHICLE MOVEMENTS INTO ACCESS JUNCTION AND EXISTING SUBSTATION JUNCTION WILL TAKE UP WIDTH OF CARRIAGEWAY SO WILL REQUIRE CONTROL.
7. ORDINARY WATER COURSE CONSENTS TO BE OBTAINED AS NECESSARY AT THE DETAILED DESIGN STAGE

KEY

- DEVELOPMENT CONSENT ORDER BOUNDARY
- HIGHWAY BOUNDARY / ASSUMED HIGHWAY BOUNDARY
- 45m FORWARD VISIBILITY
- 2.4m x 45m VISIBILITY SPLAY
- 2.4m x OUTSIDE OF BEND VISIBILITY SPLAY
- PROPOSED FENCING
- PROPOSED GATE

KEY TO HEALTH AND SAFETY SYMBOLS

SERVICES SHOWN ON RECORD MAPPING WITHIN PROPOSED WORKS:
- 132kV POWER CABLES
- 11kV OVERHEAD POWER LINES
- GAS
- POTABLE WATER
- TELECOM SERVICES

SERVICES KEY

DISCLAIMER NOTE

INFORMATION ON THE LOCATION AND SIZE FOR EACH SERVICE HAS BEEN BASED ON RECORD INFORMATION PROVIDED BY THE RELEVANT SERVICE COMPANIES. THE POSITIONS SHOWN ARE INDICATIVE ONLY AND MAY NOT BE COMPLETE. THE PRESENCE OF SERVICES ON SITE SHOULD BE VERIFIED PRIOR TO ANY CONSTRUCTION WORK OR INTRUSIVE INVESTIGATIONS.

- EXISTING GAS PIPE
- EXISTING HIGH VOLTAGE (OVERHEAD)
- EXISTING EXTRA HIGH VOLTAGE (U/G)
- EXISTING VODAFONE CABLE
- EXISTING BRITISH TELECOM (U/G)
- EXISTING POTABLE WATER PIPE

Infrastructure Planning (Applications: Prescribed Forms & Procedure) Regulations 2009 - Regulation 5(2)(i)

REV	DATE	BY	DESCRIPTION	CHK	APP
06	18/02/2021	AVI	HIGHWAY BOUNDARY UPDATED	SG	CW
05	11/02/2021	AVI	AMENDED IN RESPONSE TO STAGE 1 ROAD SAFETY AUDIT	SG	CW
04	18/09/2020	AVI	AMENDED AS PER HCC COMMENTS	CW	CW
03	30/04/2020	AVI	ADDITION OF LANDSCAPE MITIGATION DETAILS AND ADDITIONAL VISIBILITY SPLAYS	CW	CW
02	31/10/2019	MFB	UPDATED DRG FRAME & ADDED TREE LOCATIONS	CW	CW
01	19/09/2019	MFB	FIRST ISSUE	CW	CW

DRAWING STATUS: SUBMISSION FOR APPROVAL

wsp

Grosvenor House, 2 Grosvenor Square, Southampton, SO15 2BE, UK
T+ 44 (0) 2380 101 700
wsp.com

CLIENT: AQUIND

PROJECT: AQUIND Interconnector

TITLE: BROADWAY LANE SITE ACCESS JUNCTION - OPTION B GENERAL ARRANGEMENT

SCALE AT A1:	CHECKED:	APPROVED:
1:500	CW	CW

PROJECT No:	DESIGNED:	DRAWN:	DATE:
62100616	MFB	MFB	19/09/2019

DRAWING No: AQD-WSP-UK-OS-DR-Z-200215 REV: 06

File name: \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\62100XXX\62100616 - AQUIND VO INO JSE MODELS AND DRAWINGS\300 - SITE\20 - TASK 7 UK ROUTE\HIGHWAY ARRANGEMENTS\ACAD\ WSP-UK-OS-DR-Z-200215.DWG

VIEWPORT 1

FOR SWEPT PATH ANALYSIS DETAILS SEE VIEWPORT 1 OF DRAWING AQ-UK-DCO-TR-LAY-009

5.8 5.6 5.4 5.3 1.1m VERGE 0.8m VERGE 0.9m VERGE 5.4 5.5 5.5

PROPOSED PASSING BAY

2.2m VERGE 5.4 5.4 1.2m VERGE

0.5m VERGE 1m VERGE 5.4 5.4 2m VERGE 5.3 5.5

PROPOSED PASSING BAY

FOR SWEPT PATH ANALYSIS DETAILS SEE VIEWPORT 2 OF DRAWING AQ-UK-DCO-TR-LAY-009

FOR CONTINUATION SEE VIEWPORT 2

VIEWPORT 2

5.7 5.6

PROPOSED PASSING BAY

5.6 5.6

FOR SWEPT PATH ANALYSIS DETAILS SEE VIEWPORT 4 OF DRAWING AQ-UK-DCO-TR-LAY-009

FOR SWEPT PATH ANALYSIS DETAILS SEE VIEWPORT 3 OF DRAWING AQ-UK-DCO-TR-LAY-009

PROPOSED PASSING BAY

FOR CONTINUATION SEE VIEWPORT 1

5.8 5.4

NOTES:

DO NOT SCALE

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. THE DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL REVENANT DOCUMENTATION.
3. ALL PASSING BAY DIMENSIONS ARE 0.5m WIDTH BY 20m LENGTH PLUS 5m ENTRY AND EXIT TAPERS. THE FINAL LOCATION AND DIMENSIONS OF THESE PASSING BAYS WILL BE DETERMINED DURING DETAILED DESIGN TO ENSURE THAT IMPACTS TO TREES AND HEDGEROWS ARE AVOIDED
4. ORDINARY WATER COURSE CONSENTS TO BE OBTAINED AS NECESSARY AT THE DETAILED DESIGN STAGE
5. DETAILS OF CARRIAGEWAY EDGING TO BE PROVIDED AT DETAILED DESIGN STAGE
6. CONSIDERATION OF 45 DEGREE LOAD LINE TO BE CONSIDERED AT DETAILED DESIGN STAGE
7. TIE IN DETAIL TO EXISTING CARRIAGEWAY TO BE PROVIDED AT DETAILED DESIGN STAGE

KEY:

HIGHWAY BOUNDARY

PROPOSED AREA OF NEW CARRIAGEWAY TO PROVIDE NEW VEHICLE PASSING BAY

REV	DATE	BY	DESCRIPTION	CHK	APP
C	18/02/2021	AVI	HIGHWAY BOUNDARY UPDATED	SG	CW
B	11/02/2021	AVI	ADDITIONAL NOTES ADDED	SG	CW
A	16/12/2020	AVI	FIRST ISSUE	SG	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: -

PROJECT: AQUIND

TITLE:

DAY LANE
PROPOSED PASSING BAYS

SCALE @ A3:	CHECKED:		APPROVED:
1:1000	SG		CW
PROJECT No:	DESIGNED:	DRAWN:	DATE:
62100616	AVI	AVI	December 20

DRAWING No: AQ-UK-DCO-TR-LAY-008 REV: C

DO NOT SCALE

KEY

- DEVELOPMENT CONSENT ORDER BOUNDARY
- HIGHWAY BOUNDARY / ASSUMED HIGHWAY BOUNDARY
- PROPOSED FENCING
- PROPOSED GATE
- EXTENT OF PROPOSED 30mph ZONE

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	18/02/2021	AVI	HIGHWAY BOUNDARY UPDATED	SG	CW
A	11/02/2021	AVI	FIRST ISSUE	SG	CW

DRAWING STATUS:
S2 - FOR INFORMATION

wsp
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wsp.com

CLIENT:
AQUIND

ARCHITECT:
-

SITE/PROJECT:
AQUIND Interconnector

TITLE:
EXTENT OF PROPOSED TEMPORARY 30mph SPEED LIMIT ZONE ON DAY LANE AND BROADWAY LANE

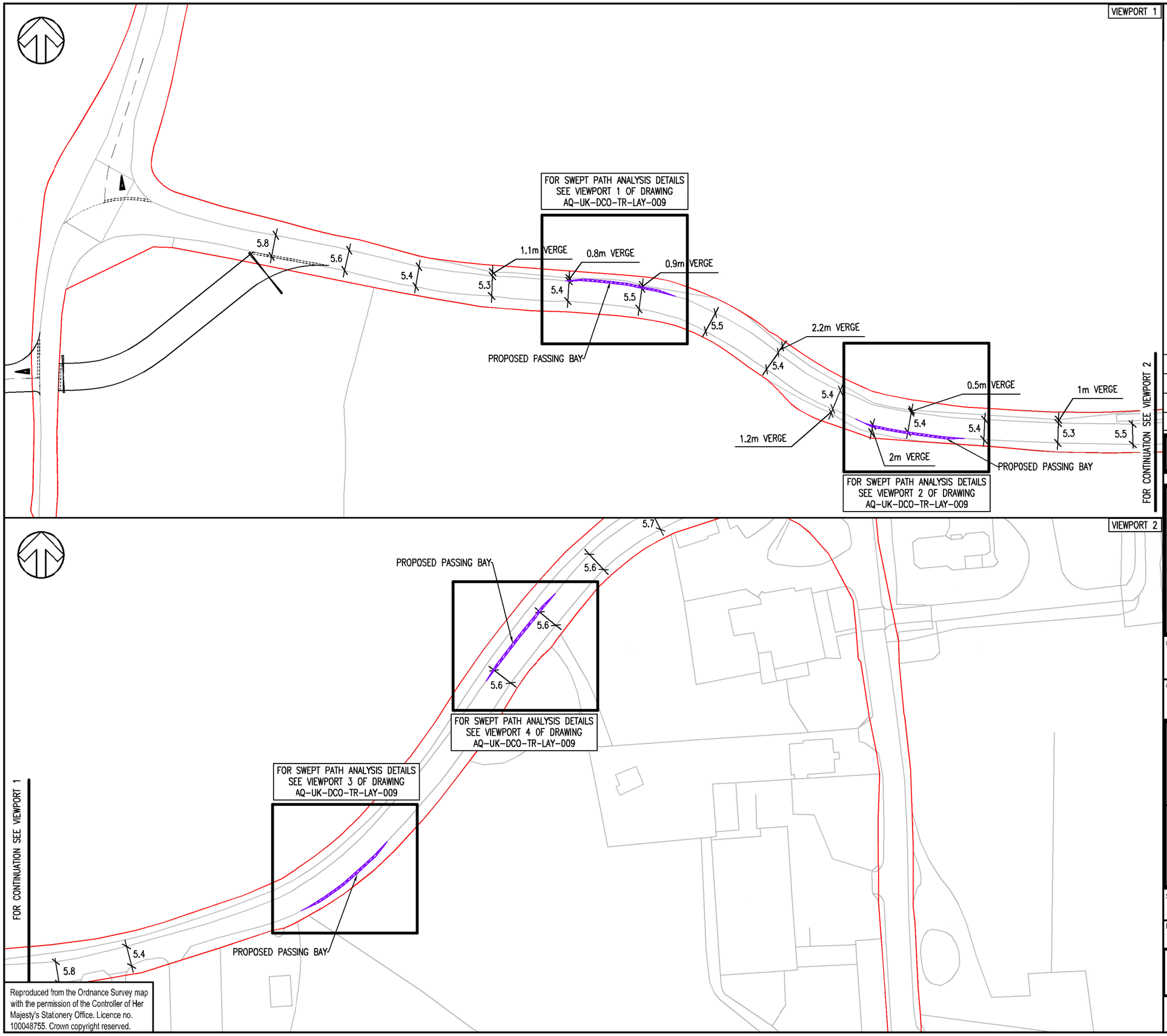
SCALE @ A1:	CHECKED:		APPROVED:
1:1000	SG		CW
PROJECT NO: 62100616	DESIGNED: SG	DRAWN: AVI	DATE: February 21

DRAWING No: AQ-UK-DCO-TR-LAY-011 REV: B

Grosvenor House
2 Grosvenor Square
Southampton, Hampshire
SO15 2BE

wsp.com

AQ-UK-DCO-TR-LAY-008



NOTES:

DO NOT SCALE

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. THE DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL REVENANT DOCUMENTATION.
3. ALL PASSING BAY DIMENSIONS ARE 0.5m WIDTH BY 20m LENGTH PLUS 5m ENTRY AND EXIT TAPERS. THE FINAL LOCATION AND DIMENSIONS OF THESE PASSING BAYS WILL BE DETERMINED DURING DETAILED DESIGN TO ENSURE THAT IMPACTS TO TREES AND HEDGEROWS ARE AVOIDED
4. ORDINARY WATER COURSE CONSENTS TO BE OBTAINED AS NECESSARY AT THE DETAILED DESIGN STAGE
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7. TIE IN DETAIL TO EXISTING CARRIAGEWAY TO BE PROVIDED AT DETAILED DESIGN STAGE

KEY:

HIGHWAY BOUNDARY

PROPOSED AREA OF NEW CARRIAGEWAY TO PROVIDE NEW VEHICLE PASSING BAY

REV	DATE	BY	DESCRIPTION	CHK	APP
C	18/02/2021	AVI	HIGHWAY BOUNDARY UPDATED	SG	CW
B	11/02/2021	AVI	ADDITIONAL NOTES ADDED	SG	CW
A	16/12/2020	AVI	FIRST ISSUE	SG	CW

DRAWING STATUS:
S2 - FOR INFORMATION

wsp
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wsp.com

CLIENT: AQUIND

ARCHITECT: -

PROJECT: AQUIND

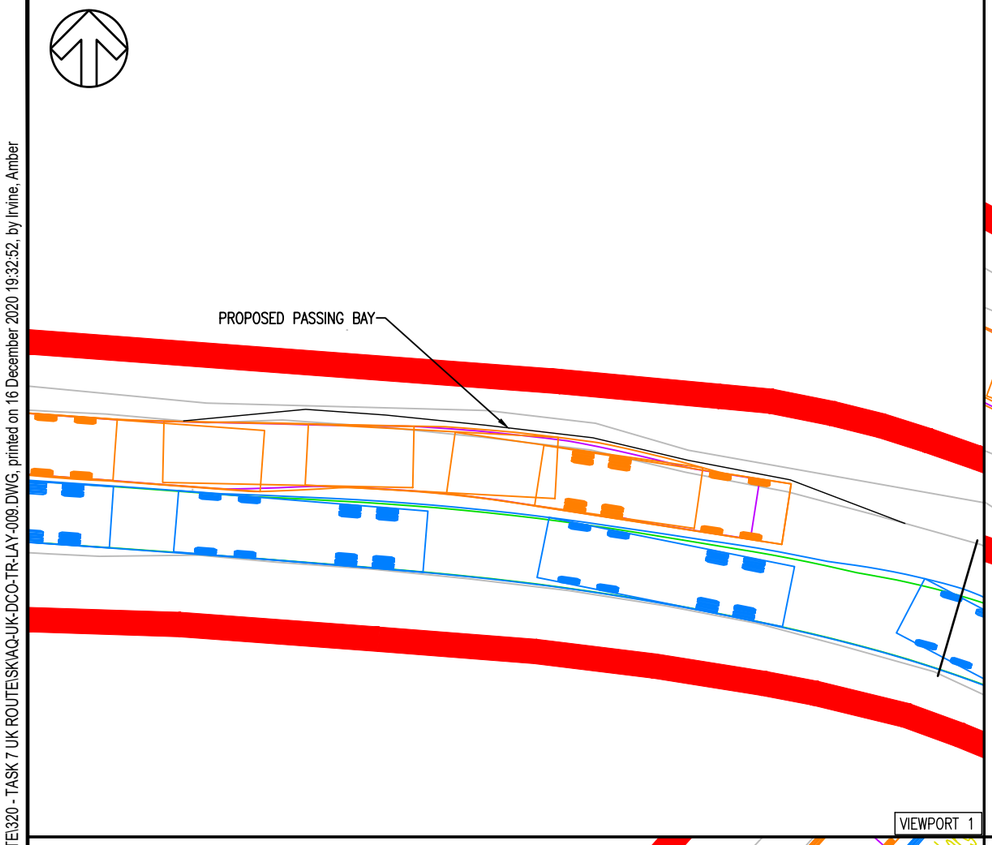
TITLE:
DAY LANE
PROPOSED PASSING BAYS

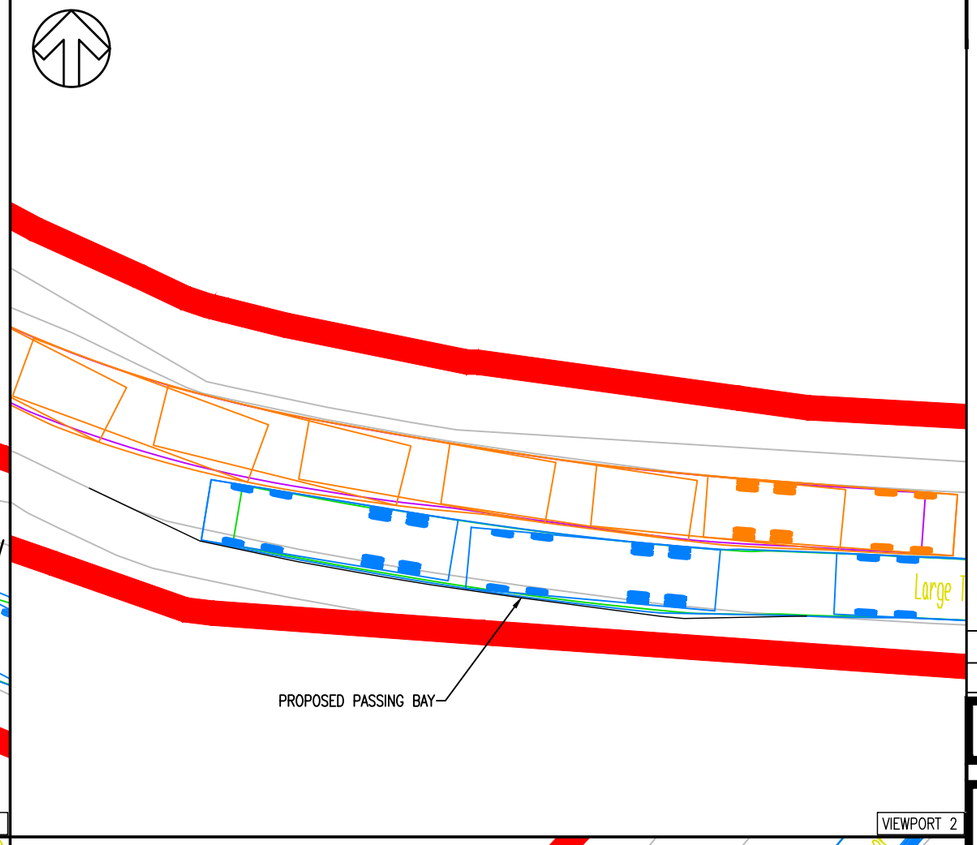
SCALE @ A3:	CHECKED:		APPROVED:
1:1000	SG		CW
PROJECT No:	DESIGNED:	DRAWN:	DATE:
62100616	AVI	AVI	December 20

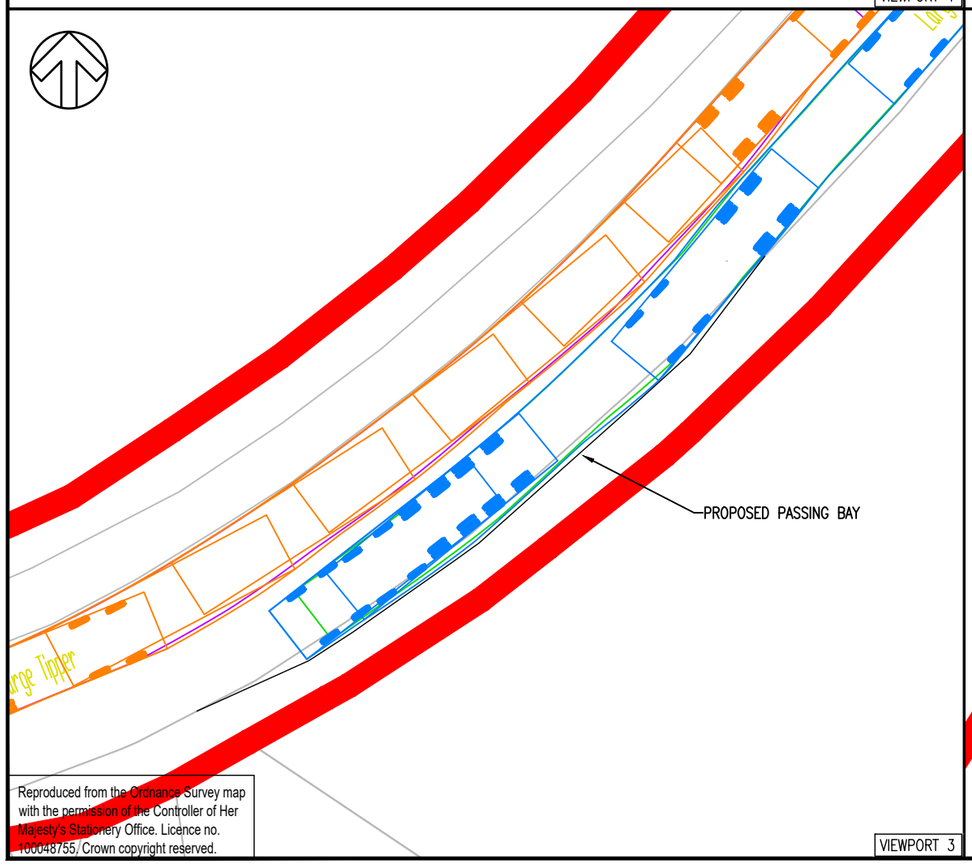
DRAWING No: AQ-UK-DCO-TR-LAY-008 REV: C

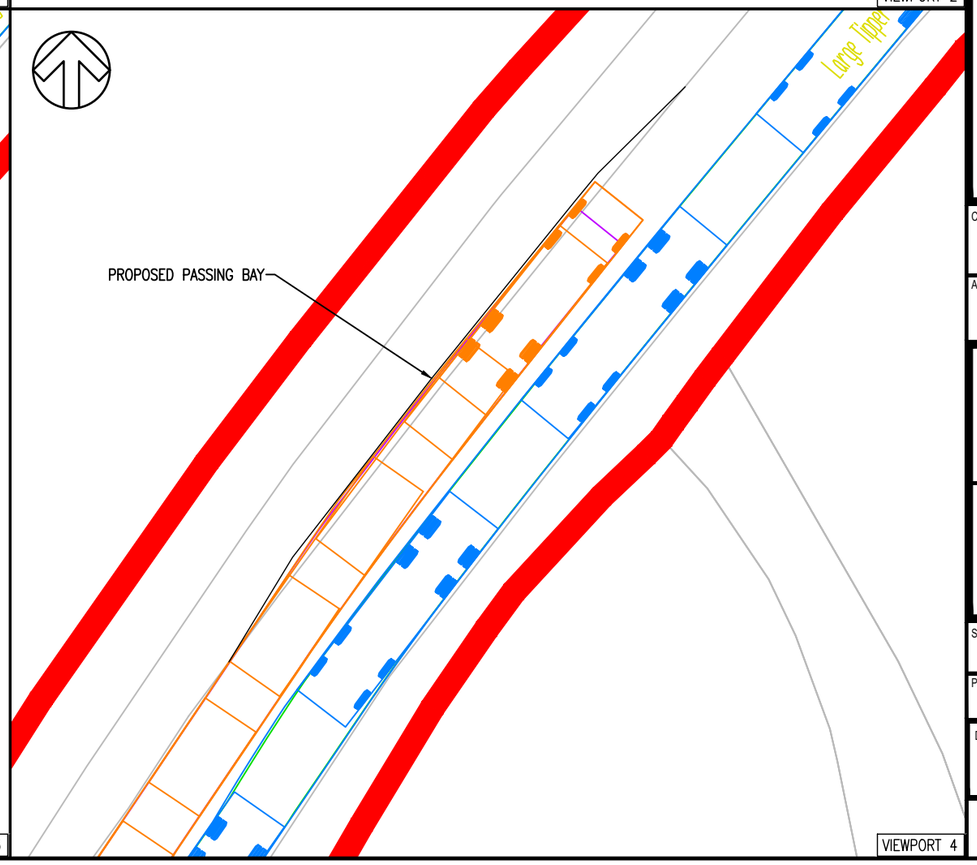
AQ-UK-DCO-TR-LAY-009

CONFIDENTIAL





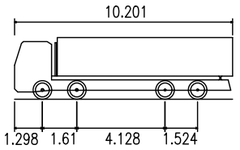




DO NOT SCALE

NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 5mph.
2. ALL SWEPT PATHS WERE TRACKED USING A LARGE TIPPER, VEHICLE PROFILE SHOWN BELOW (DIMENSIONS IN METRES):



LARGE TIPPER	
OVERALL LENGTH	10.201m
OVERALL WIDTH	2.495m
OVERALL BODY HEIGHT	2.890m
MIN BODY GROUND CLEARANCE	0.341m
TRACK WIDTH	2.471m
LOCK TO LOCK TIME	6.00s
KERB TO KERB TURNING RADIUS	11.550m

VEHICLE TRACKING KEY:

- EASTBOUND VEHICLE
- EASTBOUND VEHICLE WHEELS
- WESTBOUND VEHICLE
- WESTBOUND VEHICLE WHEELS

ADDITIONAL ITEMS:

- HIGHWAY BOUNDARY

REV	DATE	BY	DESCRIPTION	CHK	APP
A	16/12/2020	AVI	FIRST ISSUE	SG	CW

DRAWING STATUS: S0 - WORK IN PROGRESS

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T+ 44 (0) 2380 101 700
wsp.com

CLIENT: AQUIND

ARCHITECT: -

PROJECT: AQUIND

TITLE:
DAY LANE
PROPOSED PASSING BAYS SWEPT PATH ANALYSIS

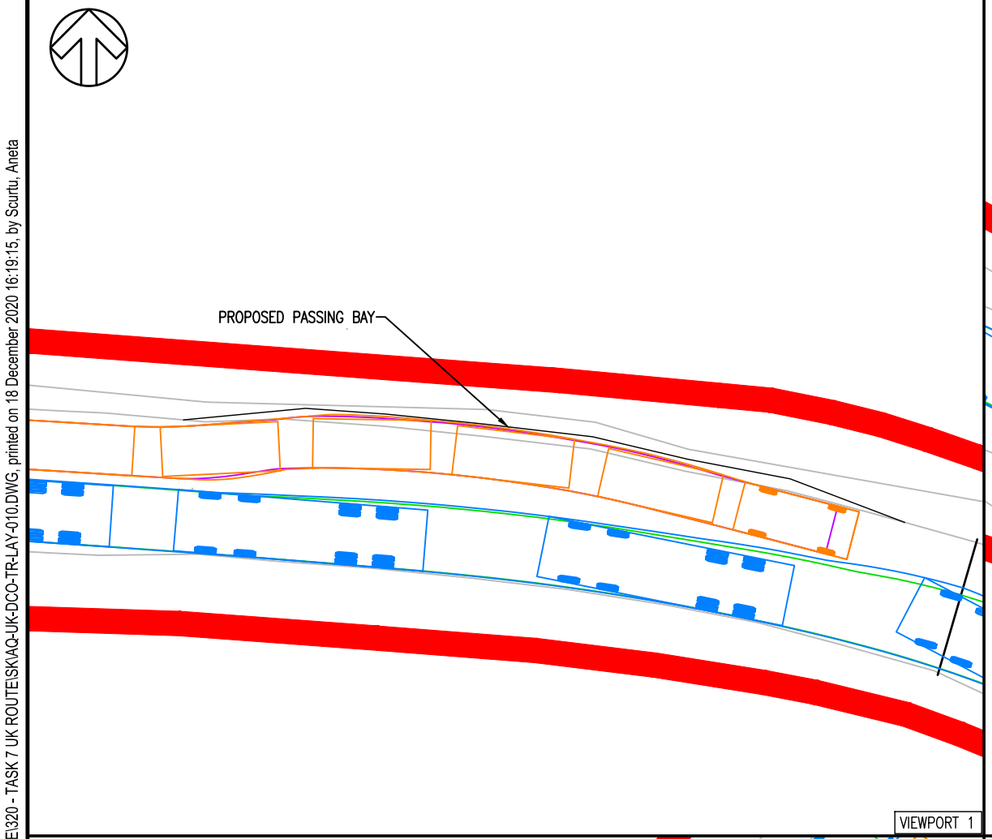
SCALE @ A3:	CHECKED:	APPROVED:
1:250	SG	CW

PROJECT No:	DESIGNED:	DRAWN:	DATE:
62100616	-	AVI	December 20

DRAWING No:	REV:
AQ-UK-DCO-TR-LAY-009	A

AQ-UK-DCO-TR-LAY-010

CONFIDENTIAL



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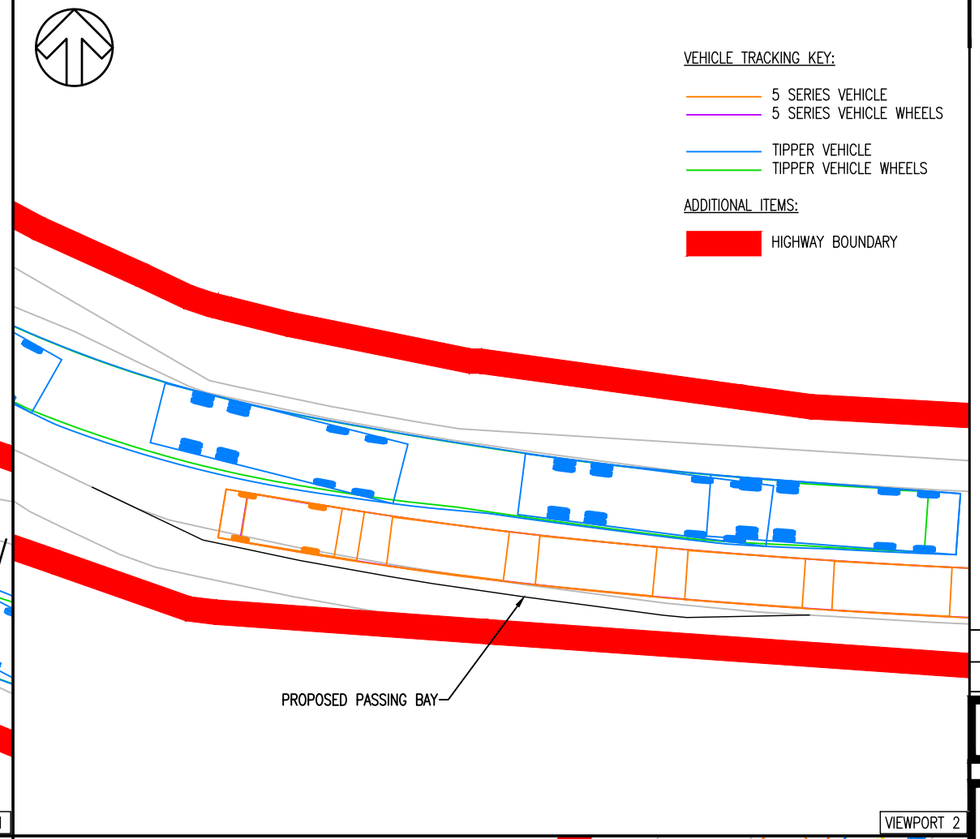

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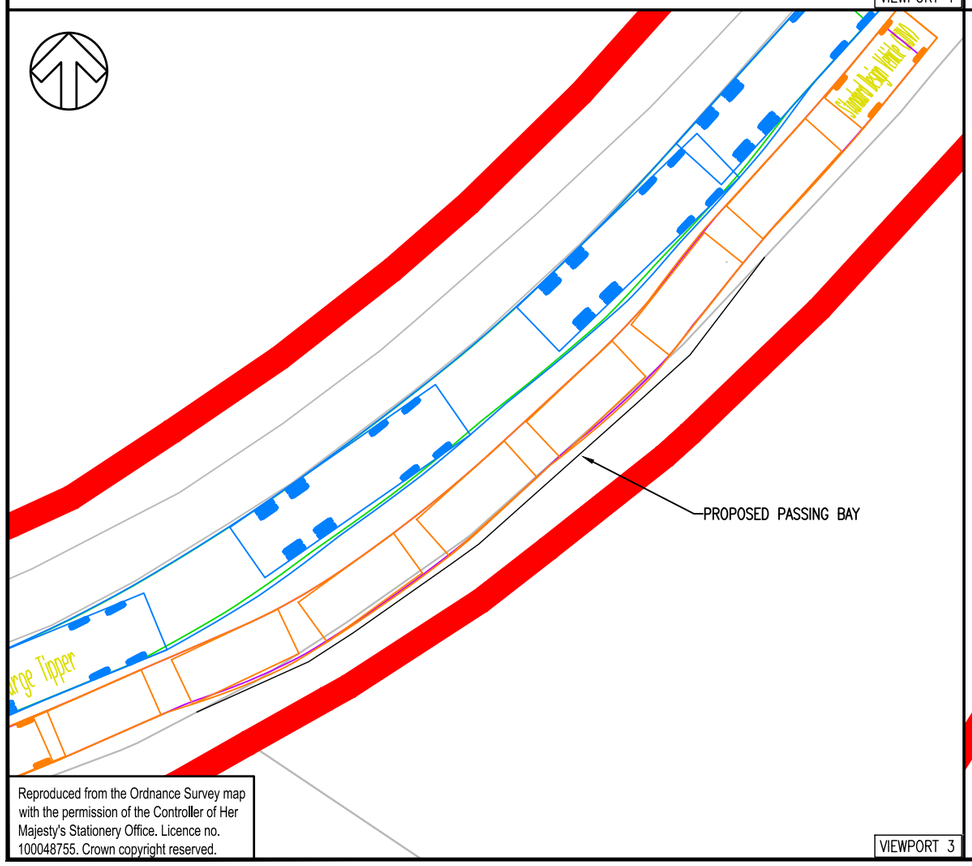

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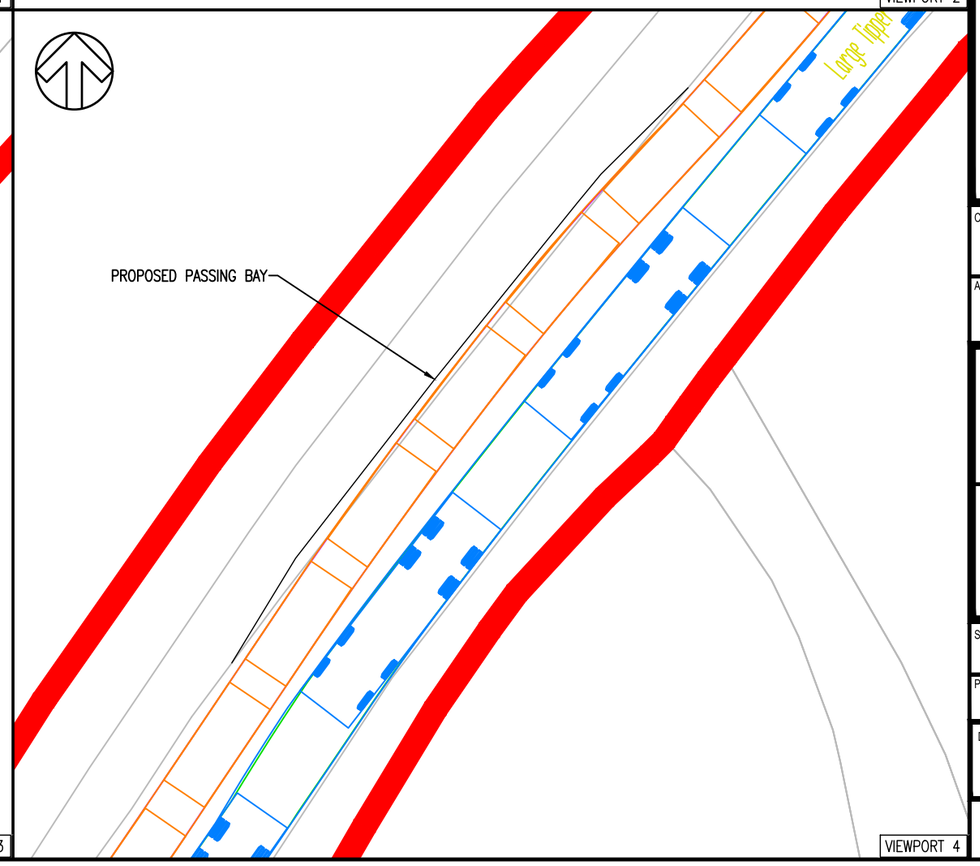


VIEWPORT 4

VEHICLE TRACKING KEY:

- 5 SERIES VEHICLE
- 5 SERIES VEHICLE WHEELS
- TIPPER VEHICLE
- TIPPER VEHICLE WHEELS

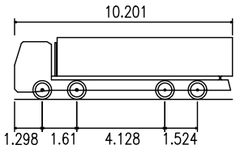
ADDITIONAL ITEMS:

- HIGHWAY BOUNDARY

DO NOT SCALE

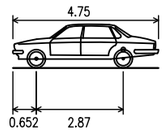
NOTES:

1. ALL VEHICLES ARE TRACKED AT A DESIGN SPEED OF 5mph.
2. SWEPT PATHS WERE TRACKED USING A LARGE TIPPER AND A STANDARD VEHICLE. BOTH PROFILES ARE SHOWN BELOW (DIMENSIONS IN METRES):



LARGE TIPPER

OVERALL LENGTH	10.201m
OVERALL WIDTH	2.495m
OVERALL BODY HEIGHT	2.890m
MIN BODY GROUND CLEARANCE	0.341m
TRACK WIDTH	2.471m
LOCK TO LOCK TIME	6.00s
KERB TO KERB TURNING RADIUS	11.550m



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

REV	DATE	BY	DESCRIPTION	CHK	APP
A	18/12/2020	AMS	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: -

PROJECT: AQUIND

TITLE:
DAY LANE
PROPOSED PASSING BAYS SWEPT PATH ANALYSIS

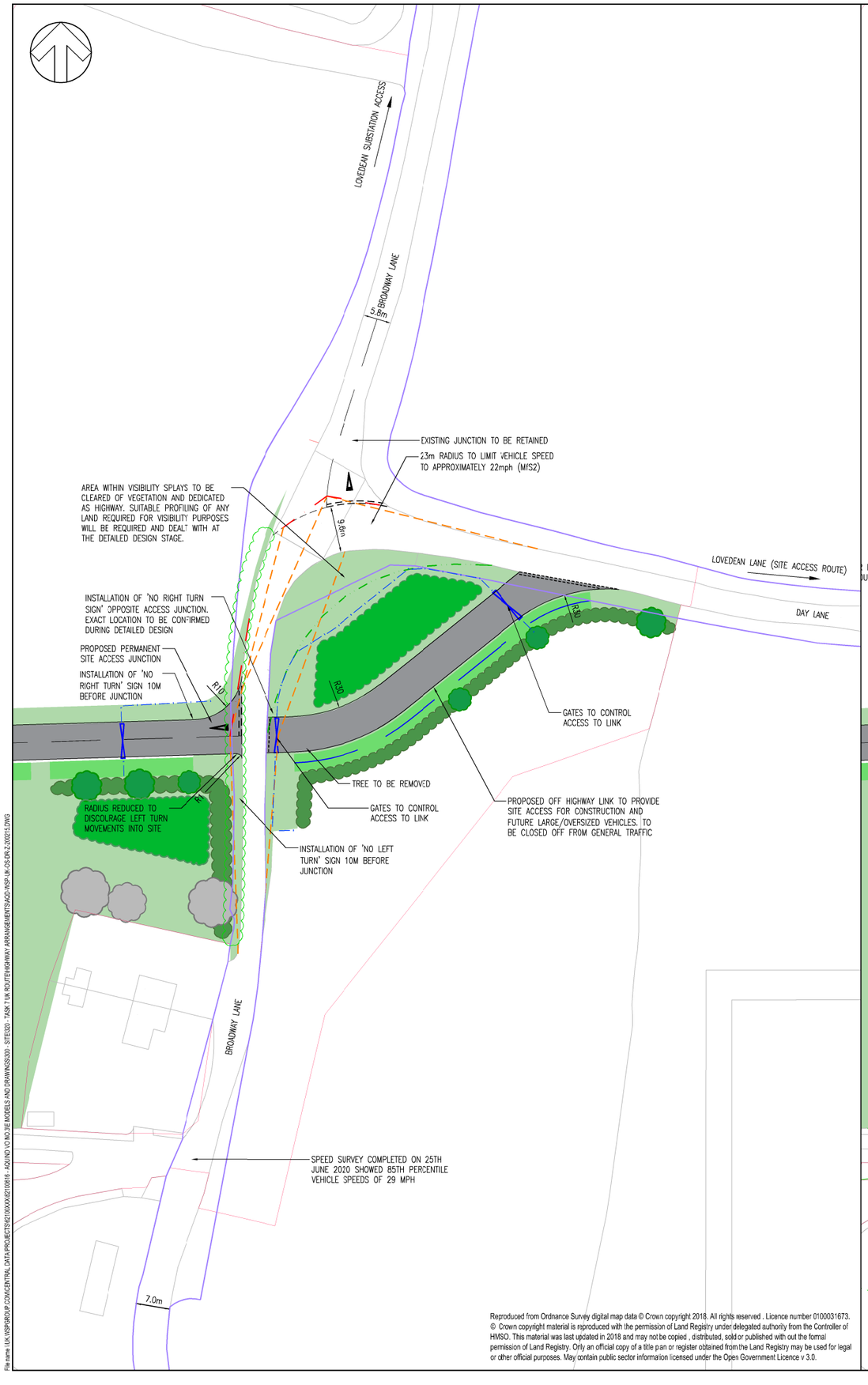
SCALE @ A3:	CHECKED:	APPROVED:
1:250	CW	CW

PROJECT No:	DESIGNED:	DRAWN:	DATE:
62100616	AMS	AMS	December 20

DRAWING No: AQ-UK-DCO-TR-LAY-010 REV: A

AQD-WSP-UK-OS-DR-Z-200215

CONFIDENTIAL



UTILITY RECORDS OVERLAY

NOTES

1. ALL DIMENSIONS SHOWN ARE IN METRES UNLESS OTHERWISE STATED.
2. CONFLICTING INFORMATION SHOWN ON THE ENGINEER'S DRAWINGS OR DISCREPANCIES BETWEEN THE INFORMATION GIVEN BY THE ENGINEER AND THAT PROVIDED BY OTHERS MUST BE REFERRED TO THE ENGINEER BEFORE THE WORKS COMMENCE.
3. MANUAL FOR STREETS (MfS) AND MANUAL FOR STREETS 2 (MfS2) STANDARDS HAVE BEEN ADOPTED TO EVALUATE APPROPRIATE VISIBILITY AND SPEEDS. THIS STANDARD IS TYPICALLY APPLIED TO URBAN AREAS BUT FOR THESE ELEMENTS IS MORE SUITABLE FOR MINOR RURAL ROADS THAN DMRB STANDARDS.
4. 85TH PERCENTILE SPEEDS OF 31mph MEASURED SOUTHBOUND JUST BEFORE BEND TO NORTH OF ACCESS, AND 29mph MEASURED NORTHBOUND SOUTH OF THE ACCESS.
5. 45m SSD BASED ON MfS TABLE 7.1
6. ARTICULATED LORRY / LOW LOADER VEHICLE MOVEMENTS INTO ACCESS JUNCTION AND EXISTING SUBSTATION JUNCTION WILL TAKE UP WIDTH OF CARRIAGEWAY SO WILL REQUIRE CONTROL.
7. ORDINARY WATER COURSE CONSENTS TO BE OBTAINED AS NECESSARY AT THE DETAILED DESIGN STAGE

KEY

- DEVELOPMENT CONSENT ORDER BOUNDARY
- HIGHWAY BOUNDARY / ASSUMED HIGHWAY BOUNDARY
- 45m FORWARD VISIBILITY
- 2.4m x 45m VISIBILITY SPLAY
- 2.4m x OUTSIDE OF BEND VISIBILITY SPLAY
- PROPOSED FENCING
- PROPOSED GATE

KEY TO HEALTH AND SAFETY SYMBOLS

SERVICES SHOWN ON RECORD MAPPING WITHIN PROPOSED WORKS:
- 132kV POWER CABLES
- 11kV OVERHEAD POWER LINES
- GAS
- POTABLE WATER
- TELECOM SERVICES

SERVICES KEY

DISCLAIMER NOTE

INFORMATION ON THE LOCATION AND SIZE FOR EACH SERVICE HAS BEEN BASED ON RECORD INFORMATION PROVIDED BY THE RELEVANT SERVICE COMPANIES. THE POSITIONS SHOWN ARE INDICATIVE ONLY AND MAY NOT BE COMPLETE. THE PRESENCE OF SERVICES ON SITE SHOULD BE VERIFIED PRIOR TO ANY CONSTRUCTION WORK OR INTRUSIVE INVESTIGATIONS.

- EXISTING GAS PIPE
- EXISTING HIGH VOLTAGE (OVERHEAD)
- EXISTING EXTRA HIGH VOLTAGE (U/G)
- EXISTING VODAFONE CABLE
- EXISTING BRITISH TELECOM (U/G)
- EXISTING POTABLE WATER PIPE

Infrastructure Planning (Applications: Prescribed Forms & Procedure) Regulations 2009 - Regulation 5(2)(i)

REV	DATE	BY	DESCRIPTION	CHK	APP
06	18/02/2021	AVI	HIGHWAY BOUNDARY UPDATED	SG	CW
05	11/02/2021	AVI	AMENDED IN RESPONSE TO STAGE 1 ROAD SAFETY AUDIT	SG	CW
04	18/09/2020	AVI	AMENDED AS PER HCC COMMENTS	CW	CW
03	30/04/2020	AVI	ADDITION OF LANDSCAPE MITIGATION DETAILS AND ADDITIONAL VISIBILITY SPLAYS	CW	CW
02	31/10/2019	MFB	UPDATED DRG FRAME & ADDED TREE LOCATIONS	CW	CW
01	19/09/2019	MFB	FIRST ISSUE	CW	CW

DRAWING STATUS: SUBMISSION FOR APPROVAL

wsp

Grosvenor House, 2 Grosvenor Square, Southampton, SO15 2BE, UK
T+ 44 (0) 2380 101 700
wsp.com

CLIENT: AQUIND

PROJECT: AQUIND Interconnector

TITLE: BROADWAY LANE SITE ACCESS JUNCTION - OPTION B GENERAL ARRANGEMENT

SCALE AT A1:	CHECKED:	APPROVED:
1:500	CW	CW

PROJECT No:	DESIGNED:	DRAWN:	DATE:
62100616	MFB	MFB	19/09/2019

DRAWING No: AQD-WSP-UK-OS-DR-Z-200215 REV: 06

File name: \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\62100XXX\62100616 - AQUIND VO INO JSE MODELS AND DRAWINGS\300 - SITE\20 - TASK 7 UK ROUTE\HIGHWAY ARRANGEMENTS\ACAD\ WSP-UK-OS-DR-Z-200215.DWG

AQ-UK-DCO-TR-LAY-011

CONFIDENTIAL

DO NOT SCALE

KEY

- DEVELOPMENT CONSENT ORDER BOUNDARY
- HIGHWAY BOUNDARY / ASSUMED HIGHWAY BOUNDARY
- PROPOSED FENCING
- PROPOSED GATE
- EXTENT OF PROPOSED 30mph ZONE

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	18/02/2021	AVI	HIGHWAY BOUNDARY UPDATED	SG	CW
A	11/02/2021	AVI	FIRST ISSUE	SG	CW

DRAWING STATUS:
S2 - FOR INFORMATION

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wsp.com

CLIENT:
AQUIND

ARCHITECT:
-

SITE/PROJECT:
AQUIND Interconnector

TITLE:
EXTENT OF PROPOSED TEMPORARY 30mph SPEED LIMIT ZONE ON DAY LANE AND BROADWAY LANE

SCALE @ A1:	CHECKED:		APPROVED:
1:1000	SG		CW
PROJECT NO: 62100616	DESIGNED: SG	DRAWN: AVI	DATE: February 21

DRAWING No: AQ-UK-DCO-TR-LAY-011 REV: B

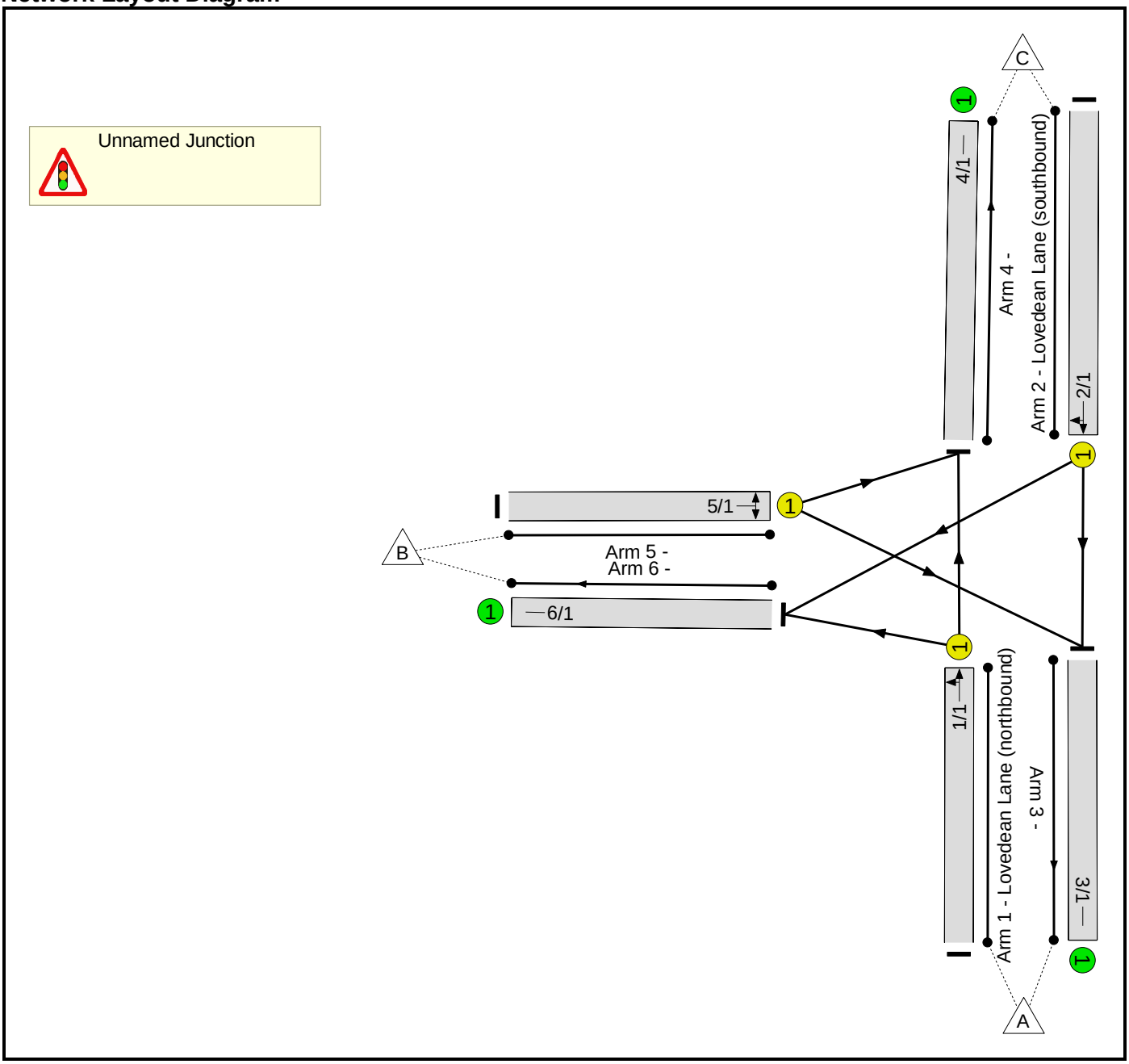
LINSIG OUTPUTS

Full Input Data And Results

User and Project Details

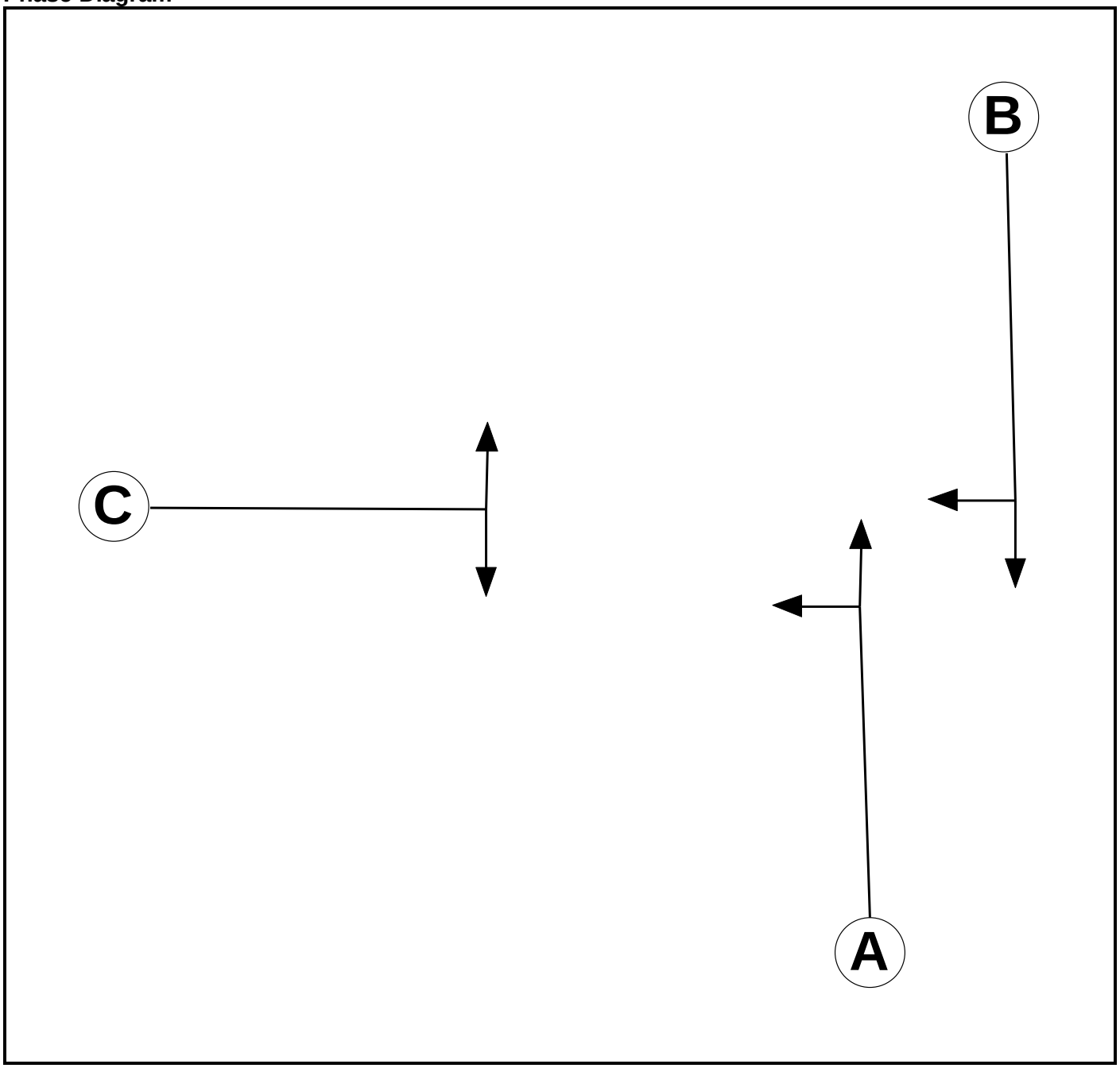
Project:	
Title:	
Location:	
Additional detail:	
File name:	Lovedean Lane Day Lane.lsg3x
Author:	
Company:	
Address:	

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
C	Traffic		7	7

Full Input Data And Results

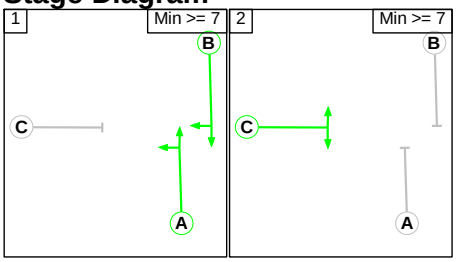
Phase Intergreens Matrix

		Starting Phase		
		A	B	C
Terminating Phase	A		-	-
	B	-		-
	C	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	C

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		2
	2	2	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: Unnamed Junction												
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 (Lovedean Lane (northbound))	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
											Arm 6 Left	Inf
2/1 (Lovedean Lane (southbound))	U	B	2	3	60.0	Geom	-	2.60	0.00	Y	Arm 3 Ahead	Inf
											Arm 6 Right	Inf
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 3 Right	Inf
											Arm 4 Left	Inf
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Average DS IP'	10:00	11:00	01:00	

Scenario 1: 'Average DS IP' (FG1: 'Average DS IP', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	144	144
	B	0	0	0	0
	C	173	0	0	173
	Tot.	173	0	144	317

Traffic Lane Flows

Lane	Scenario 1: Average DS IP
Junction: Unnamed Junction	
1/1	144
2/1	173
3/1	173
4/1	144
5/1	0
6/1	0

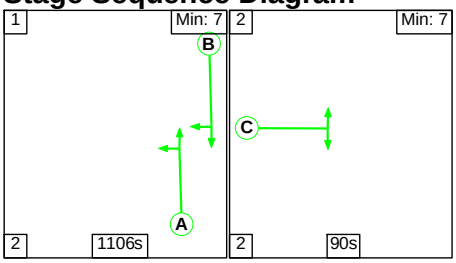
Full Input Data And Results

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lovedean Lane (northbound))	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
				Arm 6 Left	Inf	0.0 %		
2/1 (Lovedean Lane (southbound))	2.60	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1875	1875
				Arm 6 Right	Inf	0.0 %		
3/1	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	3.25	0.00	Y	Arm 3 Right	Inf	0.0 %	1940	1940
				Arm 4 Left	Inf	0.0 %		
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'Average DS IP' (FG1: 'Average DS IP', Plan 1: 'Network Control Plan 1')

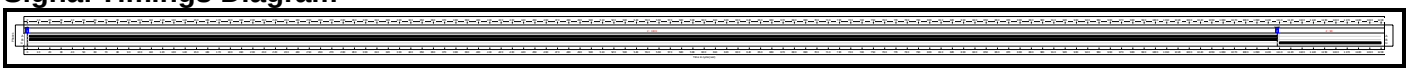
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	1106	90
Change Point	0	1108

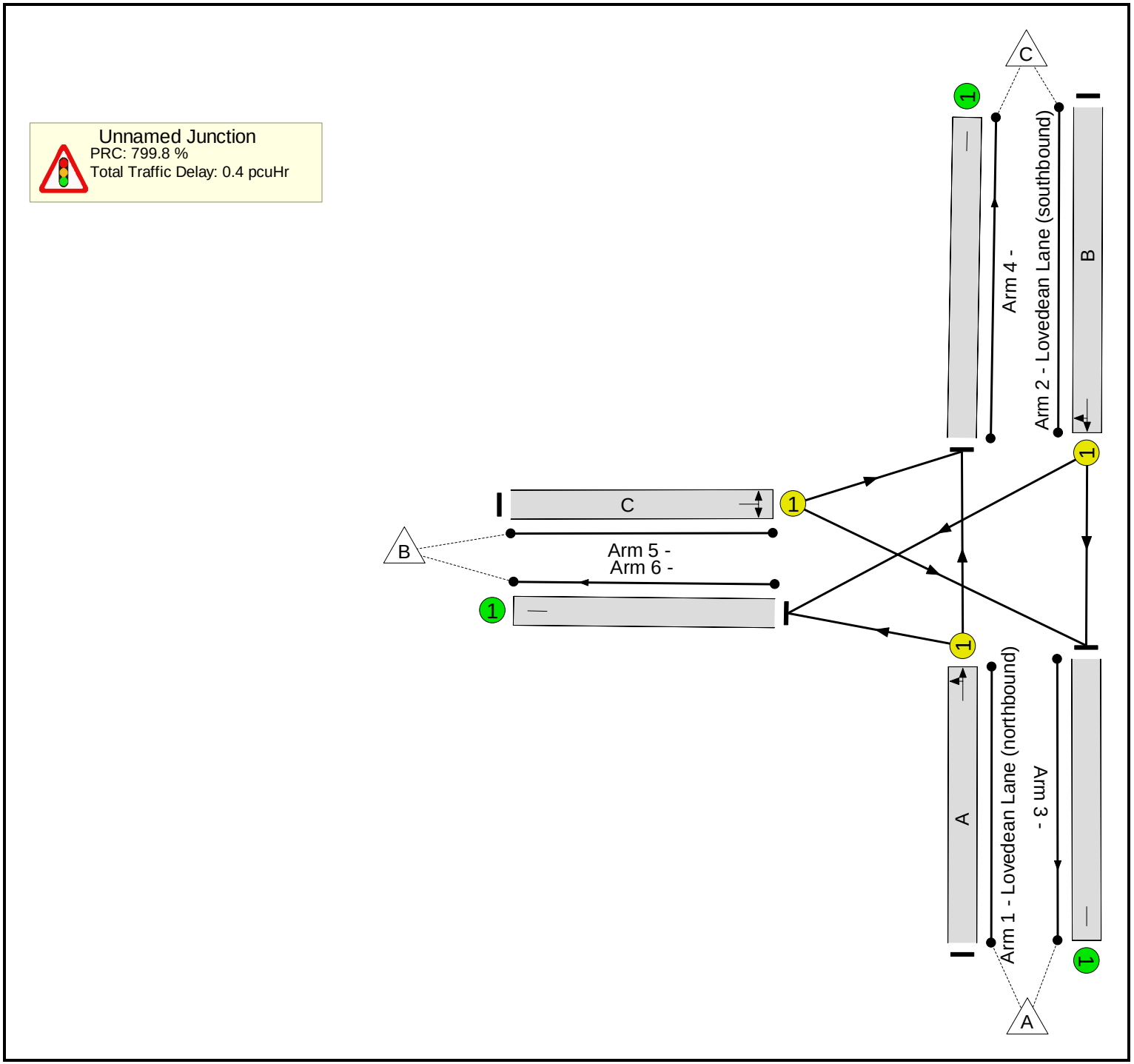
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**10.0%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**10.0%**
1/1	Lovedean Lane (northbound) Ahead Left	U	N/A	N/A	A		1	1106	-	144	1940	1790	8.0%
2/1	Lovedean Lane (southbound) Ahead Right	U	N/A	N/A	B		1	1106	-	173	1875	1730	10.0%
3/1		U	N/A	N/A	-		-	-	-	173	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	144	Inf	Inf	0.0%
5/1	Right Left	U	N/A	N/A	C		1	90	-	0	1940	147	0.0%
6/1		U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**0.3**	**0.1**	**0.0**	**0.4**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**0.3**	**0.1**	**0.0**	**0.4**	**-**	**-**	**-**	**-**
1/1	144	144	-	-	-	0.2	0.0	-	0.2	5.0	4.0	0.0	4.0
2/1	173	173	-	-	-	0.2	0.1	-	0.2	5.1	4.9	0.1	5.0
3/1	173	173	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	144	144	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 799.8 Total Delay for Signalled Lanes (pcuHr): 0.45 Cycle Time (s): 1200
PRC Over All Lanes (%): 799.8 Total Delay Over All Lanes(pcuHr): 0.45

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