

Byers Gill Solar
EN010139

6.4.2.8 Environmental Statement

Appendix 2.8 Construction Traffic Management Plan (CTMP)

Planning Act 2008

APFP Regulation 5(2)(a)

Infrastructure Planning (Applications: Prescribed Forms
and Procedure) Regulations 2009

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1. Introduction

1.1. Purpose of Document

- 1.1.1. RWE (the Applicant) has prepared this Outline Construction Traffic Management Plan (CTMP) as part of an Application for a Development Consent Order (DCO) for the construction, operation and decommissioning of Byers Gill Solar (the Proposed Development). It includes the proposed methods for the management of construction traffic and staff vehicles during the construction of the Proposed Development. It also sets out the monitoring activities designed to ensure that such management measures are carried out, and that they are effective.
- 1.1.2. An Environmental Impact Assessment (EIA) has been undertaken for the Proposed Development and an Environmental Statement (ES) (Volume 6 of the DCO application) has been prepared in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations). In accordance with the requirements of the EIA Regulations, the ES contains the assessment of the likely significant effects on the environment that may be caused during construction, operation and decommissioning of the Proposed Development and describes proposed mitigation measures. The CTMP should be read in conjunction with the assessment provided in ES Chapter 12 Traffic and Transport (Document Reference 6.2.12).
- 1.1.3. This outline CTMP has been informed by the consultation responses from the local highway authorities and National Highways (NH) as the highway authority for the Strategic Road Network (SRN) and further details are provided as part of ES Appendix 12.1 Transport Statement (TS) (Document Reference 6.4.12.1).
- 1.1.4. A detailed CTMP will be produced for the Proposed Development following the appointment of a Principal Contractor (PC) prior to the commencement of construction. The CTMP will be prepared in accordance with the Outline CTMP, under Requirement 6 of the DCO. In preparing the detailed CTMP, the Applicant will engage with Network Rail in relation to final construction traffic routing and details, including further details in relation to abnormal loads and any interface with Network Rail assets.
- 1.1.5. Decommissioning traffic will be managed in line with the outline Decommissioning Environmental Management Plan (DEMP) (Document Reference 6.4.2.7).

1.2. Objectives

- 1.2.1. The objectives of this Outline CTMP are to:
- minimise the volume of Heavy Goods Vehicles (HGV) and staff vehicles associated with the construction phase as far as reasonably practicable;
 - maximise the safe and efficient movement of materials and staff required during the construction phase as far as reasonably practicable;

- minimise the impacts both for the local community and visitors to the area using the road network as far as reasonably practicable; and
- set out the measures to be adhered to by those travelling to and from the Order Limits to reduce the impact of the construction of the Proposed Development.

1.3. Report Structure

1.3.1. This Outline CTMP is structured as follows:

- Section 1 sets out the purpose, objectives and structure of this document;
- Section 2 provides details on how this outline CTMP has been developed;
- Section 3 provides details of the Proposed Development, its location and existing site accessibility;
- Section 4 covers the future highway network on which the Outline CTMP is based;
- Section 5 summarises the HGV and staff vehicle movements which are expected to be generated by the Proposed Development across the construction period, based on the anticipated peak phase of development;
- Section 6 provides details of the proposed site access locations of the Proposed Development, including routing arrangements and internal site access considerations including access tracks, construction compounds and parking;
- Section 7 sets out the proposed measures to manage the impact of construction trips on the highway network, and pedestrian and cycle routes, during the construction phase, as well as details regarding the management, monitoring and review of the CTMP; and
- Section 8 presents the conclusion of the outline CTMP.

2. Development of the outline CTMP

2.1. Introduction

- 2.1.1. This outline CTMP has been informed by a desk-based study, alongside site visits by the transport team, to gather baseline information on the Study Area. This document has been produced in 'Outline' form, with the intention that further detail is added as the information becomes available. As such, the outline CTMP is to be considered a 'skeleton' document which sets out the elements that will be included in the detailed CTMP once the information becomes available.
- 2.1.2. To inform the outline CTMP, an estimate on the volume of construction trips associated with the Proposed Development has been calculated using the construction trip generation from similar sized solar farms located elsewhere in the UK. Further detail is provided in the Traffic and Transport assessment provided in the ES (Document Reference 6.2.12).
- 2.1.3. Additionally, stakeholder engagement and Appendix 4.2 EIA Scoping Opinion (Document Reference 6.4.4.2) have influenced the content of this CTMP. Therefore, this CTMP has been developed accordingly to address the local issues and development impact.
- 2.1.4. In addition to ES Chapter 12 Traffic and Transport (Document Reference 6.2.12), this outline CTMP should be read in conjunction with the suite of other management plans that support the delivery of the Proposed Development, as outlined in Table 2-1.

Table 2-1 Suite of management plans

Management Plan	Purpose	Stage	Document reference
Outline Construction Environmental Management Plan (CEMP)	Sets out how negative environmental impacts will be minimised during construction.	▪ Construction	ES Appendix 2.6 (Document Reference 6.4.2.6)
Outline Construction Traffic Management Plan (CTMP)	Sets out how construction traffic and staff vehicles will be managed during construction.	▪ Construction	ES Appendix 2.8 (Document Reference 6.4.2.8)
Outline Pollution and Spillage Response Plan	Sets out methods to manage pollution and spillage incidents on site during construction.	▪ Construction	ES Appendix 2.9 (Document Reference 6.4.2.10)
Outline Materials Management Plan (MMP)	Sets out how excavated materials that will be generated in the course of constructing the Proposed Development will be re-used in a manner that is compatible with the Waste Framework Directive and associated regulations.	▪ Construction	ES Appendix 2.10 (Document Reference 6.4.2.10)

Management Plan	Purpose	Stage	Document reference
Outline Site Waste Management Plan (SWMP)	Sets out how the Proposed Development will manage resources efficiently, and measures to prevent and minimise waste.	<ul style="list-style-type: none"> Construction 	ES Appendix 2.11 (Document Reference 6.4.2.11)
Outline Soil Resources Management Plan (SRMP)	Sets out the overall approach to managing soil resources affected by the Proposed Development.	<ul style="list-style-type: none"> Construction 	ES Appendix 2.12 (Document Reference 6.4.2.12)
Archaeological Management Strategy (AMS)	Sets out the management of archaeological remains, both known and currently unknown, during construction.	<ul style="list-style-type: none"> Construction 	ES Appendix 8.5 (Document Reference 6.4.8.5)
Outline Battery Fire Safety Management Plan	Sets out the key measures to minimising the chances of a battery fire event and fire spread in the event of a fire. Sets out the proposed operational response to a fire event.	<ul style="list-style-type: none"> Operation 	ES Appendix 2.13 (Document Reference 6.4.2.13)
Landscape and Ecological Management Plan (LEMP)	Sets out the management of the landscape and ecological features of the Proposed Development.	<ul style="list-style-type: none"> Construction Operation Decommissioning 	ES Appendix 2.14 (Document Reference 6.4.2.14)
Outline Public Rights of Way (PRoW) Management Plan	Sets out how PRoWs would be managed to ensure they remain safe to use, and disruption to users of the PRoW is minimised.	<ul style="list-style-type: none"> Construction Operation Decommissioning 	ES Appendix 2.15 (Document Reference 6.4.2.15)
Arboricultural Impact Assessment (AIA)	Sets out the protection measures to be implemented during the construction phase, including activity supervision by a suitably qualified arboriculturist where appropriate.	<ul style="list-style-type: none"> Construction 	ES Appendix 7.7 (Document Reference 6.4.7.7)
Outline Decommissioning Environmental Management Plan (DEMP)	Sets out how negative environmental impacts will be minimised decommissioning.	<ul style="list-style-type: none"> Decommissioning 	ES Appendix 2.7 (Document Reference 6.4.2.7)

2.2. Assumptions

- 2.2.1. This ~~outline~~ CTMP is currently in the outline stage and is based on current information on the Proposed Development at the time of submission of the DCO application. A detailed CTMP will be produced following the appointment of a PC prior to the commencement of construction, based on this outline CTMP and detailed design information available at the time of preparation.

- 2.2.2. It is highlighted that communication with Stockton Borough Council (SBC) and Darlington Borough Council (DBC) will be required in the development of the detailed CTMP to safely and effectively deliver the construction phase of the Proposed Development.
- 2.2.3. This outline CTMP establishes the principles (rather than the full details) for the routing of HGVs and staff travel to the Proposed Development. It also includes recommendations for managing the impact of construction traffic within the Study Area.
- 2.2.4. It has been assumed that the hours of construction will be restricted to 08:00-18:00 Monday to Friday and 08:00-13:00 on Saturdays, with no activity on Sunday or Bank/Public Holidays.

2.3. Study Area

- 2.3.1. The Study Area captured by this outline CTMP has been determined using statutory consultation responses in conjunction with the EIA Scoping Opinion (Document Reference 6.4.4.2).
- 2.3.2. The Study Area is bound by the A1(M) to the west, the A198 to the north, A19 to the east and A66 to the south.
- 2.3.3. Norton substation is included in the planning boundary of the Proposed Development (the Order Limits), however, due to the minimal amount of traffic expected at the substation site, the Norton substation site has not been included in the outline CTMP.

2.4. Stakeholder engagement

- 2.4.1. Details regarding statutory consultation events and stakeholder engagement can be viewed in the Consultation Report (Document Reference 5.1).

3. The Proposed Development

3.1. The Proposed Development

- 3.1.1. The Proposed Development is a renewable energy scheme, covering an area of approximately 490 hectares (ha), and comprising solar photovoltaic (PV) panels, on-site Battery Energy Storage Systems (BESS), associated infrastructure as well as underground cable connections between panel areas and to connect to the existing National Grid Substation at Norton. The Proposed Development will have the capacity to generate over 50 Megawatts (MW) of electricity. The Proposed Development is located in the north-east of England.
- 3.1.2. A full description of the Proposed Development and a detailed description of the design and environmental mitigation is provided in ES Chapter 2 The Proposed Development (Document Reference 6.2.2).

3.2. Proposed Development Location

- 3.2.1. The majority of the Proposed Development is located within the administrative boundary of Darlington Borough Council, with a section of the cable route situated within the administrative boundary of Stockton-on-Tees Borough Council. A very small section of the Order Limits is within the administrative boundary of Durham County Council.
- 3.2.2. The Order Limits and surroundings comprise of agricultural fields, interspersed with individual trees, hedgerows, farm access tracks, woodlands and local farm holdings. There are several local villages located within close proximity to the Proposed Development, including Brafferton, Newton Ketton, Great Stainton, Bishopton and Old Stillington village to the north.
- 3.2.3. The Order Limits for the Proposed Development are shown in ES Figure 1.1 Location Plan (Document Reference 6.3.1.1).

3.3. Site Accessibility

Strategic Highway Network

- 3.3.1. The surrounding Strategic Road Network (SRN) is comprised of;
- The A189 to the north;
 - The A19 to the east;
 - The A66 to the south; and
 - The A1(M) to the west of the Proposed Development.

Local Highway Network

- 3.3.2. The Local Highway Network is comprised of single carriageway rural roads subject to National Speed Limits.
- 3.3.3. Traffic surveys were conducted in 2022 to better understand baseline conditions and traffic composition. The traffic survey locations are shown on ES Figure 12.1 Proposed Access Routes and Survey Locations (Document Reference 6.3.12.1).
- 3.3.4. Further information on the local network is presented in the accompanying Transport Statement (Document Reference 6.4.12.1). The local roads used to access each Panel Area are listed in Table 3-1 and shown in ES Figure 12.1 in Appendix A.

Table 3-1 Local Roads used to access each Panel Area

Panel Area	Access Road(s)
Panel Area A: Brafferton	<ul style="list-style-type: none"> High House Lane Unnamed farm tracks off Brafferton Lane
Panel Area B: Hauxley Farm	<ul style="list-style-type: none"> Unnamed farm track off Lodge Lane
Panel Area C: Byers Gill Wood	<ul style="list-style-type: none"> Bishopton Lane Elstob Lane
Panel Area D: Great Stainton	<ul style="list-style-type: none"> Elstob Lane Unnamed Road off The Green, Bishopton
Panel Area E: West of Bishopton	<ul style="list-style-type: none"> Unnamed road off The Green
Panel Area F: North of Bishopton	<ul style="list-style-type: none"> Unnamed road on the western boundary of the site, to the north of the Green, and existing farm tracks
Norton Substation	<ul style="list-style-type: none"> Existing access from Letch Lane
Underground Cables	<ul style="list-style-type: none"> To be accessed from within Panel Areas and work undertaken along the cable route. Ongoing access would only be required should a problem occur.

Other Transport Modes

- 3.3.5. Details relating to the accessibility of the Order Limits via public transport, cycling and on foot are provided within the Transport Statement (Document Reference 6.4.12.1).
- 3.3.1. It is noted that there is an extensive network of public rights of way (PRoW) within the Proposed Development and surrounding area. Further details can be found in ES Appendix 2.14 PRoW Management Plan (Document Reference 6.4.2.14).
- 3.3.2. It should be noted that the majority of construction workers are expected to travel to and from the Order Limits by vehicle due to the remote location of the Proposed Development and lack of access by public transport.

4. Future Highway Network

4.1. Future Network Changes

- 4.1.1 Developments of a similar nature within close proximity of the Proposed Development have been identified within ES Chapter 12 Traffic and Transport (Document Reference 6.2.12). Reference should be made to this chapter for further information on these. This outline CTMP accounts for the future conditions on the highway network.

5. Construction Movements

5.1. Introduction

- 5.1.1. This section provides a summary of the forecast HGV and staff vehicle movements that are estimated to be generated during the construction phase of the Proposed Development, based on the proposed construction programme.

5.2. Construction Programme

- 5.2.1. It is estimated that the construction programme will be approximately 12-18 months in length, although this could extend to up to 18-24 depending on how the site is constructed. The peak of construction would see three Panel Areas being constructed at the same time.
- 5.2.2. The worst case scenario, in terms of transport trips on the network, would be the shorter programme as it would condense trips into a shorter period of time. A 12-18 month construction programme has therefore been assumed for the purpose of this Outline CTMP. In both scenarios, the peak period would be when three Panel Areas are under construction.
- 5.2.3. The final programme will be dependent on the detailed layout design and potential environmental constraints on the timing of construction activities.
- 5.2.4. The installation of solar PV modules does not involve any complex construction process or practices and therefore risk of delay beyond the programme would largely be driven by external factors, such as adverse weather conditions.
- 5.2.5. Many component parts of the Proposed Development would arrive on-site ready to be installed.

5.3. Construction Vehicle Movements

HGVs

- 5.3.1. Construction traffic has been estimated using data from two other JBM Solar UK based solar farm sites. Based upon the trip generation from these previous sites, and the size of the Proposed Development, it is forecast that each Panel Area could generate on average six HGV trips (12 movements) per Panel Area, per day, during the construction phase. Hence, if all Panel Areas were to be constructed simultaneously this would equate to a total of 36 construction HGV trips (72 movements) across the Order Limits per day.
- 5.3.2. As it is anticipated that a maximum of three Panel Areas will be constructed at any given time, a maximum of 18 HGV trips (36 movements) will be generated per day.

Abnormal Loads

- 5.3.3. It is expected that the majority of construction vehicles accessing the Panel Areas will fall into the 'normal' size category (i.e. transit vans and HGVs).
- 5.3.4. However, there is expected to be two abnormal load deliveries to Panel Area C of the Proposed Development. Both abnormal loads relate to the delivery of sub-station components and are considered abnormal due to the weight of the load rather than the load's dimensions. The weight of these loads would exceed the threshold of 44 tonnes for a normal load.
- 5.3.5. The abnormal loads are expected to reach the substation site from the A66, therefore we have assigned the route as the same as the access to/from Panel Area C, via the A66. The abnormal load route is shown in ES Figure 12.1 Proposed Access Routes and Survey Locations (Document Reference 6.3.12.1).
- 5.3.6. Prior to the movement of the abnormal load, extensive public awareness is required to allow residents to plan their journeys to avoid disruption. The haulage contractor shall remain responsible for obtaining the necessary permits from the relevant road and bridge authorities along the route.
- 5.3.7. Local residents along the route will be informed when the abnormal load is travelling along the route to ensure that interaction between the local community and abnormal load delivery vehicles are minimised.
- 5.3.8. It will be the responsibility of the operator of the abnormal load to notify the authorities following the Department for Transport requirements at the time the application is required. The authorities may advise an alternative route to the one shown in this Outline CTMP, but for the purpose of developing an Outline CTMP, the most appropriate route at this time has been identified.

Site Components

- 5.3.9. The plant requirements for the construction works are listed below;
- Piling Rigs;
 - Mini Excavator;
 - Excavator;
 - Mobile Crane;
 - Crane;
 - Transformers, pre-assembled battery arrays; structural steel work;
 - Crawler Dozer;
 - Telehandler;
 - Mobile Platforms/Cherry Pickers;
 - Drilling equipment

- 5.3.10. The above is expected to be sourced locally and will be delivered to the Proposed Development either individually driven (larger units) and/or by plant haulage.

Staff Vehicles

- 5.3.11. Employee numbers have also been estimated using data from other JBM Solar UK based solar farm sites. During the peak, when there could be three Panel Areas under construction, there is estimated to be demand for 300 construction workers per day (100 staff members per Panel Area, across a maximum of three Panel Areas under construction at any one time).
- 5.3.12. As set out in the Transport Statement (Document Reference 6.4.12.1), due to the rural nature of the Proposed Development site, in conjunction with the lack of public transport in the vicinity of the site, it is anticipated that construction staff will access the site via large cars (seven seaters) or minibuses. Mitigation measures concerning staff transport are detailed in ES Appendix 2.6 Outline CEMP (Document Reference 6.4.2.6).
- 5.3.13. Car sharing/the use of minibuses will be encouraged for local construction workers and the employee trip demand has therefore been based on an average car occupancy rate of 7 persons per vehicle; this factor has been informed by experience from solar farms elsewhere. The Applicant will undertake monitoring of this measure through vehicle occupancy surveys.
- 5.3.14. It is therefore anticipated that there will be 15 trips (30 two-way movements) per day, per Panel Area and a maximum of 45 staff trips (90 two-way movements) added onto the network each day.
- 5.3.15. It is assumed that construction workers would arrive to the Order Limits within the hour prior to a shift and depart from the Order Limits within the hour after completing a shift. Therefore, staff would arrive between the hours of 07:00-08:00 and depart between 18:00-19:00 (Monday-Friday) and 13:00-14:00 (Saturday).

Construction Vehicle Distribution

- 5.3.16. To summarise, it is anticipated that during the construction phase, there will be a total of 6 HGV deliveries per Panel Area per day (12 two-way movements). A maximum of three Panel Areas are expected to be constructed at any given time. Therefore, it is anticipated that the maximum number of HGVs, associated with the proposed development, will be 18 trips per day (36 two-way movements).
- 5.3.17. The number of staff trips is estimated to reach a maximum of 45 staff trips (90 two-way movements) on the network each day.
- 5.3.18. The total number of trips associated with the Proposed Development and their distribution on the network can be seen Figure 12.3 Network Diagram (Document Reference 6.3.12.3).

- 5.3.19. The distribution of these trips (i.e. the proposed routing for HGVs travelling from the SRN to each panel area) has been influenced by statutory consultation responses and is as follows:
- Panel Area A: HGVs will travel from the A1(M) and access the Panel Area via A167, Lime Lane and Aycliffe Lane. Vehicles will then access the Panel Area via an unnamed farm track off Brafferton Lane or via high House Lane (Brafferton);
 - Panel Area B: HGVs will travel from the A1(M) and access the Panel Area via A167, Lime lane and Lodge Lane;
 - Panel Area C: HGVs will travel from the A66 and access the Panel Area via Bishopton Lane/Elstob Lane;
 - Panel Area D: HGVs will travel from the A66 and access the Panel Area via Bishopton Lane and Elstob Lane;
 - Panel Area E: HGVs will travel from the A1(M) and access the Panel Area via A167, Lime Lane, Lodge Lane, an unnamed road east of Great Stainton, an unnamed road north of Bishopton and an unnamed road east of The Green; and
 - Panel Area F: HGVs will travel from the A1(M) and access the Panel Area via A167, Lime Lane, Lodge Lane, an unnamed road east of Great Stainton, an unnamed road north of Bishopton.
- 5.3.20. An image of the proposed access routes to each Panel Area is shown in ES Figure 12.1 Proposed Access Routes and Survey Locations (Document Reference 6.3.12.1).
- 5.3.21. The Applicant would not route construction related vehicles through Durham's Air Quality Management Areas (AQMA).

Operational Trips

- 5.3.22. There is expected to only be occasional maintenance trips once the Proposed Development is operational.
- 5.3.23. Based on the operation of other sites, the total trips during the operational phase of the Proposed Development is anticipated to be around 73 operational trips per year (146 movements a year), equating to 0.4 trips per day (0.8 movements). The operational access points will use the same entrance to the Panel Areas as during the construction period.

Decommissioning Trips

- 5.3.24. Decommissioning of the Proposed Development could give rise to the same level of forecast trip generation as the construction phase of the Proposed Development. Therefore, the construction stage will be used as a proxy to determine the potential impacts of the decommissioning phase.
- 5.3.25. This Outline CTMP sets out how vehicle access to and from the Proposed Development will be managed, and it is expected that the general principles agreed to

minimise disruption during construction will be reviewed and applied during decommissioning, as outlined in the DEMP (Document Reference 6.4.7).

6. Site Access, Parking and Routing

6.1. Introduction

- 6.1.1. This section will set out the likely access, parking numbers and routing to the Proposed Development, split out into each Panel Area.
- 6.1.2. Advised access routes to each Panel Area can be seen in ES Figure 12.1 Proposed Access Routes and Survey Locations (Document Reference 6.3.12.1) provided in Appendix A.
- 6.1.3. Appendix B contains detailed plans of each access to be used by construction vehicles. The drawings show the tracking of a HGV entering and leaving each site, and the visibility available at each access junction.
- 6.1.4. ES Figure 2.21 Construction Compounds and Access Routes (Document Reference 6.3.2.21) presents the construction compound locations and access points. One compound would be required in each Panel Area for the construction of the Proposed Development. This would mean that construction activities and the use of the compound in each Panel Area is kept to a shorter period of time when compared to all construction activities being based on a single, main compound. The temporary construction compounds would contain construction worker welfare facilities, a site office, limited parking, wheel wash area, plant and machinery storage, Heavy Goods Vehicle (HGV) / delivery turning area and waste storage areas.
- 6.1.5. The surrounding SRN is comprised of the A1(M) to the west of the Order Limits, and the A66(T) to the south. The Proposed Development is also accessible from the A19(T) to the east. The highway network serving each Panel Area can be described as follows:
 - Panel Area A: Brafferton
 - From the A1(M) Junction 59, access to Panel Area A would be via the A167 onto Lime Lane and Aycliffe Lane. Both Lime Lane and Aycliffe lane are rural roads, subject to the national speed limit, with a footway on one side of the carriageway. Vehicles will then access the Panel Area via an existing unnamed farm track off Brafferton Lane or via High House Lane (Brafferton).
 - Panel Area B: around Hauxley Farm
 - Vehicles will travel from the A1(M) and access the Panel Area via A167, Lime lane and Lodge Lane. Both Lime Lane and Lodge Lane are rural, single-carriageway roads that are subject to the national speed limit.
 - Panel Area C: Byers Gill Wood
 - Panel Area C is centrally located within the Order Limits however, the closest strategic road is the A66. Therefore, it is expected that HGV movements will be via the A66, connecting to Bishopton Lane/Elstob Lane. Bishopton Lane and Elstob Lane are rural roads with no footpaths.

- Panel Area D: Great Stainton
 - Panel Area D has the same access routes as Panel Area C, as it is also located off Bishopton Lane, North of Panel Area C.
- Panel Area E: West of Bishopton
 - The existing access into Panel Area E is located off the rural road that connects to Elstob Lane at a priority T-junction. Vehicular access to Panel Area E is expected to be via the A167, Lime Lane, Lodge Lane and an unnamed road east of Great Stainton and an unnamed road west of Bishopton.
- Panel Area F: North of Bishopton
 - Panel Area F is expected to be accessed via the A1(M) and will access the Panel Area via A167, Lime Lane, Lodge Lane and an unnamed road east of Great Stainton and an unnamed road north of Bishopton. These C-roads, with the national speed limit in place, have no footpaths.

6.2. Panel Area A

- 6.2.1. During the construction phase, Panel Area A will be served by two existing access points. Access to the northern section of Panel Area A is via High House Lane (Brafferton). Access to the southern section of Panel Area A is via an unnamed farm track accessed via Aycliffe Lane/Brafferton Lane.

Car Parking

- 6.2.2. It is expected that the temporary construction compound located in Panel Area A will provide sufficient car parking for staff. It is expected that at least 15 car parking spaces will be provided.

Constraints

- 6.2.3. A site visit to review the existing conditions at the access locations was undertaken in August 2023.
- 6.2.4. The existing access point to the southern section of Panel Area A is narrow and located on a bend in the road with limited visibility and space to manoeuvre. Therefore, it is advised that HGVs arrive and depart the access point via Aycliffe Lane, avoiding the sharp turn onto Brafferton Lane to the south.
- 6.2.5. The access point on Aycliffe Lane/Brafferton Lane is a single track road. Therefore;
 - the timings of HGVs will need to be planned so that there will be no conflicting movements on the lane; and
 - Suitable traffic management should be agreed with Darlington Borough Council to ensure safe entrance and exit.
- 6.2.6. There is a likely requirement for tree pruning at the access point to allow for safe HGV access. As such, it is recommended that the Principal Contractor undertakes a review of the conditions of the access point on Aycliffe/Brafferton Lane prior to construction in

order to determine any requirements and discuss any changes, such as vegetation clearance, with the landowner.

Access Drawings

- 6.2.7. Drawing BGS-ARP-XX-XX-DR-CH-0002 in Appendix B shows the access off Brafferton Lane. The drawing shows that sufficient visibility is achieved in both directions based on the 85th percentile speed (36mph) of the road. A railway corridor is located to the left of the access but visibility within the adopted highway boundary extends to 108.9m.
- 6.2.8. Drawing BGS-ARP-XX-XX-DR-CH-0003 in Appendix B shows the access off High House Lane. The drawing shows that visibility to the left is limited, but at this location High House Lane is a private road providing access to agricultural properties only. As High House Lane is single track from the village it will be necessary to manage arrivals and departures – this will be the responsibility of the Principal Contractor and secured through the detailed CTMP to be submitted and agreed with Darlington Borough Council (DBC).

6.3. Panel Area B

- 6.3.1. Access to Panel Area B will be via an existing unnamed farm track located off Salters Lodge Lane.

Car parking

- 6.3.2. It is expected that the temporary construction compound located in Panel Area B will provide sufficient car parking for staff. It is expected that at least 15 car parking spaces will be provided.

Constraints

- 6.3.3. The access road is a single track road, therefore;
- the timings of HGVs will need to be planned so that there will be no conflicting movements on the lane; and
 - Suitable traffic management should be agreed with Darlington Borough Council to ensure safe entrance and exit.

Access Drawing

- 6.3.4. Drawing BGS-ARP-XX-XX-DR-CH-0004 in Appendix B shows the access off Lodge Lane. The drawing shows that adequate visibility is achieved to the left based on the road design speed (60mph), visibility to the right is also achieved based on 85th percentile speed of the road (48mph).

6.4. Panel Area C

- 6.4.1. The access route to Panel Area C is via Bishopton lane/Elstob lane. The access into the Panel Area and substation site will use an established field access.

Car parking

- 6.4.2. It is expected that the temporary construction compound located in Panel Area C will provide sufficient car parking for staff. It is expected that at least 15 car parking spaces will be provided.

Access Drawing

- 6.4.3. Drawing BGS-ARP-XX-XX-DR-CH-0005 in Appendix B shows the access off Bishopton Lane / Elstob Lane. The drawing shows that the required visibility can be achieved to the right based on road design speed (60mph), with the available visibility just under the design speed requirement (215m) to the left, and well within the recommended visibility splay for the 85th percentile road speed (53mph).

6.5. Panel Area D

- 6.5.1. Panel Area D has two access points. The western area of Panel Area D will be accessed via Elstob lane. The eastern section of Panel Area D will be accessed via an unnamed road to the west of The Green, Bishopton.
- 6.5.2. The accesses will be located on a sections of carriageway where the required visibility splays and Sight Stopping Distances (SSDs) will be achievable in each direction.

Car Parking

- 6.5.3. It is expected that the temporary construction compound located in Panel Area D will provide sufficient car parking for staff. It is expected that at least 15 car parking spaces will be provided.

Constraints

- 6.5.4. The western access point to Panel Area D (Elstob Lane) is a single track road. Therefore;
- 6.5.5. the timings of HGVs will need to be planned so that there will be no conflicting movements on the lane; and
- Suitable traffic management should be agreed with Darlington Borough Council to ensure safe entrance and exit.

Access Drawings

- 6.5.6. Drawing BGS-ARP-XX-XX-DR-CH-0006 in Appendix B shows the access off Elstob Lane. The drawing shows that adequate visibility is achieved to the left based on road

design speed, and the visibility available to the right (115.7m) is just under the 85th percentile speed minimum requirement (120m).

- 6.5.7. Drawing BGS-ARP-XX-XX-DR-CH-0007 in Appendix B shows the access off the unnamed road located on the eastern boundary of the Panel Area. The drawing shows that the required visibility from the junction can be achieved in both directions.

6.6. Panel Area E

- 6.6.1. Panel Area E will be accessed via an unnamed road to the west of The Green, Bishopton.
- 6.6.2. The access will be located on a section of carriageway where the required visibility splays and Sight Stopping Distances (SSDs) will be achievable in each direction.

Car Parking

- 6.6.3. It is expected that the temporary construction compound located in Panel Area E will provide sufficient car parking for staff. It is expected that at least 15 car parking spaces will be provided.

Access Drawing

- 6.6.4. Drawing BGS-ARP-XX-XX-DR-CH-0008 in Appendix B shows the access off the unnamed road located on the northern boundary of the Panel Area. The drawing shows that visibility in both directions is below the recommended distance for the design speed of the road. However, the visibility requirements based on the 85th percentile speed (52mph) can be achieved in both directions.

6.7. Panel Area F

- 6.7.1. Access to Panel Area F will be via an unnamed road to the north of The Green, Bishopton.
- 6.7.2. The access will be located on a section of carriageway where the required visibility splays and Sight Stopping Distances (SSDs) will be achievable in each direction.

Car Parking

- 6.7.3. It is expected that the temporary construction compound located in Panel Area F will provide sufficient car parking for staff. It is expected that at least 15 car parking spaces will be provided.

Access Drawing

- 6.7.4. Drawing BGS-ARP-XX-XX-DR-CH-0009 in Appendix B shows the access off the unnamed road located on the western boundary of the Panel Area. Mill Lane was initially proposed as the access into Panel Area F, but following feedback during

consultation, the Mill Lane access was replaced with an access on the western boundary of the site to prevent the need for vehicles to travel through Bishopton Village. Vehicles accessing Panel Area F will travel to / from the site using routes to the north. The tracking indicates that the existing access will need to be widened slightly to the north to accommodate the HGV manoeuvre.

- 6.7.5. As this access was not initially included, the traffic survey in March 2023 did not include this road to gather speed information. However, the visibility that can be achieved in both directions is above the minimum that is required for a design speed of 85kph (53mph).

6.8. Norton Substation

- 6.8.1. Access to Norton Substation will be via the existing access point on Letch Lane. No traffic management measures are proposed as there will be minimal impact on the existing substation site.

7. Management Measures

7.1. Introduction

- 7.1.1. This section outlines the powers that would be granted by the DCO and the commitments made by the Applicant to ensure a safe and practical approach is taken to works regarding traffic management during the construction phase.
- 7.1.2. It also identifies who will be responsible for future updates to this Outline CTMP and at what stage(s) that will happen.
- 7.1.3. Additional mitigation measures are detailed in ES Appendix 2.6 Outline CEMP (Document Reference 6.4.2.6).

7.2. Project team roles and responsibilities

- 7.2.1. Overarching roles and responsibilities during the construction phase of relevance to the CTMP will likely include, but are not limited to:
- Site Manager – overall responsibility for activity onsite and will be based onsite full time.
 - Construction Project Manager - overall responsibility for ensuring all elements in the DCO, CTMP and all environmental legal and other requirements are implemented, and appropriately resourced, managed, reviewed and reported.
 - Environmental Manager - Responsible for the overall management of environmental aspects on site, ensuring environmental legislation and best practices are complied with, and environmental mitigation and monitoring measures identified are implemented. The Environmental Manager will oversee environmental monitoring on-site and carry out regular environmental site inspections, reporting and responding to any incidents or non-compliance. The Environmental Manager will liaise with relevant environmental bodies and other third parties as appropriate.
 - Community Liaison Officer – a Community Liaison Group will be set up in accordance with the relevant DCO requirement prior to construction and will continue through until final commissioning of the Proposed Development as a formal forum for local issues to be raised. A Community Liaison Officer will be appointed to lead discussions with local communities, and also act as the primary point of contact should there be any queries or complaints.
- 7.2.2. These roles and responsibilities are indicative and will be confirmed in the CTMP.
- 7.2.3. Regular staff briefings will be delivered to all staff working on site and this will include briefings in relation to highway safety and the provision of information in relation to the local transport network, any specific areas of risk or sensitivity in relation to highway safety.

7.3. Traffic Management and Signage

Traffic Management and Monitoring

- 7.3.1. This Outline CTMP recommends that the proposed Traffic Management and Monitoring during the construction phase should include:
- The provision of information to contractors/those travelling to the site such as:
 - Providing a copy of the CTMP;
 - Putting a map of the agreed routes online; and
 - Agreeing any necessary signage with the relevant Highway Authority.
- 7.3.2. If the site management notice that deliveries to the site are not using the correct routes as advised in the CTMP, the Applicant will ensure further action is taken by following up with the company responsible for the delivery to remind them of the agreed routes.

HGV Timing Restrictions

- 7.3.3. In order to reduce the potential impact of HGV deliveries, site management will be responsible for scheduling the arrival and departure times of deliveries to minimise the number of HGVs travelling to the Panel Areas during the network peak hours on the local highway network.
- 7.3.4. Deliveries will be scheduled to avoid morning and evening peak hours in order to reduce conflict with local residents' commute. Care will also be taken to avoid school arrival and departure times for those deliveries within proximity and the contractor would also consider restrictions to other specific locations such as Stillington Industrial Estate.

Banksmen and Site Management

- 7.3.5. It is recommended that suitable qualified and experienced banksmen be positioned at the proposed site accesses, to facilitate vehicle arrivals and departures, as well as to ensure internal vehicle movements are safely controlled during the construction phase. Visibility will be maximised between construction vehicles and other users at the crossing points (through hedgerow clearance for example) and advanced signage (subject to agreement with the Highway Authority) will be provided to warn users of the potential presence of construction vehicles. Manned controls will be provided at each access, with a default priority that construction traffic will give-way to other road users.

On-road Cable Routes

- 7.3.6. The Proposed Development retains some flexibility in relation to cable routing with both on-road and off-road (or a combination of both) possible. Although the Applicant's preference is to utilise off-road options wherever possible, avoiding impacts such as disruption to local access during construction works, some on-road cable works are likely and therefore considered as part of this Outline CTMP.

- 7.3.7. Any on-road cable works would ensure retained access for local communities, business and local facilities through the implementation of appropriate traffic management measures (e.g. single land closure with traffic light control). Works would be short-term and the final details in relation to programme, phasing and details of management measures would be agreed with the Local Highway Authority through the CTMP.
- 7.3.8. The draft DCO includes the relevant powers to undertake these works through Article 9, and the extent of highway that may be subject to cable works is set out in Schedule 3, should this emerge as the preferred option. These are also summarised in Table 7-1 and are shown on the Street Works, Public Rights of Way and Access Plans (Document Reference 2.3), as well as ES Figure 2.13 Underground Cable Routes (Document Reference 6.3.2.13).

Table 7-1 Highways forming potential on-road cable routes

Highway Subject to Street Works	Description
Unnamed Road, Brafferton	Short section of an unnamed road from High House Lane to Panel Area A, as shown by points A to B on Sheet 1 of the Street Works, Public Rights of Way and Access Plans.
High House Lane, Brafferton	A short section of High House Lane between points B and C as shown on Sheet 1 of the Street Works, Public Rights of Way and Access Plans.
The Green, Brafferton	Between High House Lane and Aycliffe Lane as shown by points C and D on sheet 1 of the Street Works, Public Rights of Way and Access Plans.
Aycliffe Lane, Brafferton	From the junction into Brafferton to its junction with Lime Lane, as shown by points D and E on sheet 1 of the Street Works, Public Rights of Way and Access Plans.
Lime Lane, Brafferton	Between its junction with Aycliffe Lane and Lodge Lane, as shown by points E and F on sheet 3 of the Street Works, Public Rights of Way and Access Plans.
Lodge Lane, Brafferton	Between its junction with Lime Lane to a point east of Preston Lodge, as shown by points F and G on sheet 3 Street Works, Public Rights of Way and Access Plans.
Elstob Lane, Great Stainton	South of Great Stainton between points H and I on sheets 4 and 5 of the Street Works, Public Rights of Way and Access Plans.
Unnamed Road, Great Stainton	Highway between Panel Area D and E as between points J and K on sheets 5 and 6 of the Street Works, Public Rights of Way and Access Plans.
Unnamed Road, Bishopton	Running west of Bishopton Beck between points L and K on sheet 6 of the Street Works, Public Rights of Way and Access Plans.
Redmarshall Road, Bishopton	Between its junction with High Street and Whitton Road / Kirk Hill as shown by points N and O on sheets 6 and 8 of the Street Works, Public Rights of Way and Access Plans.
Whitton Road	For a short section as show by points O and P on sheet 8 of the Street Works, Public Rights of Way and Access Plans.

Highway Subject to Street Works	Description
Kirk Hill	Between its junction with Redmarshall Road and Carlton Vlg as shown by points O and Q on sheet 8 of the Street Works, Public Rights of Way and Access Plans.
Carlton Vlg	Between Kirk Hill and Letch Lane, as shown by points Q and R on sheet 8 of the Street Works, Public Rights of Way and Access Plans.
Letch Lane	Between Carlton Vlg and the Norton substation as shown by points R and T on sheets 8 and 9 of the Street Works, Public Rights of Way and Access Plans.

- 7.3.9. The final cable routes and design will be confirmed through Requirement 3 of the draft DCO and the CTMP prepared on that basis by the appointed contractor.

7.4. Working hours

- 7.4.1. Working hours of construction of the Proposed Development are detailed below in Table 72 and vehicle movements will be aligned with these hours of working.

Table 7-2 Working Hours

Day(s)	Working Hours
Monday-Friday	08:00-18:00
Saturday	08:00-14:00
Sunday & Bank/Public Holidays	No work to take place.

- 7.4.2. Compliance with these working hours is secured via requirement 15 of the draft DCO (Document Reference 3.1).

7.5. Site Management and Delivery System

- 7.5.1. A dedicated Site Manager will be appointed for the management of the delivery booking system during the construction phase.
- 7.5.2. Deliveries will be scheduled to avoid morning and evening peak hours. This will avoid HGV traffic arriving during the morning peak hours, creating conflict with local residents' commute or school arrival and departure times. Construction personnel will be encouraged to car-pool, or to travel to the Proposed Development in minibuses.
- 7.5.3. During the construction phase and subject to agreement with the Local Highway Authority, clear construction warning signs will be placed on the roads leading to the Proposed Development access points, on the approach. The Panel Area entrance will also be appropriately signed. Access to the Proposed Development will be controlled by onsite personnel and all visitors will be asked to sign in and out of the site by security/site personnel. Site visitors will receive a suitable Health and Safety site induction and Personal Protective Equipment (PPE) will be worn.

- 7.5.4. To control, prevent and minimise dirt on the access route and emissions of dust and other airborne contaminants during the construction works, the following mitigation measures will also be implemented:
- Wheel washing equipment will be available and used onsite within the construction compound, where the site entrance / egress meets the local road network, as required, to prevent the transfer of dirt and stones onto the public highway. All drivers will be required to check that their vehicle is free of dirt, stones and dust prior to departing from the site. .. At this stage, it is anticipated that:
 - Wheel washing facilities will consist of a water bowser with pressure washer.
 - The bowser will contain water only and no other additives.
 - The Applicant is also committed to exploring the need for further provision of wheel washing facilities as part of the detailed design. This may include the use of specific wheel washing plant.
 - Dampening of site roads to minimise dust emissions;
 - Any soil stockpiles will be covered and / or lightly tracked when left for extended periods of time;
 - Drivers will adopt driving practices that minimise dust generation including a 5mph internal road speed limit; and
 - Any dust generating activities will be avoided or minimised, wherever practical, during windy conditions.
- 7.5.5. Once construction of the Proposed Development is complete, all machinery and equipment will be removed. The area will be regraded with the stockpiled topsoil to a natural profile.

7.6. Communications Strategy

- 7.6.1. A communications strategy will be developed by the Applicant to ensure that the measures contained within the CTMP are communicated to the workforce and local residents kept informed during the construction period.
- 7.6.2. The communication strategy is expected to include an information pack setting out the contractual requirements which will be provided to the contractors. Additionally, regular meetings will be held with contractors to discuss HGV management and to address any issues associated with travel to/from the Panel Areas, as well as to relay information including any restrictions and requirements which should be followed.
- 7.6.3. A Community Liaison Officer will be appointed to lead discussions with local communities, and also act as the primary point of contact should there be any queries or complaints.

7.7. Compliance and Enforcement

- 7.7.1. This Outline CTMP will be updated prior to commencement of construction and will become the responsibility of the Principal Contractor.
- 7.7.2. Pre-commencement condition surveys of HGV routes to site will be undertaken by the Principal Contractor and shared with the local highway authority. Regular inspections of these routes will subsequently be undertaken with any deterioration or damage attributable to the actions of the Applicant reported to the local highway authority. Measures to rectify this damage and restore the highway to its previous conditions would then be agreed within the highway authority.
- 7.7.3. The delivery routes will be communicated in advance by the Principal Contractor to all individuals and companies involved in the transport of materials and plant to and from the Proposed Development.
- 7.7.4. Additionally, signage will be erected, subject to agreement with the Highway Authority, along the advised construction routes informing drivers of the correct routes to take to / from each Panel Area.
- 7.7.5. Information signs will be erected at the Panel Areas which will include a telephone number for the public to report concerns. This telephone number will also be provided to the Local Authorities.

7.8. Best Practice

Recycling/Disposing of Waste

- 7.8.1. The Principal Contractor will be required to minimise the amount of waste removed from the Proposed Development.
- 7.8.2. The best practicable environmental options will be achieved at the Proposed Development to ensure compliance with the necessary UK and EU legislation for all site operations. Methods relating to waste can be confirmed upon the appointment of a contractor at the Proposed Development.

Noise and Vibration

- 7.8.3. The Principal Contractor will organise and undertake construction activities on site in a manner which demonstrates that Best Practicable Means (BPM) to control noise and vibration during activities is being adopted at all times. The Applicant, through its procurement exercises will require the Contractor to comply with the requirements of BS5288, 'Code of practice for noise and vibration control on construction and open sites'. Notwithstanding this general requirement and the other provisions set out in this report, the Contractor will specifically be required to:
- Maintain all equipment in good working condition and take care that all mufflers or other noise dampening features are correctly fitted and maintained.

- Staff will be trained in the correct use of equipment to ensure, inter alia, that it is only used for the purpose for which it has been designed.
- Assessments will be made at Site boundary to ascertain impact of noise / vibration on local residents during these periods of work; if deemed above acceptable levels, liaison with the client and adjoining properties will be undertaken to agree any further restrictions on working times.

Emissions, Dust and Dirt

- 7.8.4. The Principal Contractor is expected to follow best practice at all times to control and limit emissions of gaseous and particulate pollutants into the atmosphere from construction and demolition activities, including from vehicles and plant.
- 7.8.5. The Contractor is expected to meet the requirements of National Planning Practice Guidance (NPPG), including factors such as:
- Traffic volumes;
 - Vehicle speeds;
 - Congestion or traffic compositions;
 - The introduction of new point sources of air pollution, exposure of people to existing sources of air pollutants; and
 - The potential to give rise to air quality impacts at nearby sensitive receptors.
- 7.8.6. The Contract is further required to meet best practice guidelines as set out in The Institute of Air Quality Management (IAQM) guidance. The IAQM guidance provides a method for classifying the significance of effect from construction activities based on the 'dust magnitude' and proximity of the Proposed Development to the closest receptors. The guidance recommends that once the significance of an effect from construction is identified, the appropriate mitigation measures are implemented.

7.9. Monitoring and Review

- 7.9.1. This section will outline how often monitoring and reviews of the CTMP will be undertaken by the Principal Contractor.

Monitoring Strategy

- 7.9.2. The contractor will undertake monitoring as necessary to ensure compliance with the requirements of the final CTMP, and which will include the maintenance of records and traffic management measures.

Review

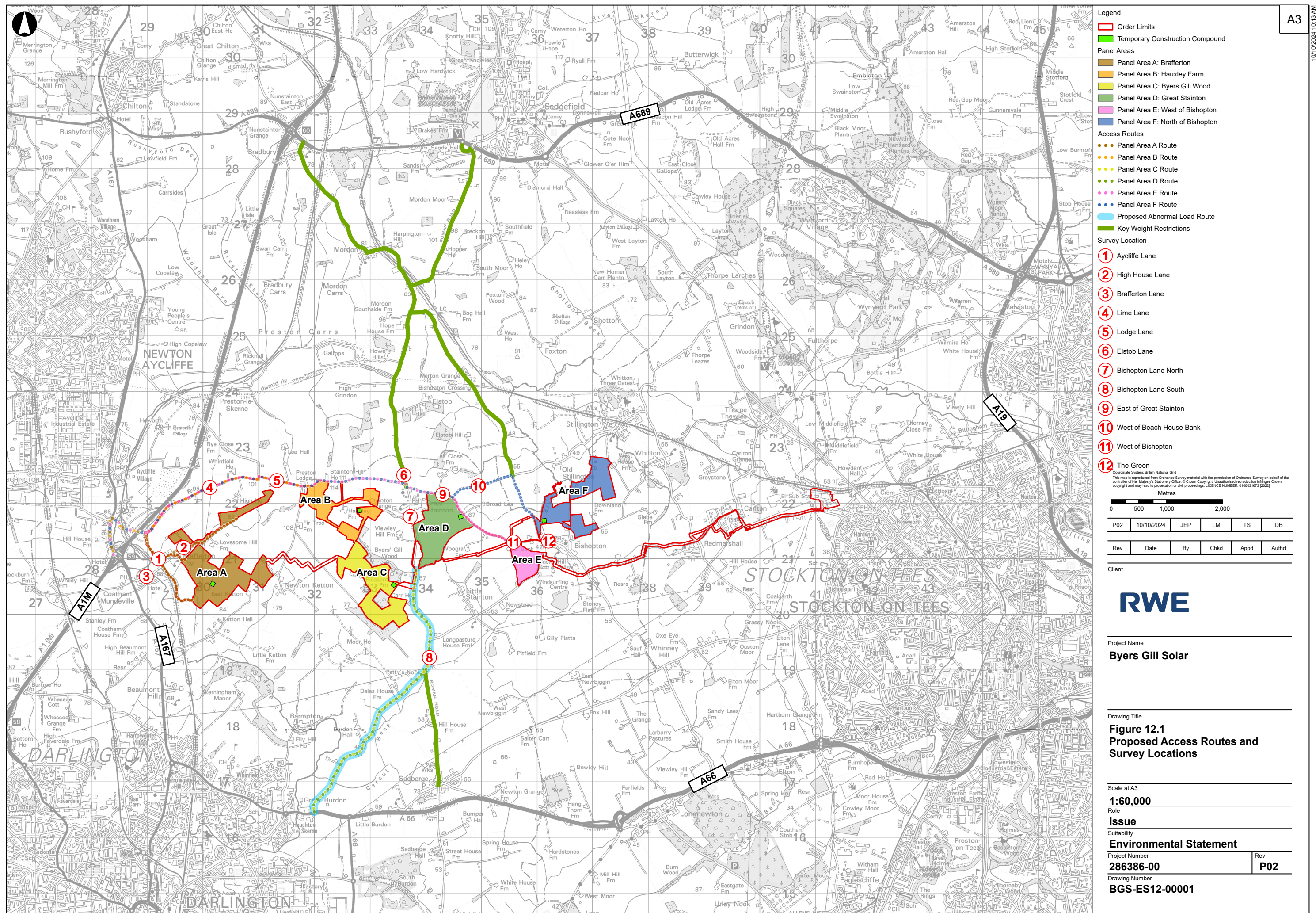
- 7.9.3. The CTMP will be reviewed on a regular basis to ensure proper adherence by construction staff.

- 7.9.4. In addition, the Environmental Manager will be responsible for the overall management of environmental aspects on site, ensuring environmental legislation and best practices are complied with, and environmental mitigation and monitoring measures identified are implemented. The Environmental Manager will oversee environmental monitoring on-site and carry out regular environmental site inspections, reporting and responding to any incidents or non-compliance.

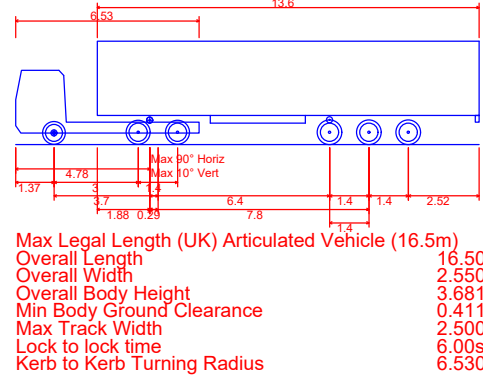
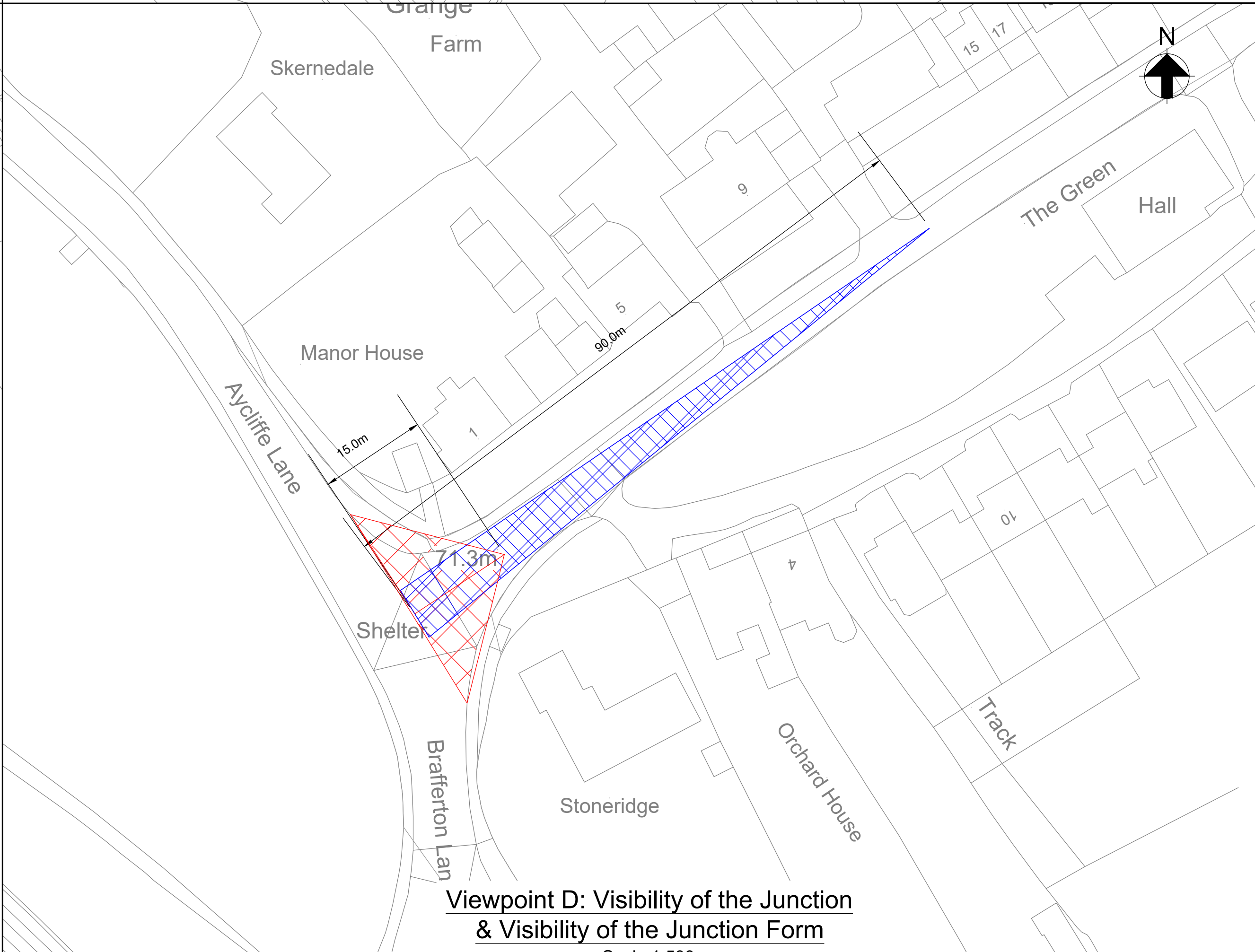
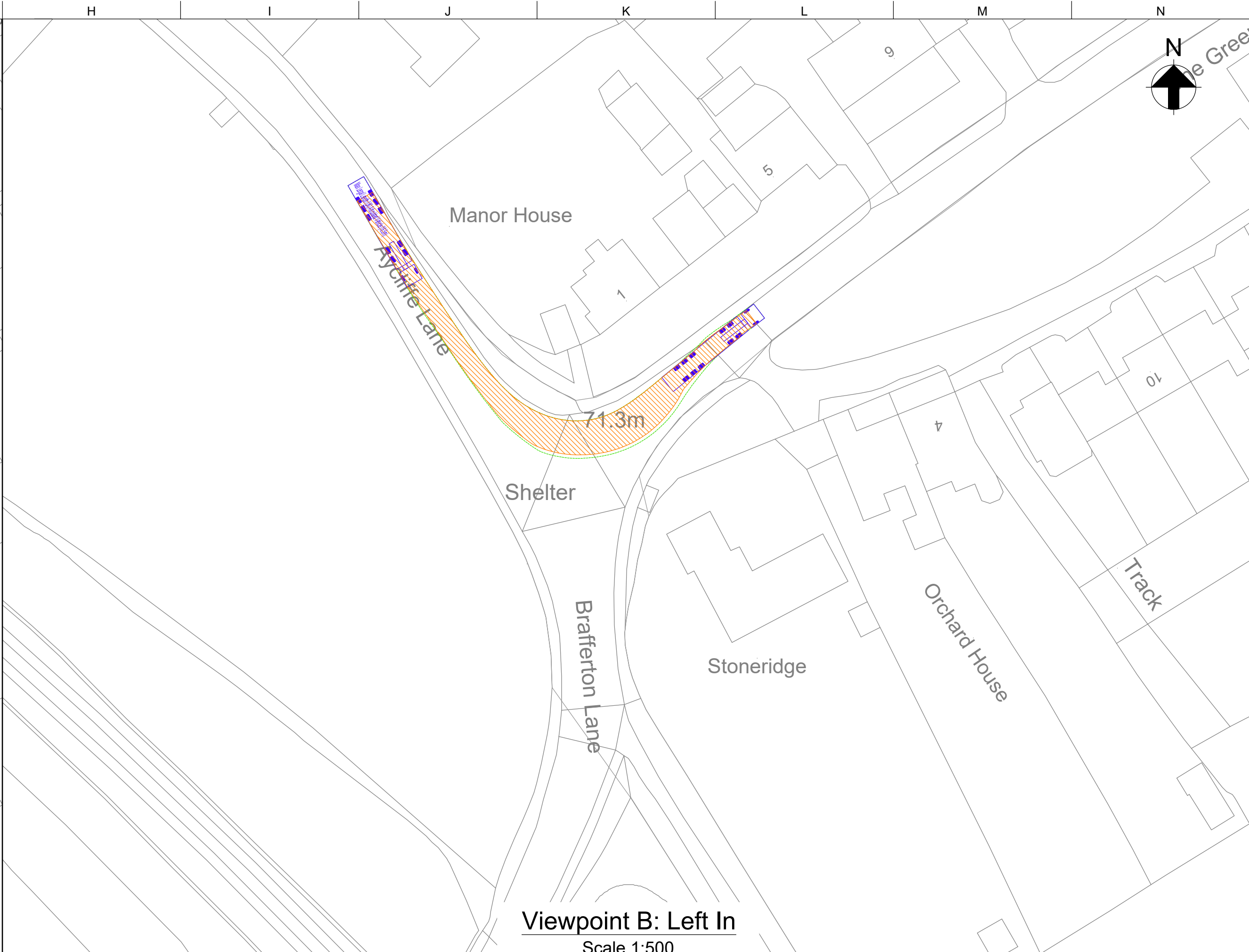
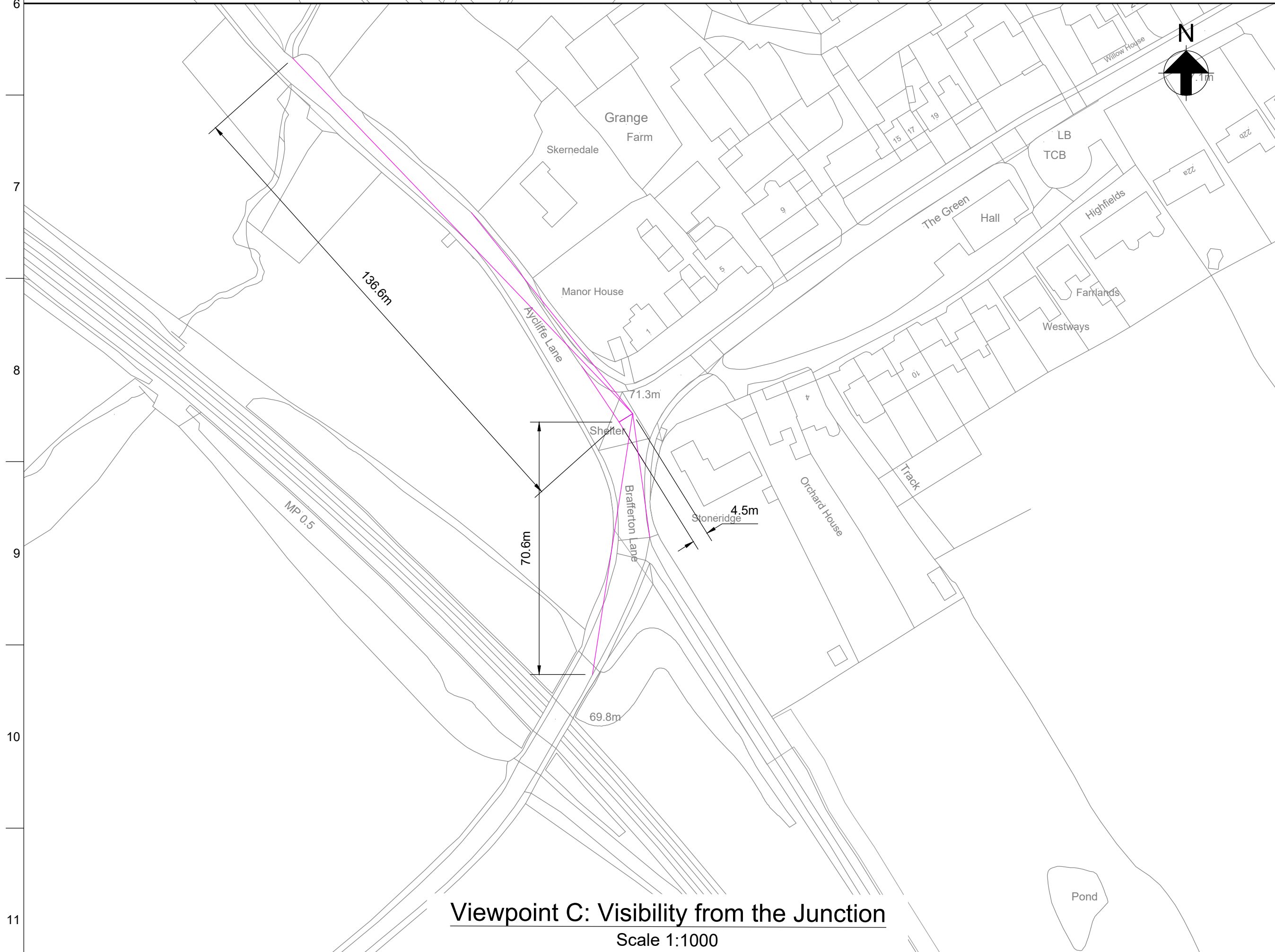
8. Conclusion

- 8.1.1. This Outline CTMP contains the overall framework for managing the movement of construction and delivery traffic to and from the Proposed Development, as well as considering the type of traffic it will generate. The traffic assessment for the operational and decommissioning phase, as assessed in the Transport Statement have also been considered.
- 8.1.2. It has recommended measures to manage traffic during the construction period, including the assignment of recommended routes, and considered any existing constraints at the access locations, albeit all access points are existing.
- 8.1.3. This Outline CTMP sets out a variety of specific mitigation measures that will be implemented during construction that will minimise the impact of the construction traffic on the environment and local communities, these include:
- Limitations on working times and HGV scheduling;
 - Site security and signage; and
 - Measures to control emissions of dust and other airborne contaminants.

**Appendix A – ES Figure 12.1 Proposed Access Routes and Survey Locations
(Document Reference 6.3.12.1)**



Appendix B – Access Drawings



Legend

- Vehicle Path
- Visibility from the Junction
- Visibility of the Junction Form
- Visibility of the Junction

Notes:

- Aycliffe Lane - 100kph design speed (60mph)
Stopping Sight Distance - 215m
One step below minimum - 160m
- Aycliffe Lane Average speed - 32mph
Aycliffe Lane 85th percentile speed - 36mph (Data collected over over 7 days in March 2023)
- Junction considered suitable for use to access panel Area A as it is an existing junction providing access into Brafferton Village.

Stopping Sight Distances (SSD)		
Design Speed kph	Desired Minimum (m)	One Step Below Desired Minimum (m)
120	295	215
100	215	160
85	160	120
70	120	90
60	90	70
50	70	50
*40	50	34

* Interpolated from Tees Valley Design Appendix 5.5 Table 5.5.1

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Issued for Comment and Review				
P02	08/10/24	DC	NH	---
Issued for Comment and Review				
P01	03/10/24	DC	NH	---
Issued for Comment and Review				
Rev	Date	By	Chkd	Appl

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Client

RWE

Project Title
Byers Gill Solar

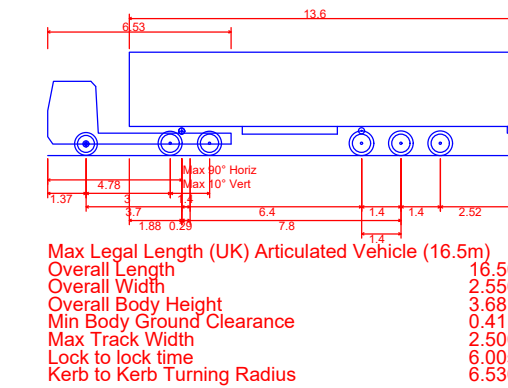
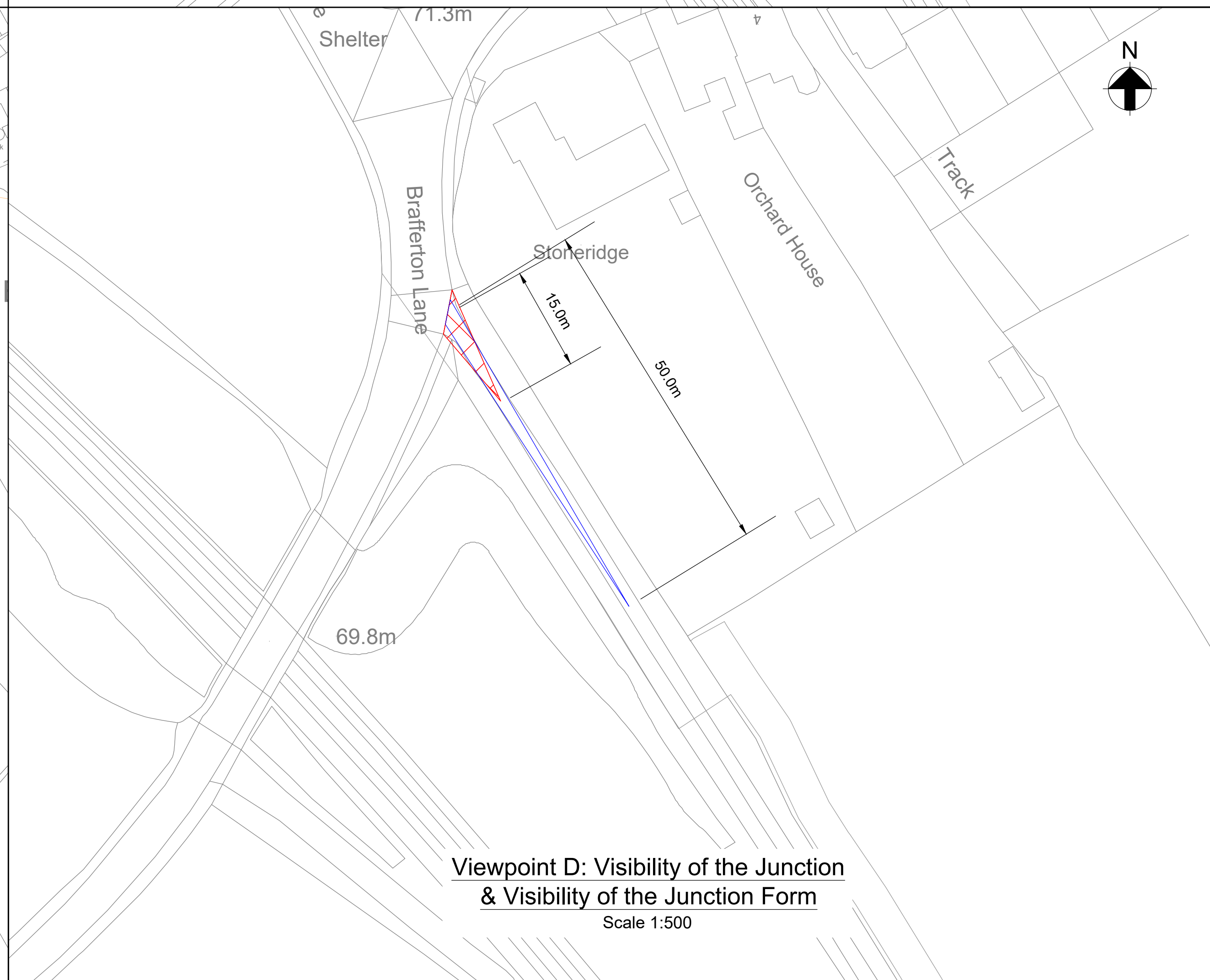
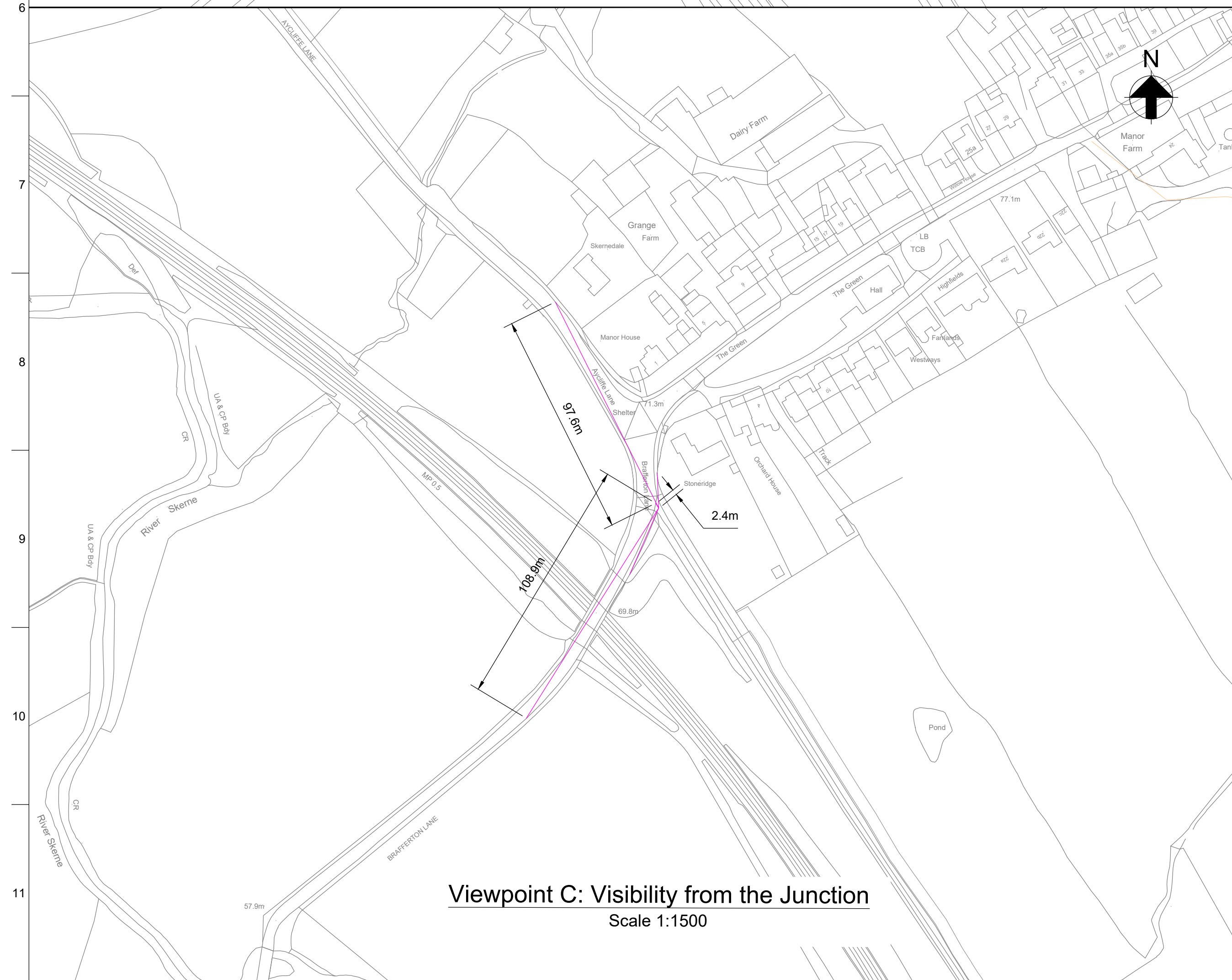
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Panel Area A
Vehicle Access - Aycliffe Lane/
Brafferton Lane/ The Green
Sheet 1 of 9

Scale at A1 1 : 1000 & 1 : 500

Role Civil

Suitability S0 - For Information

Arup Job No 285386-35	Rev P03
Name BGS-ARP-XX-XX-DR-CH-00001	



Legend



Notes:

1. Aycliffe Lane - 100kph design speed (60mph)
Stopping Sight Distance - 215m
One step below minimum - 160m
2. Aycliffe Lane Average speed - 32mph
Aycliffe Lane 85th percentile speed - 36mph
(Data collected over over 7 days in March 2023)

Stopping Sight Distances (SSD)		
Design Speed kph	Desired Minimum (m)	One Step Below Desired Minimum (m)
120	295	215
100	215	160
85	160	120
70	120	90
60	90	70
50	70	50
*40	50	34

* Interpolated from Tees Valley Design Appendix 5.5 Table 5.5.1

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Issued for Comment and Review				
P02	09/10/24	DC	NH	---
Issued for Comment and Review				
P01	03/10/24	DC	NH	---
Issued for Comment and Review				
Rev	Date	By	Chkd	Appd

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Client

Project Title
Byers Gill Solar

Drawing Title

Panel Area A

Vehicle Access

Brafferton Lane/ access Track

Sheet 2 of 9

Scale at A1 1:1500, 1:750 & 1:500

Role	Civil
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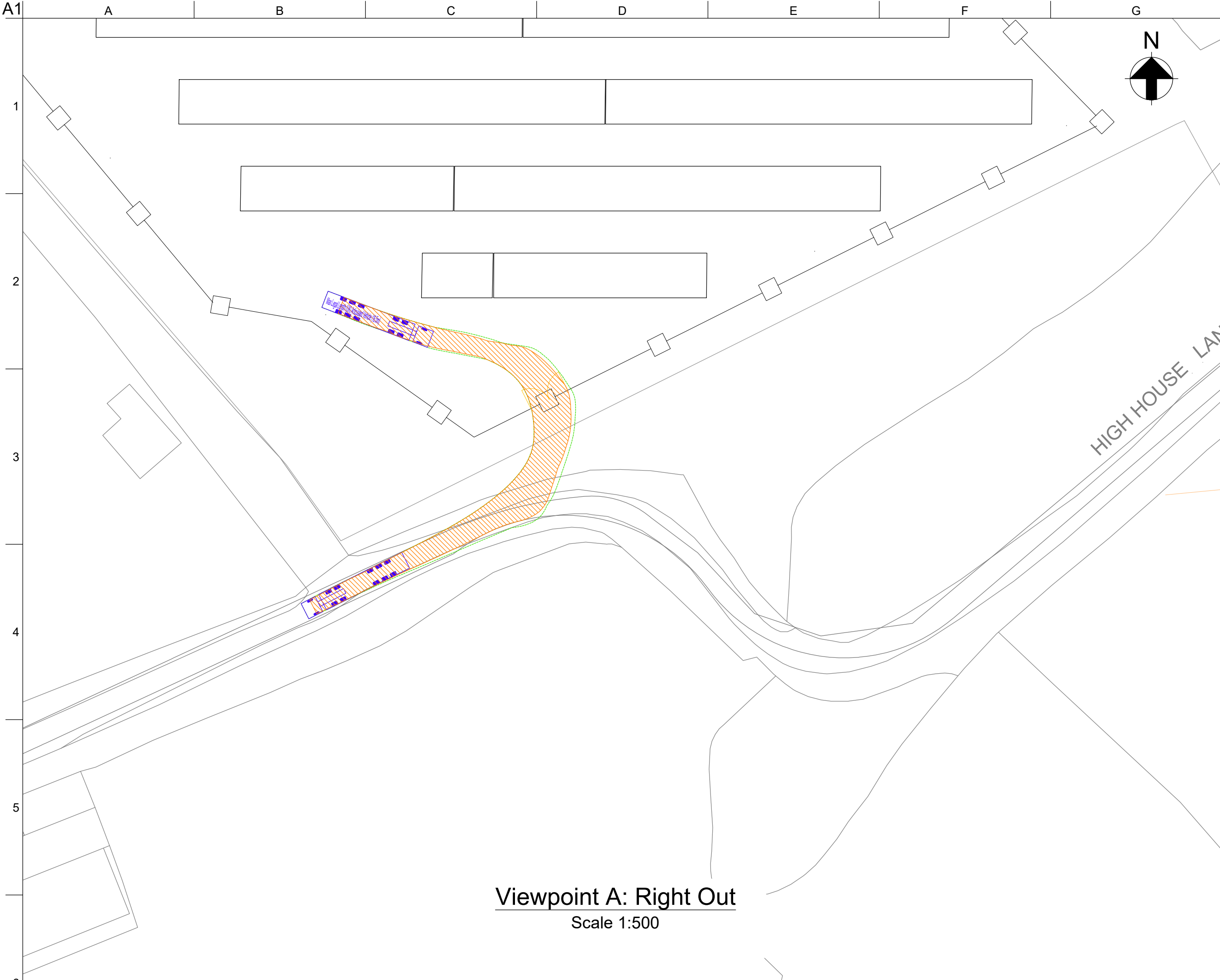
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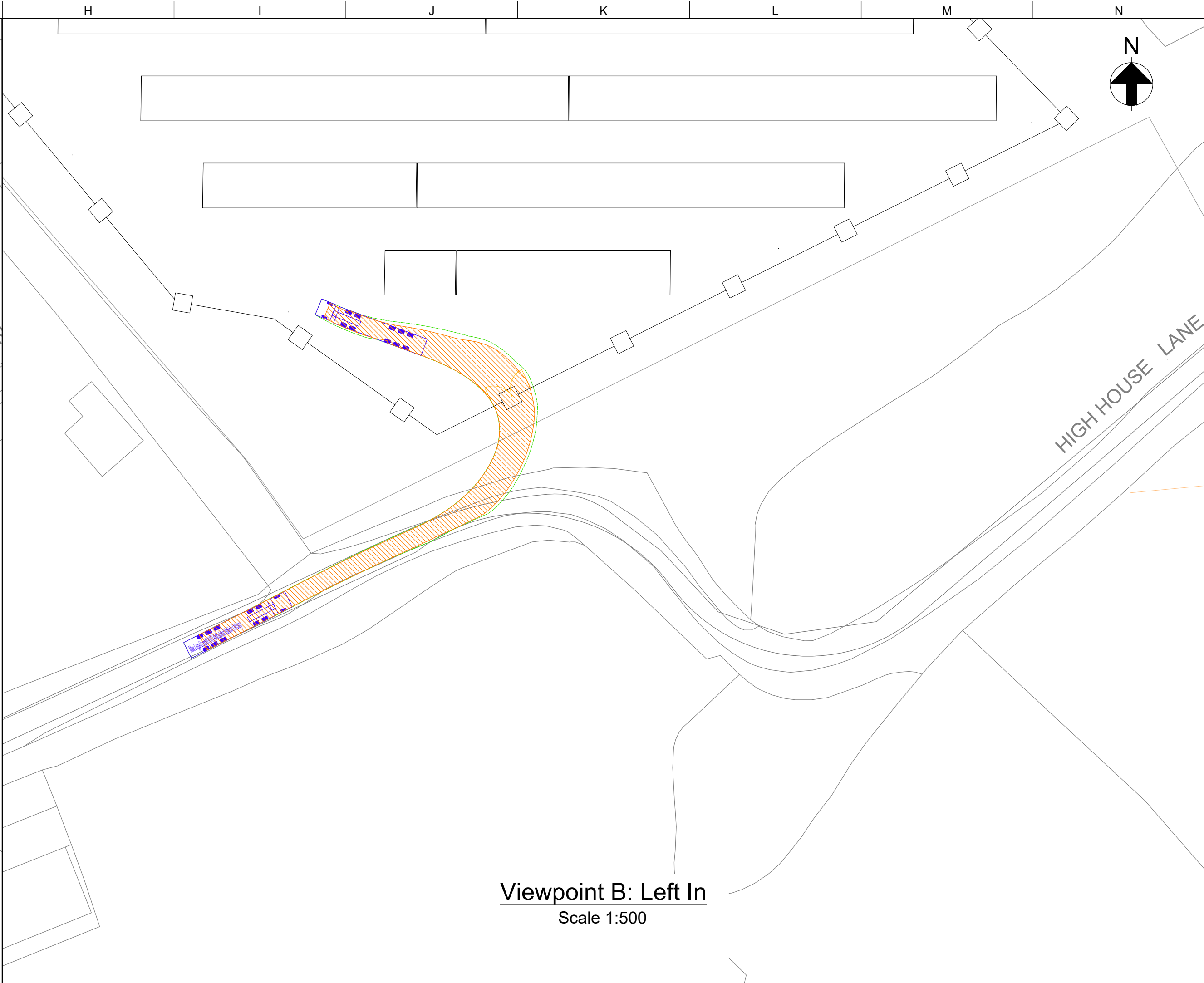
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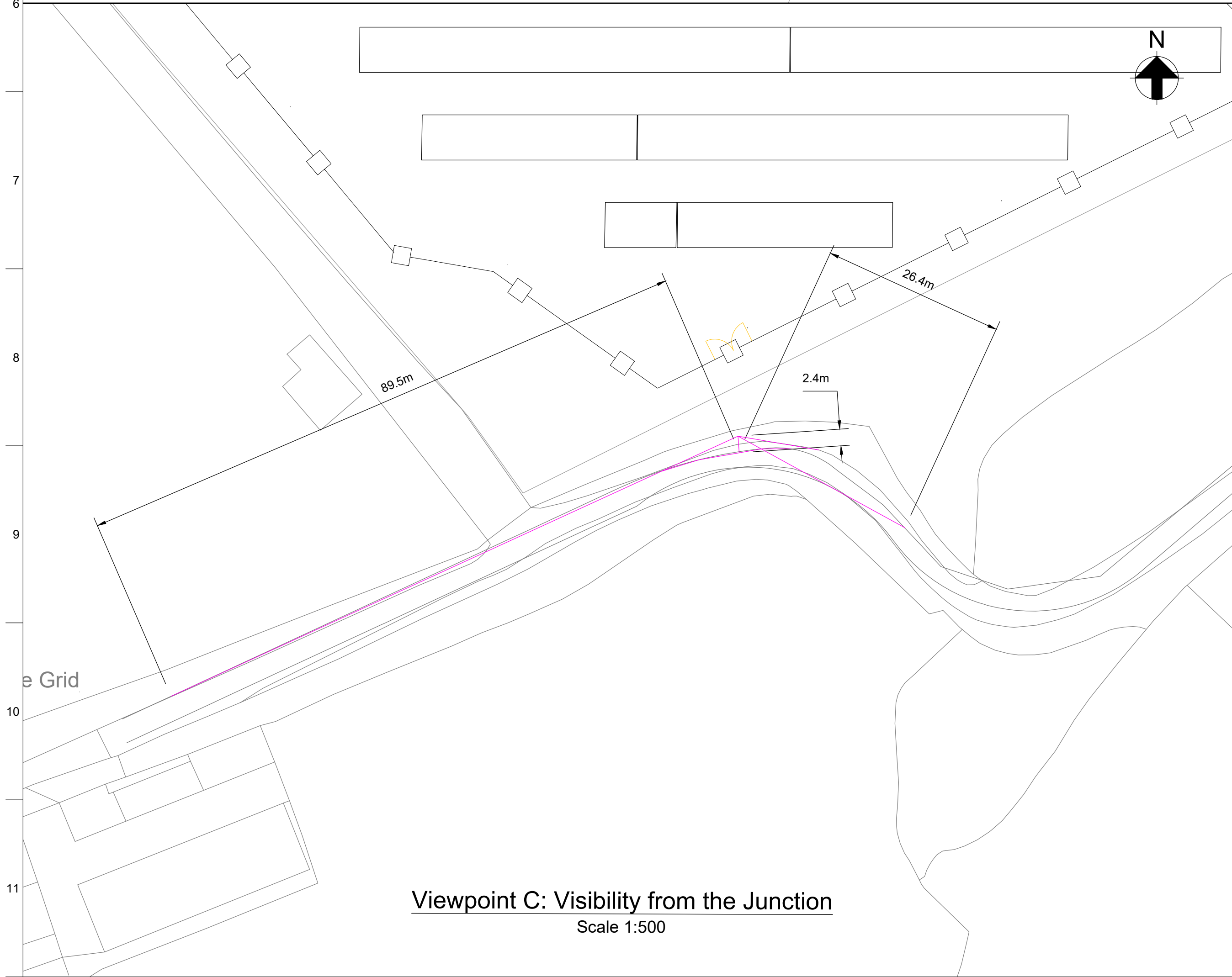
© Arup



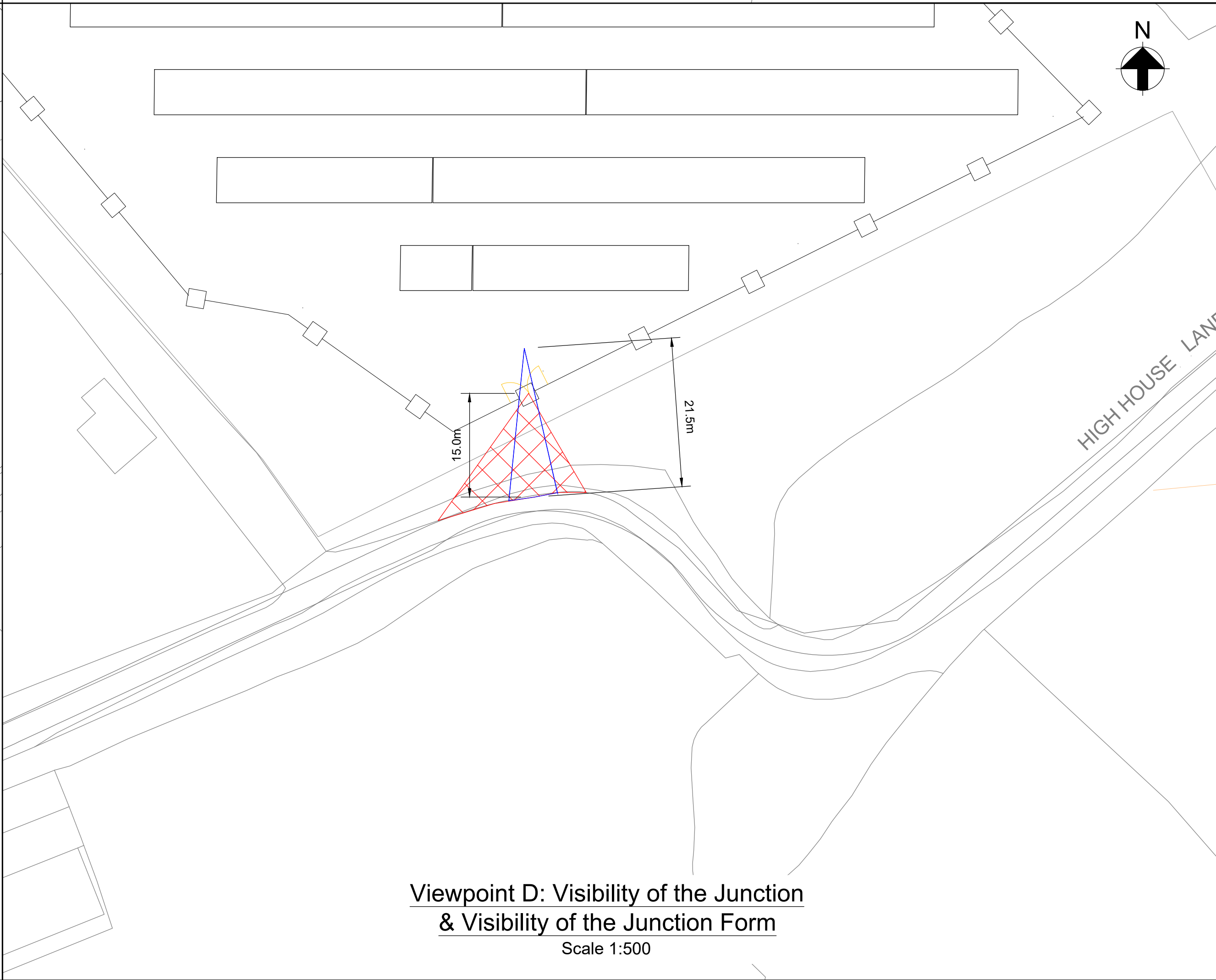
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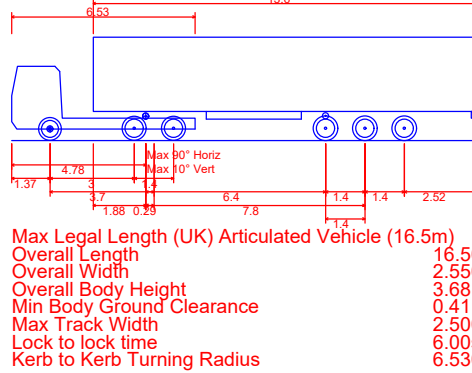
Viewpoint B: Left In
Scale 1:500



Viewpoint C: Visibility from the Junction
Scale 1:500



Viewpoint D: Visibility of the Junction
& Visibility of the Junction Form
Scale 1:500



Legend

- Vehicle Path
- Visibility from the Junction
- Visibility of the Junction Form
- Visibility of the Junction

Notes:

- High House Lane - 50kph design speed (30mph)
Stopping Sight Distance - 70m
One step below minimum - 50m
- High House Lane Average speed - 21mph
High House Lane 85th percentile speed - 25mph
(Data collected over over 7 days in March 2023)
- Visibility of High House Lane east of access restricted but private road, so limited traffic

Stopping Sight Distances (SSD)

Design Speed kph	Desired Minimum (m)	One Step Below Desired Minimum (m)
120	295	215
100	215	160
85	160	120
70	120	90
60	90	70
50	70	50
*40	50	34

* Interpolated from Tees Valley Design Appendix 5.5 Table 5.5.1

P03	22 /10/24	DC	NH	---
P02	09 /10/24	DC	NH	---
P01	03 /10/24	DC	NH	---
Issued for Comment and Review				
Rev	Date	By	Chkd	Appd

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Project Title
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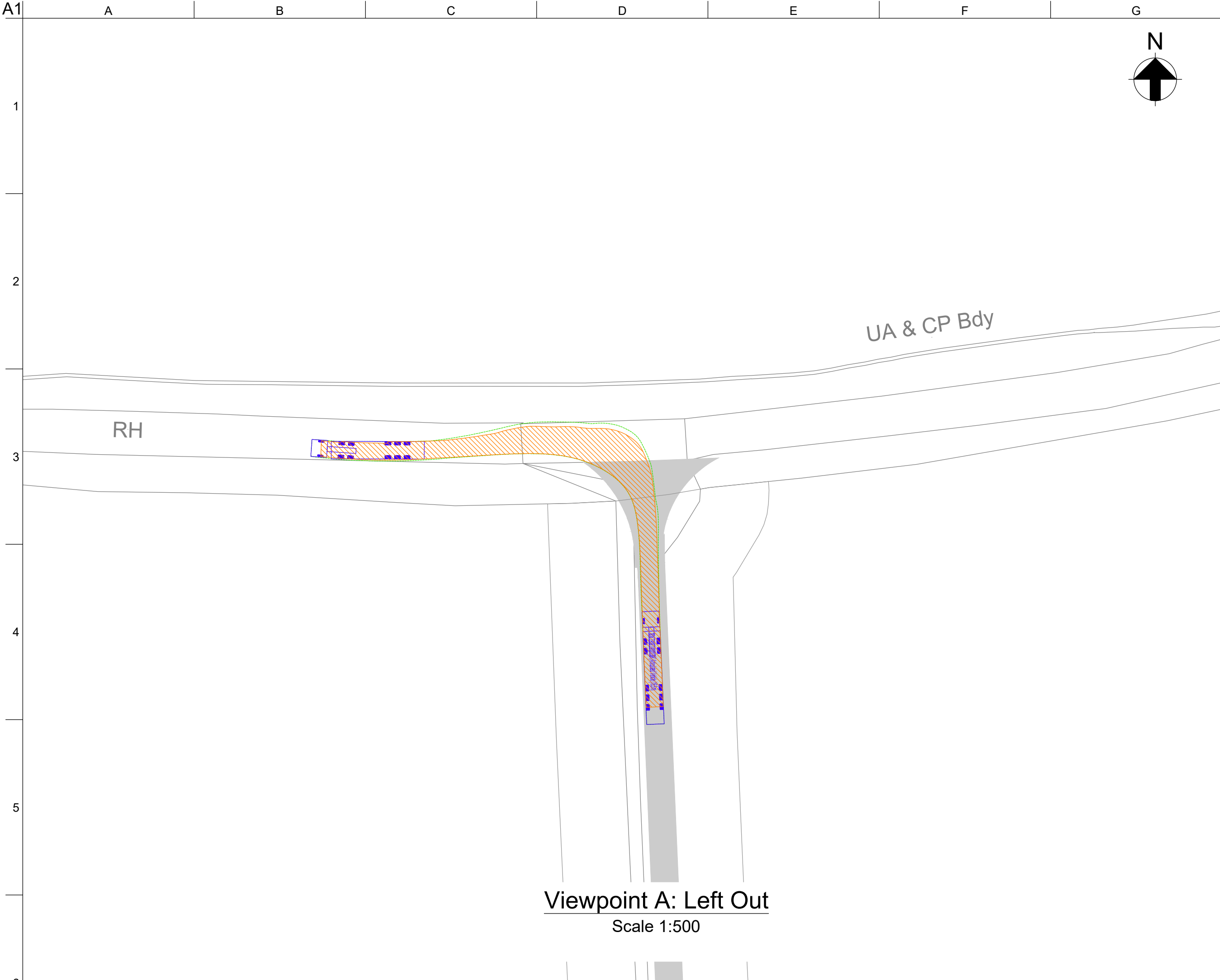
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Panel Area A
Vehicle Access
Brafferton Lane/ Access Track
Sheet 3 of 9

Scale at A1
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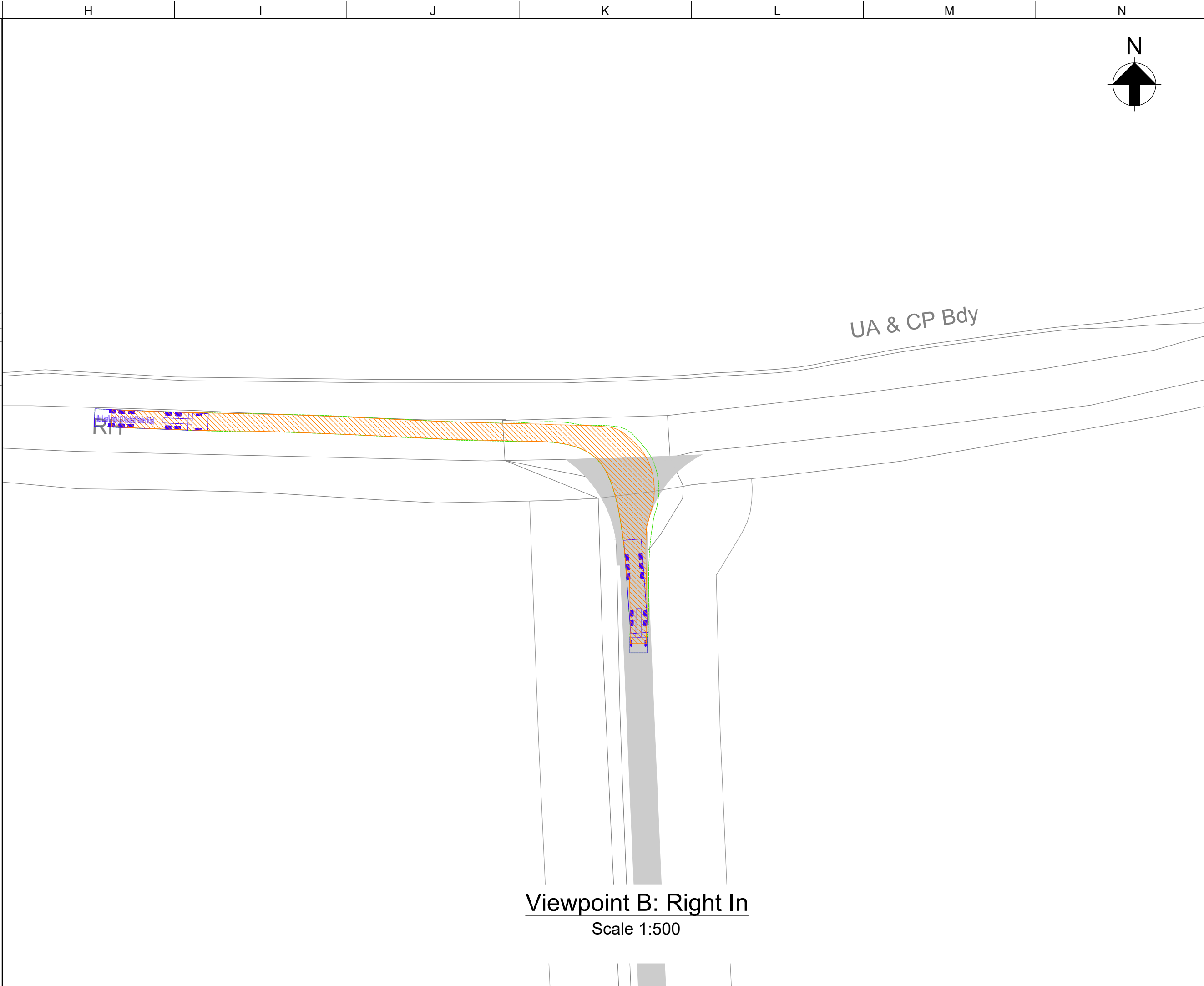
Role
Civil

Suitability
S0 - For Information

Arup Job No 285386-35	Rev P03
Name BGS-ARP-XX-XX-DR-CH-00003	



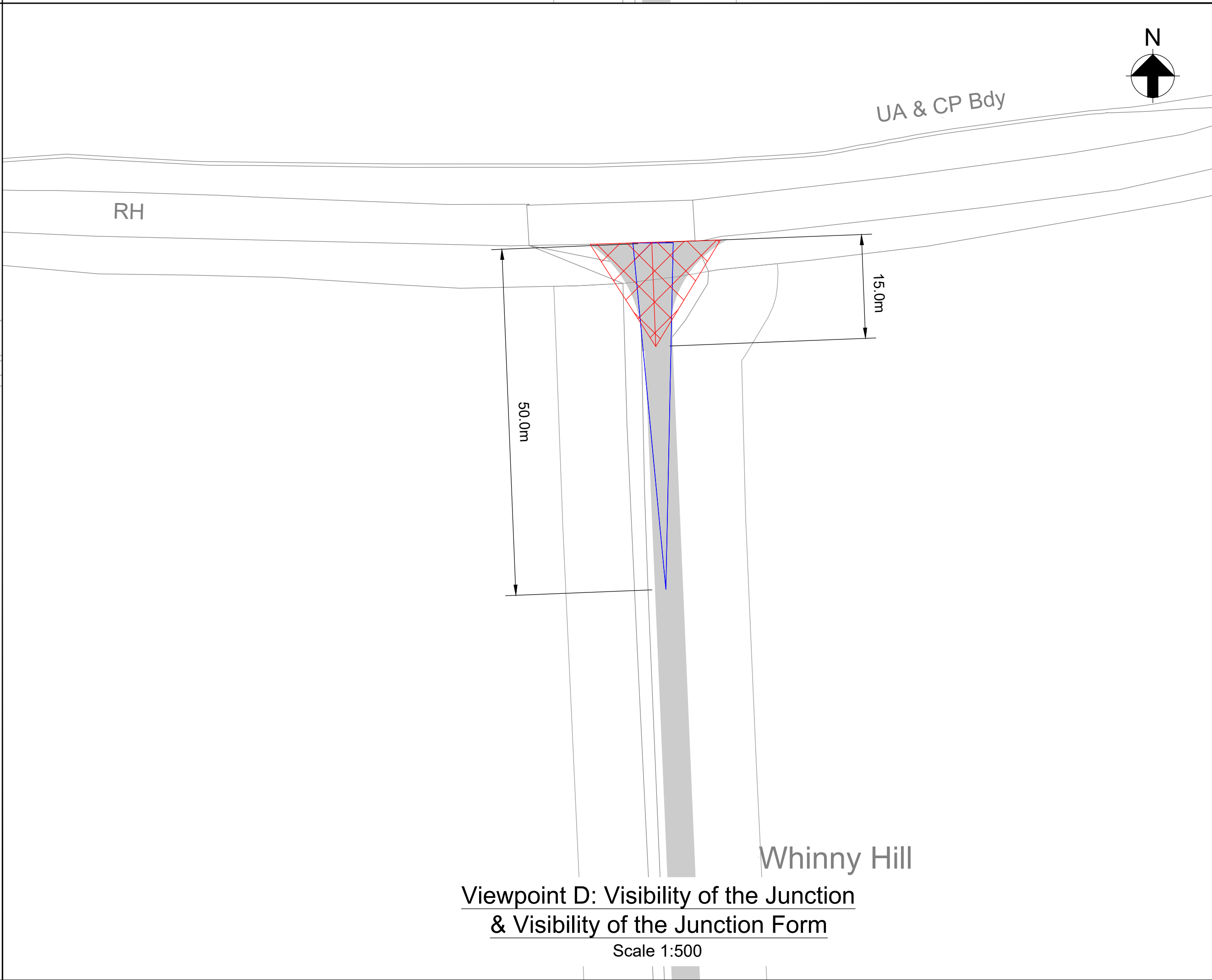
Viewpoint A: Left Out
Scale 1:500



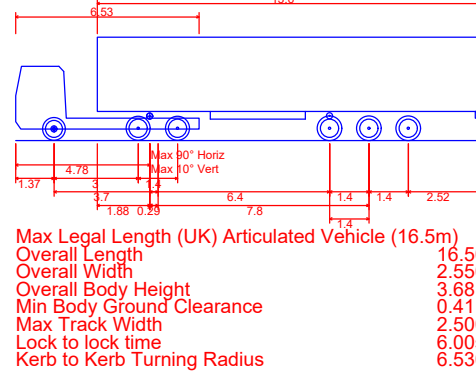
Viewpoint B: Right In
Scale 1:500



Viewpoint C: Visibility from the Junction
Scale 1:1500



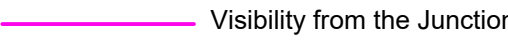
Viewpoint D: Visibility of the Junction
& Visibility of the Junction Form
Scale 1:500



Legend



Vehicle Path



Visibility from the Junction



Visibility of the Junction Form



Visibility of the Junction

Notes:

- Lodge Lane - 100kph design speed (60mph)
Stopping Sight Distance - 215m
One step below minimum - 160m
- Lodge Lane Average speed - 42mph
Lodge Lane 85th percentile speed - 48mph
(Data collected over over 7 days in March 2023)

Stopping Sight Distances (SSD)		
Design Speed kph	Desired Minimum (m)	One Step Below Desired Minimum (m)
120	295	215
100	215	160
85	160	120
70	120	90
60	90	70
50	70	50
*40	50	34

* Interpolated from Tees Valley Design Appendix 5.5 Table 5.5.1

P03	22/10/24	DC	NH	---
Issued for Comment and Review				
P02	09/10/24	DC	NH	---
Issued for Comment and Review				
P01	03/10/24	DC	NH	---
Issued for Comment and Review				
Rev	Date	By	Chkd	Appd

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Client

RWE

Project Title

Byers Gill Solar

Drawing Title

Panel Area B
Lodge Lane/Farm Access
Sheet 4 of 9

Scale at A1
1 : 1500 & 1 : 500

Role
Civil

Suitability
S0 - For Information

Arup Job No 285386-35	Rev P03
Name BGS-ARP-XX-XX-DR-CH-00004	

A1

1

2

3

4

5

6

7

8

9

10

11

A

B

C

D

E

F

G

H

I

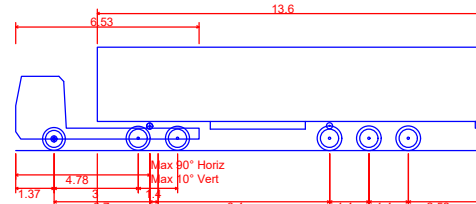
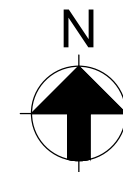
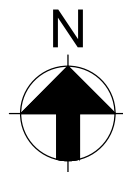
J

K

L

M

N



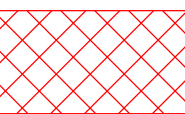
Max Legal Length (UK) Articulated Vehicle (16.5m)
Overall Length 2.500m
Overall Width 2.500m
Overall Body Height 3.681m
Min Body Ground Clearance 0.411m
Max Track Width 2.500m
Lock to lock time 6.00s
Kerb to Kerb Turning Radius 6.500m

Legend

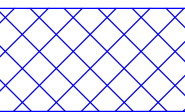


Vehicle Path

Visibility from the Junction



Visibility of the Junction Form



Visibility of the Junction

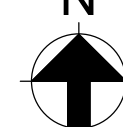
Notes:

1. Elstob Lane - 100kph design speed (60mph)
Stopping Sight Distance - 215m
One step below minimum - 160m
2. Elstob Lane Average speed - 47mph
Aycliffe Lane 85th percentile speed - 53mph
(Data collected over over 7 days in March 2023)

Stopping Sight Distances (SSD)

Design Speed kph	Desired Minimum (m)	One Step Below Desired Minimum (m)
120	295	215
100	215	160
85	160	120
70	120	90
60	90	70
50	70	50
*40	50	34

* Interpolated from Tees Valley Design Appendix 5.5 Table 5.5.1



P03	23 /10/24	DC	NH	---
Issued for Comment and Review				
P02	09 /10/24	DC	NH	---
Issued for Comment and Review				
P01	03 /10/24	DC	NH	---
Issued for Comment and Review				
Rev	Date	By	Chkd	Appd

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Client

RWE

Project Title

Byers Gill Solar

Drawing Title

Panel Area C
Elstob Lane/Farm Access Track
Sheet 5 of 9

Scale at A1 1:500 & 1:1500

Role Civil

Suitability S0 - For Information

Arup Job No 285386-35	Rev P03
Name BGS-ARP-XX-XX-DR-CH-00005	

Viewpoint A: Right Out

Scale 1:500

Viewpoint B: Left In

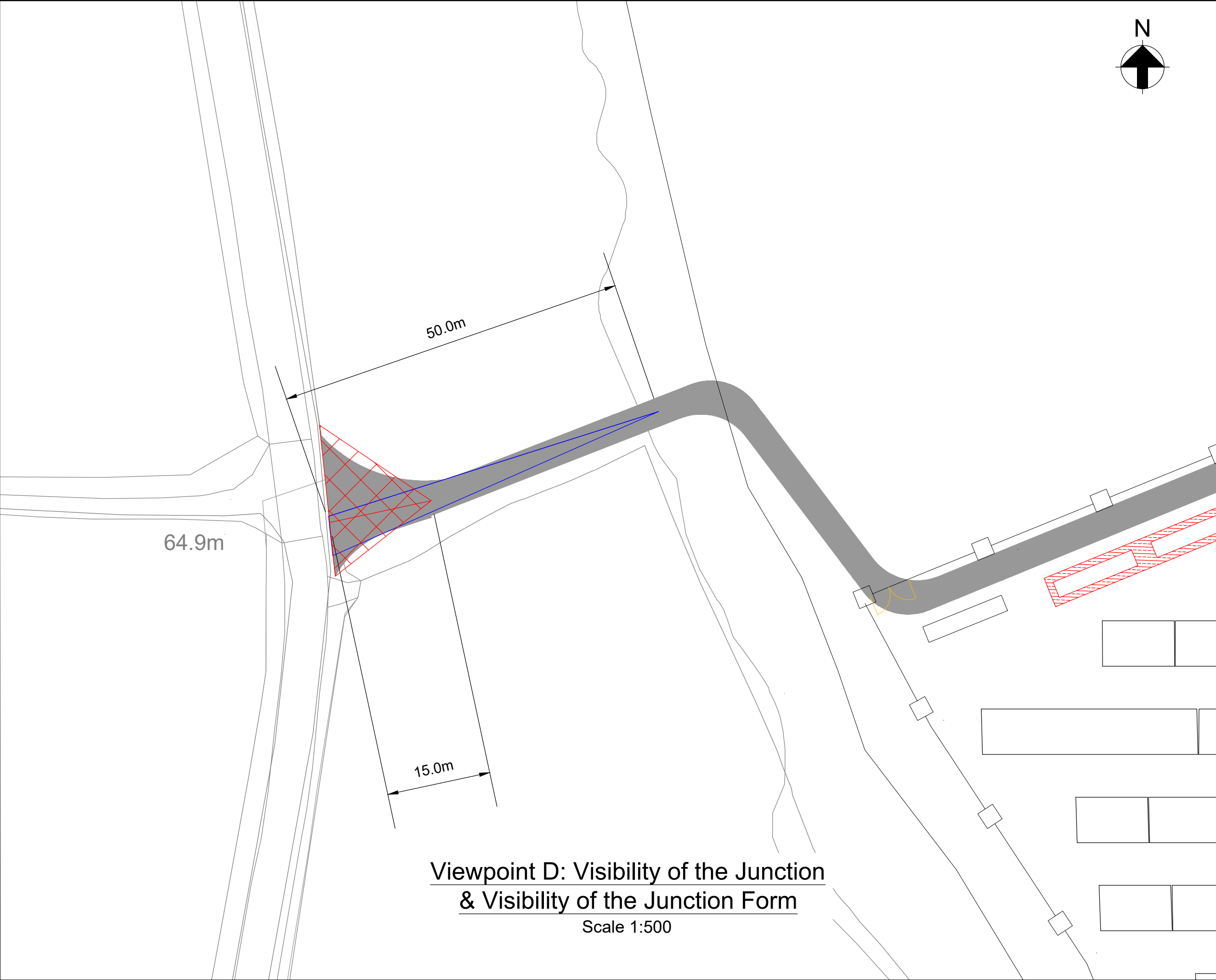
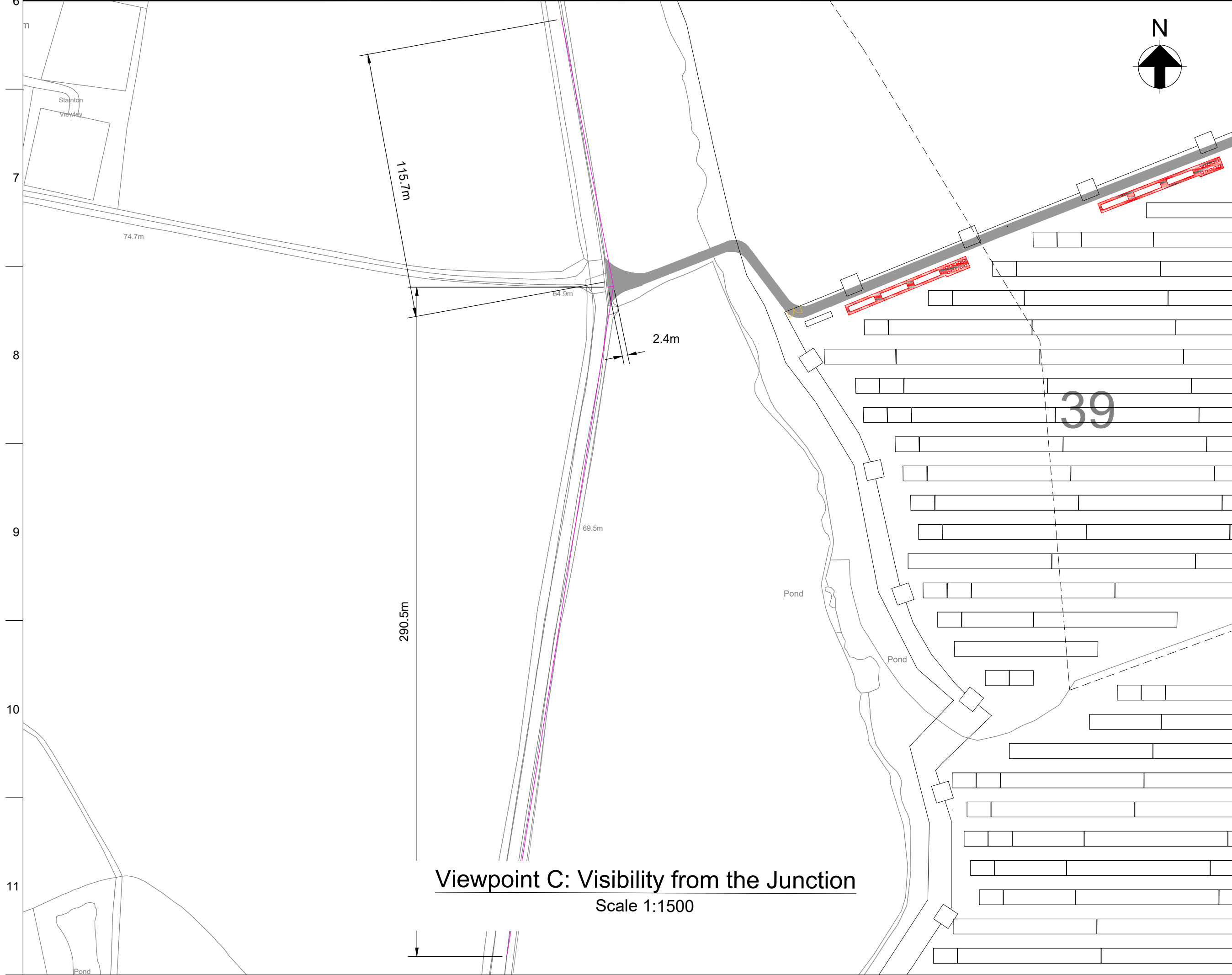
Scale 1:500

Viewpoint C: Visibility from the Junction

Scale 1:1500

Viewpoint D: Visibility of the Junction
& Visibility of the Junction Form

Scale 1:500



Max Legal Length (UK) Articulated Vehicle (16.5m)
Overall Length 16.500m
Overall Width 2.500m
Overall Body Height 3.881m
Min Body Ground Clearance 0.411m
Max Track Width 2.500m
Lock to lock time 6.00s
Kerb to Kerb Turning Radius 6.500m

Legend

- Vehicle Path
- Visibility from the Junction
- Visibility of the Junction Form
- Visibility of the Junction

Notes:

- Elstob Lane - 100kph design speed (60mph)
Stopping Sight Distance - 215m
One step below minimum - 160m
- Elstob Lane Average speed - 47mph
Elstob Lane 85th percentile speed - 53mph
(Data collected over over 7 days in March 2023)

Design Speed kph	Desired Minimum (m)	One Step Below Desired Minimum (m)
120	295	215
100	215	160
85	160	120
70	120	90
60	90	70
50	70	50
*40	50	34

* Interpolated from Tees Valley Design Appendix 5.5 Table 5.5.1

P03	23 /10/24	DC	NH	---
Issued for Comment and Review				
P02	08 /10/24	DC	NH	---
Issued for Comment and Review				
P01	04 /10/24	DC	NH	---
Issued for Comment and Review				
Rev	Date	By	Chkd	Appd

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Client

RWE

Project Title

Byers Gill Solar

Drawing Title

**Panel Area D
Vehicle Access
Farm Access Road
Sheet 6 of 9**

Scale at A1

1:1500 & 1 : 500

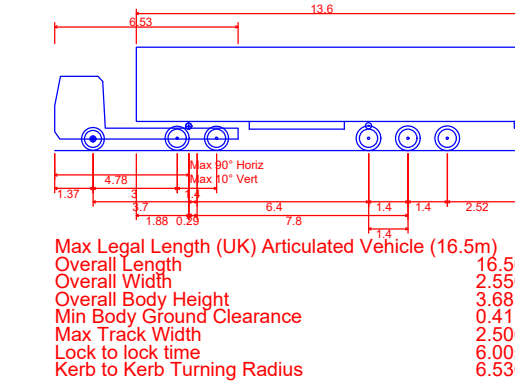
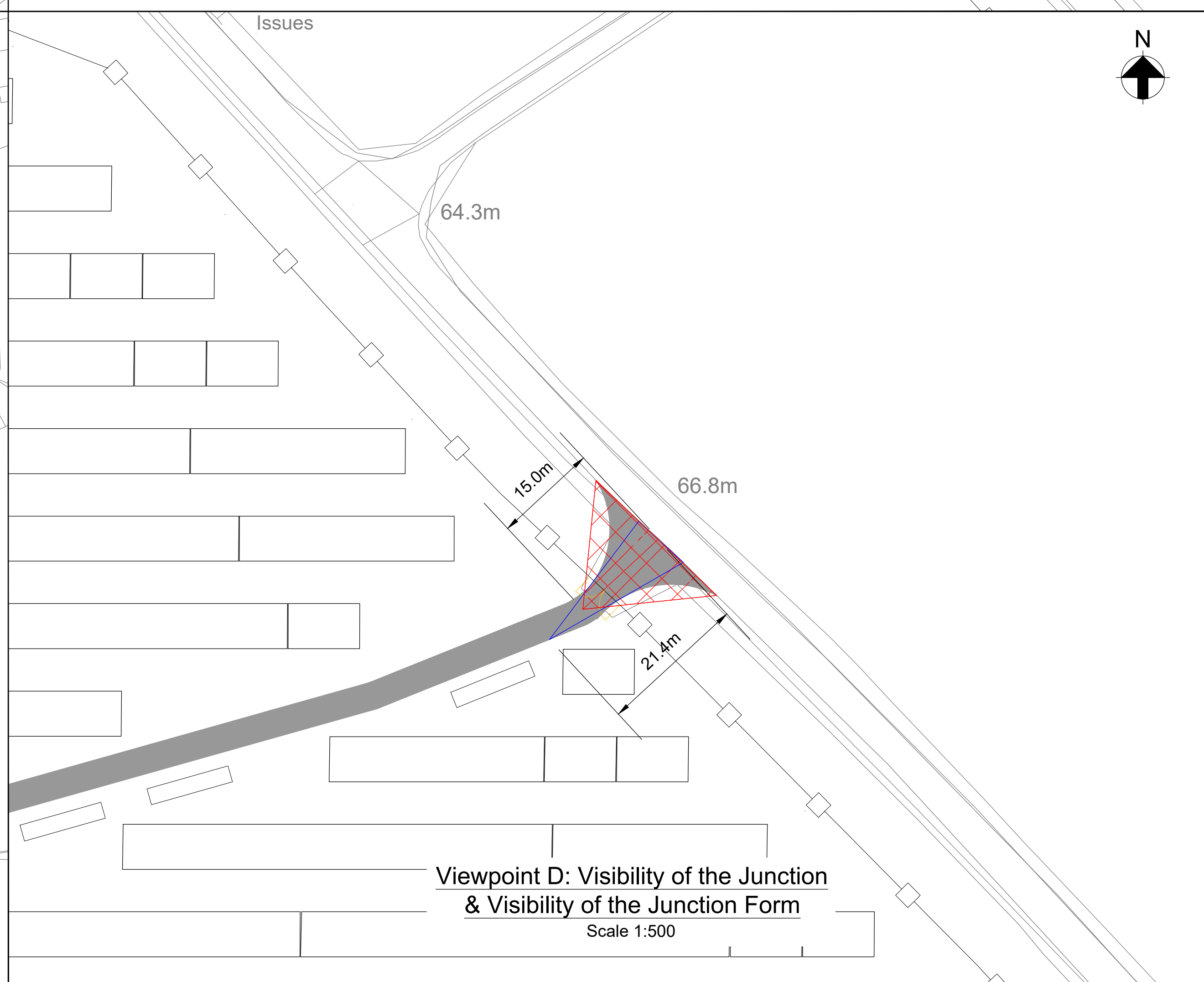
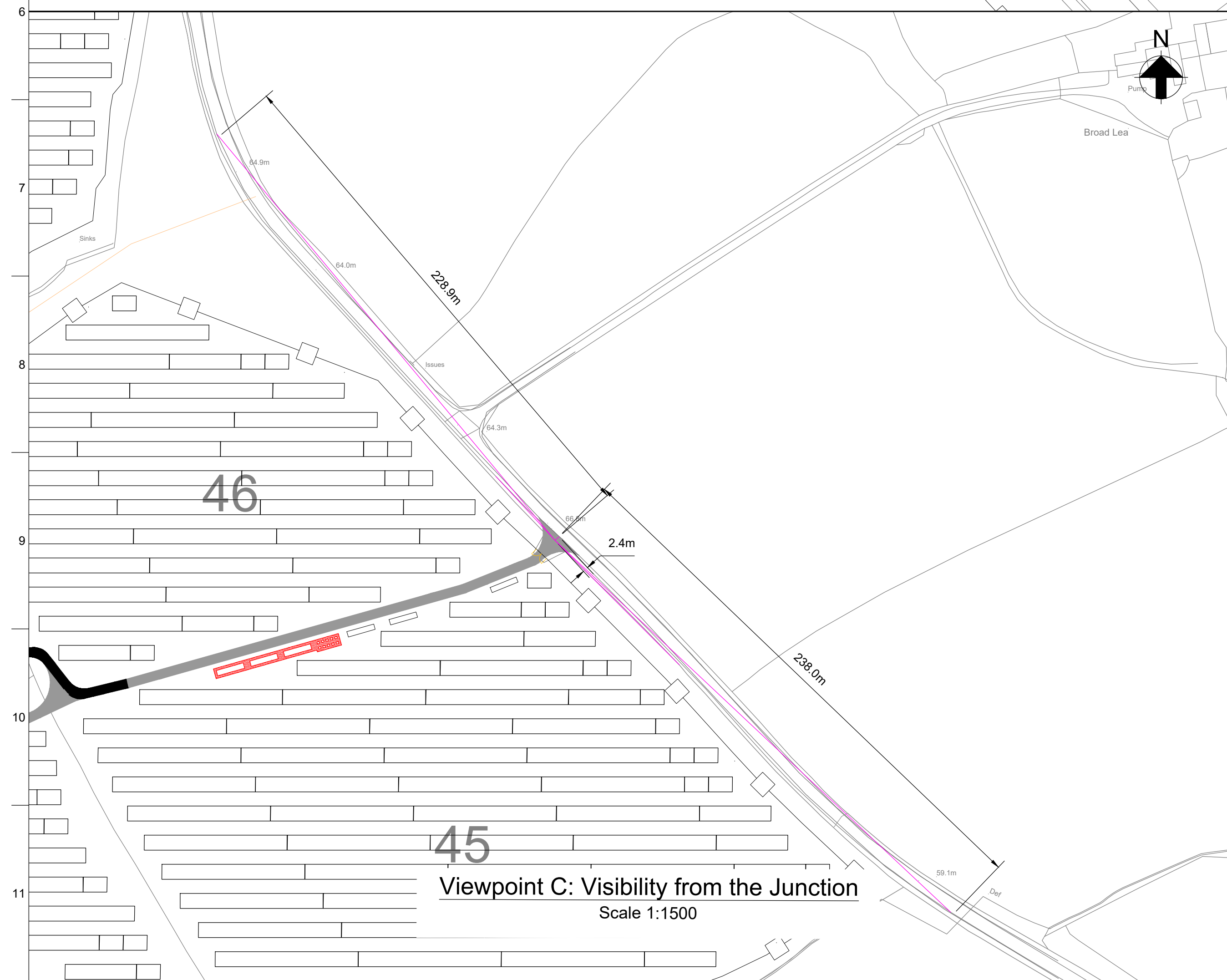
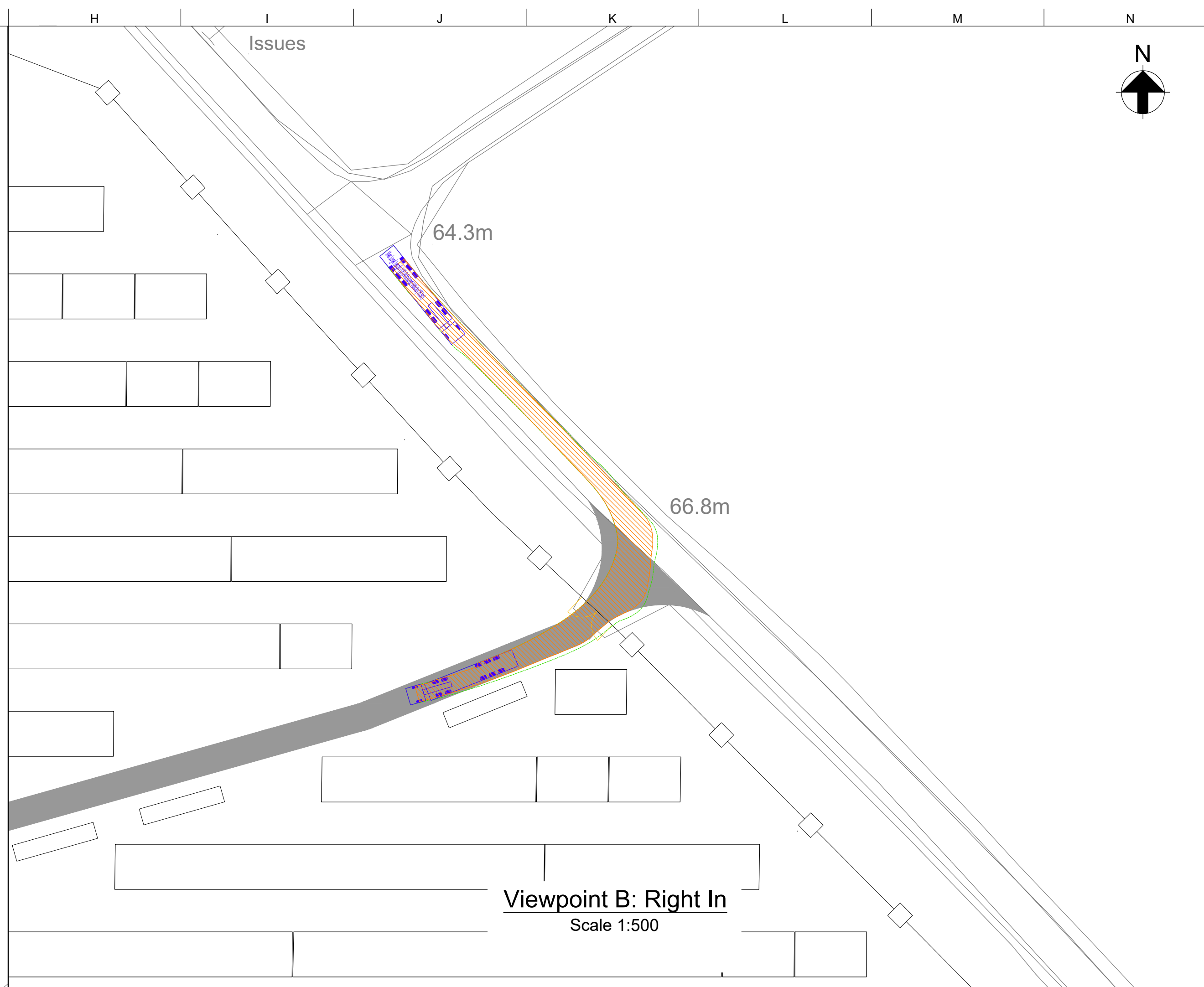
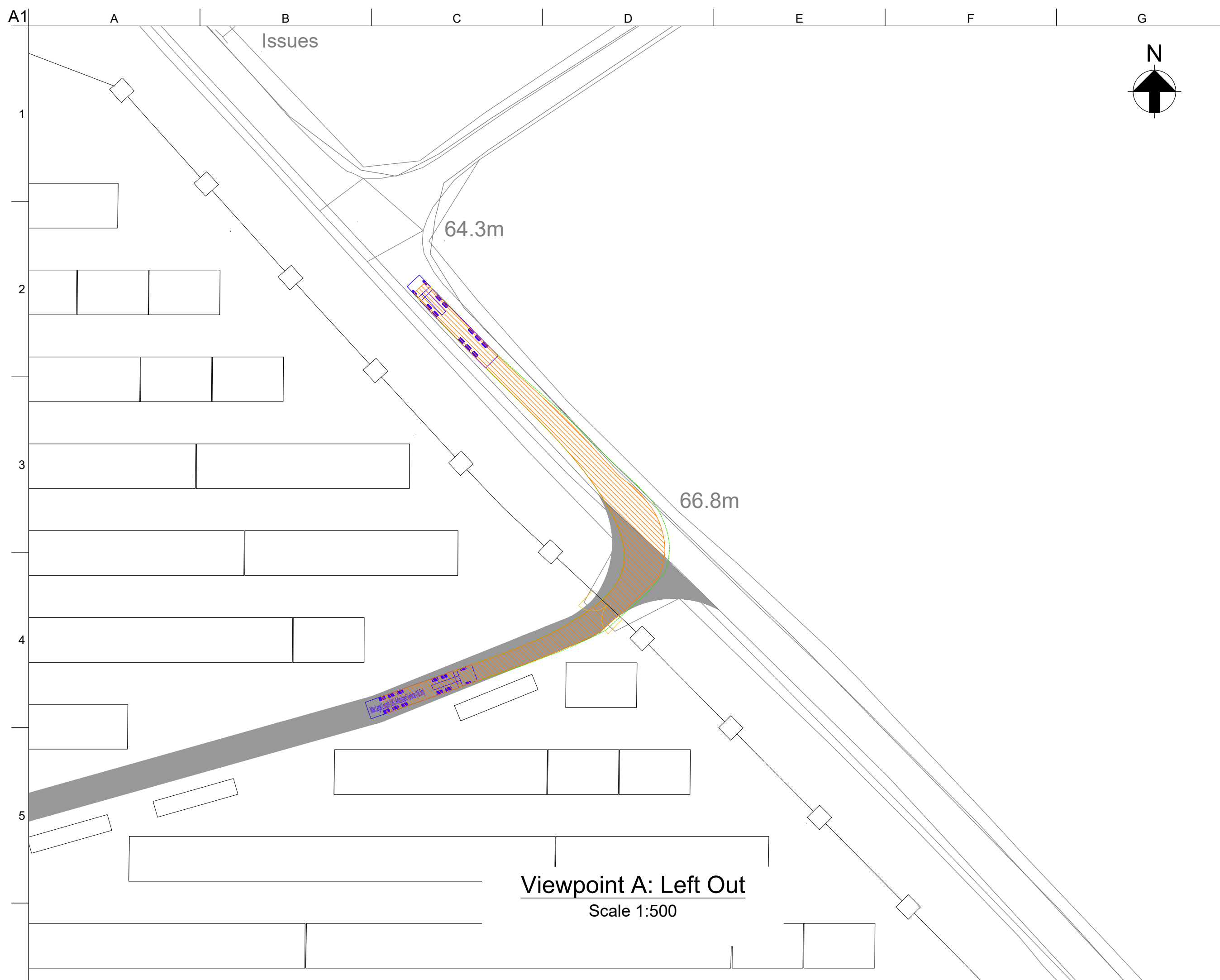
Role

Civil

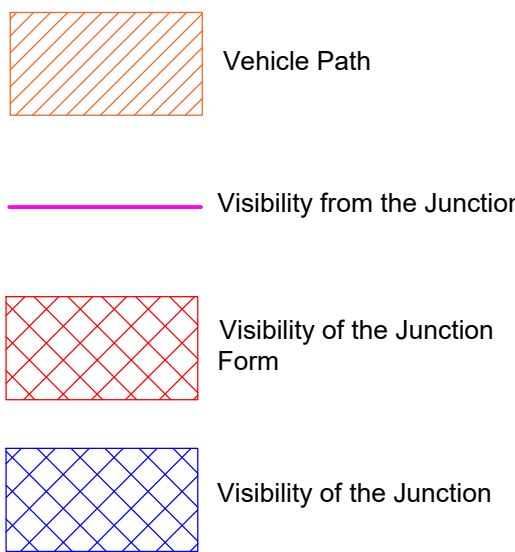
Suitability

S0 - For Information

Arup Job No	Rev
285386-35	P03
Name	
BGS-ARP-XX-XX-DR-CH-00006	



Legend



Notes:

1. Major Road - 100kph design speed (60mph)
Stopping Sight Distance - 215m
One step below minimum - 160m
2. Road East of Great Stainton Average speed - 39mph
Road East of Great Stainton 85th percentile speed - 45mph
(Data collected over over 7 days in March 2023)

Design Speed kph	Desired Minimum (m)	One Step Below Desired Minimum (m)
120	295	215
100	215	160
85	160	120
70	120	90
60	90	70
50	70	50
*40	50	34

Interpolated from Tees Valley Design Appendix 5.5 Table 5.5.1

P03	23 /10/24	DC	NH	---
Issued for Comment and Review				
P02	08 /10/24	DC	NH	---
Issued for Comment and Review				
P01	04 /10/24	DC	NH	---
Issued for Comment and Review				
Rev	Date	By	Chkd	Appd

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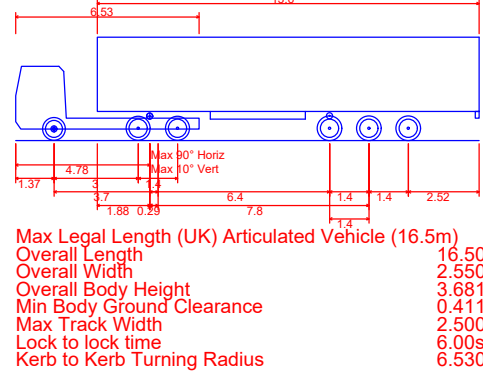
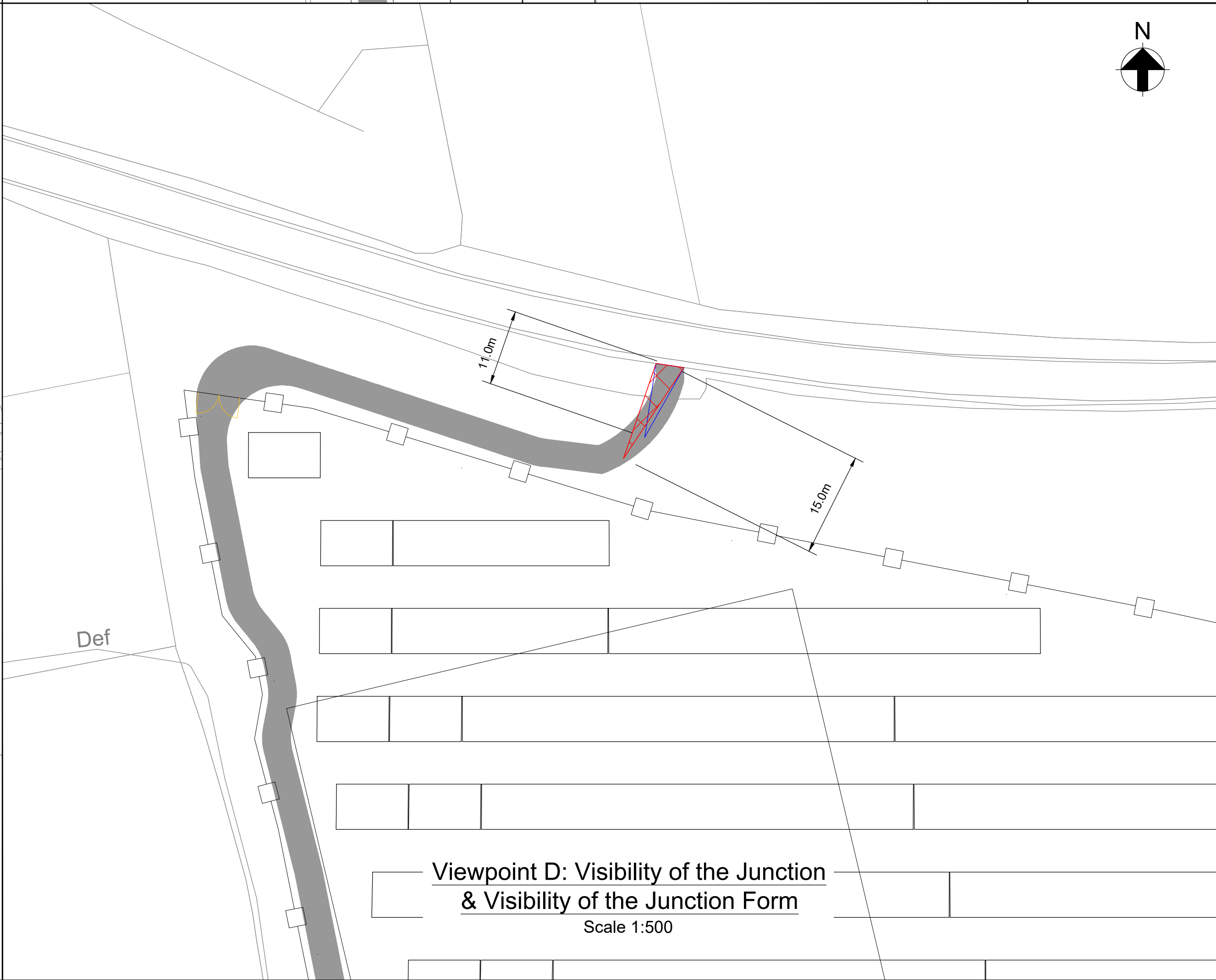
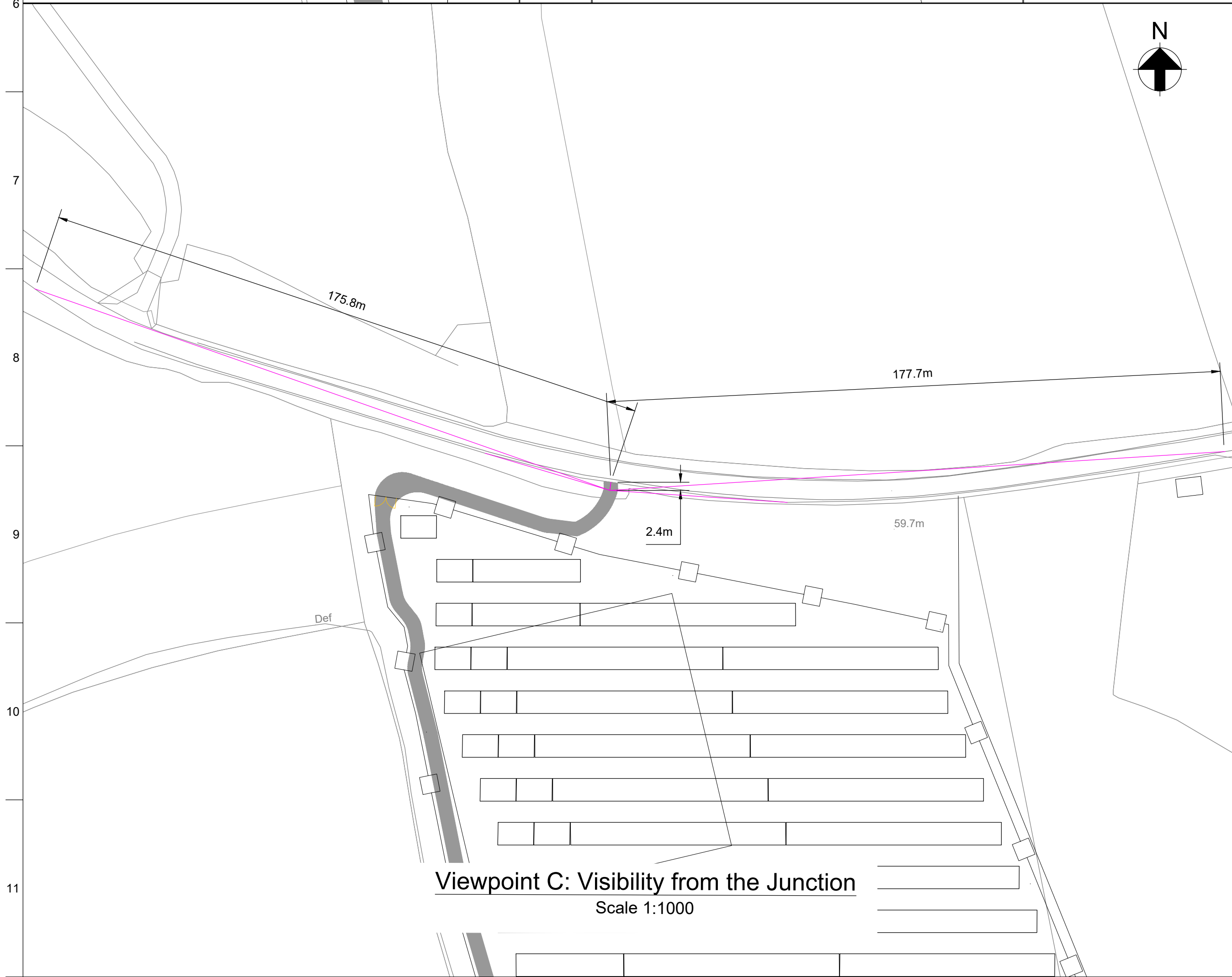
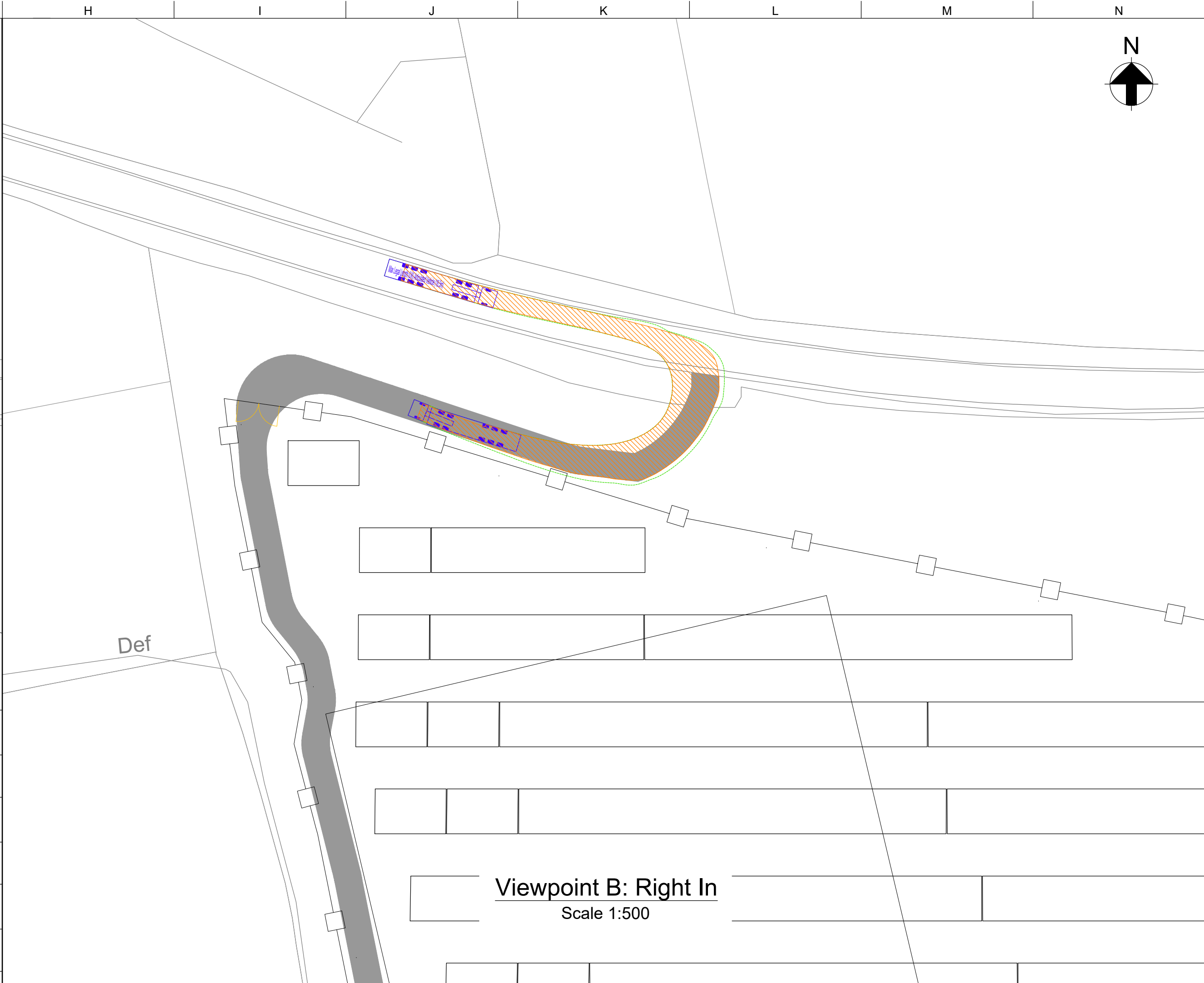
Project Title
Byers Gill Solar

Drawing Title
Panel Area D
Vehicle Access
54°35'08"N 1°28'41"W
Sheet 7 of 9

Scale at A1 1:1500 & 1 : 500

Role	Civil
Suitability	S0 - For Information

Arup Job No	Rev
285386-35	P03
Name	
BGS-ARP-XX-XX-DR-CH-00007	



- Legend**
- Vehicle Path
 - Visibility from the Junction
 - Visibility of the Junction Form
 - Visibility of the Junction

- Notes:**
- Major Road - 100kph design speed (60mph)
Stopping Sight Distance - 215m
One step below minimum - 160m
 - Road West of Bishopton Average speed - 46mph
Road West of Bishopton 85th percentile speed - 52mph
(Data collected over over 7 days in March 2023)

Stopping Sight Distances (SSD)		
Design Speed kph	Desired Minimum (m)	One Step Below Desired Minimum (m)
120	295	215
100	215	160
85	160	120
70	120	90
60	90	70
50	70	50
*40	50	34

* Interpolated from Tees Valley Design Appendix 5.5 Table 5.5.1

P03	23 /10/ 24	DC	NH	---
Issued for Comment and Review				
P02	08 /10/ 24	DC	NH	---
Issued for Comment and Review				
P01	04 /10/ 24	DC	NH	---
Issued for Comment and Review				
Rev	Date	By	Chkd	Appd

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Client

RWE

Project Title
Byers Gill Solar

Drawing Title
Panel Area E
Vehicle Access
54°35'08"N 1°27'03"W
Sheet 8 of 9

Scale at A1
1:1000 & 1:500

Role
Civil

Suitability
S0 - For Information

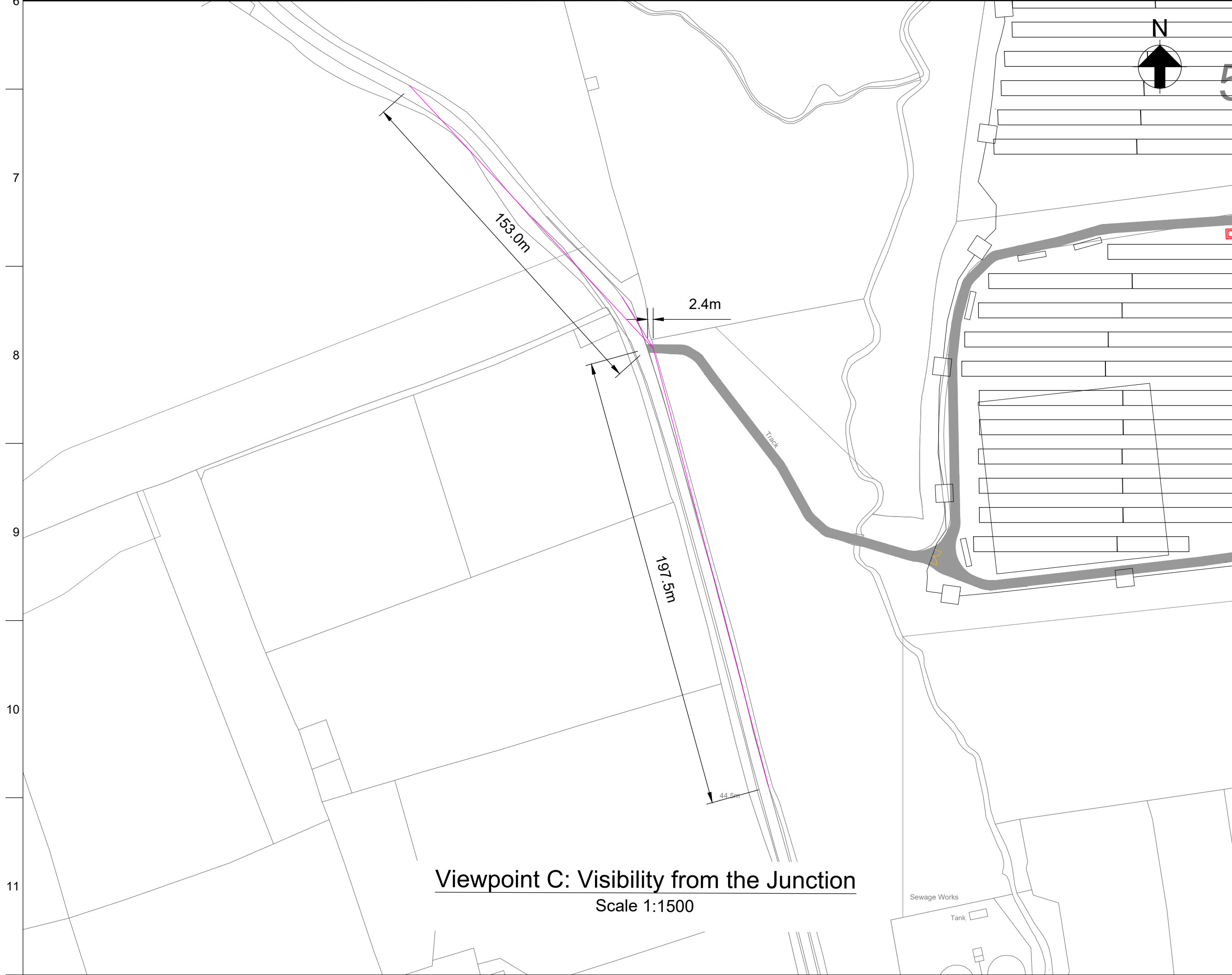
Arup Job No 285386-35	Rev P03
Name BGS-ARP-XX-XX-DR-CH-00008	



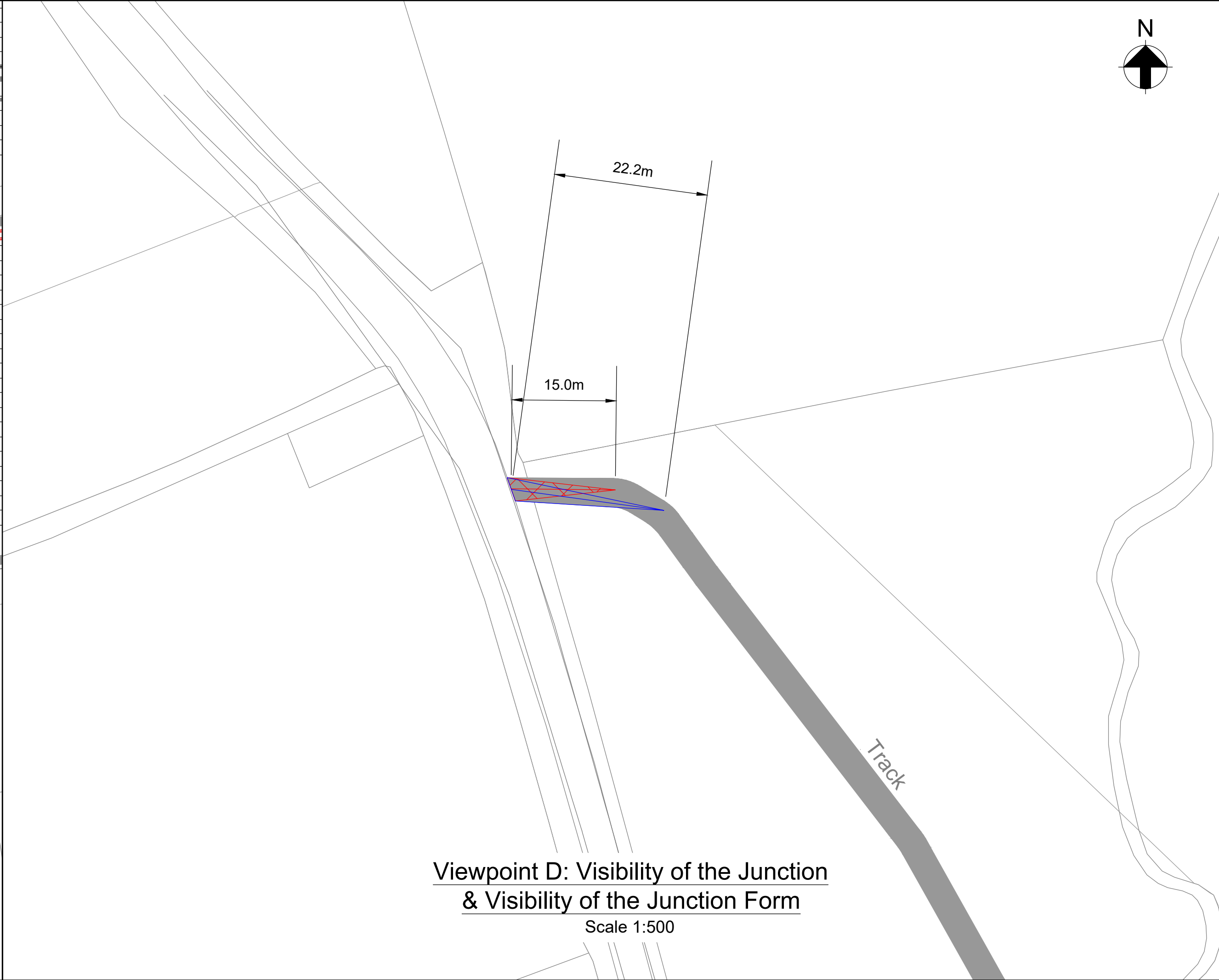
Viewpoint A: Right Out
Scale 1:500



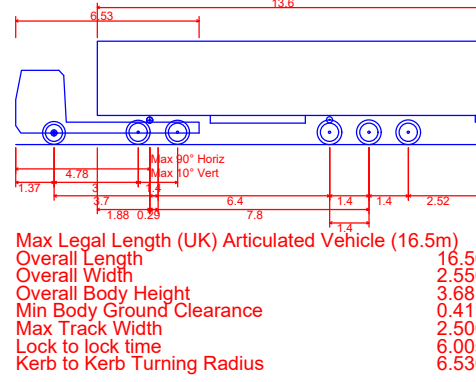
Viewpoint B: Left In
Scale 1:500



Viewpoint C: Visibility from the Junction
Scale 1:1500



Viewpoint D: Visibility of the Junction
& Visibility of the Junction Form
Scale 1:500



Max Legal Length (UK) Articulated Vehicle (16.5m)
Overall Length 16.500m
Overall Width 2.550m
Overall Body Height 3.881m
Min Body Ground Clearance 0.411m
Max Track Width 2.500m
Lock to lock time 6.05s
Kerb to Kerb Turning Radius 6.500m

Legend

- Vehicle Path
- Visibility from the Junction
- Visibility of the Junction Form
- Visibility of the Junction

Notes:

- Major Road - 100kph design speed (60mph)
Stopping Sight Distance - 215m
One step below minimum - 160m

Stopping Sight Distances (SSD)		
Design Speed kph	Desired Minimum (m)	One Step Below Desired Minimum (m)
120	295	215
100	215	160
85	160	120
70	120	90
60	90	70
50	70	50
*40	50	34

* Interpolated from Tees Valley Design Appendix 5.5 Table 5.5.1

P03	23 /10/ 24	DC	NH	---
Issued for Comment and Review				
P02	08 /10/ 24	DC	NH	---
Issued for Comment and Review				
P01	04 /10/ 24	DC	NH	---
Issued for Comment and Review				
Rev	Date	By	Chkd	Appd

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Client

RWE

Project Title

Byers Gill Solar

Drawing Title

Panel Area F
Vehicle Access
54°35'22"N 1°26'42"W
Sheet 9 of 9

Scale at A1 1:1500 & 1:500

Role Civil

Suitability S0 - For Information

Arup Job No

285386-35

Rev

P03

Name

BGS-ARP-XX-XX-DR-CH-00009